Appendix A

DRAFT LOCAL FLOOD RISK MANAGEMENT STRATEGY DOCUMENT

STOCKPORT
METROPOLITAN BOROUGH COUNCIL

LOCAL FLOOD RISK MANAGEMENT STRATEGY FOR STOCKPORT

February 2016

Foreword by Executive Member

It is with great pleasure that we can present to the public the progress we have made and the improvements that we plan to undertake to re-establish Stockport Council as the Lead Local Flood Authority for the Stockport area. We have made great progress in a short period of time and this Strategy endorses that.

I certainly accept the new duties and responsibilities the Council has to help our community and look forward to developing a closer relationship with residents and other multi-disciplined agencies with an interest in water and its impact on the built environment and natural environment.

I welcome and applaud the support the Council has from its partners in risk management.

The beauty, amenity and critical resource of water should certainly be appreciated but also acknowledged that the power of nature can deliver adverse effects that can have a huge impact on us all and for many years. The reality of major flood events in Stockport is relatively small in comparison to other areas, but some risk will remain in areas with large urbanisation and buried waterways. Flood risk management requires the support of all key stakeholders including local residents, organisations and businesses as we all have responsibilities. If we work together then the potential impacts of floods in Stockport can be minimised.

Table of contents

Chapter		Pages
Executive Summary		**4**
1.	**Introduction**	**7**
1.1.	Background	7
1.2.	Aims of the Strategy	**Error! Bookmark not defined.**
1.3.	A Vision for Flood Risk Management in Stockport	9
2.	**Local Flood Risk in Stockport**	**11**
2.1.	Sources of Flooding	11
2.2.	Overview of Flood Risk in Stockport (all sources)	12
2.3.	Assessing Local Flood Risk	17
2.4.	Overview of Climate Change Implications	18
3.	**Legislative Context**	**19**
3.1.	The Flood and Water Management Act and the Flood Risk Regulations (2009)	19
3.2.	National Flood and Coastal Erosion Risk Management Strategy for England (NFCERMS) (2011)	20
3.3.	Other relevant legislation and policies	23
4.	**Roles and Responsibilities**	**24**
4.1.	Key Stakeholders	24
4.2.	Roles of Flood Risk Management Authorities	25
4.3.	Roles of Other Stakeholders	29
5.	**Strategy for Managing Flood Risk**	**32**
5.1.	Strategy Objectives and Measures	32
5.2.	Actions to Achieve Objectives	39
5.3.	Paying for the Actions	40
6.	**Reporting and Review**	**42**
6.1.	European and National Reporting and Review	42
6.2.	Local Arrangements for Reporting and Review of the Local Flood Risk Management Strategy	43
6.3.	Monitoring of the Local Flood Risk Management Strategy Objectives	43
Appendices		**49**
Appendix A.	**Flood Risk Maps**	**50**
Appendix B.	**Action Plan**	**53**

Executive Summary

This is the formal strategy proposed by Stockport Council to demonstrate its understanding and role in managing flood risk in the borough of Stockport. It is a requirement of the Flood and Water Management Act 2010 that this document is available to the public. Previously duties and powers were with the Environment Agency but this legislation sets the Council as the Lead Local Flood Authority with the intention to be able to understand and potentially redress local flood issues by being able to react at a more local level. It is intended that matters can be handled more directly with the communities that the Council is there to help and support.

The Strategy is written to show the background and how and why changes have come about. This has to be the context of the process and in the first Section it shows in more detail what is required from the Strategy. The rest of the document establishes how the Council goes about its duties and beyond and expands that to give information on what is actually being carried out.

Flood risk from Main Rivers, such as the Mersey, Goyt and Tame although a concern and a duty for the Council are still under the management of the Environment Agency. It is predominantly what is classed as Ordinary Watercourses, Surface Water and Ground Water flooding that this strategy is to address.

It is important to establish for the people of Stockport what our policies are and what we want to achieve and it is stressed that the function is to understand flood risk. The Council certainly wants to help and support communities to be aware of it and so far as it can help others understand it. Wherever possible the Council will try and reduce it, but that may not be possible and it should be recognised that neither the duties nor this strategy make the Council responsible for flooding or the consequences of it.

The role the Council has is to collect data and process information and make it available to the public and is therefore fundamentally about raising risk awareness. Although the Council has already proven to be proactive by using its Powers to provide solutions it can only continue to do so where it is practical, affordable and realistic within the current and future funding mechanisms. There will be certainly other bodies involved and these are outlined in the report. There would not be a one-stop shop but a Lead from the Council with direction and advice and we cannot necessarily fund improvements but will try to do identify funding to do so.

Flood risk and particularly surface water flood risk is inherently unpredictable and is often complex and usually not related to one specific issue or event and is therefore rarely a simple one-fix process. The problems may have to be explored and investigated over a long period of time to try and ascertain the problem as drainage assets in an urban environment are usually buried and difficult to access. We may have to rely on information gleaned from multiple flood events or undertake complex analysis or modelling to provide solutions and also work with other agencies. The Council is developing the skills and experience to be able to deliver the investigations and solutions more effectively.

A fundamental aim of the strategy is that Stockport Council embraces and supports its role as Lead Local Flood Authority and this means taking the lead in helping with infrastructure development and re-development and working with other bodies in dealing with flood risk. The Council wants to encourage and wherever possible enforce current thinking and guidance and be able to provide improvements through working better together in terms of supporting communities to help themselves.

Although it may not necessarily be apparent the environmental impact of flooding or works to mitigate flooding are key considerations and are often within the Council's general and specific policies and objectives.

The Strategy is relevant for anyone who lives, works or visits Stockport to assist them in understanding and managing flood risk. It is also of relevance to all authorities with flood risk management responsibilities to ensure there is a common understanding of roles and responsibilities.

The Strategy is aimed at providing an overview and assessment of local flood risk in Stockport, setting out objectives and measures for how Stockport Council will manage and reduce local flood risk.

This Strategy builds on existing and developing approaches to flood risk management and promotes the use of a wide range of measures to manage flood risk. Risk should be managed in a co-ordinated way within catchments and balance the needs of communities, the economy and the environment.

Stockport will take a proportionate risk-based approach to achieve the best results possible using the budget and resources available. We are working to reduce both the likelihood of flooding and impacts of a flood when it happens.

The Strategy also shows how communities can be more involved in local flood risk management and emphasises the need to consider national and local activities and funding.

To ensure that the Strategy remains relevant and fit for purpose it will be regularly reviewed and updated as necessary. It is important that the information contained within it is the best available and it is in line with national policy on the management of local flood risk.

Our Objectives

A key aspect of this Strategy is the objectives it sets for the management of local flood risk in Stockport. These objectives aim to cover all aspects of local flood risk management and are consistent with the national flood risk management strategy.

Our Objectives are:

1) To better understand local flood risk and make best use of available information in order to better manage flood risk to people, businesses, property, infrastructure and the natural environment;
2) To reduce the potential impact and costs of flooding in the Borough;
3) To ensure resilience of local water bodies and drainage assets;
4) To ensure appropriate development in areas of flood risk;
5) To develop a collaborative partnership approach to flood risk management, and cooperate with other Risk Management Authorities (RMAs) and key stakeholders working across catchments;
6) To assist communities in understanding information on flood risk and supporting themselves;
7) To encourage, support and provide flood risk management which seeks to enhance and protect the environment.

Our Measures and Actions

To achieve these objectives, the Council has identified the necessary measures and actions that are presented in the action plan for this Strategy. The measures address the various aspects of local flood risk management, including educating communities, raising public awareness, improving our understanding of the risks and implementing measures to manage and reduce flood risk where it is unacceptable. The actions will be led by the Council with support from its partners in local flood risk management where appropriate.

Funding the implementation of the Strategy

To implement the measures outlined by this Strategy, funding will need to be sought from a variety of sources. In consultation with its partners in local flood risk management, the Council has identified the following potential funding sources (not exhaustive):

- Department for Environment, Food and Rural Affairs Grant for Lead Local Flood Authority Duties;
- Flood and Coastal Erosion Risk Management (FCERM) Grant in Aid.
- Local Levy;
- Section 106 developer contributions;
- SMBC contributions;
- other Local Authority contributions;
- other partner contributions;
- Local Enterprise Partnership (LEP) contributions.

1. Introduction

1.1. Background

Flood risk in England is expected to increase due to climate change and development in areas at risk. 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, the environment and infrastructure.

Under the Flood and Water Management Act (2010) ('the Act') Stockport Metropolitan Borough Council (SMBC) became a Lead Local Flood Authority (LLFA), responsible for managing local flood risk from surface water, ground water and ordinary watercourses in Stockport. One of the new duties placed upon SMBC as LLFA to assist in the management of local flood risk is to 'develop, maintain, apply and monitor' a Local Flood Risk Management Strategy'.

SMBC will take a risk-based approach to achieve the best results possible using the budget and resources available. We are working to reduce both the likelihood of flooding and the impacts of a flood when it happens.

The events of the summer of 2007 and more recently in 2012, 2014 and 2015 across large parts of the UK has demonstrated the major impacts floods can have. They also showed the importance of understanding the flood risks we face nationally so that we can be better prepared to face future risks. In all, around 5.2 million properties in England, or one in six properties, are at risk of flooding. More than 5 million people live and work in 2.4 million properties that are at risk of flooding from rivers or the sea, one million of which are also at risk of surface water flooding. A further 2.8 million properties are susceptible to surface water flooding alone.

The Local Flood Risk Management Strategy is an important tool to help everyone understand and manage risk within Stockport and is therefore of relevance to everyone who lives, works, visits or travels through the area. Its main focus is on 'local flood risk', flooding caused by surface water, ground water and ordinary watercourses.

Its main aim is to reduce the risk of flooding and economic damage that flooding causes, in a sustainable manner. Also any flood management activities carried out will aim to enhance the built and natural environment.

This strategy builds on existing and developing approaches to flood and coastal risk management and promotes the use of a wide range of measures to manage risk. Risk should be managed in a co-ordinated way within catchments and balance the needs of communities, the economy and the environment.

It also shows how communities can be more involved in local flood risk management and emphasises the need to consider national and local activities and funding.

The Strategy is subject to both Strategic Environmental Assessment and Habitats Regulation Assessment.

1.2. Aims of the Strategy

1.2.1. Defining Flood Risk in Stockport

The Strategy aims to provide an overview and assessment of local flood risk in Stockport, setting out objectives and measures for how the Council will manage and reduce local flood risk.

The Strategy will seek to define what "locally significant flood risk" is in Stockport, however there can be no simple single definition of what constitutes significant flooding. Measures such as magnitude, impact, frequency, duration or exceeding of a threshold could all be used individually or in combination to describe the significance of a flood event.

Evaluation of significant risk depends on context and may vary between organisations and individual perceptions. A householder who has been flooded would certainly see the event as significant however in terms of allocating limited resources, a single domestic property will need to be assessed in the context of the overall number of properties at risk of flooding in Stockport. In areas with a potential risk of significant flooding due to surface water runoff such properties will have a higher risk factor than those in other areas.

Significance can be described using a variety of measures which could include value or potential value of damage due to flooding, number of people directly affected, number of people indirectly affected through infrastructure failure or disruption of transport networks and factors such as pollution or other environmental impacts.

Linked to significance is the need to develop thresholds to define events such as flooding incidents or the inclusion of structures and features on the local register. These thresholds will be used to trigger actions as well as providing a methodology for the prioritisation of areas where flood risk management work will be carried out. The determination of appropriate thresholds will take account of the degree of judgement and discretion that the LLFA has to apply its powers in relation to the activity being considered and the practical limitations of capacity and resources to undertake the required actions.

1.2.2. Areas covered by the Strategy

The Strategy will cover the following areas:

- Provide an **Introduction** to the document summarising the Aims and the Vision for Flood Risk Management in Stockport;
- Define **Local flood risk in Stockport** and what is considered to be 'locally significant flood risk';
- Summarise **Legislation and policy documents** that are relevant to the Strategy. It is anticipated that these will change during the life of the Strategy and will be reviewed when an update to the Strategy is undertaken;
- Explain **Roles and Responsibilities** of key partners and stakeholders;
- Specify **Flood Risk Management Objectives** and identify and describe **Measures** proposed to deliver the objectives. Where relevant provide details of the costs and benefits related to any **Actions**, and identify a means or process of how these may be paid for. Changes of the actions are anticipated within the life of the Strategy and updates will be added in the light of experience;
- Describe and establish **Strategy Monitoring and Review** process and timetables.

1.3. A Vision for Flood Risk Management in Stockport

Sir Michael Pitt's review of the flooding events in the summer of 2007 identified that flood risk management activity and planning was compartmentalised and fragmented. Amongst his recommendations was that there should be coordination of flood risk management at a local level, supported by changes in legislation. Up until 2010 there has been no consistent approach to local flood risk management across Stockport, work to reduce risk has been carried out by a number of organisations through discretionary powers set out in a range of legislation.

As part of the local strategy a vision for flood risk management is being created to set the strategic direction for Stockport. The vision will describe an ideal (proportionate and risk based) approach that is needed in order to make sound decisions about managing flood risk.

The vision is being developed through consultation with key stakeholders and public consultation as well as a number of workshops.

The local strategy also needs to be consistent with the national strategy which outlines six guiding principles for flood risk management in England. These principles have been embraced in the local strategy for Stockport and are discussed further in Chapter 3.

Given these guiding principles the overall position that Stockport is striving to achieve is as follows:

- Stockport is one of ten Greater Manchester Authorities that make up the Association of Greater Manchester Authorities (AGMA) framework. It will work with all stakeholders not only within AGMA but in partnership with all the risk management authorities to deliver the best service for its residents;
- As the LLFA it will take a proactive role in engaging and encouraging the other Risk Management Authorities (RMAs) to seek and promote changes that will reduce current and future flood risk;
- Where flooding or potential flooding cannot be minimised Stockport will ensure that any affected communities are consulted and all property resilience measures are explored and communicated to residents.

The objectives and measures that the LLFA is proposing to put in place are included in Chapter 5 of this Strategy. These set out the detail of the policies to be followed and the proposals for actions that will be taken to deliver the Strategy in Stockport.

In summary, the strategy is proposing the following objectives:

1) To better understand local flood risk and make best use of available information in order to better manage flood risk to people, businesses, property, infrastructure and the natural environment;
2) To reduce the potential impact and costs of flooding in the Borough;
3) To ensure resilience of local water bodies and drainage assets;
4) To ensure appropriate development in areas of flood risk;
5) To develop a collaborative partnership approach to flood risk management, and cooperate with other Risk Management Authorities and key stakeholders working across catchments;

6) To assist communities in understanding information on flood risk and supporting themselves;
7) To encourage, support and provide flood risk management which seeks to enhance and protect the environment.

2. Local Flood Risk in Stockport

2.1. Sources of Flooding

Flooding due to intense or prolonged rainfall is a natural phenomenon which depending on the area where it occurs may have positive or negative consequences. It is an environmental risk that we need to ascertain and understand in order for appropriate steps to be taken to manage the potential impacts.

The different sources of flooding that may affect Stockport are set out below.

Overland flooding:	High intensity rainfall causes surface water runoff which flows over the ground and accumulates in low-lying areas.
Groundwater flooding:	Water in the ground rises up above the ground surface from within permeable rocks often as a result of prolonged or heavy rainfall.
Ordinary watercourse flooding:	When a watercourse (not designated as Main River) cannot accommodate the volume of water flowing in it or the channel becomes blocked, causing water to come out of the channel and flow over the surrounding land.
Sewer flooding:	Flooding from manhole - Flooding from a sewer, usually via manholes, due to the capacity being exceeded or due to temporary problems with the system such as blockages, collapses or equipment failures (i.e. pumping stations).
Highway flooding:	Flooding from manhole - Heavy rainfall or overflow from blocked drains and gullies causes water to pond on the carriageway.
Main River flooding:	When the capacity of a river (designated as Main River) is exceeded or the channel becomes blocked, causing water to spill onto the floodplain.
Reservoir flooding:	When a reservoir overtops or the dam is breached causing the water stored by the reservoir to be released.
Snow meltwater flooding:	When a large covering of snow melts perhaps in combination with heavy rainfall large volumes of water is released and causes surface water runoff which flows over the ground and accumulates in low-lying areas.

.

When anyone has suffered flooding there are a number of questions that they may ask such as; why they didn't know that there was potential for them to be flooded, what is the probability of flooding reoccurring and what can be done to prevent it happening again?

The majority of people understand the general mechanism of flooding, in that it happens when water ends up in places where it is not usually found and that the water may have come from one of a range of sources. The sources include overland flows from direct rainfall, groundwater, and water from river or other watercourses, flooding through the failure of a manmade structure such as a reservoir, sewer or a water main, or flooding due to inadequate capacity or blockage of sewers, gullies or highway drains.

This Strategy will be focussing on local flooding which is defined as flooding from surface water (overland flows from direct rainfall, flooding from gullies and highway manholes), groundwater and ordinary watercourse as managing flooding from these sources falls under the Council's responsibility. Flooding from sewers, main rivers, canals and reservoirs is dealt with by other Flood Risk Management Authorities and their responsibilities and duty of care will be detailed in this document.

For some, awareness will come from news coverage of flooding events on a regional or national scale whilst for others it will be personal experience of the misery and disruption that is caused when water enters their building. As a consequence the risk of flooding will be a remote consideration for some and for others it will be something that they will be conscious of whenever heavy rain or snowfall is forecast.

Perhaps because reporting of flooding focuses on large or catastrophic events where intervention is required by agencies and authorities, there is an assumption that these bodies are "responsible" for dealing with all things relating to flooding and that individuals or their communities have no role to play outside the immediate period of flood events. Whilst these organisations do have a role to play in management of flood risk they cannot "solve" flooding and people need to be encouraged and supported to play an active role in managing their own flood risk as individuals and within their communities. Individuals that have ordinary watercourses (streams or pipes) running through or along the boundaries of their properties have a responsibility to maintain them in such condition that they do not pose a flood risk.

2.2. Overview of Flood Risk in Stockport (all sources)

Stockport is close to the Peak District and is 4 miles (6.5 km) south of the city of Manchester. Stockport is surrounded by several smaller towns and villages which together form Stockport Metropolitan Borough Council, of which Stockport is the administrative centre. The borough of Stockport has a population of around285,000 and is a highly urbanised area with semi-rural parts and a relatively affluent area for the North-West of England.

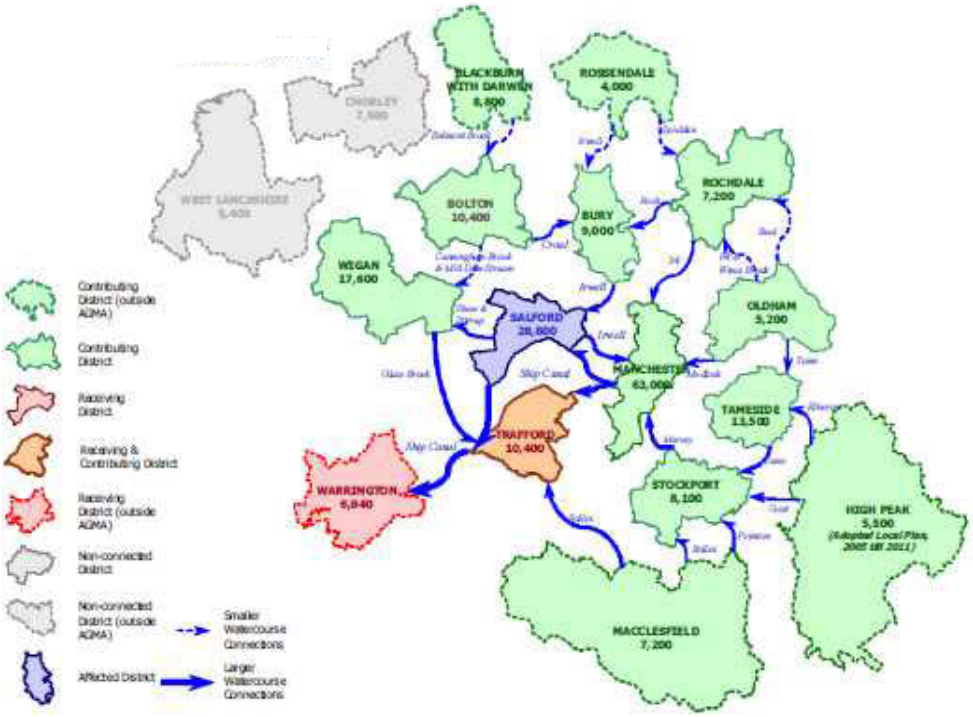
As a large populous live and work in urbanised and developed areas surface water flood risk is the key issue for Stockport and it is predominantly the Local and District Centres, particularly to the south and west of the borough, that experience flood problems.

Geology will have a factor in this in that the Town Centre, Edgeley and the north of the borough have largely underlying sandstone, to the south there is a mix of sands and clays and to the east clay is more predominant. Clay as opposed to sand or sandstone is not as permeable to allow natural base flows in the ground and can lead to more saturation in the soil above the clay layers which leads to more surface water run-off.

Stockport is one of the ten districts that lies within the Greater Manchester area situated mostly in the middle and lower catchments of the Rivers Tame and Goyt, which converge into the river Mersey at Stockport Town Centre. It is in the Upper Catchment of the River Mersey.

Greater Manchester consists of a complex hydrological network that interlinks all of the Authorities with all river catchments in the GM area, apart from the River Douglas which partially drains into the Manchester Ship Canal. This in itself acts as a form of flood relief.

Stockport and eight other unitary authority controlled areas within Greater Manchester have been identified as areas of flood risk from the Greater Manchester Flood Risk Assessment.



Hydrological Links between Districts

Stockport is at risk from a variety of sources of flooding which are known to interact with each other. The main sources of flood risk include surface water, groundwater and fluvial flooding, the effects of which are expected to increase as a result of climate change.

In the recent past a number of plans and assessments have sought to explore flood risk from a variety of sources. These include the Mersey Catchment Flood Management Plans (CFMP), Stockport Preliminary Flood Risk Assessment (PFRA), Environment Agency mapping of fluvial flood zones, areas susceptible to surface water and groundwater flooding, Strategic Flood Risk Assessments (SFRA). Historic records of flooding vary greatly, making it difficult to provide a consistent picture of past flooding within Stockport, but these are considered where notable events have occurred.

2.2.1. Surface Water Flooding

Surface water flooding is caused by overland flow during periods of sustained or heavy rainfall, causing ponding of water where it becomes obstructed or collects in low lying

areas. Local drainage capacity and infiltration is unable to cope with the volume of water experienced.

The risk of surface water flooding increases as the amount of built-up area and the associated area of impermeable hard surfacing extends across the borough. The increase in car ownership has led to increased paving of gardens due to the provision of off-road parking which increases the surface water run-off.

Stockport's PFRA identified that the Flood Map for Surface Water (FMfSW) was the best available indication of predicted surface water flood risk within Stockport. Based on this information, over 29,200 properties are predicted to be at risk of deep flooding up to 0.3m in a high risk (1 in 200 chance in any year) event.

The potential for surface water flooding is predicted mainly in Cheadle and Gatley settlements; see Map 1 - Extent of Flood Map for Surface Water flooding in Stockport in Appendix A.

2.2.2. Groundwater Flooding

Groundwater flooding occurs when the water held underground rises to a level where it breaks the surface in areas away from usual channels and drainage pathways. It is generally a result of exceptional extended periods of heavy rain, but can also occur as a result of reduced abstraction, underground leaks or the displacement of underground flows. Once groundwater flooding has occurred, the water can remain in place for a lengthy period of time.

In the East of the borough ground water problems present more of an issue due to the heavier clay content in the soils and underlying strata. This is more prevalent in Romiley, High Lane and Marple Bridge but especially in Marple. Cellar and garden flooding seems to be increasing.

Areas with the potential for groundwater emergence are shown by the Areas Susceptible to Groundwater Flooding (AStGF) maps, see Map 2 in Appendix A. The AStGF is based on 1 kilometre squares where the percentage of the area where there is the potential for groundwater emergence is above 25%. The majority of Stockport is not shown to be at risk above this level, with very few kilometre squares with a percentage greater than 50%.

2.2.3. Flooding from Main Rivers

Fluvial flooding occurs when the capacity of a watercourse is reached, causing water to spill out of the channel into nearby areas. In some areas the surrounding floodplain of the river may be undeveloped or have flood compatible uses, but in some areas development has occurred within these floodplain areas.

The Main Rivers, Mersey, Tame and Goyt are not the predominating concern due to the topography of the borough especially in the Town Centre itself. Only 2% of Stockport's population are at risk from fluvial flooding

Within Cheadle a number of dwellings fall in Flood Zone 2 (1 in 1000 chance in any year) and in Flood Zone 3 (1 in 100 chance in any year). Significant levels of fluvial flood risk are seen in the north and west parts of the borough in particular, see Map 3 - Extent of Flood Zone 2 and 3 in Stockport in Appendix A.

2.2.4. Flooding from Ordinary Watercourses

Similar to flooding from main rivers, flooding from ordinary watercourses (small streams, brooks, ditches, etc.) occur when their capacity is reached causing water to overspill into the nearby areas. These ordinary watercourses could either be open channels, or parts of them could be culverted in pipes.

Many of the tributaries in the borough form the main network and spread across the catchment for the Upper Mersey. Development and re-development in the past has seen fit to cover or culvert the watercourses and use the land for other purposes. The main problem areas are to the south and east of the town and the main focus of consideration tends to be around the districts of Cheadle Hulme, Bramhall, Romiley and Marple.

There are significant flood risks identified around Chorlton Brook in Cheadle and Cheadle Heath, which is classed as Main River. Again long sections of this brook have been culverted providing a throttle effect presenting maintenance issues but there are also more complex issues of water backing up in heavy rainfall in a low lying area. Gatley village was identified as our other main risk area.

There are many areas and long lengths of watercourse that have been entirely built over and many of our major access routes are built on what was an open watercourse. These include the A6 through Great Moor and Hazel Grove and Upper Hibbert Lane in Marple. These old culverts tend to be brick and box-shaped and are prone to siltation, collecting of debris and susceptible to collapse. They are also very difficult to access, inspect and maintain as they very rarely have manholes incorporated. Again ground water issues present a problem along their catchments as well as the surface water issues if the culverts are under capacity.

Many residents have a tendency to feel that to culvert a stream in their rear garden is the best solution. This leads to having continued lengthy sections of poorly maintained and uncharted culverted systems that have no access points and no determined outfall. The continued increase in ground water flooding with climate change in these areas is of concern as the base water cannot feed into the watercourse.

2.2.5. Sewer or Highway Flooding

Sewer or highway flooding is caused by excess surface water entering the drainage network, exceeding available capacity or when a blockage occurs. This generally occurs during periods of heavy rainfall when the drainage network becomes overwhelmed.

Water Companies keep a record of property flooding which is called the DG5 register. Currently, there are approximately 100 properties on the internal and external DG5 register respectively.

2.2.6. Highway Flooding

Highway gullies that are reported as blocked are logged and left until the normal routine maintenance date unless they are causing a health and safety issue where they will instead be prioritised as urgent gulley cleansing works.

2.2.7. Canal Flooding

Canal flooding is caused by overtopping or breach of the canal network. There are a number of canals within Stockport including the Macclesfield Canal and The Peak Forest Canal The Canal and River Trust is currently investigating the potential for flooding from the canal network. It is considered that there are no significant flood risks associated expressly with the canals.

2.2.8. Reservoir Flooding

Reservoir flooding occurs when a reservoir structure is overtopped or fails due to damage or collapse of the reservoir structure. The Environment Agency has produced reservoir maps to show the largest area that might be flooded if a reservoir that holds over 25,000 cubic metres of water were to fail.

The following list indicates all reservoirs in and around Stockport which have been included within the Environment Agency Risk of Flooding from Reservoir maps. The majority of the reservoirs listed are owned and maintained by United Utilities:

- Arnfield Reservoir
- Audenshaw No1
- Audenshaw No 2
- Audenshaw No 3
- Bollinhurst
- Bottoms (Longdendale)
- Brushes (Stalybridge)
- Castleshaw lower
- Castleshaw Upper (Lower Border of Stockport)
- Chew
- Combs
- Crookgate (Border of Stockport)
- Dovestone
- Dowry (Border of Stockport)
- Errwood
- Fernilee
- Godley Open
- Greenfield
- Horse Coppice
- Kinder
- Lower Swineshaw (Glossop)
- Poynton Pool
- Readycon Dean (Border of Stockport)
- Rhodeswood
- Swineshaw Lower (Stalybridge)
- Swineshaw Higher
- Toddbrook
- Torside
- Valehouse
- Walkerwood
- Woodhead
- Yeoman Hey

2.3. Assessing Local Flood Risk

The Strategy must assess and define what locally significant flood risk is. This will require the development of criteria to ensure that significance is determined on a consistent basis across Stockport. Significance will need to be assessed in a number of different ways depending on the situation, for example through the setting of thresholds that will trigger investigations, the assessment of the effect that structures and features have on flood risk and how potential flood risk management schemes will be prioritised for funding.

The Preliminary Flood Risk Assessment (2011) indicates that flooding has occurred in Stockport from a range of sources and is widely distributed across the borough. Modelling of flood risk and climate change gives an insight into the potential impact of future flooding. Greater Manchester which includes Stockport has areas that currently meet the national criteria for designation as significant Flood Risk Areas.

The PFRA considered that the risk from ordinary watercourses and groundwater will be within the same areas as those recorded as being at risk from surface water, therefore the surface water maps are indicative of areas at risk from all local flood sources.

The FMfSW shows areas at surface water flood risk in most of Stockport's major settlements. As part of the PFRA process kilometre grid squares above the following thresholds were identified on the map as areas at significant risk:

- 200 or more people affected and/or;
- 1 or more critical services affected, including electricity and water and/or;
- 20 or more non-residential properties affected.

The number of people at risk was calculated using a multiplier based on the number of residential properties affected. For the purposes of prioritising the areas to be assessed, this will be done by the number of properties overall within each district at risk of surface water flooding. This is based on flooding to a depth of 0.3m in a 1 in 200 chance in any year event. Whilst the map of areas above the threshold is a valuable tool for indicating areas where properties at flood risk are concentrated, there are a number of areas which fall below the threshold which would be missed.

This is particularly important in the context of Stockport's mixed urban and rural setting to ensure that settlements that may not hold a significant number of properties but would be entirely flooded are appropriately assessed. Additionally, as part of Stockport's routine assessment all work issues are evaluated to determine the likely impact and extent on a property, highway or other area. This will inform our decision on whether to establish a priority structure and how our resources are best utilised.

What is less obvious is how to rate impact of flooding on a road or other essential infrastructure compared to properties. The most practical means of comparison would be to grade potential flood risk against a standardised scale of impacts. A simplistic flood risk score has been adopted based on the Corporate Resilience risk matrix. Once further survey and assessment of the network is carried out this risk assessment will be developed.

During the process of establishing a criteria for a cost / benefit review at the start of any project it is vital to review maps and the topography of the area to understand the detailed impact a complete or partial failure would have on an area. This tends to develop into a

complex model exercise that seeks to establish the specific flood risk and the likelihood of a flood event.

A strategic review was carried out on large urban areas where the LLFA was aware of culverted watercourses. An initial assessment was carried out based on risk based criteria in the event that such watercourses became blocked and a programme of investigation and survey work was launched to determine the condition of culverted sections. This was fed into the risk assessment again and from that the key sites were identified for detailed work and these were entered into a programme of works.

2.4. Overview of Climate Change Implications

As well as looking at past flood risk the future risk of flooding needs to be assessed and is especially relevant because of the need to consider effects from climate change. A range of climate change scenarios have been developed and it seems likely that overall flood risk will increase as flooding may happen more often and / or to a greater depth, depending on the flooding source and mechanism.

Changes in climatic conditions can affect local flood risk in several ways; however, impacts will depend on local conditions and vulnerability. Wetter winters and more intense rainfall may increase river flooding in both rural and urban catchments. More intense rainfall causes greater surface runoff, increasing localised flooding and erosion. In turn, this may increase pressure on drains, sewers and water quality. Storm intensity in summer could increase even in drier summers, so the borough needs to be prepared for the risks arising from unexpected flash flooding.

Many drainage systems in the borough have been modified to manage water levels and could help in adapting locally to some impacts of future climate change on flooding. However changing intensity of weather patterns may mean that these assets would need to be managed differently.

Where appropriate, the Strategy will be promoting local studies to enable a better understanding of potential climate impacts on flooding as well as looking at the detail of the effects from other factors like land use change. The implementation of sustainable development and sustainable drainage will help us adapt to climate change locally and should contribute to the mitigation and management of the risks that could arise from damaging floods in the future.

3. Legislative Context

3.1. The Flood and Water Management Act and the Flood Risk Regulations (2009)

Between May and June 2007, extreme rainfall led to widespread flooding in England and Wales. It was arguably the largest peacetime emergency since World War II, causing 13 deaths and £3.2 billion in damage. The Government commissioned Sir Michael Pitt to undertake an independent review of the floods. The Pitt Review 'Learning Lessons from the 2007 Floods' concluded that "urgent and fundamental" changes were needed to reduce flood risk.

The Flood and Water Management Act (FWMA) gained royal assent in April 2010 and provides legislation for the management of risks associated with flooding and coastal erosion. The Government accepted all 92 recommendations from the Pitt Review and implemented those that required legislation through the FWMA, including the provision of clearer oversight of flood risk management at national and local levels and the changing of building regulations to improve the flood resilience of properties.

The Flood Risk Regulations 2009 came into force in December 2009; they transposed the Floods Directive into English law and are complementary to the Flood and Water Management Act. The regulations require the Environment Agency to assess, map and manage flood risk from main rivers, the sea and reservoirs and Lead Local Flood Authorities to do so for all other flood risks.

The Act ensures that for the first time one body is accountable for the delivery of coordinated local flood risk management so as to minimise the risk of a repeat of the floods in Summer 2007. The Act defines 'local flood risk' as flood risk from:

- Surface runoff – rainwater which has not entered a watercourse, drainage system or public sewer;
- Groundwater – all water below in direct contact with the ground;
- Ordinary watercourses – any watercourse that is not classified as Main River (defined in the Water Resources Act 1991).

This local management role is given to County and unitary Local Authorities (LAs) which lead and are accountable for ensuring effective management of these local flood risks. The LAs in turn rely on information from other public and private bodies, such as water companies and emergency services, which have a duty to co-operate and share information. The LAs have powers to complete works to control/mitigate surface run-off and groundwater flood risk and also to maintain or restore natural processes and manage water levels in relation to these sources of flood risk. These are identified and managed as part of locally agreed work programmes.

The Act also created new **Regional Flood and Coastal Committees (RFCCs)** which provide democratic input into local decisions and helps coordinate flood and coastal erosion risk management. The RFCC is a committee established by the Environment Agency that brings together members appointed by LLFAs and independent members with relevant experience for three purposes:

- To ensure there are coherent plans for identifying, communicating and managing flood and coastal erosion risks across catchments and shorelines;
- To promote efficient, targeted and risk-based investment in flood and coastal erosion risk management that optimises value for money and benefits for local communities;
- To provide a link between the Environment Agency, LLFAs, other risk management authorities, and other relevant bodies to engender mutual understanding of flood and coastal erosion risks in its area.

3.2. National Flood and Coastal Erosion Risk Management Strategy for England (NFCERMS) (2011)

The Flood and Water Management Act 2010 establishes that flood risk will be managed within the framework of National Strategies for England and Wales and Local Strategies for each Lead Local Flood Authority area.

The national strategy for England has been developed by the Environment Agency with the support and guidance of Defra. 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. It sets out principles for how flood risk should be managed and provides strategic information about different types of flood risk and which organisations are responsible for their management.

The NFCERMS has been published 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 others' roles and co-ordinate how they manage these risks.

3.2.1. Objectives

The national strategy aims to ensure that flood risk is managed in a co-ordinated way within catchments and that this balances the needs of communities, the economy and the environment. The strategy encourages more effective risk management through enabling people, communities, business, infrastructure operators and the public sector to work to together towards the following objectives:

- Understanding the risk of flooding and coastal erosion, and working together to develop long term plans to manage these risks and ensuring other plans take account of them;
- Avoiding inappropriate development in areas of flood and coastal erosion risk, and ensuring development does not increase these risks;
- Building, maintaining and improving flood and coastal erosion risk management infrastructure and systems to reduce the likelihood of harm to people and damage to the economy, environment and society;
- Increasing public awareness of the risk that remains and engaging with people at risk to make their property more resilient;
- Improving the detection, forecasting and issuing of flood warnings, planning for and co-ordinating a rapid response to flood emergencies, and promoting faster recovery from flooding.

3.2.2. Guiding Principles

The Act requires risk management authorities (local authorities, internal drainage boards, sewerage companies and highways authorities) to act consistently with the national strategy in carrying out their flood and coastal erosion risk management functions. This means acting in accordance with the overall aims and objectives and particular with the six 'guiding principles':

i) Community focus and working in partnership

This requires close collaborative working between all partners with an interest in local flood risk and should help to ensure communities understand local flood risk, provide evidence for decision making, and set out the agreed means to manage the risk of local flooding whilst contributing to wider local objectives. The Local Strategy should give an improved and transparent understanding of local flood risk and should outline an agreed range of measures for its management.

ii) Taking a catchment and coastal cell based approach

This approach is crucial to managing flood risks at their sources and enabling wider benefits to be achieved through integrated water management. Catchment Flood Management Plans and Shoreline Management Plans follow this approach consideration should be given to how these strategic plans will inform the Local Strategy. In doing this, a Local Strategy should build on the existing approaches to local flood risk management and should promote coordination and collaboration between partners within catchments.

iii) Sustainability

When planning risk management account should be taken for all current and future costs and impacts to ensure that effective local flood risk management is delivered both now and into the future. They should also work with natural processes wherever possible.

iv) Multiple benefits

As well as reducing risks to people and property, flood and coastal erosion risk management can deliver significant economic, environmental and social benefits to the community. These aspects should be included within the objectives of the Local Strategy to help deliver broader benefits.

The Local Strategy is an opportunity to also deliver a greater range of benefits linked to environmental and social objectives both within the community and at regional and national levels.

v) Proportionate risk based approach

Not all flooding and coastal erosion can be prevented and so by taking a proportionate and risk-based approach, resources are targeted where they will have greatest benefit.

There will be many ways of producing a successful Local Strategy and its structure and content should be developed in a manner relevant to and proportionate to the risk in Stockport area. The content of the Local Strategy should be influenced by the specific characteristics of Stockport:

- The nature and scale of local flood risk;

- The number and variety of partners to the Local Strategy as well as their commitment to achieving its aims;
- Opportunities to embed flood risk solutions into Local Authority and other partners' priorities, initiatives and planned works;
- The availability of funding from a wide range of sources;
- The capacity of the partnership to implement and maintain agreed activities for local flood risk management.

vi) Beneficiaries should be encouraged to invest in risk management

The private as well as public benefits of flood and coastal erosion risk management suggest that their costs should not fall to the general taxpayer alone.

3.2.3. Content of Local Flood Risk Management Strategy

A Local Flood Risk Management Strategy will need to include objectives and measures that will enable the requirements of the Flood Risk Regulations (FRR) and European Floods Directive to be met.

The Strategy is informed by a number of previous documents and strategies, for example:

- The Preliminary Flood Risk Assessment (PFRA);
- Strategic Flood Risk Assessment (SFRA);
- Surface Water Management Plan (SWMP);
- Catchment Flood Management Plan (CFMP).

The Local Strategy is one of the key requirements given to LLFAs by the Flood and Water Management Act 2010. It outlines how local flood risk will be managed, both now and into the future and will therefore be crucial for gaining community wide support for the LLFA's activities. It will also provide clarity and transparency to risk management partners and the general public by explaining how the LLFA will manage local flood risk. A Local Strategy is a crucial tool in achieving this aim.

This strategy will form the framework within which communities have a greater role in local risk management decisions. It will encourage more effective risk management by enabling people, communities, business, infrastructure operators and the public sector to work together to:

- ensure a clear understanding of the risks of flooding and coastal erosion, nationally and locally, so that investment in risk management can be prioritised more effectively;
- set out clear and consistent plans for risk management so that communities and businesses can make informed decisions about the management of the remaining risk;
- manage flood and coastal erosion risks in an appropriate way, taking account of the needs of communities and the environment;
- Ensure that emergency plans and responses to flood incidents are effective and that communities are able to respond effectively to flood forecasts, warnings and advice; help communities to recover more quickly and effectively after incidents.

3.3. Other relevant legislation and policies

Further information on other relevant legislation and policy documents is provided in the Strategic Environmental Assessment Environment Report. This does not cover every piece of legislation that is related to the management of local flood risk but is intended give an appreciation of those which are most relevant. The legislation and policy documents covered are listed below.

Legislation

- Flood Risk Regulations 2009
- The Land Drainage Act 1991
- Water Resources Act 1991
- The Localism Act 2011
- Highways Act 1980
- Civil Contingencies Act 2004
- Reservoirs Act 1975
- Habitats Directive (The Conservation of Habitats and Species Regulations) 2010
- Water Framework Directive 2000

Policy

- River Basin Management Plans
- Catchment Flood Management Plans
- Planning Policy:
    - National Planning Policy Framework
    - Borough Local Plans
    - Strategic Flood Risk Assessments
    - Preliminary Flood Risk Assessment

4. Roles and Responsibilities

The Strategy will detail the arrangements that have been put in place to undertake the flood risk responsibilities assigned under the Act. Stockport will work with the RMAs and other interested parties to develop appropriate partnership arrangements to underpin the delivery of the measures outlined in the Strategy.

4.1. Key Stakeholders

Flood risk management is the responsibility of everyone, not solely the organisations identified by the Act. No single body has the means to reduce all flood risk. Effective management will involve various bodies each with a range of relevant duties and powers. The more that the relevant organisations are able to find opportunities to work together and with the community the better use will be made of their capacity and resources.

4.1.1. Risk Management Authorities

In addition to designating Lead Local Flood Authorities the Act identifies certain organisations as RMAs which have specified responsibilities, duties and powers related to local flood risk management. Some responsibilities are new, and others are existing duties and powers set out in previous legislation.

Within Stockport there are five RMAs:

- The Environment Agency.
- United Utilities.
- Highways England.
- The Council as Lead Local Flood Authority.
- The Council as Local Highway Authority.

4.1.2. Other Major Stakeholders

As well as the RMAs there are a number of other key stakeholders with interests in key infrastructure and service provision. Organisations that are seen to be key stakeholders in the Strategy are as follows:

- Utilities and Infrastructure providers
    - Canal and River Trust – Canal network, e.g. Peak Forest, Macclesfield Canal
    - Network Rail - Various rail lines running through Stockport
    - Highways England – M60, M56 running through Stockport
    - National Grid / EDF - Electrical distribution network, sub stations, ground level transformers etc.
    - Transco - Gas pipelines and associated pumping stations
- Other Councils

    - Neighbouring LLFAs with catchment flows entering the Stockport Boundary – Cheshire East Council, Tameside Metropolitan Borough Council, High Peak Borough Council, and Manchester City Council
- Parish Councils
- Businesses and Local Communities
- Greater Manchester Civil Contingencies and Resilience Unit

4.2. Roles of Flood Risk Management Authorities

4.2.1. Lead Local Flood Authority

The LLFA has an important role to play as the strategic leader for local flood risk management in Stockport. This involves developing this Local Flood Risk Management Strategy document, ensuring that all organisations involved in flood risk management are aware of their responsibilities, monitoring progress and activity by all parties involved in flood risk management and co-ordinating communication with the public and between organisations.

The LLFA has a range of duties which includes:

- Preparing reports and plans to meet the requirements of the Flood Risk Regulations 2009.
- Carrying out investigations of flooding where appropriate and publishing reports.
- Keeping a public register and associated record of structures and features which have a significant effect on local flood risk.
- Designation of structures and features where appropriate.
- Regulation of ordinary watercourses.
- Statutory Consultee role on major planning applications including sustainable drainage systems (SuDS).

In addition, the LLFA has incidental powers which allow it to carry out practical works to manage flood risk from surface water and groundwater. These are:

- Land Drainage Act 1991
- Public Health Act 1936

The LLFA also has a number of other roles that relate to flood risk management through other statutory duties. These are:

- Highways Authority – management of the majority of roads in the borough and their associated drainage.
- Planning Authority - the borough council prepare a local plan to guide development. Flood risk is taken into account based on a Strategic Flood Risk Assessment which must consider flood risk from all forms of flooding.
- Emergency Planning – the authority is a category one responder under the civil contingencies act and the role is set out in the Multi Agency Flood Plan.
- Historical and Natural Environment - maintenance of databases which are shared with other authorities. The information is relevant to planning of practical works and assessing of potential for environmental impacts. The Borough owns and

manages public spaces which, may already, and could potentially perform a flood risk management function.

Taking the Lead

The Council as LLFA will set up and maintain regular meetings with other RMAs and wider community groups to disseminate information. It will allow and encourage open communication channels, forum and media.

It will work with the other bodies to establish the priorities and to establish our future and on-going programmes of works. It will share the results of these works and any issues that arise from them in a spirit of collaboration. The Council's main aim and driver is to understand flood risk and wherever possible work with others to mitigate that risk or remove it within the constraints that are set.

Investigation and reporting of flood events

Flood events reported to the council are recorded and where necessary appropriately investigated in line with the criteria set out in the procedure "Recording and Investigation of Flood Events" that is jointly produced and agreed by AGMA and endorsed by the Regional Flood and Coastal Committee (RFCC). The LLFA investigates flooding and informs appropriate RMA if required. If the LLFA is the relevant RMA to assess the source of flooding, or there is no obvious RMA, the LLFA will consider carrying out an appropriate investigation into the causes and reasons for the flooding.

The results of any significant flooding investigations including condition assessments are added to the Council's GIS based Drainage Asset Management System (DAMS). A flood risk database is also being developed which will integrate DAMS into a Quantum GIS (QGIS) unified platform for geographical datasets including the highway asset register and critical geographical data (such as the locations of watercourses and residential and business properties) across the Council that would link with a public-facing web-mapping portal. QGIS enables importing and exporting of geographical data in the most common formats. This means that inventory data can be readily shared with other RMAs.

Register of Structures and Features

Any structure or feature that has a significant effect on local flood risk will be placed on the public register. The determination of structures and features to be placed on the register will be made by the LLFA in consultation with the relevant RMA and the structure or feature's owner.

The register has been initially populated with known structures which may have a potential positive or negative effect on local flood risk. Details such as size, location and condition are recorded onto the database and a risk assessment score determined in relation to the consequence of failure of the structure. This is then used to identify a survey programme and subsequent maintenance/repair activities needed to ensure the feature or structure continues to carry out its function.

Consenting and Enforcement activities relating to Ordinary Watercourses

The LLFA is operating a risk based approach to the consenting and enforcement activities relating to ordinary watercourses. Where required, activity is coordinated with:

- The Environment Agency as they have a statutory function relating to pollution and water resources.
- Natural England as they have statutory functions relating to species habitats and protected sites.

- other relevant bodies where there are consequences for regulated functions such as highways and historic environment.

We will continue to challenge misconceptions and discourage further culverting and review opportunities to open up watercourses. Whenever possible, we will support and prefer environmental enhancements that will encourage biodiversity.

Sustainable Drainage (SuDS)

As a statutory consultee on new developments, Stockport as LLFA is required to determine the arrangements for surface water drainage schemes linked to new development or re-development. Stockport will work with the planning authority to ensure that any relevant SuDS will, in addition to meeting the requirements under the National Standards, as far as it practically possible, make a contribution to local amenity and environment appropriate to the locality in Stockport and that adequate maintenance of SuDS is secured during the lifetime of the development.

Designation of Structures and Features

Stockport will work with the RMAs to develop and keep under review criteria and a protocol for the designation of third party structures and features which are deemed to have a significant effect on or benefit for local flood risk.

An initial assessment has been carried out in Stockport and no structure or features have been identified as needing designation. It is envisaged that during investigations of flooding problems and assessment of flood risk hotspot areas that such features may be discovered.

4.2.2. Environment Agency

The Environment Agency has a role in flood risk management both as a national strategic body and also more locally operating as a RMA at a catchment and area level. Aspects of the strategic role that are relevant to the LFRMS are:

- Using strategic plans like the Catchment Flood Management Plan to set the direction for Flood Risk Management;
- Collation and review of the assessments, plans and maps LLFAs produce to meet the Flood Risk Regulations;
- Providing the data, information and tools to inform government policy and aid Risk Management Authorities in delivering their responsibilities;
- Supporting collaboration, knowledge-building and sharing of good practice including provision of capacity-building schemes such as trainee schemes and officer training;
- Managing the RFCCs and supporting their decisions in allocating funding for flood defence and flood resilience schemes;
- Monitoring activity and reporting on flood and coastal erosion risk management; and
- Providing grants to risk management authorities to support the implementation of their incidental flooding or environmental powers.

The Environment Agency's local role as a risk management authority is relevant in the following areas:

- Managing flooding from main rivers and reservoirs.
- Communication about flood risk flood warnings to the public, the media and to partner organisations.
- Supporting communities to be flood resilient through sharing best practice and provision of information.
- Advising on the planning process.
- Emergency planning, multi-agency flood plans, which are developed by local resilience forums.
- Bringing forward flood defence schemes through RFCC, working with LLFAs and local communities to shape schemes which respond to local priorities.

4.2.3. Water Companies

United Utilities is the water supply and sewage company providing both water supply and wastewater services within Stockport.

Water supply companies

Water supply companies are not RMAs and do not have the same obligations to co-operate and be subject to scrutiny by LLFA committees. However, like all bodies, they will be required to provide information related to flood risk to Stockport and the Environment Agency. They will also be affected by the change to the Reservoirs Act 1975.

Water and sewage companies

Water and sewage companies have the following responsibilities around flood risk management:

- 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 functions.
- 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.

4.2.4. Highways England

Highways England is an Executive non-departmental public body sponsored by the Department for Transport (DfT), and is responsible for operating, maintaining and improving England's motorways and major A roads. It acts as the Highways Authority for a number of major highways in Stockport namely of the following motorways in Stockport.

- Motorway M56 between junction 1 and 4.
- Motorway M60 between junction 5 and 25 travelling anticlockwise.

As a Highway Authority, Highways England 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:

- Responsibility to maintain the Highways which includes ensuring that highway drainage systems are clear and those blockages on the highway are cleared, where reasonably practicable.
- Powers to deliver works considered necessary to protect the highway from flooding.
- Highway Authorities may divert parts of a watercourse or carry out any other works on any form of watercourse if it is necessary for the construction, improvement or alteration of the highway or provides a new means of access to any premises from a highway.
- Adoption of SuDS on its property as the LLFA has no obligation to adopt any part of a drainage system which is a publicly-maintained road. If it is on a Highways Agency road, the Highways Agency is expected to adopt and maintain the part of the drainage system on its property in accordance with the approved proposals and the National Standards for sustainable drainage.

The LLFA is also working closely with Local Highway Authority in Stockport Council on all aspects related to flood risk management and drainage of local roads.

4.3. Roles of Other Stakeholders

4.3.1. Utility and Infrastructure Providers

Utility and infrastructure providers such as Network Rail, Canal and River Trust, energy companies and telecommunication companies are not risk management authorities. However they have a crucial role to play in flood risk management as their assets can be important consideration in planning for flooding. Moreover they may have assets such as culverts for which it is important to share information of these with flood risk management authorities.

They already maintain plans for the future development and maintenance of the services they provide and it is important that they factor in flood risk management issues into this planning process. This will ensure that their assets and systems are resilient to flood risks and that the required level of service can be maintained in the event of an incident.

4.3.2. Other Councils

AGMA Councils

Stockport is working closely with AGMA on all aspects related to flood risk management including policies.

Parish Councils and Communities

Communities have vital knowledge about the history of flooding in their areas and can make important contributions to helping manage the levels of flood risk and also by helping residents to be aware of and manage the risk to their household.

Parish Councils and community groups in areas which suffer from local flooding should record and report flooding incidents when they occur and convey to the LLFA.

Most flood defence and flood resilience projects, particularly in small communities, will require some local funding to supplement that provided by national government if the project is to go ahead.

4.3.3. Businesses and Local Households

Property Owners and Residents

It is the responsibility of householders and businesses to look after their property, including protecting it from flooding. While in some circumstances other organisations or property owners may neglect their own responsibilities, there will be many occasions when flooding occurs despite all parties meeting their responsibilities. Consequently it is important that householders, whose homes are at risk of flooding, take steps to ensure that their house is protected.

Riparian Owners

Householders or businesses whose property is adjacent to a river or stream or ditch are likely to be riparian owners with responsibilities. If your property backs out onto a river or stream then you are likely to be a riparian owner and own the land up to the centre of the watercourse. Your land registry details should confirm this but you may need to discuss it with the local authority to ensure it matches their details. Riparian owners have a right to protect their property from flooding and erosion but in most cases will need to discuss the method of doing this with the Environment Agency or LLFA as appropriate. They also have responsibility for maintaining the bed and banks of the watercourse and ensuring there is no obstruction, diversion or pollution to the flow of the watercourse. Full details can be found in the EA document 'Living on the edge'.
https://www.gov.uk/government/publications/riverside-ownership-rights-and-responsibilities

4.3.4. Greater Manchester Civil Contingencies and Resilience Unit

The Greater Manchester Civil Contingencies and Resilience Unit (CCRU) works with all Greater Manchester local authorities, emergency services and key partners such as the Environment Agency and United Utilities 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 which in Stockport district include flooding from the River Mersey, surface water and a number of reservoirs. Stockport Council has 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, Environment Agency 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

Environment Agency and the National Flood Forum including the Rochdale Borough Flood Resilience Community Pathfinder.

Emergency response to flooding incidents is coordinated through the Greater Manchester Resilience Forum which publishes a Multi Agency Flood Plan. The plan identifies potential impacts of flooding and sets out how emergency response will be organised to deal with major incidents. It was tested through a local event run during the period of a national flood response exercise (Operation Watermark) run in 2011.

5. Strategy for Managing Flood Risk

5.1. Strategy Objectives and Measures

5.1.1. Strategy Objectives

To support the strategic vision for the management of local flood risk in Stockport, objectives have been developed to provide a strategic context and steer the flood risk management activities undertaken by all RMAs. These objectives have been developed to be consistent with the objectives and guiding principles of the national FCERM strategy (see table below). All RMAs should have regard to these objectives when undertaking their flood risk management activities.

Stockport Local Strategy Objective	National Strategy Objectives	National Guiding Principles
1) To better understand local flood risk and make best use of available information in order to better manage flood risk to people, businesses, property, infrastructure and the natural environment.	1	4
2) To reduce the potential impact and costs of flooding in the Borough.	1, 3, 5	4, 6
3) To ensure resilience of local water bodies and drainage assets.	3	3, 6
4) To ensure appropriate development in areas of flood risk.	2	3
5) To develop a collaborative partnership approach to flood risk management, and cooperate with other Risk Management Authorities (RMAs) and key stakeholders working across catchments.	1, 4	6
6) To assist communities in understanding information on flood risk and supporting themselves.	4, 5	1, 6
7) To encourage, support and provide flood risk management which seeks to enhance and protect the environment.	3	2, 3, 5

National Strategy Objectives:
1.Understanding the risks of flooding and managing risks; **2**.Avoiding inappropriate development in areas of flood risk; **3**.Building, maintaining and improving flood management infrastructure; **4**.Increasing public awareness of the risk that remains and engaging with people at risk; **5**.Improving the detection, forecasting and issue of warnings of flooding, rapid response, faster recovery.
National Guiding Principles:
1. Community focus and partnership working; **2**.Catchment approach; **3**.Sustainability; **4**.Proportionate risk based approach; **5.**Multiple benefits; **6**.Beneficiaries should be allowed and encouraged to invest in local risk management.

5.1.2. Strategy Measures

To enable the objectives of this Strategy to be met a range of measures have been identified to be undertaken by Stockport as LLFA working with other RMAs and key stakeholders. Measures to manage flood risk comprise more than building flood alleviation schemes, and the maintenance and management of watercourses and drainage assets. They also include educating communities to be prepared for flooding, effective partnership working between the various agencies that hold flood risk management responsibilities, and effective use of the planning system, among others.

The following sections set out the measures for each of the local flood risk management objectives.

5.1.3. Objective 1 - To better understand local flood risk and make best use of available information in order to better manage flood risk to people, businesses, property, infrastructure and the natural environment

A clear understanding of local flood risk in Stockport is crucial to ensuring that it can be effectively managed. This involves understanding where flooding may occur, how frequently it may happen and what impact it may have.

In order to better understand flood risk within Stockport, further assessments of the areas at risk and the sources and extent of that flood risk will need to be completed. Recognising that some areas will have a greater level of flood risk than others, it will be necessary to prioritise the areas to be assessed.

Whilst parts of Stockport are at risk of flooding from a variety of sources, those associated with main rivers are well documented through the Environment Agency's own flood zone maps and the management of that risk is set out in the Catchment Flood Management Plans. Therefore any further assessment and collection of data undertaken by Stockport will focus on local sources of flood risk, with the opportunity for the sources of information to be combined as part of future partnership projects. Further assessment will initially take place through the Surface Water Management Plan process.

Through this objective, information on sources of flood risk in Stockport will improve and better records will be available for historic flooding, to provide a clearer understanding of the overall flood risk in the borough.

With local flood risk expected to increase due to climate change, greater understanding will enable Stockport to plan for the future, mitigating against potential problems and advising strategic development plans.

Measure 1a) - To further develop the Surface Water Management Plan for Stockport to gain a better understanding of key flooding hotspots, risks and associated consequences.

Measure 1b) - To work with RMAs and other key stakeholders to investigate locally significant flooding incidents and identify sources, pathways and receptors of flooding.

Measure 1c) - To further develop and continue to maintain a register of flood risk management and drainage assets with a record of any significant structures with respect to flood risk, together with details of ownership, condition, maintenance regime and where appropriate the designation of such structures or features, which may affect flood risk.

Measure 1d) - To map historical flooding incidences from all sources to identify recurrent flooding issues and hotspots which will assist in the prioritisation of flood mitigation.

Measure 1e) - To provide a web based system of flood risk information accessible by risk management authorities and other key stakeholders.

Measure 1f) - To review the Preliminary Flood Risk Assessment as required by the EU Floods Directive and Flood Risk Regulations 2009 and contribute to the other requirements.

Measure 1g) - To use the better understanding of local flood risk to create a priority list of flood mitigation interventions

5.1.4. Objective 2 - To reduce the potential impact and costs of flooding in the Borough

Local flood risk will be managed via a risk-and evidence-based programme, incorporating proportionate and practical measures. Measures used should be multi-beneficial as far as possible, integrating flood risk management solutions alongside sustainable development and social and environmental benefits.

Flood risk management funding will be directed to areas most at need or where solutions will be most effective and flood risk management will guide other funding decisions and be appropriately prioritised alongside other needs.

Information on local flood risk will be used to allow informed decisions to be made on the level of funding allocated to flood risk management resources within Stockport. Potential funding for flood risk management projects will be prioritised according to cost-benefit and a range of weighting factors to take into account the evidence of flooding and sustainability of the proposed solution. This will ensure that resources are dedicated in areas where it will be most effective.

Whilst every effort will be made to reduce local flood risk across the borough, limited resources will require some prioritisation. Protecting commercial properties, built and cultural heritage, and the natural environment are also important, but with limited resources not everything can be a priority; in this context, individual properties are unlikely to be priorities. Contributory funding from beneficiaries can help make schemes deliverable; however, it is important that public funding remains focused on areas of greatest risk.

Information on local flood risk will be made available to assist in preparing for flood events, roles and responsibilities in a flood event will be clear and well-rehearsed and the cause of flood events will be effectively investigated.

The improved information on flood risk will be used to ensure that emergency responders better understand the nature of local flood risk and can use the information to improve preparedness for flood events and thus reduce the impact of flooding to communities.

Measure 2a) - To progress the actions of the SWMP and, where suitable, sustainable flood risk management schemes are identified and funding sought.

Measure 2b) - To work with RMAs and key stakeholders to encourage sustainable flood management activities (including drainage and maintenance) by riparian landowners on ordinary watercourses and flood defence structures, as well as limiting the development of constrictions on ordinary watercourses through consenting and, if necessary, enforcement.

Measure 2c) - To develop a risk based criteria to prioritise projects across Stockport to inform future grant applications to ensure flood risk management funding is directed to areas most at need and where solutions are more effective and prioritised alongside other needs.

Measure 2d) - To improve the detection, forecasting and issue of flood warnings; planning for and co-ordinating a rapid response to flood emergencies, and promoting

faster recovery from flooding.

Measure 2e) - To identify opportunities for natural flood management and the restoration of ordinary watercourses, including de-culverting.

5.1.5. Objective 3 - To ensure resilience of local water bodies and drainage assets

A risk based and proportionate approach to local flood risk management requires an up-to-date and appropriately detailed understanding of the current condition of local water bodies and drainage assets and their maintenance.

Local water bodies and drainage infrastructure will only operate effectively if it is adequately maintained, and regular ongoing inspections linked to maintenance programmes are an essential part of managing local flood risk.

RMAs are responsible for their individual assets, e g. United Utilities are responsible for the sewer network, the Highway Authorities are responsible for highway drains and Navigation Authorities are responsible for the maintenance of their canal networks, whilst Riparian Landowners are generally responsible for the maintenance of watercourses (main river and ordinary watercourses) passing by or adjoining their land.

The implications of a growing population on the resilience of water bodies and drainage assets will be important to consider along with the recognition that severe storm events are likely to increase in the future with climate change.

Stockport will work in partnership with key stakeholders to develop effective inspection procedures linked to maintenance works for water bodies and drainage assets to ensure future resilience.

Measure 3a) - To promote environmentally sustainable solutions including for example de-culverting, natural flood risk management, blue/green infrastructure, increased tree cover and catchment sensitive farming.

Measure 3b) - To develop a maintenance plan for the regular clearing of trash screens at critical flood risk locations including their inspection and clearing as part of a post-event Recovery Plan.

Measure 3c) - To develop a maintenance plan for the regular de-silting and de-vegetation of ordinary watercourses at critical flood risk locations, including their inspection and clearing as part of a post-event Recovery Plan.

Measure 3d) - To develop a maintenance plan for the regular clearing of highway gullies based on a prioritised risk based approach.

Measure 3e) - To develop a plan for improving existing local flood risk infrastructure so it is resilient to climate change.

Measure 3f) - To undertake review of flood risk and drainage assets and their maintenance plans following a flood event to ensure resilience.

Measure 3g) - To identify and manage a resilient network of highways during a flood event.

5.1.6. Objective 4 - To ensure appropriate development in areas of flood risk

The planning process has a significant role to play in ensuring that new developments do not increase flood risk and that they are not at risk from flooding. In order to ensure new development is safe and does not have detrimental impacts on local flood risk, particularly in areas of known flood risk, it should ideally be considered at the pre-application stage and the relevant flood risk management authorities should be involved in these discussions.

RMAs will be required to ensure that the principle of 'no new flood risk' is taken into account as part of new developments and infrastructure, managing the effects of climate change and further reducing flood risk where possible.

The NPPF is the key piece of legislation that sets out the requirements for managing flood risk in new development. This sets out the requirement that the planning process should be informed by the SFRA for Stockport at all stages.

As LLFA, Stockport is statutory consultee on surface water drainage for major planning applications, whilst the local planning authority maintains responsibility for assessing surface water drainage for all other types of development.

Measure 4a) - To work with RMAs and key stakeholders to produce local policies and guidance; and enforce standards to promote a positive impact on flood risk from new development, and to prevent any increase in flood risk, including the possible impacts of climate change.

Measure 4b) - To maximise opportunities for contribution towards existing and proposed flood risk management from new development to address local flood risk.

Measure 4c) - To work with relevant RMAs and key stakeholders to promote SuDS measures for new developments through the LLFA role as a statutory consultee on major planning applications.

Measures 4d) - To identify exemplar projects to introduce innovative SuDS approaches through the use of green infrastructure.

5.1.7. Objective 5 - To develop a collaborative partnership approach to flood risk management, and cooperate with other Risk Management Authorities and key stakeholders working across catchments

Stockport has a partnership approach to flood risk management, and co-operates with other partnerships on working across catchments, recognising that engagement and collaborative working sit at the heart of a viable catchment based approach.

A valuable partnership will be formed for Stockport both with RMAs and affected local communities to target resources and provide co-ordination of expertise and funding. The partnership will recognise that management of flood risk may need to be brought together across the catchment and authority boundaries, whilst continuing to recognise local priorities. A partnership approach will provide opportunities to build links with wider plans, avoid transfer of flood risk elsewhere, and provide multi-benefit schemes.

There will be a partnership approach to flood response ensuring that roles are clear. Stockport as LLFA will undertake investigations into flood events where it is necessary to understand the cause of flooding.

Measure 5a) - To clarify local roles and responsibilities of Risk Management Authorities in Stockport and adjoining authorities and establish lines of communication to share information and resources and work collaboratively in a coordinated manner for flood risk management.

Measure 5b) - To work with RMAs and key stakeholders to encourage flood schemes by third parties, riparian landowners and stakeholders.

Measure 5c) - To lead on the implementation of local flood risk management schemes and to work with RMAs and key stakeholders to best utilise funding obtained through a prioritised risk-based approach.

Measure 5d) - To work with neighbouring Lead Local Flood Authorities to ensure a catchment-based approach to local flood risk management.

Measure 5e) - To work with key RMAs for managing flood risk from dam and canal infrastructure.

Measure 5f) - To promote early engagement with partners so opportunities for enhancing the natural and built environment as well as managing flood risk can be maximised.

Measure 5g) - To work with Association for Greater Manchester Authorities to share best practice, to identify funding opportunities and identify cross borough schemes for managing flood risk on a catchment scale.

Measure 5h) – To work with health partners to identify funding opportunities and quantify health and wellbeing benefits as part of the prioritisation of flood risk management schemes.

5.1.8. Objective 6 - To assist communities in understanding information on flood risk and supporting themselves

While Stockport has a big role to play in the management of local flood risk, it is important that communities are prepared to deal with flood events if they happen and are best placed to recover as quickly as possible.

An improved understanding of local flood risk from the measures outlined under Objective 1 will allow Stockport to advise local communities, ensuring they are aware of the risks they face and enabling them to take appropriate action when necessary.

We will optimise existing communication activities being delivered by partners and to explore opportunities for joint working, thereby securing efficiencies and savings.

We will make sure that all audiences have a clear understanding of the key messages, how to access the right information, and how communities can take the necessary precautions before, during and after flood events.

As improved information becomes available this will be effectively conveyed to local communities to ensure they have a full understanding of the flood risk in their area, allowing them to make informed decisions for managing their own flood risk. It is important to communicate to residents and businesses what can be done to prepare for flooding. Properties can be made more resilient to flooding, warning and alert systems can be established, and with effective maintenance of drainage and flood defence infrastructure and assets, and additional works (which eventual beneficiaries could contribute towards) the existing risk can be managed effectively.

As part of the new partnership funding mechanisms for flood defence, local contributions are likely to be required for flood alleviation schemes to go ahead. Where local flood alleviation schemes are identified, communities will be engaged via local stakeholders in the project process to influence the design, bring in contributions and maximise the schemes potential.

Communities and individuals will be supported to take part in preparing for flood events, forming local action groups and planning for future flood risks.

Communities will be encouraged to engage with the RMAs and others, such as by reporting flood incidents or blocked drains / watercourses, to help RMAs to respond to incidents before problems arise.

Measure 6a) - To provide educational material to the public and promote personal resilience.

Measure 6b) - To work with RMAs and key stakeholders to reduce the harmful consequences of local flooding to communities, including vulnerable groups, and human health through pro-active actions; community activities and education programmes that enhance preparedness and resilience to local flood risk, thereby promoting community cohesion and minimising community disruption.

Measure 6c) - To support local groups and vulnerable people to manage local flood risk and increase the resilience of their communities to flooding.

Measure 6d) - To continue to work with RMAs and key stakeholders to improve communications and advice given before and during flooding events.

Measure 6e) - To work with RMAs and key stakeholders to establish a co-ordinated approach to the provision of temporary flood risk management measures.

5.1.9. Objective 7 - To encourage, support and provide flood risk management which seeks to enhance and protect the environment

Stockport contains a range of environmental assets which promote multiple social, economic and environmental benefits. Where opportunities are available to implement flood risk management solutions which work with natural processes and make environmental enhancements these will be explored to establish if they are economically viable and can form part of a sustainable approach to local flood risk management in Stockport. These will be prioritised to ensure that the most beneficial solutions are implemented first.

Flood management solutions should pay high regard to important local natural and built environment assets, including biodiversity, soil, the historic environment and landscape and townscape character, and contribute to address key issues such as climate change and water pollution.

The provision of SuDS as part of new developments or through retrofitting can have positive effects in enhancing and protecting the environment through the provision of green infrastructure. The provision of more conventional green infrastructure, such as planting of trees at appropriate locations in streets can help reduce flood risk.

Flood risk management schemes in ordinary watercourses must comply with the requirements of the Water Framework Directive, and with the recommendations of the River Basin Management Plans.

Measure 7a) - To promote environmentally sustainable flood risk management solutions which work with the natural and built environment, using a catchment based approach where applicable, and providing multiple benefits where possible.

Measure 7b) - To ensure that Emergency Planning for flooding includes consideration of, and avoids damage or deterioration to, the natural and built environment, including landscape and townscape character and the historic environment.

Measure 7c) - To promote the conservation, management and creation of green infrastructure as part of sustainable flood risk management solutions, recognising the multiple benefits green infrastructure delivers, such as flood risk management, urban cooling, climate change resilience and enhancement of biodiversity. This should include promotion in the built environment of retrofitting SUDS, green roofs and building integrated vegetation to manage run-off water.

Measure 7d) - To promote flood risk management solutions that protect and enhance the landscape and built environment character of the Borough, including the historic environment and heritage assets.

Measure 7e) - To aim to ensure no net loss of biodiversity and where possible net gain through habitat creation and enhancement as a result of flood management solutions, contributing to the Borough's natural environment and biodiversity.

Measure 7f) - To ensure that international, national and locally designated sites are not adversely affected by flood risk management activities.

Measure 7g) - To protect soil resources and avoid permanent (irreversible) loss of the best quality and most versatile agricultural land as a result of flood risk management solutions.

Measure 7h) - To seek to reduce energy consumption and minimise use of natural resources in the implementation of flood management schemes, through encouraging the re-use of materials, use of secondary materials and maximising recycling.

Measure 7i) - To ensure that WFD assessments are undertaken where required for flood risk management schemes; with no deterioration in WFD waterbody status as a result of flood risk management activities and where possible enhancement of status through implementation of the recommendations of River Basin Management Plans.

5.2. Actions to Achieve Objectives

A list of flood risk management actions is included in the Action Plan attached to the Strategy in Appendix B. These actions will be updated over time as actions are completed and new ones are identified. The Action Plan states what actions will be taken to achieve the objectives of the Strategy including actions taken by other organisations. Actions should always aim to achieve multiple benefits, as focusing on single issue flood-orientated solutions can cause potential conflicts to be overlooked and opportunities to be missed.

Actions included in the Strategy are as follows:

- Studies, assessments and plans - Developing a greater understanding of local flood risk in Stockport will be critical to deploying the most effective measures for managing the risk and making the best use of limited resources.
- Information-sharing protocols - This function will be developed to understand what data is needed for, what information is available, what information is missing and how information will be shared. The data will help define 'locally

significant' flood risk and set criteria for when the LLFA will investigate a flooding incident.

- Development control - It is assumed in drafting the Strategy that, in line with the requirements of NPPF, unless there are mitigating factors new development will not generally increase flood risk either specifically in the area of a development or overall. An improving information base about local sources of flooding will help inform the determination of development proposals and support the SFRA produced by Stockport as Local Planning Authority.
- Sustainable drainage systems – SuDS have been defined as "management practices and control structures designed to drain surface water in a sustainable way". Stockport as LLFA will provide a statutory consultee role on planning applications including SuDS. The Policy and Guidance supporting the Strategy will detail the local arrangements for SuDS approval and set out criteria for adoption of existing SuDS.
- Raising awareness - Individuals and communities should understand that there will always be a degree of flood risk and the role that they can play in the local management of that risk. Raising awareness will be a critical aspect of the Strategy.
- Resilience - The Strategy will explore ways in which flood risk can be reduced through individuals and communities increasing their own resilience.
- Investment and funding - The Strategy will look at the development of priorities for investment and at the same time explore opportunities for funding.

The Strategy must detail how each action will be implemented. It is anticipated that the majority of the actions set out within the Strategy will be implemented through partnership working. However the legislation is clear that LLFA must take the lead responsibility.

Actions will need to be affordable and realistic and follow the general principle set out in the National Flood Risk Management Strategy; that of being proportionate and risk based. Priorities for Stockport will be set in such a way that decisions can be made about local benefit within a strategic context. Accurate identification of the beneficiaries of measures will help with the development of appropriate funding strategies.

5.3. Paying for the Actions

Stockport Council has used its own budgets to carry out much of the initial assessment and investigation work related to flood risk and this was partly based on the statutory duties for the LLFA to establish asset records. It has used the information developed to assist in the powers the LLFA has to help reduce or mitigate flood risk.

The specific projects require a detailed assessment of flood risk in order to establish its real priority not just within Stockport, but regionally to the North West and on a National basis. In order to gain funding the more conventional method is to apply to DEFRA for Grant in Aid through FCERM and that has to meet key criteria in order to be listed on the programme. These predominantly relate to a calculation based on costs and derived benefits from the proposed scheme.

The vast majority of projects are restricted and tied through this evaluation process and therefore often puts on onus on the LLFA to be clear on its priorities in the work it wants to carry out and that that has to be justified. A key driver or threshold is that benefits are

derived by the calculator from the value of private properties and hence to number of properties at risk and their risk level is critical to the process.

This does have limitations then for the LLFA to assist businesses and support public assets or infrastructure which would not feature as costed benefits. The LLFA should it wish to carry out works that affect these it would have to seek high levels of contributions from the stakeholders or use the Council's public funding. These may however still be a priority for the relevant authorities. It should be acknowledged that through no fault of each LLFA or the EA extensive and hence expensive proposals to assist single properties or even small groups of properties would prove difficult to attract government funding based on the priority.

Of other interest is that benefits can be enhanced if works are proposed to assist a designated Deprived Area and therefore the LLFA's priorities would tend to focus on these. In Stockport the higher Surface Water flood risks tend not to be in the more deprived areas and actually tend to be in the more affluent areas of the borough. Again this restricts the LLFA in attracting GiA.

It has been the case that the LLFA has been unable to find or promote additional funding and has been in a position that it enforces maintenance or repairs with the landowner or Riparian owner. There are circumstances that the LLFA may see it is reasonable to work with the responsible person(s) to assist the project if the relationship is reciprocal. Alternatively full liability may rest solely with the Riparian owner to resolve and fund the works. The Council will actively help and advise as much as possible, but ultimately the responsibility may well be with others. Should formal notice be required then the costs associated to process the notice and details to establish this will be sought from the Riparian owner.

The Authority is working with other bodies to work together and to try to combine contributions and will look to other funding streams such as the Water Framework Directive. Working in partnership with other RMAs is a requirement.

Stockport Council at present is still committing funds to help develop projects and carry out the initial study work with the intention that enough data and information can be gathered to primarily understand the flood risk but secondly to seek to attract other funding should the LLFA be in a position to provide a scheme.

Since 2010 Stockport Council has fully engaged with its new duties and has established priority risk-based assessment to provide and annual funded programme of studies and works to help us to understand the infrastructure and flood risk and possibly look to reduce the risk or to mitigate this.

6. Reporting and Review

6.1. European and National Reporting and Review

Coordinating progress and managing flood risk will be reviewed under a number of reporting methods. The European Floods Directive through the Flood Risk Regulations 2009, Flood and Water Management Act 2010 and the Department for Communities and Local Government's Single Data List provide opportunities to demonstrate Stockport's understanding and progress on Lead Local Flood Authority duties and powers.

The Flood Risk Regulations 2009 implement the European Floods Directive in UK law. Responsibilities for LLFAs under the FRR are consistent with those under the FWMA. A six year cycle requires the LLFA to assess flood risk from local sources and undertake a management plan in areas where there is a significant flood risk, defined as affecting more than 30,000 people within a 'cluster' of mapped square kilometres.

The first stage of the six year cycle is the publication of a Preliminary Flood Risk Assessment by the LLFA. The PFRA must include details of significant historical flooding, predicted future flood risk and the assessment of any significant Flood Risk Areas within the LLFA boundary. Where a Flood Risk Area is identified, the second and third stages producing flood hazard and risk maps and a management plan must also be completed. As Stockport does have Flood Risk Areas, a flood risk management plan will need to be produced.

Information gathered through the processes set out in the Local Flood Risk Management Strategy will be used to provide historic and future flood risk data in the next cycle.

Section 18 of the FWMA requires the Environment Agency to report to the Minister on flood and coastal erosion risk management progress. The National Flood Risk Management Strategy confirms that annual reporting will be undertaken, with more detailed reporting in line with the six year cycle outlined in the FRR.

Contributions are needed from LLFAs to complete a national picture of progress implementing new legislation, strategic planning such as Catchment Flood Management Plans and Local Flood Risk Management Strategies and delivery of flood defence schemes. Progress indicators, such as production of a local strategy and development of a register of structures and features, will reflect the developing nature of flood and water management roles and therefore may change in future years so progress can continue to be appropriately reported.

The Department for Communities and Local Government produces the single data list which acts as a catalogue of the data that local authorities must provide to central government each year to report progress. The list covers aspects of all local authority responsibilities not just those relating to flood risk, and replaces the former performance related national indicator sets. Flood risk data required includes progress on implementing aspects of the FRR and FWMA such as investigations undertaken and SuDS approval, numbers of FCERM staff within local authorities, number of developments in the floodplain against Environment Agency advice, and properties at risk of flooding and those where flooding has been reduced or managed. Data is reported annually in March.

6.2. Local Arrangements for Reporting and Review of the Local Flood Risk Management Strategy

It is envisaged that the review and reporting of the local strategy will be through the Regional Flood and Coastal Committee along with the Council member with the relevant portfolio.

It is important that the information contained within the Strategy is the best available and it is in line with national policy on the management of local flood risk.

Triggers for review of the Strategy may include the following.

- Significant flood events that alter our understanding of flood risk in Stockport.
- Significant policy changes that affect the role of Flood Risk Management Authorities.
- Publication of significant new flood risk information and mapping.

The initial Strategy will be subject to an early review after 3 years. This will be necessary as it is expected that many of the objectives relating to development of service delivery will be achieved in this time frame and the overall context for the Strategy will evolve as recent and proposed legislative changes in areas related to flood risk management, become more established.

6.3. Monitoring of the Local Flood Risk Management Strategy Objectives

A monitoring framework to assess interventions against the aims and objectives of the Strategy will be developed to enable annual monitoring of the Strategy to be undertaken. The LLFA is responsible for monitoring the Strategy under Section 9 of the FWMA, but will need the cooperation of other RMAs and flood risk stakeholders to do this, supported by Section 13 of the FWMA.

The monitoring framework may include the following key indicators, which will be developed with reference to the Strategic Environmental Assessment process and linked to the Strategy objectives, measures and actions, but could potentially include other indicators:

- Reduce the likelihood, severity and consequences of flooding from Ordinary Watercourses, from Groundwater, and from Surface Water Runoff.
    - Number of deaths/injuries resulting from flooding annually;
    - Number of residential properties within flood risk areas;
    - Number of non-residential properties within flood risk areas;
    - Number of community and economic assets within flood risk areas;
    - Number of incidents of road or railway line closures due to flooding annually;
    - Numbers of residential properties covered by flood warning / alert areas;
    - Numbers of reactive call-outs to clear blocked drainage infrastructure;
    - Number of recorded local flood incidents;

    - Number of repeated recorded local flood incidents - i.e. incidents where the spatial cause (blocked trash screen, silted culvert, sewer exceedance etc.) is the same;
    - Number of New and Redevelopment Schemes incorporating SuDS;
    - Number of planning permissions granted contrary to the Environment Agency or LLFA on flooding and water quality grounds;
    - Number of planning permissions where landscaping has contributed to sustainable urban drainage provision;
    - Number of Local Flood Risk Management intervention bids made;
    - Number of Local Flood Risk Management interventions implemented;
    - Value of funding levered into local flood risk management.

- Protect and enhance biodiversity, blue/green infrastructure and geodiversity assets.
    - Number of flood risk management interventions that work with natural processes;
    - Number of new flood risk management interventions delivering green/blue infrastructure and length of blue/green infrastructure network;
    - Area of green space important for wildlife corridors identified and safeguarded or enhanced as part of flood management;
    - Number of new flood risk management interventions delivering habitat creation or enhancement;
    - Area of protected woodland and trees lost through flood risk management interventions;
    - Square metres of habitat created / improved.

- Seek opportunities to improve water quality and biodiversity through flood risk management activities.
    - Length of improved watercourse as part of flood risk management interventions;
    - Proportion of rivers with biological quality classed as good or high;
    - Proportion of rivers which pass on chemical status;
    - Surface water bodies reaching 'good' ecological status or 'good' ecological potential.

The key indicators will be assessed annually to provide an assessment of progress.

TECHNICAL GLOSSARY

ACRONYM	TERM	DESCRIPTION
ABI	Association of British Insurers	This is supported by the company members of the insurance industry to provide general advice. It promotes best practice, transparency and standards within the industry.
	Aquifer	Layers of permeable rock which provide water storage important for supporting water supply and /or river flows.
AStGF	Areas Susceptible to Ground Water	Mapping produced by the Environment Agency and others to show areas with a potential for groundwater emergence.
AStSW	Areas Susceptible to Surface Water	Mapping produced by the Environment Agency to provide broad areas where surface water flooding was likely to cause problems in four bans from Very Low to High Risk. The methodology assumed that sewer and drainage systems were near capacity and did not account for infiltration or the impacts of the locations of buildings.
	Base Flow	Water below the ground surface and movement of the water under the Ground Water Level, which tend to feed rivers and watercourses.
CFMP/S	Catchment Flood Management Plan or Strategy.	These plans or strategies assess flood risk from all sources over a larger river catchment area and establish flood risk management policies for those areas to assist in understanding flood risk within the catchment and delivering sustainable flood risk management in the long term.
	Climate Change	Long term variations in the climate of the earth that affect temperature, wind and rainfall patterns.
CDA	Critical Drainage Area	This is an area that forms part of the Planning Policy of the LLFA and is defined by the LLFA based on catchment data and historic records.
CLG	Department for Communities and Local Government	Central Government department responsible for policy and regulations supporting local government, communities and neighbourhoods.
Defra	Department for Environment, Food and Rural Affairs	Central Government department responsible for policy and regulations on the environment, food and rural affairs.
DG5	Director General 5 register	Records of property flooding from the drainage and sewer network collated and held by water companies.
EA	Environment Agency	A non-departmental public body responsible for protecting and improving the environment and promoting sustainable development.
	European Floods Directive	European Commission legislation which aims to provide a consistent approach to managing flood risk across Europe.
FAS	Flood Alleviation Scheme	A capital scheme to provide defences or storage for flood water to alleviate flooding within a surrounding area.
FCERM	Flood and Coastal Erosion Risk Management	Measures including strategies, policies and schemes designed to manage flood and coastal erosion risk at a national, regional or local scale. Also referred to as FRM – Flood Risk Management.

FDGiA or GiA	Flood Defence Grant in Aid	Part of the Environment Agency's overall capital allocation to invest in flood risk management schemes for which bids are made and assessed.
FMfSW	Flood Map for Surface Water	Mapping hosted by the Environment Agency to provide broad areas where surface water is likely to cause problems based on four bands of surface water flooding and deep surface water flooding. The methodology assumed an allowance for infiltration and a national average drainage capacity and mapped building locations. (More sophisticated than AStSW).
FRAr	Flood Risk Area	An area where there is a significant risk of flooding from local flood risk sources including surface water, ground water and ordinary watercourses.
FRAs	Flood Risk Assessment	This is normally a requirement to be carried out by a developer as part of the Planning Application process. It is intended to assess what the risks are, whether there will be an increase in risk and how risk will be managed.
FRR	Flood Risk Regulations 2009	Regulations for England and Wales which transposes and implements the European Floods Directive. It is based on a six-year cycle of assessment and planning.
F&WM Act or FWMA	Flood and Water Management Act 2010	Regulations for England which sets out the roles and responsibilities for flood and coastal erosion risk management as a response to the Pitt review of the 2007 floods.
	Flood Zone 1	River and Coastal Low flood risk designated by EA. Assessed to have less than a 1 in 1000 year probability.
	Flood Zone 2	River and Coastal Medium flood risk designated by EA. Assessed to have between 1 in 100 and 1 in 1000 year probability.
	Flood Zone 3a	River and Coastal High flood risk designated by EA. Assessed to have greater than 1 in 100 year probability of fluvial flooding.
	Flood Zone 3b	River and Coastal Flood Plain as determined by EA.
	Fluvial Flooding	Flooding where water in a river exceeds the capacity of the river and its banks and overspills into surrounding areas.
	Groundwater Flooding	Flooding where water stored underground or in the Base Flow rises above the ground or surface level in areas that have no channels or drainage paths.
GIS	Geographic Information System	A system designed to capture, store, manipulate, analyse, manage, and present all types of spatial or geographical data.
	Highway Authority	There are two tiers. This can be the County, District Council or unitary authority for most minor roads. Some Local Authorities operate as agencies for others typically within County areas.
HE	Highways England	A non-departmental public body sponsored by the Department for Transport (DfT), which is responsible for operating, maintaining and improving England's motorways and major A roads.

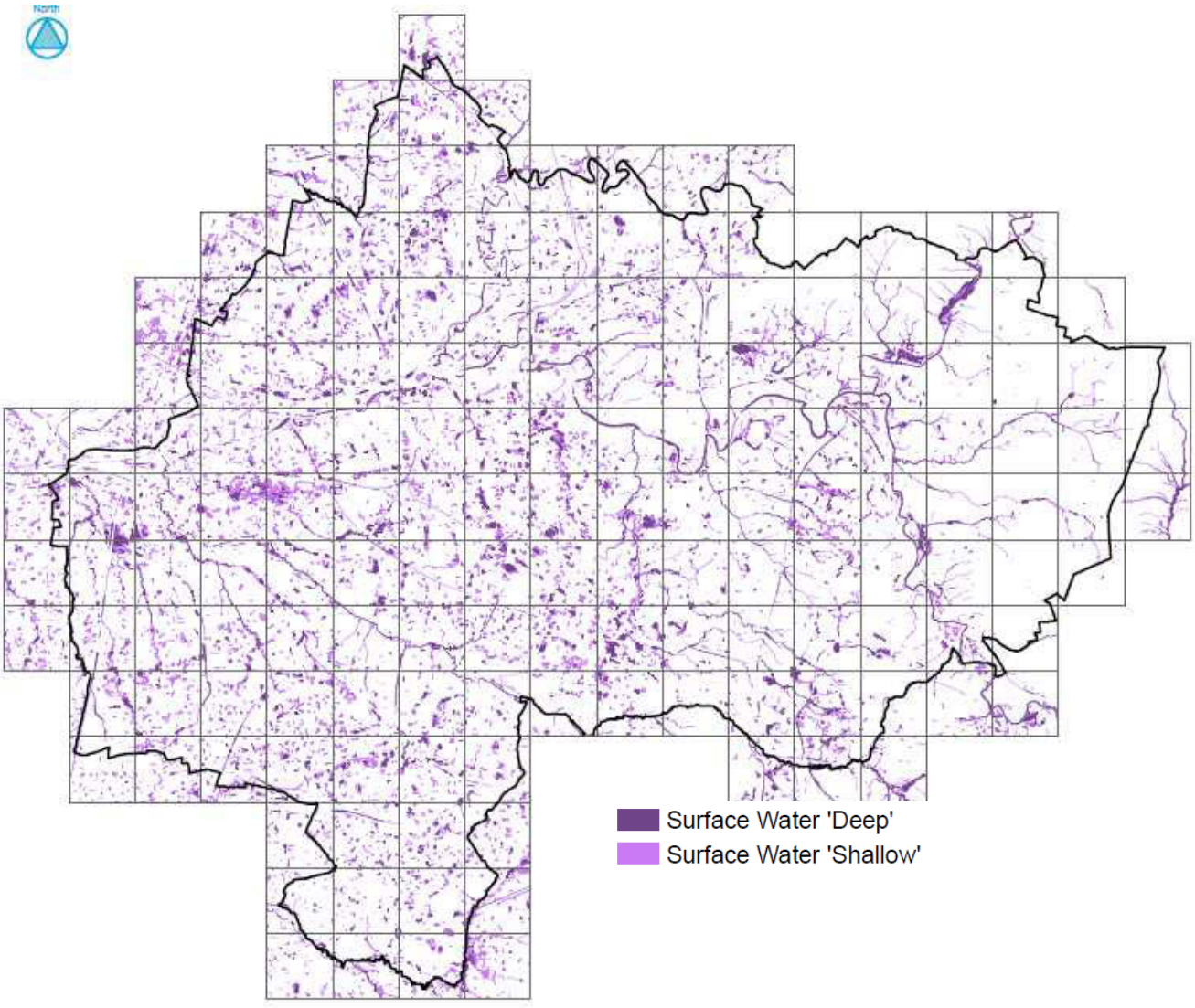
iFRA	Indicative Flood Risk Area	Areas identified by the EA as part of a PFRA in a development where more than 30,000 people are at risk of flooding (in clusters of 1Km squares where at least 200 are potentially at risk of significant surface water flooding).
	Infiltration	A technique used for sustainable drainage in which water is allowed to return to the ground and a term that ranks the permeability of the sub-surface to allow this to happen.
	Interflow	Water below the ground that flows between the surface and the ground water level. The rate of this is indicated by the sub-surface infiltration.
	Land Drainage Act 1991	This is primary legislation in England and Wales that sets out the duties and responsibilities of how watercourses and drainage is maintained. It sets out the role of the Riparian owners and powers of local authorities.
LFRMS	Local Flood Risk Management Strategy	The local strategy for the LLFA to identify the various flood risk management functions of different RMAs. It is to set out how it will assess local flood risk and measures for managing this and produces objectives and how they will be implemented. It highlights costs and benefits and review impact or contribution to wider environmental issues.
LLFA	Lead Local Flood Authority	A County Council, borough Council or unitary authority as designated under the F&WM Act that had duties under that Act responsible for local flood risk management. It is not responsible or liable for flooding but has powers to act.
	Local Levy	Annual levy collected from Local Authorities by the Regional Flood and Coastal Committee to fund flood and coastal erosion risk management within that region.
	Main River	This could be any watercourse, river , brook or stream this is deemed significant for catchment management to be managed by the EA and designated by the EA as such (refer to Ordinary Watercourse below as alternative).
NFF	National Flood Forum	This is an independent charity set up to assist private individuals affected by flooding and guiding them on legislation and providing information. It works with communities and flood groups and supports projects.
NFRMS	National Flood Risk Management Strategy	The strategy developed by the EA for England to identify the various flood risk management functions of different RMAs and organisations. It sets out objectives and measures for managing flood risk, the costs and benefits of measures and how they can be implemented. It assesses impacts of climate change and contributions to wider environmental objectives.
NPPF	National Planning Policy Framework	The national planning regime developed from PPS25.
	Ordinary Watercourse	This could be any watercourse, river, brook or stream and drainage path that is not classed by the EA as Main River or by the Water Companies as public sewer and as such is managed but not owned by the LLFA.
PFRA	Preliminary Flood Risk Assessment	An assessment under the FRR which evaluates significant historic and future flood risk within an area, identifying significant flood risk areas and providing information on flooding for reporting to the European Commission.
	Pluvial	Relating to rainfall and surface water run-off which often contributes to surface water flooding. Contrasts with Fluvial.

PPS25	Planning Policy Statement 25	Guidance on how flood risk should be covered in planning policy and development control. It is superseded by the NPPF but has the principles likely to be included and carried out through Local Plans and Councils' planning policy.
Retro SuDS	Retrospective Sustainable Drainage Systems	Refer to SuDS below. To review or adjust drainage from an area or development after it has been built to improve it or help reduce flood risk.
RFCC	Regional and Coastal Committee	Committees established by the EA consisting of members representing LLFAs and independent members who ensure that there are plans for identifying and managing flood risk across catchments, promote investment in flood and coastal erosion risk management and provide a link between RMAs and other relevant bodies.
	Riparian Owners	This is a key principle in drainage law in that the landowner has duties and responsibilities for management of watercourses in their land or if adjacent to their land.
RMA	Risk Management Authority	Defined under the F&WM Act as all bodies with vested interests in flood risk and management. They tend to be the LLFAs, the EA, IDBs, water companies and Highway Authorities.
	Single Data List	A list of all data returns that central government expects from local government. It replaces the National Indicator Set and consolidates other requirements.
SFRA	Strategic Flood Risk Assessment (Level 1 and Level 2)	An assessment providing information on areas at risk from all sources of flooding used to provide an evidence base for flood risk and planning decisions.
	Surface Water Flooding	Rainwater collects on the surface of the ground due to the soil being saturated or rests on hard standing areas where drainage and watercourses in the area are at full capacity or are not accessible due to land levels or restrictions. Can be referred as Pluvial Flooding.
SWMP	Surface Water Management Plan	This assesses surface water flooding within a given area and outlines the preferred approach to managing that risk. It is undertaken in consultation with key partners who are responsible for flood risk management and drainage for that area. It is intended to influence future resource, emergency and land use planning and identifying areas where flood alleviation works may be required.
	Sustainable Development	Ensure the needs of the current generations do not adversely impact the lives of and risks to future generations by improving and enhancing the area concerned.
SuDS	Sustainable Drainage Systems	Methods for draining and storing surface water that is designed to mimic natural processes and to provide and support multiple environmental benefits and improved amenity as well as helping mitigate flood risk potentially created by development or re-development.

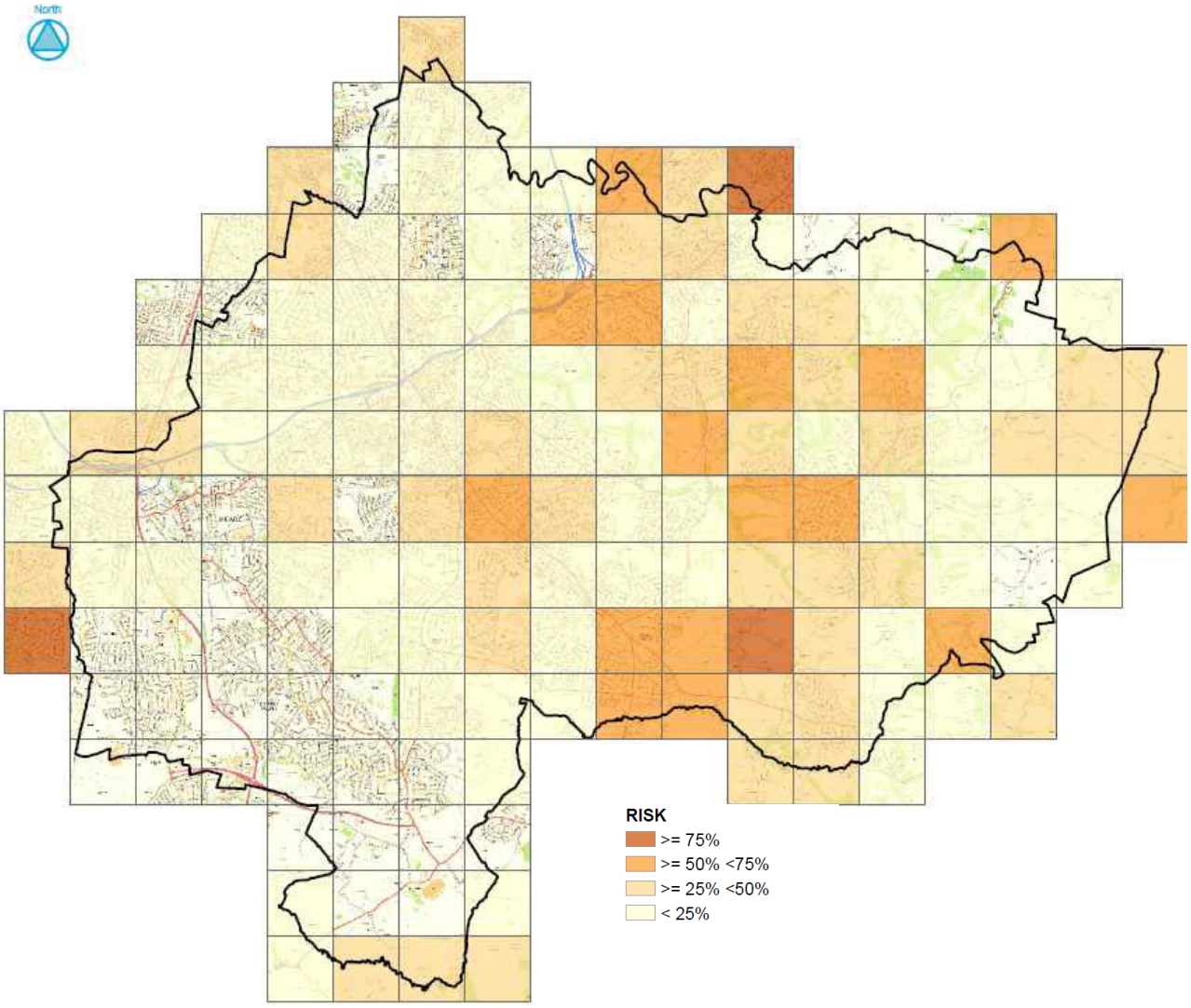
Appendices

Appendix A. **Flood Risk Maps**

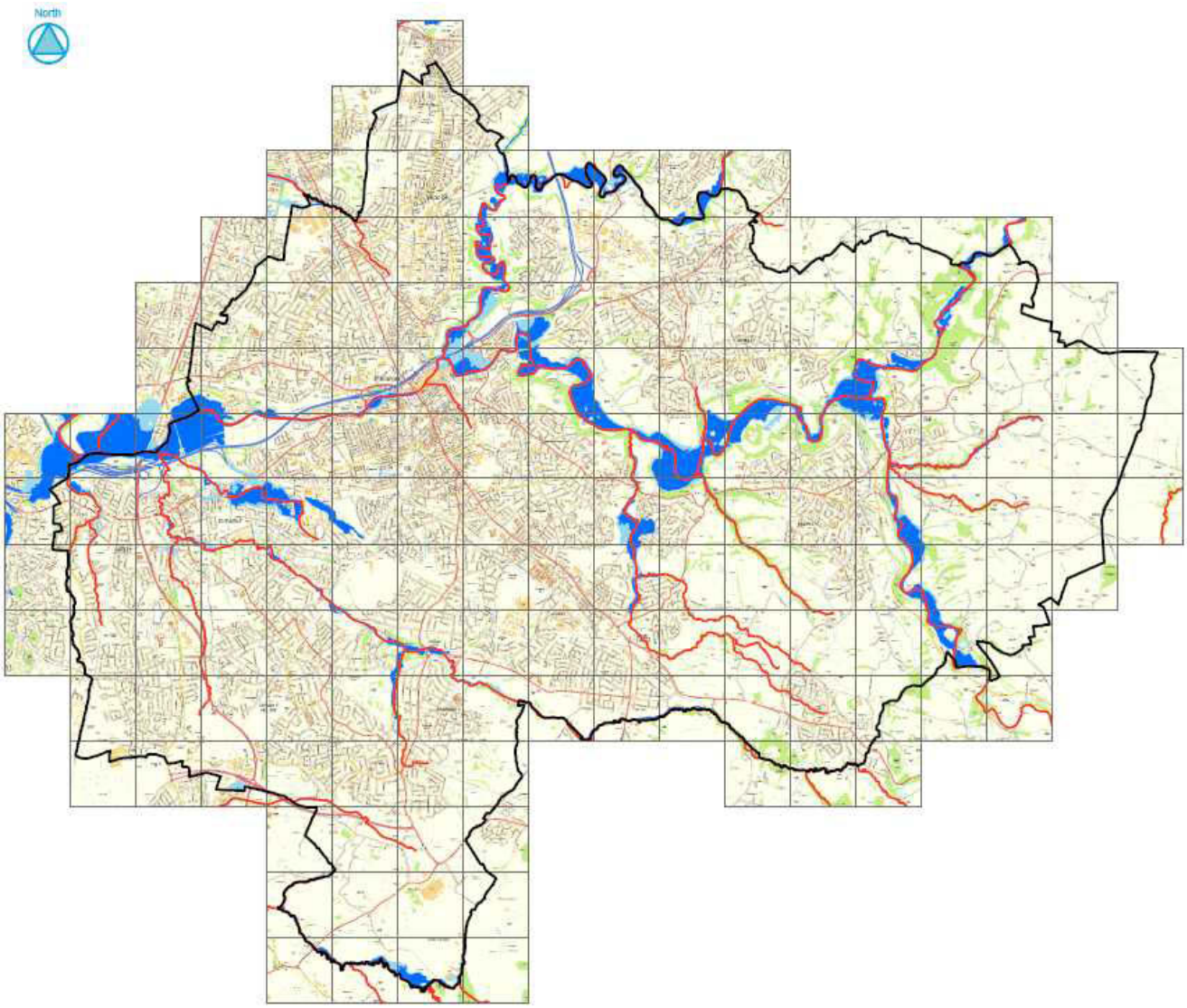
Map 1 - Extent of Flood Map for Surface Water flooding in Stockport



Map 2 - Areas Susceptible to Groundwater flooding in Stockport



Map 3 - Extent of Flood Zone 2 and 3 in Stockport



Appendix B. **Action Plan**

Action	Aim	Timescale	Progress	Estimated Cost	Potential Funding Source	Lead Partner	Supporting Partners
Objective 1: To better understand local flood risk and make best use of available information							
To map historical flooding incidences from all sources to identify recurrent flooding issues and cluster areas which will assist in the prioritisation of flood mitigation intervention.	Assist in the development of funding bids and prioritisation of flood risk management within Stockport.	Ongoing	Ongoing	N/A	N/A	SMBC	EA, UU
To provide a web based system of flood risk information to be accessed by key stakeholders and others, e.g. developers.	To provide easy access to flood risk information to interested groups, increasing officer availability to carry out other flood risk management duties. To maintain up-to-date evidence base to help identify and prioritise locations for flood risk management interventions. Address gaps in the evidence base, improving the quality of the evidence base, and keeping the evidence base up-to-date.	Ongoing	Ongoing	N/A	N/A	SMBC	RMAs
Record local flooding incidents appropriately and use this information to manage risk.	Ensure effective mechanisms and procedures exist for recording information about flooding from ordinary watercourses, groundwater and surface water, and for using this information to manage risk.	Ongoing	Ongoing	N/A	N/A	SMBC	RMAs
Review of the Preliminary Flood Risk Assessment for Stockport	To ensure the reported flood risk areas are kept up to date with recent flooding incidents and understanding of flood risk.	2 years	Ongoing	N/A	N/A	SMBC	RMAs
Undertake surveys and hydraulic modelling from waterways and sewers in Romiley West.	To better understand flood risk in Romiley West.	2 years	Ongoing	N/A	N/A	SMBC	UU
Undertake surveys and hydraulic modelling from unknown waterways in Romiley East.	To better understand flood risk in Romiley East.	2 years	Ongoing	N/A	N/A	SMBC	Riparian owners
Undertake surveys and hydraulic modelling from uncharted culverts in Bramhall.	To better understand flood risk in Bramhall.	2 years	Ongoing	N/A	N/A	SMBC	Riparian owners
Undertake an investigation of flooding from the drainage network in Cheadle Hulme.	To better understand flood risk in Cheadle Hulme.	2 years	Ongoing	N/A	N/A	SMBC	UU
Objective 2: To reduce the potential impact and costs of flooding in the borough							
Develop a prioritised list of potential local flood risk management capital schemes to be taken forward for detailed analysis and development of options to reduce flood risk and develop business cases for potential capital schemes.	To reduce the potential impact and costs of flooding in the borough with multiple benefits beyond flood risk management including environmental enhancements, meeting WFD objectives and facilitating economic development and regeneration.	Ongoing	Ongoing	N/A	N/A	SMBC	RMAs
Consent works on ordinary watercourses and undertake enforcement to remove unapproved constrictions on ordinary watercourses	To reduce the potential impact and costs of flooding in the borough	Ongoing	Ongoing	N/A	N/A	SMBC	RMAs
Dingle Hollow Detention Basin.	Provision of flood relief to Bredbury Green and Romiley from attenuation at head of culvert.	2 years	Ongoing	N/A	N/A	SMBC	Riparian owners
Implement Stage 2 of Cheadle Hot Spot Study.	To implement works derived from the Stage 1 study.	3 years	Commence in 2017/18	N/A	N/A	SMBC	EA, UU
Rehabilitation of Bramhall Minor Culverts.	To reduce risk of flooding from blockage, collapse and restricted capacity.	3 years	Commence in 2017/18	N/A	N/A	SMBC	Riparian owners
Rehabilitation of Barlow Fold road culvert.	To reduce risk of flooding from blockage, collapse and restricted capacity.	3 years	Commence in 2017/18	N/A	N/A	SMBC	Riparian owners

Objective 3: To ensure resilience of the local water bodies and drainage assets							
To develop a record of local water body and drainage asset, together with details of ownership, state of repair, and where appropriate, the designation of such structures or features which may affect flood risk. Develop a procedure for the periodic review and update of the asset register.	To better understand flood risk assets and their function in managing flood risk. To Identify areas where targeted maintenance and improvements to watercourses and drainage systems are required.	Ongoing	Ongoing	N/A	N/A	SMBC	RMAs
To develop a maintenance plan for the regular cleansing of trash screens at critical flood risk locations.	To ensure ordinary watercourses are free of debris during extreme weather events to reduce the risk of flooding and identify need for replacement with new structures.	Ongoing	Ongoing	N/A	N/A	SMBC	RMAs
To develop a maintenance plan for the regular de-silting and de-vegetation of ordinary watercourses at critical flood risk locations.	To ensure ordinary watercourses are free of debris during extreme weather events to reduce the risk of flooding.	Ongoing	Ongoing	N/A	N/A	SMBC	RMAs
To develop a maintenance plan for the regular cleansing of highway gullies based on a prioritised risk based approach.	To make efficient use of gully cleaning resource and budget and reduced impacts from road closures, etc.	Ongoing	Ongoing	N/A	N/A	SMBC	RMAs
To develop a plan with priority locations for improving existing flood risk infrastructure, including ongoing maintenance and condition monitoring.	To reduce risk of flooding from failure of infrastructure.	Ongoing	Ongoing	N/A	N/A	SMBC	RMAs
To identify key highways requiring protection during flood events.	To identify and manage a resilient network of highways during a flood event.	Ongoing	Ongoing	N/A	N/A	SMBC	RMAs
Action	**Aim**	**Timescale**	**Progress**	**Estimated Cost**	**Potential Funding Source**	**Lead Partner**	**Supporting Partners**
Objective 4: To ensure appropriate development in areas of flood risk							
Establish an approach through the S106 process to ensure the adoption and continued maintenance of SuDS as part of the planning process for new developments to manage flood risk now and in the future.	Provide betterment on existing surface water flood risk through managing runoff from new developments and ensuring the SuDS are maintained regularly so that there is no deterioration in their function.	Ongoing	Ongoing	N/A	N/A	SMBC	EA, UU
Respond to strategic planning consultations including Local Plans and planning policy documents.	To ensure flood risk is considered as part of the planning process.	Ongoing	Ongoing	N/A	N/A	SMBC	RMAs
To engage where possible with developers at the earliest possible point in the planning process for major developments and seek to influence the planning process through proactive pre-application discussions.	To ensure that developers avoid the flood plain except in exceptional circumstances, with appropriate design including “offset” of lost floodplain and to manage surface water runoff through SuDS.	Ongoing	Ongoing	N/A	N/A	SMBC	RMAs
Objective 5: To develop a collaborative partnership approach to flood risk management, and cooperate with other Risk Management Authorities and key stakeholders working across catchments							
Identify partnership arrangements, setting out roles and responsibilities, protocols for communicating and working together and with other key stakeholders.	To clarify local roles and responsibilities of Risk Management Authorities in Stockport and adjoining authorities and establish lines of communication to share information and resources and work collaboratively in a coordinated manner for flood risk management.	Ongoing	Ongoing	N/A	N/A	SMBC	RMAs

Establish responsibility for the management of flood risk from watercourses of unknown status.	Where culverted ordinary watercourses have been incorporated into the sewer network and ownership is not clearly defined, identifying responsibility and the condition of the asset is important to manage flood risk effectively.	Ongoing	Ongoing	N/A	N/A	SMBC	UU
Participate in national and regional LLFA best practice sharing groups.	To work with neighbouring Lead Local Flood Authorities to ensure a catchment-based approach to local flood risk management, taking advantage of training opportunities, realising economies of scale.	Ongoing	Ongoing	N/A	N/A	SMBC	RMAs
To confirm responsibility for management of flood risk from dam and canal infrastructure, establish and agreeing roles and responsibilities. Engage with neighbouring LLFAs who share canals	To work with key RMAs for managing flood risk from dam and canal infrastructure	Ongoing	Ongoing	N/A	N/A	SMBC	RMAs
Identify particularly vulnerable groups through meetings with health partners	To work with health partners to identify funding opportunities and quantify health and wellbeing benefits as part of the prioritisation of flood risk management schemes.	Ongoing	Ongoing	N/A	N/A	SMBC	Health Partners
Objective 6: To assist communities in understanding information on flood risk and supporting themselves							
Update website and produce leaflets for householders and businesses on preparing for floods with clear guidance on who to contact during a flood event.	To promote public awareness and ensure they have a flood emergency plan and where possible improve the resilience of their property.	12 months	Ongoing	N/A	N/A	SMBC	RMAs
Promote the formation of new flood action groups	To support local groups to manage local flood risk and increase the resilience of their communities to flooding.	12 months	Ongoing	N/A	N/A	SMBC	RMAs
Objective 7: To encourage, support and provide flood risk management which seeks to enhance and protect the environment							
Work with Healthy Waterways Trust to collaborate on ideas, Communications and projects to assist in the cleaning up of our watercourses, e.g. Micker Brook and Chorlton Brook.	Promote sustainable flood risk management.	12 months	Ongoing	N/A	N/A	SMBC	Healthy Waterways Trust, EA
Explore the potential for use of environmentally sustainable solutions in all Stockport led flood risk management schemes.	To promote environmentally sustainable flood risk management solutions which work with the natural and built environment	Ongoing	Ongoing	N/A	N/A	SMBC	RMAs

Appendix B

DRAFT LOCAL FLOOD RISK MANAGEMENT STRATEGY – SUPPORTING DOCUMENTS

APPENDIX B-1

STRATEGIC ENVIRONMENTAL ASSESSMENT

ATKINS

Stockport Local Flood Risk Management Strategy (LFRMS)

Strategic Environmental Assessment Environmental Report

Stockport Metropolitan Borough Council

February 2016

Notice

This document and its contents have been prepared and are intended solely for Stockport Metropolitan Borough Council's information and use in relation to the Strategic Environmental Assessment of the Stockport Local Flood Risk Management Strategy (LFRMS).

Atkins Ltd assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

This report has been prepared by environmental and sustainability specialists and does not purport to provide legal advice.

Document history

Job number: 5140491			**Document ref: issue to client Draft Stockport LFRMS Environmental Report rev1.0.docx**			
Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
Rev 1.0	Environmental Report for comment	KP	EG	CW	CW	10/02/16

Client signoff

Client	Stockport Metropolitan Borough Council
Project	Stockport Local Flood Risk Management Strategy – Strategic Environmental Assessment
Document title	Stockport LFRMS Environmental Report
Job no.	5145509
Copy no.	
Document reference	issue to client Draft Stockport LFRMS Environmental Report rev1.0.docx

Table of contents

Chapter		Pages
Non-Technical Summary		**6**
1.	**Introduction**	**20**
1.1.	Introduction	20
1.2.	Local Flood Risk Management Strategy	20
1.3.	Requirement for SEA	21
1.4.	The SEA Process	21
1.5.	Purpose of the Environmental Report	23
1.6.	Consultation	23
1.7.	Habitats Regulations Assessment	23
2.	**Setting the scope of the SEA**	**25**
2.1.	Spatial Scope	25
2.2.	Temporal scope	26
2.3.	Technical scope	26
3.	**Methodology**	**27**
3.1.	Overview of Approach	27
3.2.	Stage A: Setting the Context and Objectives, Establishing the Baseline and Deciding on Scope	27
3.3.	Stage B: Developing and Defining Options	28
3.4.	Stage C: Preparing the Environmental Report	31
3.5.	Stage D: Consulting on the Draft Plan and the Environmental Report	31
4.	**Identifying Other Plans and Programmes and Environmental Objectives**	**33**
4.1.	Introduction	33
4.2.	Methodology	33
4.3.	Results	35
5.	**Baseline Characteristics and Key Issues and Opportunities for the LFRMS**	**37**
5.1.	Introduction	37
5.2.	Methodology	37
5.3.	Data Analysis	38
6.	**SEA Framework**	**40**
6.1.	Framework	40
7.	**Testing the LFRMS Objectives against the SEA Objectives**	**45**
7.1.	Introduction	45
7.2.	Compatibility Assessment Outcomes	47
7.3.	Changes to the LFRMS Objectives based on the SEA recommendations	48
8.	**Options Appraisal**	**49**
8.1.	Introduction	49
8.2.	Development of Options	49
8.3.	Working Towards a Preferred Option	49
8.4.	Identification of Preferred Options	49
9.	**Assessment of Preferred Strategy**	**66**
9.1.	Introduction	66
9.2.	Assessment Results	66
10.	**Cumulative, Synergistic and Indirect Effects**	**99**
12.	**Mitigation**	**101**
13.	**Monitoring**	**102**
14.	**Conclusions**	**107**

Appendix A. **Review of relevant plans, programmes and environmental protection objectives** **108**
Appendix B. **Baseline Conditions** **133**
Appendix C. **Consultation Responses to Scoping Report** **148**

Abbreviations

Abbreviation	Definition
AQMA	Air Quality Management Area
DCLG	Department for Communities and Local Government
DEFRA	Department for Environment, Food and Rural Affairs
DPD	Development Plan Document
EA	Environment Agency
ER	Environmental Report.
FCERM	Flood and Coastal Erosion Risk Management
FRA	Flood Risk Assessment
GIS	Geographical Information Systems
GM	Greater Manchester
HRA	Habitat Regulations Assessment
LCA	Landscape Character Assessment
LDF	Local Development Framework
LFRMS	Local Flood Risk Management Strategy
LLFA	Local Lead Flood Authority
LNR	Local Nature Reserve
LBAP	Local Biodiversity Action Plan
NEET	Not in Education Employment or Training
NGO	Non-Governmental Organisation
NHS	National Health Service
PPP	Plans, Programmes and Policies
PROW	Public Right Of Way
RBD	River Basin District
RBMP	River Basin Management Plan
RMA	Risk Management Authority
SAC	Special Area of Conservation
SBI	Site of Biological Importance
SEA	Strategic Environmental Assessment
SMBC	Stockport Metropolitan Borough Council
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
SuDS	Sustainable Drainage Systems

Non-Technical Summary

Overview of Process and Purpose of Strategic Environmental Assessment

Stockport Metropolitan Borough Council (SMBC) is working in partnership with local authorities, local landowners, developers, the Woodland Trust, the Environment Agency and other agencies to prepare a Local Flood Risk Management Strategy (LFRMS) to set out how local flood risk will be managed in the Stockport Metropolitan area.

This document is the Environmental Report (ER) for the SMBC LFRMS. The purpose of this ER is to outline how the statutory requirements for Strategic Environmental Assessment (SEA) have informed the development of the LFRMS. It records all the environmental assessment work undertaken predicting and evaluating the effects of strategic options and the preferred strategy.

The Process Followed

There are five stages (A to E) in the SEA process. Stages A to C, as described below, have been completed thus far:

Stage A

- Identifying other plans, programmes and sustainability objectives that inform and influence the development of the LFRMS;
- Establishing an understanding of the social and environmental conditions of SMBC (referred to as 'the baseline');
- Identifying key environmental sustainability issues in the Borough;
- Outlining SEA Objectives against which to later evaluate the LFRMS Measures; and
- Gathering consultation feedback on the proposed breadth of coverage and level of detail for the SEA.

Stage B

- Assessing the initial LFRMS Objectives against the SEA Objectives;
- Assessing a series of options for the development of measures;
- Completing an assessment of the LFRMS preferred measures and actions;
- Identifying the cumulative, synergistic and indirect effects likely to arise as a result of the implementation of the LFRMS measures;
- Identifying appropriate mitigation to avoid predicted negative effects and making recommendations to further enhance predicted beneficial effects, where appropriate; and
- Identifying a suitable monitoring programme.

Stage C

- Preparation of ER to accompany the Draft LFRMS for consultation.

Habitats Regulations Assessment

The EU Habitats (92/43/EEC) and Birds (2009/147/EEC) Directives aim to protect European birds and species and the habitats that support them. In the UK, the Directives are implemented through the Conservation of Habitats and Species Regulations 2010, as amended. These are known as the Habitats Regulations.

The legislation requires 'competent authorities' to undertake an 'appropriate assessment' of plans, projects and strategies that may have a significant effect on the site, if those plans, projects or strategies are not directly concerned with the management of the protected sites themselves. The process that includes the 'appropriate assessment' is known as a Habitats Regulations Assessment (HRA).

Paragraph 118 of the National Planning Policy Framework (NPPF) states that any 'sites identified, or required as compensatory measures for adverse effects on European sites Special Protection Areas (SPA) and Special Areas of Conservation (SAC), potential SPAs, possible SACs and listed or proposed Ramsar sites… should be given the same protection as European sites'.

The HRA Screening Assessment identified the following sites that could potentially be affected by the LFRMS. These are:

- Peak District Dales SAC
- South Pennines Moors SAC
- Rixton Clay Pits SAC
- Rochdale Canal SAC
- Peak District Moors (South Pennines Moors Phase 1 and 2) SPA
- Rostherne Mere Ramsar Site
- Midland Meres and Mosses Phase 1 Ramsar Site
- Mersey Estuary Ramsar Site
- Mersey Estuary SPA

The Draft LFRMS has been screened with the result that there are no Likely Significant Effects anticipated either alone or in combination with other plans or projects.

Although the requirements and process for HRA are separate from that for SEA, the two processes have been run in parallel for the LFRMS and the HRA has informed the SEA.

Local Flood Risk Management Strategy

The Flood and Water Management Act 2010 (the Act) establishes that flood risk will be managed within the framework of National Strategies for England and Wales and Local Strategies for each Lead Local Flood Authority (LLFA) area. SMBC is the LLFA for Stockport. The LFRMS must be consistent with the National Flood and Coastal Erosion Risk Management (FCERM) strategy, produced by the Environment Agency in September 2011.

The Stockport LFRMS provides an overview and assessment of local flood risk, setting out objectives and measures for how SMBC will manage and reduce local flood risk.

The Act also requires LFRMS to specify:

- The roles and responsibilities of risk management authorities (RMAs) within the authority's area.
- The assessment of local flood risk for the purpose of the Strategy.
- The objectives for managing local flood risk.
- The measures proposed to achieve those objectives.
- How and when the measures are expected to be implemented.
- The costs and benefits of those measures, and how they are to be paid for.
- How the LFRMS will contribute to wider environmental objectives.
- A review process and timetable for the LFRMS.

The Draft LFRMS sets seven objectives and a number of measures and actions to fulfil the achievement of these objectives. The objectives are as follows.

Objective 1: To better understand local flood risk and make best use of available information in order to better manage flood risk to people, businesses, property, infrastructure and the natural environment

Objective 2: To reduce the potential impact and costs of flooding in the Borough

Objective 3: To ensure resilience of the local water bodies and drainage assets

Objective 4: To ensure appropriate development in areas of flood risk

Objective 5: To develop a collaborative partnership approach to flood risk management, and cooperate with other Risk Management Authorities and key stakeholders working across catchments

Objective 6: To assist communities in understanding information on flood risk and supporting themselves

Objective 7: To encourage, support and provide flood risk management which seeks to enhance and protect the environment

The measures proposed can be found under the Assessment of Preferred Strategy section below.

Environmental Baseline and Key Issues

The baseline data provides an overview of the characteristics of the LFRMS area and how these compare to the region and the UK. The following topics have been considered:

- Biodiversity (including flora and fauna), including:
  - National designations for nature conservation;
  - Local designations for nature conservation;
  - Wildlife habitats;

  Note: there are no Sites designated for nature conservation purposes at the International scale in the SMBC area;
- Key Characteristics of the Borough's Population trends and demographics;
- Human Health, Community Satisfaction and Cohesion;
- Land use, Soil & Agriculture, including Green Infrastructure;
- Water resources, including:
  - Water Catchments and water resources;
  - Water chemical and biological quality;
  - Groundwater;
  - Flood risk;
- Air quality;
- Climatic factors;
- Material assets, including:
  - Utility Infrastructure;
  - Extractive resources;
  - Transport;
  - Waste;
- Cultural heritage including:

        - Conservation areas;
        - Listed buildings;
        - Registered Parks and Gardens;
        - Archaeological sites;
        - Scheduled Monuments;
        - Historic navigable canals; and
    - Landscape including landscape character areas.

Strategic Environmental Assessment Framework

The SEA Framework is a key tool in completing the SEA as it allows the assessment of the effects arising from the LFRMS proposals to be undertaken in a systematic way. The SEA Objectives were consulted upon through the SEA Scoping Report and are supported by a range of decision-making questions which have played a role in the assessment itself. The SEA Objectives that have been identified are as follows.

1 Protect and enhance biodiversity, blue/green infrastructure and geodiversity assets

2 Protect and enhance the International sites *(HRA specific objective)*

3 Promote good physical and mental health

4 Conserve soil and agricultural resources

5 Protect and enhance the water environment

6 Take account of a changing climate and reduce the consequential risk of flooding

7 Educate and encourage the population of Stockport to take action to manage the flood risks they face

8 Protect air quality

9 Reduce CO_2 emissions and encourage development of CO_2 'sinks'

10 Promote prudent use of natural resources, minimise the production of waste and support re-use and recycling

11 Maintain and enhance the quality and distinctiveness of Stockport's historic and cultural heritage

12 Protect and enhance the character and quality of Stockport's landscapes and townscapes

Compatibility between LFRMS and SEA Objectives

An initial version of the LFRMS objectives prepared by SMBC was tested early on in the SEA process for compatibility with the SEA objectives. This helped to consider to what degree the initial LFRMS objectives were in accordance with SEA objectives with a view to developing and refining the LFRMS objectives through an iterative process informed by SEA recommendations. Recommendations were put forward requiring LFRMS Objective 1 to identify the reason for requiring a better understanding of local flood risk. Recommendations were also put forward to clarify the flood risk management and protection and enhancing the environment functions of Strategy Objective 7. It was also identified that Strategy Objectives 2 and 3 had the potential for uncertain outcomes against the SEA objectives, however when considered in parallel with a strengthened Strategy Objective 7 these potential conflicts are minimised to satisfactory levels.

Following discussions with SMBC, the SEA recommendations were taken on board and the final draft LFRMS objectives are those listed below:

> Objective 1: To better understand local flood risk and make best use of available information in order to better manage flood risk to people, businesses, property, infrastructure and the natural environment
>
> Objective 2: To reduce the potential impact and costs of flooding in the Borough

Objective 3: To ensure resilience of the local water bodies and drainage assets

Objective 4: To ensure appropriate development in areas of flood risk

Objective 5: To develop a collaborative partnership approach to flood risk management, and cooperate with other Risk Management Authorities and key stakeholders working across catchments

Objective 6: To assist communities in understanding information on flood risk and supporting themselves

Objective 7: To encourage, support and provide flood risk management which seeks to enhance and protect the environment

LFRMS Options

For each LFRMS objective, a series of alternative flood risk management measures were originally developed by SMBC. These were based on the scenarios of 'do nothing' and 'do more'. Different degrees of compatibility with the SEA objectives have been identified for the alternative measures. Recommendations (as set below) were made in terms of additional measures to improve the compatibility with the SEA objectives:

- **LFRMS Strategy Objective 1**
  - Creation of an additional measure to create a priority list of flood mitigation interventions.
  - Amendment of Measure 1c to include existing maintenance activities (by riparian land owners) and key flood drainage structures.

- **LFRMS Strategy Objective 2**
  - In order to clarify that only environmentally sustainable flood risk management schemes and activities will be put forward, rewording of Measure 1a to read "To progress the actions of the SWMP and, where suitable, identify *environmentally sustainable* flood risk management schemes and seek funding for them"
  - Rewording of Measure 2b 'To work with partners to encourage *environmentally sustainable* flood management activities by riparian landowners on …". Rewording of Measure 2b to include drainage and maintenance, as well as the noted flood defence structures.
  - Creation of a measure which would ensure the undertaking of proactive assessment of opportunities for de-culverting and addressing other constrictions in ordinary water courses.

- **LFRMS Strategy Objective 3**
  - Creation of a measure addressing the need to inspect and review drainage assets after flooding.
  - Creation of a measure which will require examination of existing infrastructure to improve its environmental performance if/when it is being maintained/upgraded to improve resilience. Measures 3a and 3b should be reworded slightly to include for inspection and debris clean up in Recovery Plans.

- **LFRMS Strategy Objective 4**
  - Strengthening of Measure 4b by inclusion of the consideration to promote opportunities for funding contributions that would increase the ability for implementation of flood risk schemes, Section106 and local levies should be considered.
  - Creation of a measure recognising the wider environmental benefits that SUDS can bring. This should include natural opportunities to control run off such as green roofs and green walls.
  - Creation of a measure to seek to influence the planning process through proactive pre-application discussions, seeking to ensure that developers avoid the flood plain

except in exceptional circumstances, with appropriate design including 'offset' of lost floodplain.

- **LFRMS Strategy Objective 5 –**
  - Whilst it is recognised that Objective 6 is aimed at community engagement, the wording of these objectives could be strengthened by inclusion of wording to specifically require the need to proactively engage with and inform local communities/populations – in particular in areas of high flood risk. This would have a positive direct impact on flood risk management.
  - Creation of a measure to promote / make links to health partners to ensure that response and recovery plans and actions take account of the potential effects on mental health.

- **LFRMS Strategy Objective 6**
  - Creation of a measure to include seeking to work with small and medium sized enterprises to help improve their resilience to flood risk.
  - Creation of a measure to focus on identifying vulnerable groups and developing communications and action plans to engage these groups would have a particular positive effect in terms of reducing potential inequalities between social groups.

- **LFRMS Strategy Objective 7**

  - Measure 7a should be moved to Strategy objective 3 as it describes measures which improve the resilience of drainage assets.
  - Measure 7a should be replaced by a Measure which promotes flood risk management solutions which work with the natural and cultural environment and avoid or minimise impacts.
  - Measure 7c should be moved to Strategy Objective 5 as it relates to collaborative working. Recommended rewording as follows "To promote early engagement with partners so opportunities for enhancing the natural and built environment as well as managing flood risk can be maximised."
  - Creation of a measure to ensure that Emergency Planning for flooding includes consideration of environmental issues. This will ensure that these issues do need to be considered during the emergency period.
  - Creation of a measure to ensure a catchment-based approach to flood risk management.
  - Creation of a measure to ensure that international, national and locally designated sites are not adversely affected by flood risk management activities.
  - Creation of a measure promoting the creation of blue/green infrastructure as part of flood risk management interventions recognising the multiple benefits developing green infrastructure delivers, such as flood risk management, urban cooling and enhancement of biodiversity.
  - Creation of a measure to ensure that Cultural Heritage is protected or enhanced when feasible. Equal consideration should also be given to the need to protect and enhance the landscape / townscape of the Borough.
  - Creation of a measure requiring the avoidance of permanent (irreversible) loss of the most highly productive agricultural soils.
  - Creation of a measure seeking to reduce the consumption of natural resources during construction of any flood scheme through encouraging the use of recycled or secondary materials and reducing energy consumption.
  - Creation of a measure relating to WFD to ensure there is no deterioration in water body status through flood risk activities by ensuring that WFD assessments are undertaken where required for all local flood risk management schemes, and where possible look to enhance status through implementation of the recommendations of the River Basin Management Plans.

Many of these recommendations were taken on board by SMBC in determining the Draft Preferred Strategy.

Assessment of Draft Preferred Strategy

SMBC developed a Draft LFRMS (February 2016) which included a number of measures and actions to achieve the LFRMS Objectives which were the subject of a more detailed assessment. A list of the measures and actions assessed and a summary of the results of the assessment are set out below.

Measures and Actions Proposed in Draft LFRMS (February 2016)

Measures	Actions
Objective 1 - To better understand local flood risk and make best use of available information in order to better manage flood risk to people, businesses, property, infrastructure and the natural environment	
Measure 1a) - To further develop the Surface Water Management Plan for Stockport to gain a better understanding of key flooding hotspots, risks and associated consequences. Measure 1b) - To work with RMAs and other key stakeholders to investigate locally significant flooding incidents and identify sources, pathways and receptors of flooding. Measure 1c) - To further develop and continue to maintain a register of flood risk management and drainage assets with a record of any significant structures with respect to flood risk, together with details of ownership, condition, maintenance regime and where appropriate the designation of such structures or features, which may affect flood risk. Measure 1d) - To map historical flooding incidences from all sources to identify recurrent flooding issues and hotspots which will assist in the prioritisation of flood mitigation. Measure 1e) - To provide a web based system of flood risk information accessible by risk management authorities and other key stakeholders. Measure 1f) - To review the Preliminary Flood Risk Assessment as required by the EU Floods Directive and Flood Risk Regulations 2009 and contribute to the other requirements. Measure 1g) - To use the better understanding of local flood risk to create a priority list of flood mitigation interventions	• To map historical flooding incidences from all sources to identify recurrent flooding issues and cluster areas which will assist in the prioritisation of flood mitigation intervention. • To provide a web based system of flood risk information to be accessed by key stakeholders and others, e.g. developers. • Record local flooding incidents appropriately and use this information to manage risk. • Review of the Preliminary Flood Risk Assessment for Stockport • Undertake surveys and hydraulic modelling from waterways and sewers in Romiley West. • Undertake surveys and hydraulic modelling from unknown waterways in Romiley East. • Undertake surveys and hydraulic modelling from uncharted culverts in Bramhall. • Undertake an investigation of flooding from the drainage network in Cheadle Hulme.
Objective 2 - To reduce the potential impact and costs of flooding in the Borough	
Measure 2a) - To progress the actions of the SWMP and, where suitable, sustainable flood risk management schemes are identified and funding sought. Measure 2b) - To work with RMAs and key stakeholders to encourage sustainable flood management activities (including drainage and maintenance) by riparian landowners on ordinary watercourses and flood defence structures, as well as limiting the development of constrictions on ordinary watercourses through consenting and, if necessary, enforcement. Measure 2c) - To develop a risk based criteria to prioritise projects across Stockport to inform future grant applications to ensure flood risk management funding is directed to areas most at need and where solutions are more effective and prioritised alongside other needs. Measure 2d) - To improve the detection, forecasting and issue of flood warnings; planning for and co-ordinating a rapid response to flood emergencies, and promoting faster recovery from flooding. Measure 2e) - To identify opportunities for natural flood management and the restoration of ordinary watercourses, including de-culverting.	• Develop a prioritised list of potential local flood risk management capital schemes to be taken forward for detailed analysis and development of options to reduce flood risk and develop business cases for potential capital schemes. • Consent works on ordinary watercourses and undertake enforcement to remove unapproved constrictions on ordinary watercourses. • Dingle Hollow Detention Basin. • Implement Stage 2 of Cheadle Hot Spot Study. • Rehabilitation of Bramhall Minor Culverts. • Rehabilitation of Barlow Fold road culvert.

Objective 3 - To ensure resilience of local water bodies and drainage assets	
Measure 3a) - To promote environmentally sustainable solutions including for example de-culverting, natural flood risk management, blue/green infrastructure, increased tree cover and catchment sensitive farming. Measure 3b) - To develop a maintenance plan for the regular clearing of trash screens at critical flood risk locations including their inspection and clearing as part of a post-event Recovery Plan. Measure 3c) - To develop a maintenance plan for the regular de-silting and de-vegetation of ordinary watercourses at critical flood risk locations, including their inspection and clearing as part of a post-event Recovery Plan. Measure 3d) - To develop a maintenance plan for the regular clearing of highway gullies based on a prioritised risk based approach. Measure 3e) - To develop a plan for improving existing local flood risk infrastructure so it is resilient to climate change. Measure 3f) - To undertake review of flood risk and drainage assets and their maintenance plans following a flood event to ensure resilience. Measure 3g) - To identify and manage a resilient network of highways during a flood event.	• To develop a record of local water body and drainage asset, together with details of ownership, state of repair, and where appropriate, the designation of such structures or features which may affect flood risk. Develop a procedure for the periodic review and update of the asset register. • To develop a maintenance plan for the regular cleansing of trash screens at critical flood risk locations. • To develop a maintenance plan for the regular de-silting and de-vegetation of ordinary watercourses at critical flood risk locations. • To develop a maintenance plan for the regular cleansing of highway gullies based on a prioritised risk based approach. • To develop a plan with priority locations for improving existing flood risk infrastructure, including ongoing maintenance and condition monitoring. • To identify key highways requiring protection during flood events.
Objective 4 - To ensure appropriate development in areas of flood risk	
Measure 4a) - To work with RMAs and key stakeholders to produce local policies and guidance; and enforce standards to promote a positive impact on flood risk from new development, and to prevent any increase in flood risk, including the possible impacts of climate change. Measure 4b) - To maximise opportunities for contribution towards existing and proposed flood risk management from new development to address local flood risk. Measure 4c) - To work with relevant RMAs and key stakeholders to promote SuDS measures for new developments through the LLFA role as a statutory consultee on major planning applications. Measures 4d) - To identify exemplar projects to introduce innovative SuDS approaches through the use of green infrastructure.	• Establish an approach through the S106 process to ensure the adoption and continued maintenance of SuDS as part of the planning process for new developments to manage flood risk now and in the future. • Respond to strategic planning consultations including Local Plans and planning policy documents. • To engage where possible with developers at the earliest possible point in the planning process for major developments and seek to influence the planning process through proactive pre-application discussions.
Objective 5 - To develop a collaborative partnership approach to flood risk management, and cooperate with other Risk Management Authorities and key stakeholders working across catchments	
Measure 5a) - To clarify local roles and responsibilities of Risk Management Authorities in Stockport and adjoining authorities and establish lines of communication to share information and resources and work collaboratively in a coordinated manner for flood risk management. Measure 5b) - To work with RMAs and key stakeholders to encourage flood schemes by third parties, riparian landowners and stakeholders. Measure 5c) - To lead on the implementation of local flood risk management schemes and to work with RMAs and key stakeholders to best utilise funding obtained through a prioritised	• Identify partnership arrangements, setting out roles and responsibilities, protocols for communicating and working together and with other key stakeholders. • Establish responsibility for the management of flood risk from watercourses of unknown status. • Participate in national and regional LLFA best practice sharing groups. • To confirm responsibility for management of flood risk from dam

risk-based approach. Measure 5d) - To work with neighbouring Lead Local Flood Authorities to ensure a catchment-based approach to local flood risk management. Measure 5e) - To work with key RMAs for managing flood risk from dam and canal infrastructure. Measure 5f) - To promote early engagement early engagement with partners so opportunities for enhancing the natural and built environment as well as managing flood risk can be maximised. Measure 5g) - To work with Association for Greater Manchester Authorities to share best practice, to identify funding opportunities and identify cross borough schemes for managing flood risk on a catchment scale. Measure 5h) – To work with health partners to identify funding opportunities and quantify health and wellbeing benefits as part of the prioritisation of flood risk management schemes.	and canal infrastructure, establish and agreeing roles and responsibilities. Engage with neighbouring LLFAs who share canals. • Identify particularly vulnerable groups through meetings with health partners.
Objective 6 - To assist communities in understanding information on flood risk and supporting themselves	
Measure 6a) - To provide educational material to the public and promote personal resilience. Measure 6b) - To work with RMAs and key stakeholders to reduce the harmful consequences of local flooding to communities, including vulnerable groups, and human health through pro-active actions; community activities and education programmes that enhance preparedness and resilience to local flood risk, thereby promoting community cohesion and minimising community disruption. Measure 6c) - To support local groups and vulnerable people to manage local flood risk and increase the resilience of their communities to flooding. Measure 6d) - To continue to work with RMAs and key stakeholders to improve communications and advice given before and during flooding events. Measure 6e) - To work with RMAs and key stakeholders to establish a co-ordinated approach to the provision of temporary flood risk management measures.	• Update website and produce leaflets for householders and businesses on preparing for floods with clear guidance on who to contact during a flood event. • Promote the formation of new flood action groups
Objective 7 - To encourage, support and provide flood risk management which seeks to enhance and protect the environment	
Measure 7a) - To promote environmentally sustainable flood risk management solutions which work with the natural and built environment, using a catchment based approach where applicable, and providing multiple benefits where possible. Measure 7b) - To ensure that Emergency Planning for flooding includes consideration of, and avoids damage or deterioration to, the natural and built environment, including landscape and townscape character and the historic environment. Measure 7c) - To promote the conservation, management and creation of green infrastructure as part of sustainable flood risk management solutions, recognising the multiple benefits green infrastructure delivers, such as flood risk management, urban cooling, climate change resilience and enhancement of biodiversity. This should include promotion in the built environment of retrofitting SUDS, green roofs and building integrated vegetation to manage run-off water. Measure 7d) - To promote flood risk management solutions that protect and enhance the landscape and built environment character of the Borough, including the historic environment and heritage assets. Measure 7e) - To aim to ensure no net loss of biodiversity and where possible net gain through habitat creation and	• Work with Healthy Waterways Trust to collaborate on ideas, Communications and projects to assist in the cleaning up of our watercourses, e.g. Micker Brook and Chorlton Brook. • Explore the potential for use of environmentally sustainable solutions in all Stockport led flood risk management schemes.

enhancement as a result of flood management solutions, contributing to the Borough's natural environment and biodiversity. Measure 7f) - To ensure that international, national and locally designated sites are not adversely affected by flood risk management activities. Measure 7g) - To protect soil resources and avoid permanent (irreversible) loss of the best quality and most versatile agricultural land as a result of flood risk management solutions. Measure 7h) - To seek to reduce energy consumption and minimise use of natural resources in the implementation of flood management schemes, through encouraging the re-use of materials, use of secondary materials and maximising recycling. Measure 7i) - To ensure that WFD assessments are undertaken where required for flood risk management schemes; with no deterioration in WFD waterbody status as a result of flood risk management activities and where possible enhancement of status through implementation of the recommendations of River Basin Management Plans.	

Summary of Assessment of Measures and Actions Proposed in Draft LFRMs (February 2016)

The summary results in the table below indicate that the February 2016 Draft LFRMS proposals are likely to result in positive or neutral environmental effects. This is because when Strategy Objectives 1 to 6, and their measures, are considered in parallel with Strategy Objective 7, which is aimed at protecting and enhancing the environment, this is likely to ensure that any potential conflicts will be minimised to satisfactory levels.

Significant positive effects (shaded in green) are predicted with regards to the promotion of physical and mental health (SEA Objective 3), taking account of changing climate and reducing consequential risk of flooding (SEA Objective 6) and educating and encouraging the population of Stockport to take action to manage the flood risks they face (SEA Objective 7). There are also significant positive effects in relation to protecting and enhancing biodiversity and blue/green infrastructure (SEA Objective 1), protecting and enhancing the water environment (SEA Objective 5), conserving soils and agricultural resources (SEA Objective 4), promoting prudent use of natural resources (SEA Objective 10), maintaining and enhancing Stockport's landscape, townscapes and historic and cultural heritage (SEA Objectives 11 and 12).

These significant effects arise out of the measures and actions proposed under all LFRMS Objectives, with greater significant positive effects arising from Strategy Objectives 7 and 3, 4 and 5, and they are likely to ensure that:

- the level of information on local flood risk issues is improved;
- knowledge of local flood risk is improved and the results of the flood risk investigations shared with partners and collaboration is achieved;
- public participation in flood risk management is actively encouraged;
- information is shared and discussed with property owners with regards to flood resilience measures;
- critical areas requiring more urgent prioritization would be allocated funding;
- local policies, guidance and standards are produced to prevent flood risk arising from new development, which will strengthen the basis for rejection of planning applications that could have adverse impact on flood risk;
- the physical and mental health of communities is improved through improved knowledge, participation and action, and from the implementation of flood management interventions and improved maintenance regimes, thus reducing the risk of flooding;
- opportunities for funding contributions are identified and the ability for implementation of flood risk interventions is increased;
- SUDS and blue/green infrastructure are promoted and these schemes are potentially implemented;
- landscapes, townscapes and heritage are not adversely affected and may be enhanced through additional protection and the introduction of further blue/green infrastructure;
- enhancements to biodiversity and landscape through the promotion of more environmentally sustainable schemes that work with nature; and
- soils and water quality will be protected.

No significant adverse effects were predicted on any of the SEA objectives. Measures associated with Strategy Objective 2 could on its own result in proposals such as for funding to be sought for flood risk management schemes and the encouragement of flood management activities by riparian landowners potentially having adverse effects on some SEA objectives, such as biodiversity (SEA objective 1), soils (SEA objective 4), water (SEA objective 5) and landscape, townscape and heritage assets (SEA Objectives 11 and 12). However, when considered in parallel with Strategy Objective 7 there is likely to be a slight improvement on the wider environmental objectives on the assumption that understanding and protecting the existing environment will allow appropriate management to avoid adverse impacts on these features.

A number of measures within Strategy Objective 3, relating to developing maintenance plans such as clearing of trash screens (Measure 3b), improving existing local flood risk infrastructure (Measure 3e) and plans following review of assets post-flood events (Measure 3f) would potentially result in uncertain effects on a number of SEA objectives, including biodiversity (SEA objective 1), soils (SEA objective 4), water (SEA objective 5) and landscape, townscape and heritage assets (SEA Objectives 11 and 12). However, as above, when considered in parallel with Strategy Objective 7 there is likely to be a neutral or slight improvement on the wider environmental objectives as consideration of these features will allow them to be planned for in any proposals for maintenance.

Measures 7a-7i would deliver significant positive effects to many of the SEA objectives, and counteract the potential for negative effects identified for Strategy Objective 2.

The following recommendations were made to SMBC in order to improve the environmental performance of the LFRMS. SMBC's response to the recommendations are also provided.

1- It is not clear that the information collected and reviewed in relation to Strategy Objective 1 will result in a priority list of flood risk management interventions, including all actions related to flood risk management not just the large projects. It has been recommended that an additional measure is included. This recommendation has been taken on board and the following measure has been included in Strategy Objective 1:

Measure 1g: "To use the better understanding of local flood risk to create a priority list of flood mitigation interventions"

2- In order to clarify that only sustainable flood risk management schemes and activities will be put forward, we recommend that the wording to Measures 2a and 2b are amended. Furthermore, it is proposed that the wording of Measure 2b is amended to include drainage and maintenance, as well as noted flood defence structures. SMBC has taken these recommendations on board, and the following measures have been amended as follows:

Measure 2a) – "To progress the actions of the SWMP and, where suitable, sustainable flood risk management schemes are identified and funding sought."

Measure 2b) - To work with RMAs and key stakeholders to encourage sustainable flood management activities (including drainage and maintenance) by riparian landowners on ordinary watercourses and flood defence structures, as well as limiting the development of constrictions on ordinary watercourses through consenting and, if necessary, enforcement."

3- In order to strengthen ongoing maintenance plans, reference should also be made to the need to inspect and review drainage assets following a flood event. SMBC has taken these recommendations on board, and the following measures have been amended as follows:

Measure 3b) – "To develop a maintenance plan for the regular clearing of trash screens at critical flood risk locations including their inspection and clearing as part of a post-event Recovery Plan."

Measure 3c) – "To develop a maintenance plan for the regular de-silting and de-vegetation of ordinary watercourses at critical flood risk locations, including their inspection and clearing as part of a post-event Recovery Plan."

4- In order to strengthen measures related to Strategy Objective 6, consideration should be given to identifying vulnerable groups and developing communications and action plans to engage these groups in order to have a positive effect in terms of reducing potential inequalities between social groups. SMBC has taken these recommendations on board, and the Measures 6b and 6c have been amended as follows:

Measure 6b) – "To work with RMAs and key stakeholders to reduce the harmful consequences of local flooding to communities, including vulnerable groups, and human health through pro-active actions; community activities and education programmes that enhance preparedness and resilience to local flood risk, thereby promoting community cohesion and minimising community disruption."

Measure 6c) – "To support local groups and vulnerable people to manage local flood risk and increase the resilience of their communities to flooding."

5- There are no recommendations for additional measures under LFRMS Strategy Objectives 1, 4, 5 and 7 as these result in positive or neutral environmental effects.

6- In order to strengthen the actions proposed in the Draft LFRMS, a number of additional actions were also proposed. These recommendations were taken on board by SMBC and the following actions included in the Draft LFRMS:

Strategy Objective 1 actions:

Record local flooding incidents appropriately and use this information to manage risk.

Review of the Preliminary Flood Risk Assessment for Stockport.

The final action has not been included as this approach has been ongoing for almost 4 years. And is therefore already in place.

Strategy Objective 2 actions:

Develop a prioritised list of potential local flood risk management capital schemes to be taken forward for detailed analysis and development of options to reduce flood risk and develop business cases for potential capital schemes.

Consent works on ordinary watercourses and undertake enforcement to remove unapproved constrictions on ordinary watercourses.

Strategy Objective 3 actions:

To develop a record of local water body and drainage asset, together with details of ownership, state of repair, and where appropriate, the designation of such structures or features which may affect flood risk. Develop a procedure for the periodic review and update of the asset register.

To develop a plan with priority locations for improving existing flood risk infrastructure, including ongoing maintenance and condition monitoring.

To identify key highways requiring protection during flood events.

Strategy Objective 4 objectives:

Respond to strategic planning consultations including Local Plans and planning policy documents.

To engage where possible with developers at the earliest possible point in the planning process for major developments and seek to influence the planning process through proactive pre-application discussions.

Strategy Objective 5 actions:

Identify partnership arrangements, setting out roles and responsibilities, protocols for communicating and working together and with other key stakeholders.

Participate in national and regional LLFA best practice sharing groups.

To confirm responsibility for management of flood risk from dam and canal infrastructure, establish and agreeing roles and responsibilities. Engage with neighbouring LLFAs who share canals.

Identify particularly vulnerable groups through meetings with health partners.

Strategy Objective 6 action:

Promote the formation of new flood action groups.

7- No recommendations for actions were considered necessary for Strategy Objective 7.

The above recommendations were taken on board fully, and have been included in the Draft LFRMS and in the assessment set out in the table below.

Measures	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12
Measure 1a)	+	+	+	+	+	++	+	n/a	0	+	+	+
Measure 1b)	+	+	+	+	+	++	++	n/a	0	+	+	+
Measure 1c)	+	+	+	+	+	++	++	n/a	0	+	+	+
Measure 1d)	0	0	0	0	0	++	+	n/a	0	0	0	0
Measure 1e)	+	+	+	+	+	++	++	n/a	+	0	+	+
Measure 1f)	0	0	+	0	0	++	+	n/a	0	0	0	0
Measure 1g)	0	0	++	0	0	++	+	n/a	0	0	0	0
Measure 2a)	+	+	++	+	+	++	+	+	+	+	+	+
Measure 2b)	+	+	+	+	+	++	++	+	?	?	+	+
Measure 2c)	+	+	+	+	+	+++	++	+	+	+	+	+
Measure 2d)	n/a	n/a	++	n/a	n/a	-	+	n/a	n/a	n/a	n/a	n/a
Measure 2e)	++	+	++	+	++	+++	+	+	+	++	+	+
Measure 3a)	+++	+	+++	+	++	++	+	+	+	++	+	+
Measure 3b)	?	0	++	0	+	+	+	n/a	0	+	+	+
Measure 3c)	+	+	++	-	+/-	+	+	n/a	-	0	-	-
Measure 3d)	+	+	+	+	+	+	+	n/a	n/a	+	n/a	n/a
Measure 3e)	+	+	+++	+	+	+++	+	+	+	+	+	+
Measure 3f)	?	?	++	?	?	+	?	?	n/a	?	?	?
Measure 3g)	n/a	n/a	++	n/a	n/a	++	n/a	n/a	n/a	n/a	n/a	n/a
Measure 4a)	+	0	++	0	0	+++	++	0	0	+	0	+
Measure 4b)	+	0	++	0	0	+++	+	0	0	0	0	+
Measure 4c)	++	+	++	+	++	+++	++	+	+	++	+	++
Measures 4d)	+++	0	++	0	+	++	++	0	0	0	0	++
Measure 5a)	n/a	n/a	+	n/a	n/a	+	++	n/a	n/a	n/a	n/a	n/a
Measure 5b)	+	+	++	+	+	++	+++	+	+	+	+	+
Measure 5c)	+	+	+++	+	+	+++	++	+	+	+	+	+
Measure 5d)	++	++	++	++	++	++	+	+	+	++	+	+
Measure 5e)	+	0	++	0	+	+	+	n/a	n/a	+	+	+
Measure 5f)	++	+	++	+	++	++	+	+	+	++	++	++
Measure 5g)	++	+	++	+	++	++	+	+	+	+	+	+
Measure 5h	+	n/a	+++	+	+	++	++	n/a	+	+	+	+
Measure 6a)	n/a	n/a	++	n/a	n/a	+	++	n/a	n/a	n/a	n/a	n/a
Measure 6b)	n/a	n/a	+++	n/a	n/a	+	+++	n/a	n/a	n/a	n/a	n/a
Measure 6c)	+	+	+++	+	+	+	+++	+	+	+	+	+
Measure 6d)	n/a	n/a	++	n/a	n/a	n/a	+	n/a	n/a	n/a	n/a	n/a
Measure 6e)	+	0	++	+	+	+	+	0	0	+	+	+
Measure 7a)	+++	+	+++	+	++	++	+	+	+	++	+	+
Measure 7b	++	++	+	++	++	0	0	+	+	+	++	++
Measure 7c)	+++	+	+++	+	++	++	+	+	+	++	+	+

Measures	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12
Measure 7d)	++	n/a	++	+	n/a	n/a	n/a	n/a	+	+	+++	+++
Measure 7e)	+++	++	++	+	+	n/a	n/a	n/a	+	++	n/a	+
Measure 7f)	+++	+++	++	+	+	n/a	n/a	n/a	+	+	n/a	+
Measure 7g)	+	+	++	+++	+	n/a	n/a	n/a	n/a	+	n/a	+
Measure 7h	+	+	+	+	+	n/a	n/a	+	+	+++	n/a	+
Measure 7i	+	+	+	n/a	+++	n/a	n/a	n/a	n/a	+	n/a	n/a

Conclusions

Following the assessment of the February 2016 Draft LFRMS, a number of recommendations were made as set out above, and these have been taken into account by SMBC in the preparation of the Draft LFRMS that is being consulted upon.

As a result, it is considered that the measures in the Draft LFRMS taken together will result in the sustainable reduction in local flood risk over the strategy period and are generally considered to offer positive effects overall (some potentially significant) against the SEA Objectives, in particular improving physical and mental health, minimising the risk of and from flooding, biodiversity gain, blue/green infrastructure, protecting soil, protecting landscape and townscape, as well as cultural heritage, and improving water quantity, quality and flow.

1. Introduction

1.1. Introduction

1.1.1. An environmental assessment of the Stockport Metropolitan Borough Council (SMBC) Local Flood Risk Management Strategy (LFRMS) is required under European Directive 2001/42/EC 'on the assessment of certain plans and programmes on the environment' (the SEA Directive). In addition, under the Habitats Regulations 2010, it is necessary to assess whether the LFRMS is likely to have a significant effect upon European Sites.

1.1.2. SMBC is working in partnership with local authorities and key stakeholders to produce a LFRMS to set out how local flood risk will be managed in the Stockport Metropolitan area. The LFRMS is a statutory requirement under Section 9 of the Flood and Water Management Act 2010 ('the Act').

1.1.3. Atkins Ltd. was commissioned in November 2015 by SMBC to undertake a Strategic Environmental Assessment (SEA) of the LFRMS. The SEA is informed by the Habitats Regulations Assessment (HRA) also being undertaken by Atkins Ltd.

1.1.4. This document is the Environmental Report (ER) for the SMBC LFRMS. The purpose of this ER is to outline how the statutory requirements for SEA have informed the development of the LFRMS. It records all the environmental assessment work undertaken predicting and evaluating the effects of strategic options and preferred strategy.

1.2. Local Flood Risk Management Strategy

1.2.1. Following serious flooding across England in 2007, the government commissioned Sir Michael Pitt to review the lessons learned. The final Pitt Review was published in 2008, with a series of recommendations for local government and government agencies, some of which were taken forward in the Flood and Water Management Act 2010 ('the Act'). Flood risk in England is expected to increase due to climate change and development in areas at risk. 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, the environment and infrastructure.

1.2.2. The Act gave local authorities a new role to manage local flood risk in their area. The Act established Stockport Council as a Lead Local Flood Authority (LLFA) with the requirement to produce a LFRMS. This LFRMS should be consistent with the National Flood and Coastal Erosion Risk Management Strategy, produced by the Environment Agency in September 2011.

1.2.3. The Act requires LFRMSs to specify:

- The roles and responsibilities of Risk Management Authorities (RMAs) within the authority's area (in Stockport these are the Environment Agency, the LLFA (SMBC), the Water Company (United Utilities) and the Highway Authority (SMBC and the Highways Agency);
- The assessment of local flood risk for the purpose of the LFRMS. The Act defines local flood risk as flood risk from surface water, groundwater and ordinary watercourses;
- The objectives for managing local flood risk and identify and describe the measures (actions) proposed to deliver the objectives;
- How and when the measures are expected to be implemented and, where relevant, the details of the costs and benefits related to any actions, and identify a means or process as to how these may be paid for;
- How the LFRMS will contribute to wider environmental objectives; and
- A review process and timetable for the LFRMS.

1.2.4. The LFRMS sets out a vision for the management of flood risk and, although the Act specifies some of the key elements that must be included in the LFRMS, it is intended that they will be locally specific, reflecting key local issues and enabling communities to be more involved in decision-making regarding flood risk management.

1.2.5. The LFRMS will form the framework within which communities have a greater role in local risk management decisions. The LFRMS is an important tool to help everyone understand and manage risk within Stockport and is therefore of relevance to everyone who lives in, works in, visits or travels through the area.

1.2.6. Its main aim is to reduce the risk of flooding and economic damage that flooding causes, in a sustainable manner. Also any flood management activities carried out will aim to enhance the built environment.

1.2.7. The LFRMS builds on existing and developing approaches to flood and coastal risk management and promotes the use of a wide range of measures to manage risk. Risk should be managed in a co-ordinated way within catchments and balance the needs of communities, the economy and the environment.

1.2.8. The LFRMS will ensure that emergency plans and responses to flood incidents are effective and that communities are able to respond effectively to flood forecasts, warnings and advice; help communities to recover more quickly and effectively after incidents.

1.3. Requirement for SEA

1.3.1. The EU Directive 2001/42/EC on assessment of effects of certain plans and programmes on the environment (the 'SEA Directive') came into force in the UK on 20 July 2004 through the Environmental Assessment of Plans and Programmes Regulations 2004. The Directive applies to a variety of plans and programmes including LFRMS.

1.3.2. The overarching objective of the SEA Directive is:

"To provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans…with a view to promoting sustainable development, by ensuring that, in accordance with this Directive, an environmental assessment is carried out of certain plans…which are likely to have significant effects on the environment." (Article 1)

1.3.3. The SEA Directive and the SEA Regulations state that the SEA should consider the following topic areas:

- Biodiversity;
- Population;
- Human health;
- Flora and fauna;
- Soil;
- Water;
- Air;
- Climatic factors;
- Material assets;
- Cultural heritage, including archaeological and built heritage;
- Landscape; and
- the Interrelationship between these factors.

1.4. The SEA Process

1.4.1. The SEA guidance recommends that SEA is undertaken in the following main stages:

- Stage A – Setting the context and objectives, establishing the baseline and deciding on scope;
- Stage B – Developing and refining options and assessing effects;
- Stage C – Preparing the Environmental Report;
- Stage D – Consultation on the preferred options of the draft plan and the Environmental Report; and
- Stage E – Monitoring implementation of the plan.

1.4.2. SEA is an iterative assessment process which plans and programmes are now required to undergo as they are being developed to ensure that potential significant environmental effects arising from the plan/programme are identified, assessed, mitigated and communicated to plan-makers. SEA also requires the monitoring of significant effects once the plan/programme is implemented. Through consultation and the involvement of stakeholders and specialist experts in the process, the resulting appraisal should be both robust and fully integrated.

1.4.3. The intention is that SEA is fully integrated into the strategy making process from the earliest stages, both informing and being informed by it. By identifying potential issues at an early stage it is then possible to amend the policies/plans to ensure that they are as sustainable as possible.

1.4.4. This ER will be published for information and consultation alongside the Draft LFRMS. A SEA Post Adoption Statement will then be published alongside the Final LFRMS, which will summarise how environmental issues were integrated into the LFRMS development process; the reasons for choosing the preferred options; the consultation results and the monitoring that is proposed.

1.4.5. Table 1.2 sets out the relationship between the LFRMS and SEA processes and the SEA tasks, which are being applied to the SEA of the LFRMS.

1.4.6. The current guidance also sets out a requirement for the preparation of the following reports:

- Scoping Report (summarising Stage A work) which should be used for consultation on the scope of the SEA;
- Draft Environmental Report (documenting Stages A , B and C) work which should be used in the public consultation on the Draft LFRMS; and
- Environmental Report (documenting Stages A, B, C and D work) which should accompany the LFRMS.

1.4.7. To date, Stages A - C of the process have been undertaken and this is fully documented under the Methodology in Chapter 3. This is the ER documenting the SEA work undertaken to inform the preparation of the Draft LFRMS.

Figure 1.2 - LFRMS and SEA Processes Stages and Links

LFRMS	Strategic Environmental Assessment	
	Stage	**Tasks**
Determining the scope of the LFRMS clarifying goals; specifying the problems or challenges the authority wants to solve	A. Setting the context and objectives, establishing the baseline and deciding on the scope	Identify related plans/programmes
		Identify environmental protection objectives
		Baseline data and likely future trends
		Identify sustainability issues
		Develop objectives, indicators and targets (Assessment Framework)
		Prepare SEA Scoping Report
		Consult on the scope of the SEA
Generating options to resolve these challenges; appraising the options and predicting their effects	B. Developing, refining and appraising strategic options	Assess LFRMS objectives against the Assessment Framework
		Develop, refine and appraise strategic options
		Evaluate/select preferred options.
Selecting preferred options for LFRMS and deciding priorities	B. Assessing the effects of the LFRMS Preferred Options	Predict and assess effects of options taken forward
		Propose mitigation measures
Production of the draft LFRMS		Propose monitoring programme
	C. Prepare Environmental Report	
Consultation on draft	D. Consultation on the Environmental Report	

LFRMS	Strategic Environmental Assessment	
	Stage	Tasks
LFRMS		
Production of final LFRMS	D. Take on board consultation comments	Assess significant changes
		Prepare supplementary or revised Environmental Report (if necessary)
Adoption of LFRMS	D. SEA Statement	

1.5. Purpose of the Environmental Report

1.5.1. The ER is a requirement under the European Directive, and reports on the appraisal process, presenting information on the effects of the planning document for public consultation.

1.5.2. The overarching purpose of an ER is to report on the SEA process so far, and how it has informed the development of the LFRMS. This report has been informed and refined by the consultation at the Scoping Stage A (see Appendix B). This ER provides information on:

- other relevant plans, programmes and sustainability objectives;
- baseline information;
- environmental issues;
- the framework for appraising likely significant environmental effects arising from the LFRMS;
- compatibility between the LFRMS objectives and the SEA Objectives;
- the development of the LFRMS options;
- the assessment of the preferred measures of the LFRMS; and
- the next stages of the SEA.

1.6. Consultation

1.6.1. The aim of the consultation on the ER is to involve and engage with statutory consultees and other key stakeholders on the results of the appraisal.

1.6.2. The requirements for consultation during a SEA are as follows.

- Authorities which, because of their environmental responsibilities, are likely to be concerned by the effects of implementing the plan or programme, must be consulted on the scope and level of detail of the information to be included in the Strategic Environmental Assessment. These are termed the statutory Consultation Bodies, and in England comprise the Environment Agency, Natural England and Historic England. It is considered good practice to also consult with other appropriate consultees who would have a significant influence upon, or would be influenced by the LFRMS.
- The public and Consultation Bodies must be consulted on LFRMS and the ER.

1.6.3. The following reports have been consulted upon as part of this SEA process:

- Strategic Environmental Assessment Scoping Report, 7th December 2105- 8th January 2016.

1.6.4. The statutory and non-statutory bodies and organisations that have responded to consultation to date (Scoping Report) are presented in Appendix C.

1.6.5. This ER, to be subject to consultation, is a statutory part of the SEA process, to be used to further enable the integration of environmentally sustainable principles into the plan making process.

1.7. Habitats Regulations Assessment

1.7.1. Alongside the SEA process it is also necessary to assess whether the LFRMS is likely to have a significant effect upon Natura 2000 sites, which comprise Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites and are designated as European sites for their ecological value.

1.7.2. An HRA is required by the Conservation of Habitats and Species 2010 (the Habitats Regulations), for all plans and projects which may have adverse effects on international sites (Natura 2000 sites). HRA is also required, as a matter of UK Government policy for potential SPAs (pSPA), candidate SACs (cSAC) and listed Wetlands of International Importance (Ramsar sites) for the purposes of considering plans and projects, which may affect them.

1.7.3. The international sites designated for nature conservation purposes and potentially relevant to the Stockport LFRMS HRA include:

- Peak District Dales SAC;
- South Pennines Moors SAC;
- Rixton Clay Pits SAC;
- Rochdale Canal SAC;
- Manchester Mosses SAC;
- Peak District Moors (South Pennines Moors Phase 1 and 2) SPA;
- Rostherne Mere Ramsar Site;
- Midland Meres and Mosses Phase 1 Ramsar Site;
- Mersey Estuary Ramsar Site; and
- Mersey Estuary SPA.

1.7.4. The results of the HRA indicate that following the screening of the LFRMS, no sites were scoped in as having the potential to lead to Likely Significant Effects to a European site. No in-combination effects were anticipated from the other plans and projects.

1.7.5. The findings of the HRA have been integrated into this SEA where appropriate.

2. Setting the scope of the SEA

2.1. Spatial Scope

2.1.1. Stockport is a town and a metropolitan borough of Greater Manchester. It is bounded by the City of Manchester to the north-west and Tameside metropolitan borough to the north-east, Cheshire to the south-west and Derbyshire to the south-east.

2.1.2. Stockport has a population of around 285,032 (2013), which is expected to increase 289,000 by 2037. There is a mix of urban density and open rural areas within the borough. The rural areas tend to be toward the eastern and southern areas of the Borough. Over 46% of the Borough area is designated as green belt.

2.1.3. There is a spatial variation across the borough in terms of population – the smallest ward population is about two thirds of the highest ward population. The vast majority of the population (over 90%) lives in areas classed urban, with the rural population predominantly located in the east of the Borough. It is anticipated that the number of households in the Stockport borough area will increase from 123,000 in 2012 to 143,000 by 2037, an increase of 14%.

2.1.4. The Stockport LFRMS applies to the administrative area of Stockport Metropolitan Borough Council as shown in Figure 2.1.

2.1.5. The nature and extent of flood risk management issues means that cross boundary liaison is essential, to ensure that neighbouring LFRMSs both shape and are shaped by the situation in Stockport. The counties and unitary authorities (LLFAs) neighbouring Stockport are:

- Manchester City Council
- Tameside Metropolitan Borough Council
- Cheshire East Council
- Derbyshire County Council

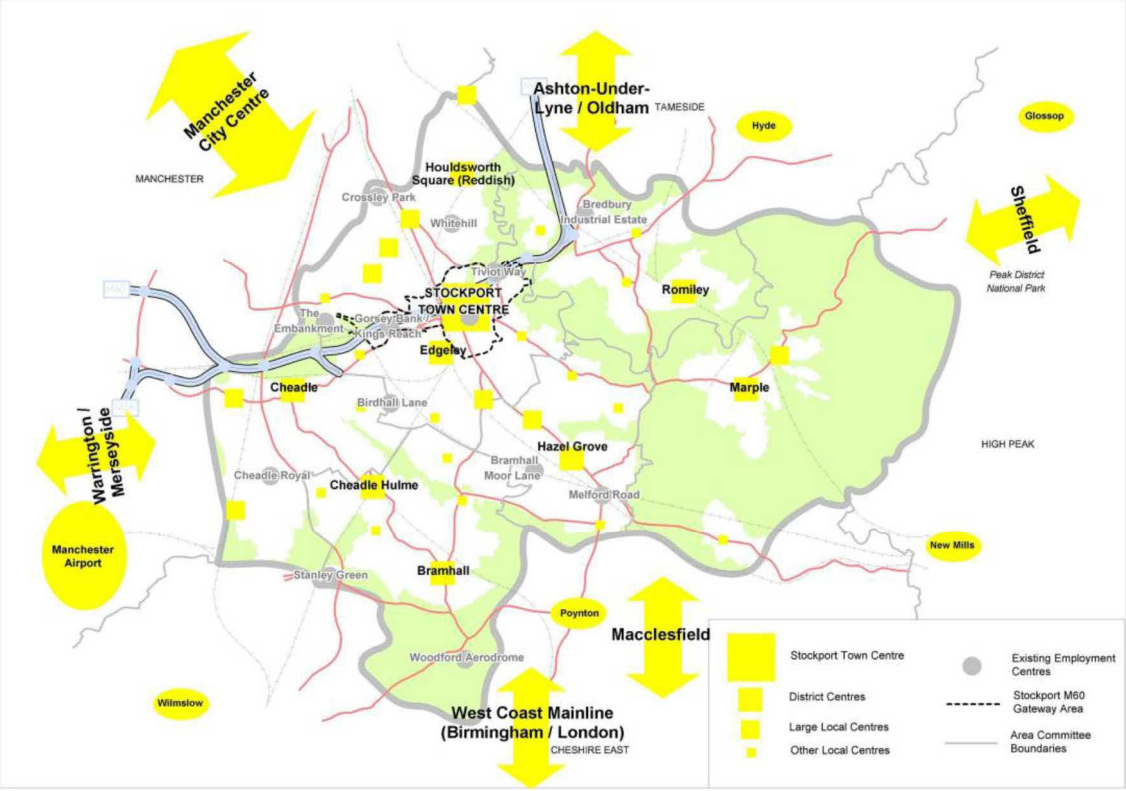


Figure 2.1 Stockport Metropolitan Borough Study Area (map extracted from Core Strategy 2011)

2.2. Temporal scope

2.2.1. The LFRMS will remain a live document. The initial Strategy will be subject to an early review after 3 years. This will be necessary as it is expected that many of the objectives relating to development of service delivery will be achieved in this time frame and the overall context for the Strategy will evolve as recent and proposed legislative changes in areas related to flood risk management, become more established.

2.2.2. Subsequently, it will be reviewed if one of the below triggers takes place:

- Significant flood events that alter our understanding of flood risk in Stockport;
- Significant policy changes that affect the role of Flood Risk Management Authorities; and
- Publication of significant new flood risk information and mapping.

2.3. Technical scope

2.3.1. Annex I(f) of the SEA Directive lists thirteen factors (and the inter-relationships between these) which must be taken as a starting point when scoping issues in and out of an SEA. These factors are:

- Biodiversity;
- Population;
- Human health;
- Flora and fauna;
- Soil;
- Water;
- Air;
- Climatic factors;
- Material assets;
- Cultural heritage, including archaeological and built heritage;
- Landscape; and
- the Interrelationship between these factors.

3. Methodology

3.1. Overview of Approach

3.1.1. SEA is a process that follows a number of sequential stages. This report has been structured to reflect the way in which work has been undertaken, presenting a logical progression through the various tasks that local authorities must complete in order to satisfy formal SEA requirements. This sequence of tasks is presented in Figure 1 in Chapter 1.

3.1.2. The work presented in this report represents the findings of Stage A and Stage B. This ER forms Stage C of the SEA process. Figure 1 can be used as a reference for the description of the subsequent stages (D and E) of the SEA process.

3.1.3. The approach used in the SEA of the SMBC is based on the process set out in national guidance, to meet the requirements of the SEA Regulations[1]. Current guidance sets out a requirement for the preparation of the ER (documenting work in Stages A and B) which should be used in the public consultation on the Draft LFRMS.

3.2. Stage A: Setting the Context and Objectives, Establishing the Baseline and Deciding on Scope

3.2.1. Scoping work was undertaken, consulted upon and revised in December 2015 and January 2016 to help ensure that the SEA covered the key environmental issues that are relevant to Stockport within the context of the LFRMS. Following consultation on the Scoping Report, the baseline, the Plans, Programmes and Policies (PPPs), key environmental issues and the SEA Framework were updated, in preparation for the assessment of the Draft LFRMS.

A1: Identifying other relevant policies, plans and programmes and SEA objectives

3.2.2. Both the LFRMS and the SEA should be set in the context of national, regional and local objectives along with strategic planning and environmental policies. This being the case, a comprehensive review of all relevant plans, policies and programmes (PPPs) was carried out as part of the SEA scoping process. This ensures that the objectives in the ER generally adhere to, and are not in conflict with, objectives found in other PPPs and also assists in the setting of objectives for the SEA. In addition to this, it can also be used to ascertain potential conflicts between objectives which may need to be addressed as part of the process.

3.2.3. The PPPs reviewed are outlined in Chapter 4 and further described in Appendix A.

A2: Collecting baseline information

3.2.4. To predict accurately how the LFRMS measures could affect environmental factors, it is first important to understand the current state of these factors and then examine their likely evolution without the implementation of the plan.

3.2.5. Baseline information is summarised in Chapter 5 and presented in Appendix B. The information has been extracted from a wide range of available publications and datasets. Sources have included, among others, national government and government agency websites. No primary research has been conducted.

A3: Identifying issues and opportunities

3.2.6. Analysis of key issues and opportunities relevant to the LFRMS was carried out. This work was based on the review of relevant PPPs and an analysis of the baseline data and is presented in Chapter 5.

[1] Environmental Assessment of Plans and Programmes Regulations July 2004, which transposed EU Directive 2001/42/EC on assessment of effects of certain plans and programmes on the environment (the 'SEA Directive') into UK law.

A4: Developing the SEA Framework

3.2.7. A framework of objectives and decision making questions, against which the measures in the LFRMS can be assessed, was drawn up. These were developed using an iterative process, based on the review of relevant PPPs, the evolving baseline and developing analysis of key sustainability issues. This is presented in Chapter 6.

A5: Consulting on the scope of SEA

3.2.8. At this stage the SMBC sought the views of the consultation bodies and others on the scope and level of detail of the ensuing SEA Report. A SEA Scoping Report was prepared to support the process. The consultation results have been taken into account in this report (see Appendix C).

3.3. Stage B: Developing and Defining Options

B1: Testing the plan objectives against the SEA objectives

3.3.1. A compatibility matrix was developed to identify to what extent the objectives of the LFRMS are compatible with the SEA Objectives as set out in the SEA framework. When testing compatibility, the following scale was used as shown in Table 3.1. The results are presented in Chapter 7.

Table 3.1 Key to Compatibility of Objectives

√	Broadly Compatible
X	Potential Conflict
?	Depending upon the nature of the implementation measure
NR	Not Relevant / No Relationship

B2: Developing the plan options

Assessment of Strategic Options

3.3.2. A high level assessment of options for the measures developed for the LFRMS was then conducted. The assessment used a broad-brush and qualitative approach, which is generally accepted as good practice by the SEA guidance for the earlier strategic stages of the appraisal.

3.3.3. Potential sustainability effects for each of the options were assessed in terms of progress towards achieving the relevant SEA objective using the scoring system presented in Table 3.2.

3.3.4. The high level assessment of the options allowed the most and least sustainable options to be identified, with the aim of, where necessary, amending them in order to promote their likely sustainable effects and reduce their likely unsustainable effects. This assessment also informed the selection of options to be taken forward as preferred options within the LFRMS. The results of the assessment are presented in Chapter 8.

Table 3.2 Scoring of Options Assessment

☹	conflict with SEA objectives - Measure is likely to have a negative effect on the SEA objective
😐	may / may not be compatible with SEA objectives - Measure may have a positive or negative effect on the SEA objective depending on implementation
☺	compatible with SEA objectives - Measure is likely to have a positive effect on the SEA objective
n/a	not applicable or not relevant to the SEA objective
neutral	no effect

B3 & B4: Predicting & Evaluating the effects of the Preferred Strategy

3.3.5. This assessment stage forms the statutory assessment of the preferred LFRMS. The assessment of the preferred strategy has been broken down into 'assessment' of effects and 'mitigation' of effects.

3.3.6. The prediction of effects was undertaken for each measure being implemented through the LFRMS against the SEA Framework.

3.3.7. The next stage of the assessment involved the evaluation of the significant effects. The evaluation involved forming a judgement on whether or not the predicted effects will be environmentally significant. The technique that has primarily been used to assess the significance of effects in this assessment is qualitative and largely based on expert judgement. Other techniques included consultation with stakeholders involved in the SEA process, geographical information systems (GIS) and reference to key legislation, primarily the Strategic Environmental Assessment of Plans and Programmes Regulations 2004.

3.3.8. As with the prediction of the effects, the criteria for assessing the significance of a specific effect used in this assessment, as outlined in Annex II of the SEA Directive, has been based on the following parameters to determine the significance:

- scale;
- permanence;
- nature and sensitivity;
- cumulative effects.

3.3.9. In general, this assessment has adopted the scale set in Table 3.3 to assess the effects (and their significance) of the LFRMS proposals.

Table 3.3 Scoring of Options Assessment

Assessment Scale	Assessment Category	Significance of Effect
+++	Large beneficial	Significant
++	Moderate beneficial	
+	Slight beneficial	Not Significant
0	Neutral or no obvious effect	
-	Slight adverse	
--	Moderate adverse	Significant
---	Strong adverse	
?	Effect uncertain/Requires further clarification	
n/a	Not relevant	

3.3.10. Moderately and strongly positive and negative effects have been considered of significance whereas neutral and slightly positive and negative effects have been considered non-significant; noting that there may be mixed beneficial and adverse effects.

3.3.11. Where significant negative effects have been identified recommendations in the form of mitigation measures have been made in order to reduce the significance of the effects. Further information is provided in Chapters 9, 10 and 11 on the methodology used to undertake this assessment. Essentially this involved using information obtained from the scoping stage alongside strategy proposals to predict and evaluate the nature of effects and identify potential improvements and mitigation solutions.

Secondary and Cumulative Effects Assessments

3.3.12. Annex I of the SEA Directive requires that the assessment of effects include secondary, cumulative and synergistic effects.

3.3.13. Secondary or indirect effects are effects that are not a direct result of the plan, but occur away from the original effect or as a result of the complex pathway e.g. a development that changes a water table and thus affects the ecology of a nearby wetland. These effects are not cumulative and have been identified and assessed primarily through the examination of the relationship between various objectives during the assessment of environmental effects.

3.3.14. Cumulative effects arise where several proposals individually may or may not have a significant effect, but in combination have a significant effect due to spatial crowding or temporal overlap between plans, proposals and actions and repeated removal or addition of resources due to proposals and actions. Cumulative effects can be:

- additive - the simple sum of all the effects;
- neutralising - where effects counteract each other to reduce the overall effect; and
- synergistic – is the effect of two or more effects acting together which is greater than the simple sum of the effects when acting alone (for instance, a wildlife habitat can become progressively fragmented with limited effects on a particular species until the last fragmentation makes the areas too small to support the species at all).

3.3.15. Many environmental problems result from cumulative effects. These effects are very hard to deal with on a project by project basis through Environmental Impact Assessment. It is at the strategic level that they are most effectively identified and addressed.

3.3.16. Cumulative effects assessment is a systematic procedure for identifying and evaluating the significance of effects from multiple activities. The analysis of the causes, pathways and consequences of these effects is an essential part of the process.

3.3.17. Cumulative (including additive, neutralising and synergistic) effects have been considered throughout the entire SEA process, as described below:

- As part of the review of relevant strategies, plans and programmes and the derivation of draft SEA Objectives, key receptors have been identified which may be subject to cumulative effects.
- In the process of collecting baseline information cumulative effects have been considered by identifying key receptors (e.g. specific wildlife habitats) and information on how these have changed with time, and how they are likely to change without the implementation of the LFRMS.
- Through the analysis of environmental issues and problems, receptors have been identified that are particularly sensitive, in decline or near to their threshold (where such information is available).
- The development of the SEA Objectives and decision-making Questions has been influenced by cumulative effects identified through the process above and the SEA Objectives that consider cumulative effects have been identified.
- The likely cumulative effects of the LFRMS policies have been identified.

3.3.18. The results are presented in Chapter 10.

B5: Consider ways of mitigating adverse effects and maximising beneficial effects

3.3.19. Mitigation measures have been identified during the evaluation process to reduce the scale/importance of significant negative effects.

B6: Proposing measures to monitor the significant effects of the plan's implementation

3.3.20. Monitoring involves measuring indicators which will enable the establishment of a causal link between the implementation of the plan and the likely significant effect (positive or negative) being monitored. It thus helps to ensure that any adverse effects which arise during implementation, whether or not they were foreseen, can be identified and that action can be taken by SMBC to deal with them (see Chapter 11).

3.4. Stage C: Preparing the Environmental Report

3.4.1. The ER is the outcome of Stage C in the SEA Process and informs the LFRMS Preferred Strategy consultation.

3.5. Stage D: Consulting on the Draft Plan and the Environmental Report

3.5.1. Stage D will be undertaken once the LFRMS Preferred Strategy and ER consultation has taken place.

Assessing significant changes and the SEA Statement

3.5.2. The results of the formal public consultation exercise on the Draft Strategy and ER to be undertaken by SMBC may well result in changes to the Draft Strategy, and these may have implications for the Environmental Report. In addition, the consultation exercise may result in direct changes to the contents of the Environmental Report, such as revisions to mitigation or monitoring measures.

3.5.3. The SEA Directive requires that information on the changes to the ER resulting from the formal consultation is recorded in the SEA statement of how the SEA findings have been taken into account in the final strategy, which should be made available to stakeholders.

Meeting the requirements of the SEA Directive

3.5.4. The SEA is primarily focused on environmental effects and the methodology addresses a number of topic areas namely Biodiversity, Population, Human Health, Flora and Flora, Soil, Water, Air, Climatic Factors, Material Assets, Cultural Heritage and Landscape and the interrelationship between these topics. Table 3.4 sets out where the specific SEA requirements have been met in this ER. Where they have not yet been completed, this is made clear.

Table 3.4 Schedule of SEA Requirements

Requirements of the Directive	Where Covered in Report
Preparation of an environmental report in which the likely significant effects on the environment of implementing the plan or programme, and reasonable alternatives taking into account the objectives and geographical scope of the plan or programme, are identified, described and evaluated. The information to be given is:	
a) An outline of the contents, main objectives of the plan or programme and relationship with other relevant plans and programmes	Chapters 1 and 4 and Appendix A
b) The relevant aspects of the current state of the environment and the likely evolution without implementation of the plan or programme	Chapter 5, Appendix B
c) The environmental characteristics of areas likely to be significantly affected	Chapter 5, Appendix B
d) Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directive 2009/147/EEC and 92/43/EEC	Chapter 5, Appendix B

Requirements of the Directive	Where Covered in Report
e) The environmental protection objectives established at international, community or national level which are relevant to the programme and the way those objectives and any environmental considerations have been taken into account during its preparation	Chapters 4 and 6
f) The likely significant effects on the environment, including: short, medium and long term; permanent and temporary; positive and negative; secondary, cumulative and synergistic effects on issues such as: biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors.	Chapters 8, 9 and 10
g) The measures envisaged to prevent, reduce and, as fully as possible, offset any significant adverse effects on the environment of implementing the plan or programme.	Chapters 10 and 11
h) An outline of the reasons for selecting the alternatives dealt with and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information	Chapters 3, 5 and 7
i) A description of measures envisaged concerning monitoring (in accordance with regulation 17)	Chapter 12
j) A non-technical summary of the information provided under the above headings	Non-Technical summary

4. Identifying Other Plans and Programmes and Environmental Objectives

4.1. Introduction

4.1.1. The first task of the SEA is the identification of other relevant plans, programmes and environmental objectives. A plan may be influenced in many ways by other plans and programmes and by external environmental objectives, such as those laid down in policies and legislation. This task is carried out in response to the requirements of the SEA Directive, which specifically states that the Environmental Report should provide information on:

"The plan's relationship with other relevant plans and programmes" and "the environmental protection objectives, established at international, [European] Community or national level, which are relevant to the plan... and the way those objectives and any environmental considerations have been taken into account during its preparation" (Annex 1 (a), (e))

4.1.2. This task helps establish a clear context for the SEA and is important because these programmes, plans and objectives may influence the preparation of the LFRMS. The constraints or challenges these other documents pose for the LFRMS will need to be considered and summarised by setting out how they may be incorporated into the SEA.

4.2. Methodology

4.2.1. A wide range of plans, programmes and policies (PPPs) relevant to the study area were identified. The review of plans, programmes and environmental protection objectives is a dynamic process and as new objectives emerge or are revised, they will be reviewed and any conflicts or inconsistencies will be recorded. Policy context continually shifts as new plans are adopted and/or take the place of former plans. The full list of reviewed plans, programmes and environmental protection objectives, with hyperlinks to each document, can be found in Appendix A and Table 4.1 lists the PPPs that have been considered.

4.2.2. The purpose of the review has not been to highlight every detail from every document selected, but to identify the key implications for the SEA. For each document reviewed the table sets out the name of the document, its date of publication/period of validity, key objectives/targets, and potential implications for the LFRMS.

Table 4.1 Relevant Plans, Policies or Programmes considered

Plan, Policy or Programme
European
Habitats Directive (92/43/EEC)
Birds Directive (2009/147/EC)
Water Framework Directive (2000/60/EC)
Groundwater Directive (2006/118/EC)
Air Quality Directive (2008/50/EC)
Floods Directive (2007/60/EC)
European Landscape Convention (2000)
Convention for the Protection of the Architectural Heritage of Europe
European Convention on the Protection of the Archaeological Heritage

European Strategy for Sustainable Development
EU Biodiversity Strategy to 2020
National
Wildlife and Countryside Act 1981
Natural Environment and Rural Communities Act 2006
Guidance for Local Authorities on Implementing the Biodiversity Duty, DEFRA (2007)
Climate Change Act 2008
Localism Act 2011
Flood and Water Management Act 2010
Natural Environment White Paper (2011)
Making Space for Water: Taking forward a new Government strategy for flood and coastal erosion risk management in England (March 2005)
House of Commons Environment, Food and Rural Affairs Committee: Managing Flood Risk, Third Report of Session 2013–14, Volume I (2 July 2013)
Environment Agency: The National Flood and Coastal Erosion Risk Management Strategy for England (2011)
Spatial Planning for Sport and Active Recreation: Guidance on Sport England's Aspirations and Experience (2005)
Strategic Environmental Assessment, Sustainability Appraisal and the Historic Environment, English Heritage (2010)
Planning (Listed Buildings and Conservation Areas) Act 1990
Ancient Monuments and Archaeological Areas Act 1979
National Planning Policy Framework, DCLG (2012)
Technical Guidance to the National Planning Policy Framework (2012)
Securing the Future: UK Sustainable Development Strategy (2005)
A Strategy for England's Trees, Woods and Forests, DEFRA (2007)
Flooding and Historic Buildings, English Heritage (2010)
Developing the evidence base to describe the flood risk to agricultural land in England and Wales, Joint Defra/EA Flood and Coastal Erosion Risk Management R&D Programme (August 2011)
Safeguarding our Soils: A Strategy for England (Defra, September 2009)
Countryside and Rights of Way Act 2000
Regional
Water for Life and Livelihoods - North West River Basin District (2009)
Greater Manchester Third Local Transport Plan (2011)
Greater Manchester Joint Minerals Plan (2013)
Greater Manchester Climate Change Implementation Plan (2011 – 2020)
Towards a Green Infrastructure Framework for Greater Manchester (2008)
An Ecological Framework for Greater Manchester (2008)

4.3. Results

Greater Manchester Joint Waste Plan (2012)
North West River Basin District, Consultation on the draft Flood Risk Management Plan, Environment Agency (October 2014)
Local
Stockport Core Strategy (2011) & associated LDF and DPD
Stockport Unitary Development Plan (2006)
Stockport Town Centre Urban Green Infrastructure Enhancement Strategy (2015)
Future Stockport – Supplementary Planning Document for the town centre master plan (2006)

4.3.1. The key points emerging from the review that the LFRMS may be able to positively influence (either directly or indirectly) are outlined below:

- The LFRMS should embody sustainability principles, and recognize the valuable contribution that flood prevention and alleviation can make to society, the economy and the environment. The LFRMS should be guided by sustainable development principles.
- An open and inclusive approach should be fostered with opportunities for public participation and meaningful engagement and local communities should have adequate opportunities to become involved.
- There is a need to conserve and enhance biodiversity, and avoid any significant impacts on International, Natura 2000 sites, Sites of Special Scientific Interest and sites of local importance. In delivering flood risk management account should be taken of the particular sensitivities of these sites that could potentially be affected, and advice from Natural England sought.
- The implementation of the LFRMS should result in a net gain to biodiversity.
- There is a need to conserve protected, notable, rare and endangered species. In delivering flood risk management, account should be taken of particular sensitivities of these species that could potentially be affected.
- Opportunities to contribute to a linked green infrastructure network should be maximised to provide benefits such as flood control. Access to the districts green spaces that are of strategic importance in terms of defining the district's character, supporting biodiversity, recreation and other benefits i.e. flood defence/ alleviation should be safeguarded, enhanced and promoted.
- The value of trees should be recognised, and loss of trees should be avoided where practicable through location and design policies. The potential contribution of trees in schemes should be explored and maximized.
- Heritage assets (designated and undesignated) and the wider historic environment should be conserved and enhanced. This includes avoiding adverse impacts through location and design of flood risk management infrastructure, and protecting vulnerable heritage. Policy should be informed by an understanding of the significance of a heritage asset, including its setting. Where loss of significance is unavoidable, assessment and recording should be required where appropriate. Advice from Heritage English should be sought.
- Landscape should be protected from harmful development, recognising the cultural and historic dimension of the landscape.
- Strict requirements should be in place to prevent water pollution and to contribute to meeting Water Framework Directive objectives. Water quality should be improved. Groundwater quality should be protected.
- Air quality should be protected. Carbon emission should be minimized, including through encouraging lower-carbon practices in flood risk infrastructure and operations.

- The value of agricultural land should be recognised and protected.
- Strategic transport infrastructure should be protected.
- Existing sports and recreation should be protected and enhanced.
- Proposals for mineral working or the provision of mineral infrastructure should only be permitted where adverse impacts on 'controlled waters and/ or flood risk management' can be appropriately mitigated or avoided.
- There is a relationship with the planning system and the LFRMS should aim to contribute to the achievement of sustainable development. Any flood risk management intervention in Stockport should ensure that flood risk is not worsened elsewhere as a result.

4.3.2. The above points, coupled with consideration of baseline data (discussed in the next chapter of this report), enabled the initial identification of the key environmental issues and opportunities that have been addressed in the ER.

5. Baseline Characteristics and Key Issues and Opportunities for the LFRMS

5.1. Introduction

5.1.1. The next tasks in the SEA cover the collection of baseline information and identification of key issues and opportunities. The review of other plans and programmes provided a considerable amount of baseline information which has been complemented by collection of data relating to the SEA topic areas.

5.1.2. More specifically, the SEA Directive says that the ER should provide information on:

"relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan" and *the "environmental characteristics of the areas likely to be significantly affected"* (Annex I (b) (c)) and

"any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC (Birds Directive) and 92/43/EEC (Habitats Directive)" (Annex I (d)).

5.1.3. The aim of the baseline data collation is to give an overview of the environmental characteristics of the strategy area. This enables informed judgements to be made with regard to the likely evolution of the strategy area in the future, which in turn enables judgements to be made about the emerging LFRMS.

5.1.4. The identification of environmental issues provides an opportunity to help define key issues for the LFRMS and to improve the LFRMS objectives and options. The analysis of environmental issues both influences and is influenced by the development of the baseline and the SEA Framework, in particular in identifying and selecting indicators and targets.

5.2. Methodology

5.2.1. SEA guidance emphasises that the collection of baseline data and the development of the SEA Framework should inform each other. Baseline data have been extracted from a wide range of available publications and datasets. Sources have included national government and government agency websites, the census and wider professional partnerships and the review of plans and policies carried out as outlined in Chapter 4. No primary research has been conducted.

5.2.2. Detailed baseline data have been provided in Appendix B. Data have been collated and analysed for the following indicators:

- Biodiversity (including flora and fauna), including:
  - National designations for nature conservation;
  - Local designations for nature conservation;
  - Wildlife habitats;
  - *Note: there are no Sites designated for nature conservation purposes at the International scale in the SMBC area;*
- Key Characteristics of the Borough's Population trends and demographics;
- Human Health, Community Satisfaction and Cohesion;
- Land use, Soil & Agriculture, including Green Infrastructure;

- Water resources, including:
    - Water Catchments and water resources;
    - Water chemical and biological quality;
    - Groundwater;
    - Flood risk;
- Air quality;
- Climatic factors;
- Material assets, including:
    - Utility Infrastructure;
    - Extractive resources;
    - Transport;
    - Waste;
- Cultural heritage including:
    - Conservation areas;
    - Listed buildings;
    - Registered Parks and Gardens;
    - Archaeological sites;
    - Scheduled Monuments;
    - Historic navigable canals; and
- Landscape including landscape character areas.

5.3. Data Analysis

5.3.1. A series of environmental issues and opportunities have emerged from the analysis of the baseline data, which can be summarised as follows:

- Stockport's population is 285,032 (2013), with a projected population of 289,000 by 2037. It is anticipated that the number of households in the Stockport borough area will increase from 123,000 in 2012 to 143,000 by 2037, an increase of 14%. Stockport has an ageing population with a third of households being of pension age.
- Although overall a generally affluent borough, there are significant differences in levels of deprivation etc and this mirrors the health of the population. People in more deprived areas tend to have poorer health and a significantly lower life expectancy.
- There are no Sites designated for nature conservation purposes at the International (European) level, though there are a number within 15km of the Borough boundary.
- There are a range of sites at the National and local level which are designated for their nature conservation value. These sites include 2 SSSIs, 13 LNRs and 66 SBIs.
- Stockport, alongside Greater Manchester, has a wealth of green infrastructure assets such as such as rivers and canals, ancient woodlands, SSSIs, SBIs Conservation Areas, Public Open Spaces, undeveloped land in Flood Zones 2 and 3. These assets deliver a whole series of provisioning, regulating and cultural benefits.
- Over 46% of the Borough area is designated as green belt (5,857 hectares in 2014), concentrated in the south and east of the Borough.
- The eastern and southern areas of the Borough are largely rural, with the southern area typically having agricultural land of Grade 3 and the eastern area typically having Grade 4. It

is estimated that a third of the Borough is under intensive agriculture, though it is to be recognised that agricultural land in the Borough is now being targeted for enhancement in terms of biodiversity.

- There are 37 Conservation Areas designated across the Borough. There are also 388 entries on the list of buildings of special architectural or historic interest, 468 locally listed buildings of architectural or historic interest and 6 Scheduled Monuments; and over 3,618 sites noted on the Greater Manchester Sites and Monuments Record.
- Stockport has a mix of landscape types as recognised by the Landscape Character Designations which cover 13 areas of the Borough. Particular protection is provided to the Borough's four main river valleys of the Mersey, Tame, Etherow / Goyt and Ladybrook.
- The main issue in relation to Air Quality in Stockport is emissions from road traffic. This has led to the declaration of an Air Quality Management Area (AQMA), mainly centred on the M60 and other main routes. This AQMA is in force over much of the town centre.
- Main rivers in the Stockport area include the River Goyt, River Mersey, River Tame, River Etherow and a range of tributaries, becks and ditches which feed into these main rivers. Within this catchment there are also a range of 'man made' water resources such as canals.
- Water quality is generally fair in Stockport and is reflective of conditions in neighbouring local authority areas.
- Of the different water body types within the River Basin District (of which Stockport is a part), 218 surface water bodies and 222 of all water bodies are at good or better overall status/potential. For groundwater bodies, currently 61 per cent are at good quantitative status and 44 per cent are at good chemical status.
- 219 surface water bodies (30 per cent) are at good or better ecological status/potential.
- 431 surface water bodies are assessed for biology. 160 (37%) of those are at good or better biological status.
- In the North West River Basin District, 27 per cent of 398 artificial and heavily modified water bodies are currently classified as at good or better ecological potential, compared to 35 per cent of 333 natural surface water bodies having good or better ecological status.
- Approximately half the Stockport borough area is classed as a major aquifer.
- The most common causes of flooding are surface water flooding, river flooding, and sewer flooding.

6. SEA Framework

6.1. Framework

6.1.1. The SEA Framework is a key component in completing the SEA and comprises a bespoke series of objectives. The purpose of the SEA Framework is to provide a set of criteria against which the performance of the LFRMS can be predicted and evaluated. It is developed by synthesising the baseline information and sustainability issues into a systematic and easily understood tool that allows the assessment of effects arising from the implementation of the LFRMS in key areas.

6.1.2. A framework of 12 objectives and associated decision-making questions has been drawn up, developed through the analysis of baseline information and identification of key environmental issues and opportunities, as well as the PPP review. No changes were proposed by consultees to the SEA Objectives during the Scoping Report consultation. A minor addition was recommended to the decision making criteria for SEA Objective 4, and this decision making criteria has been amended. This reflects the comments received from consultees, as detailed in Appendix C.

6.1.3. The scope of the SEA Framework excludes certain topic areas as the LFRMS will not have a direct influence on issues or opportunities relating to these. Significant effects on waste are unlikely as a result of the LFRMS and therefore this topics was scoped out. However, the need for assessment of these issues should be considered in the environmental assessment of physical interventions for particular localities.

6.1.4. The 12 identified objectives (Table 6.1) have been worded so that they reflect one single desired direction of change for the theme concerned and do not overlap with other objectives. They include both externally imposed environmental objectives and others devised specifically in relation to the context of the LFRMS being prepared and they are distinct from the LFRMS objectives. Decision-making criteria have been identified for each objective to aid in the assessment.

Table 6.1 SEA Framework

No	SEA Objective	Decision making questions	SEA topics
1.	Protect and enhance biodiversity, blue/green infrastructure and geodiversity assets	*Will the LFRMS...* • Lead to the direct physical loss of wildlife and habitat? • Avoid damage to / destruction / disturbance of sites designated for nature conservation or geodiversity purposes? • Provide opportunities to improve / enhance sites designated for nature conservation? • Promote and aid the delivery of Local Biodiversity Action Plans and other similar plans? • Protect and enhance blue/green infrastructure and avoid severance of habitats links / promote or provide wildlife corridors and cohesive habitat networks? • Afford the opportunity to provide new habitat creation and enhancement? • Promote good design to include consideration of biodiversity?	Biodiversity
2.	Protect and enhance the International sites *(HRA specific objective)*	*Will the LFRMS...* • Affect (directly or indirectly) the International sites identified as part of the HRA Screening process? • Take on board the HRA findings and recommendations?	Biodiversity
3.	Promote good physical and mental health	*Will the LFRMS…* • Allow the development of schemes that will protect the health and well-being of vulnerable groups (children and adolescents; older people; disabled people and people with other health problems; low-income groups and communities with high level of deprivation) • Allow the development of schemes that will protect the health and well-being of the wider population (residents, workers, commuters, tourists and visitors)? • Decrease the proportion of the population at risk from flooding? • Improve people's ability to access green spaces for recreation and amenity?	Population Health
4.	Conserve soil and agricultural resources	*Will the LFRMS…* • Promote the reclamation and use of previously developed land to make more productive use of land?	Landscape, soil & agriculture

No	SEA Objective	Decision making questions	SEA topics
		• Avoid permanent (irreversible) loss of the most highly productive agricultural soils? • Seek to avoid impact to agricultural holdings through contamination or severance? • Ensure protection of soil resources during any infrastructure construction activities? • Provide opportunities to increase / enhance biodiversity and sustainable management of soils?	
5.	Protect and enhance the water environment	*Will the LFRMS…* • Protect the quality of surface and groundwater resources? • Minimise the use of impermeable hard surfacing? • Protect and enhance green infrastructure contributing to improvements in the quality of surface water run-off?	Water; Biodiversity, Climatic Factors
6.	Take account of a changing climate and reduce the consequential risk of flooding	*Will the LFRMS…* • Encourage patterns of spatial development that are adaptable to a changing climate? • Allow protection of people, businesses and infrastructure from flooding during extreme weather? • Reduce the risk of flooding in existing developed areas – including homes, businesses and areas of critical infrastructure? • Encourage the use of Sustainable Drainage Systems (SuDS) and appropriate source control measures? • Prevent inappropriate development on the floodplain and protect overland flow paths?	Water, Material Assets ,Climatic Factors
7.	Educate and encourage the population of Stockport to take action to manage the flood risks they face	*Will the LFRMS...* • Educate and inform the local population in flood risk and how to manage this? • Encourage local people and businesses to take practical steps to protect themselves? • Help protect residential and business areas?	Population

No	SEA Objective	Decision making questions	SEA topics
8.	Protect air quality	*Will the LFRMS…* • Allow the development of flood protection schemes that can operate without any energy input / emissions? • Help to meet national air quality standards? • Have neutral / minimal negative impact on Air Quality in the Stockport area? • Allow the planting of trees etc that will potentially improve Air Quality?	Air Quality; Biodiversity
9.	Reduce CO_2 emissions and encourage development of CO_2 'sinks'.	*Will the LFRMS…* • Protect and enhance green infrastructure through protecting existing and/or creating new carbon sinks? • Allow the development of flood protection schemes that can operate without any energy input / CO_2 emissions? • Encourage the consideration of embedded carbon during project / scheme design? • Help to achieve the Greater Manchester objective to move to a low carbon economy? • Aid understanding of the need to reduce CO_2 emissions and communicate this need to relevant communities and other interested parties?	Climate
10.	Promote prudent use of natural resources, minimise the production of waste and support re-use and recycling	*Will the LFRMS…* • Seek to reduce the consumption of natural resources during construction of any flood scheme through encouraging the use of recycled or secondary materials? • Encourage resource efficiency during the whole project life cycle i.e. from concept through design and operation to decommissioning? • Promote the use of local suppliers and locally produced materials in construction? • Promote sustainable waste management practices?	Material Assets, Health
11.	Maintain and enhance the quality and distinctiveness of Stockport's historic and cultural heritage	*Will the LFRMS…* • Attach value to the historic environment? • Conserve, protect and enhance the region's cultural and designated / non-designated historic assets (e.g. locally important buildings, archaeological	Cultural Heritage; Landscape

No	SEA Objective	Decision making questions	SEA topics
		remains, SMs, Listed Buildings and structures, registered Parks and Gardens, Conservation Areas etc), their integrity and their settings? • Provide opportunities to improve the setting of cultural heritage features?	
12.	Protect and enhance the character and quality of Stockport's landscapes and townscapes	*Will the LFRMS…* • Ensure that design, construction and maintenance of flood protection infrastructure is sympathetic to, respects and enhances the landscape character & townscapes of the Stockport borough area? • Conserve, protect and enhance the natural environmental assets (e.g. blue/green infrastructure, parks and green spaces, common land, woodland / forests etc) of Stockport? • Improve sustainable access to open space and quality natural environments for all sections of the community? • Promote / protect Public Rights of Way (PROW) and greenways? • Seek to avoid sensitive areas and respect the integrity and setting of landscapes / townscapes? • Protect and enhance locally important buildings and townscapes, maintaining and strengthening local distinctiveness and a sense of place? • Assist in the regeneration of previously utilised (brownfield) land, in particular areas of dereliction / contamination? • Protect and enhance green & blue infrastructure and explore the direct / indirect benefits of this e.g. both can enhance landscape while protecting from flood risk?	Landscape; Biodiversity; Climatic factors

7. Testing the LFRMS Objectives against the SEA Objectives

7.1. Introduction

7.1.1. This chapter sets out the iterative process of assessment that has been completed in respect of the LFRMS objectives (Stage B1). The initial assessment of the first iteration of LFRMS objectives is described, followed by the changes made based on the recommendations, resulting in the version that appears in the Draft LFRMS. A commentary on the latest version of the LFRMS Objectives and their overall compatibility with the SEA Objectives completes the chapter.

7.1.2. The LFRMS initially identified the following draft objectives.

Objective 1: To better understand local flood risk and make best use of available information.

Objective 2: To reduce the potential impact and costs of flooding in the Borough.

Objective 3: To ensure resilience of the local flood risk infrastructure.

Objective 4: To avoid inappropriate development in areas of flood risk.

Objective 5: To develop a collaborative partnership approach to flood risk management, and cooperate with other partners working across catchments.

Objective 6: To assist communities to understand information on flood risk and support toward self.

Objective 7: To encourage, support and provide water management from its source utilising and developing sustainable techniques which have wider considerations of the environment.

7.1.3. These draft LFRMS objectives were tested for compatibility with the SEA Objectives (see Table 7.1). This helped to consider to what degree they are in accordance with the SEA objectives, with a view to developing and refining the LFRMS objectives.

Key to Compatibility of Objectives

√	Broadly Compatible
X	Potential Conflict
?	Depending upon the nature of the implementation measure
NR	Not Relevant / No Relationship

Table 7.1 Compatibility Assessment between initial LFRMS Objectives and SEA Objectives

		Strategic Environmental Assessment Objectives											
	Stockport LFRMS Objectives	Protect and enhance biodiversity, green infrastructure and geodiversity assets	Protect and enhance the international sites	Promote good physical and mental health	Conserve soil and agricultural resources	Protect and enhance the water environment	Take account of a changing climate and reduce the risk of flooding	Educate and ecourage the population of Stockport to take action to manage flood risks they face	Protect air quality	Reduce CO2 emissions and encourage development of CO2 'sinks'.	Promote prudent use of natural resources, minimise the production of waste and support re-use and recycling	Maintain and enhance the quality and distinctiveness of Stockport's historic and cultural heritage	Protect and enhance the character and quality of Stockport's landscapes and townscapes
i.	To better understand local flood risk and make best use of available information	?	?	?	?	?	✓	✓	?	?	?	?	?
ii.	To reduce the potential impact and costs of flooding in the borough	X	?	✓	X	X	✓	✓	X	?	X	X	X
iii.	To ensure resilience of the local flood risk infastructure	?	?	✓	?	?	✓	✓	?	?	✓	?	✓
iv.	To avoid inappropriate development in areas of flood risk	✓	?	✓	✓	✓	✓	✓	NR	NR	✓	✓	✓
v.	To develop a collaborative partnership approach to flood risk management, and cooperate with other partners working across catchments	NR	?	NR	NR	NR	NR	✓	NR	NR	NR	NR	NR
vi.	To assist communities to understand information on flood risk and support towards self sufficiency for flood preparedness and resilience	NR	NR	✓	NR	NR	NR	✓	NR	NR	NR	NR	NR
vii.	To encourage, support and provide water management from its source utilising and developing sustainable techniques which have wider considerations of the environment	✓	?	✓	✓	✓	✓	NR	✓	✓	✓	✓	✓

7.2. Compatibility Assessment Outcomes

7.2.1. Specific recommendations that emerged from the assessment in Table 7 were as follows:

Strategy objective 1. To better understand local flood risk and make best use of available information

7.2.2. There is a significant amount of uncertainty relating to this Strategy Objective in that it is unclear as to the reason for requiring a better understanding of local flood risk and for what purpose this understanding would be used. In order to resolve the areas of uncertainty relating to the SEA objectives, it is recommended that the wording is changed to read:

'Strategy Objective 1. To better understand local flood risk and make best use of available information in order to better manage flood risk to people, businesses, property, infrastructure and the natural environment'

Strategy objective 2. To reduce the potential impact and costs of flooding in the borough

7.2.3. This objective is highly likely to promote a range of interventions which could have potential negative impacts on the environment and as such there is a potential for conflict. This Strategy Objective though is broadly compatible with SEA objectives in a number of areas as follows:

- Promote good physical and mental health
- Take account of a changing climate and reduce the consequential risk of flooding
- Educate and encourage the population of Stockport to take action to manage the flood risks they face

7.2.4. However, when considered in parallel with Strategy objective 7. 'To encourage, support and provide water management from its source utilising and developing sustainable techniques which have wider considerations of the environment' (see below), it is likely to ensure that the potential conflicts that have been identified are minimised to satisfactory levels.

Strategy objective 3. To ensure resilience of the local flood risk infrastructure

7.2.5. A number of uncertain outcomes have been identified against the SEA objectives related to the protection of the environment. For the most part, this Objective relates to maintenance of existing infrastructure and it is unclear how this may impact on the following:

- Protect and enhance biodiversity etc
- Protect and enhance European and International sites
- Conserve soil and agricultural resources
- Protect and enhance the water environment
- Protect air quality
- Reduce CO2 emissions etc
- Maintain and enhance cultural heritage

7.2.6. As identified for Strategy Objective 2, these uncertainties are addressed by Strategy Objective 7i such that the potential conflicts that have been identified are minimised to satisfactory levels.

Strategy Objective 7: To encourage, support and provide water management from its source utilising and developing sustainable techniques which have wider considerations of the environment

7.2.7. This Strategy Objective is broadly compatible with most SEA Objectives and will work toward protecting and enhancing the environment of the Stockport area. There is uncertainty relating to 'protecting and enhancing International Sites' (as indeed across all of the Strategy Objectives where a potential interaction has been identified) as there are no International sites within the Strategy area. There is therefore no chance of a direct impact from any measure taken as part of the implementation of the Strategy, but the potential exists for indirect impacts which have been considered as part of the HRA of the Strategy. In order to clarify the flood risk management and

protection and enhancing the environment functions of this objective it is recommended that its wording is amended as follows:

'Strategy Objective 7. To encourage, support and provide flood risk management which seeks to protect and enhance the environment'.

7.3. Changes to the LFRMS Objectives based on the SEA recommendations

7.3.1. Following discussions with SMBC in an internal workshop on 13th January 2016, and taking into account the SEA recommendations above, the final LFRMS Objectives are shown in Table 7.2 together with commentary concerning the changes that have been made to some of the LFRMS objectives.

7.3.2. It is considered that the final LFRMS Objectives represent an improvement on the previous objectives from the perspective of environmentally sustainable development, taking into account the SEA recommendations.

Table 7.2 Final LFRMS Objectives

Objective		Comments
Objective 1	To better understand local flood risk and make best use of available information in order to better manage flood risk to people, businesses, property, infrastructure and the natural environment.	SEA recommendation has been taken on board by SMBC.
Objective 2	To reduce the potential impact and costs of flooding in the Borough.	No SEA recommendation. Objective remains the same.
Objective 3	To ensure resilience of local water bodies and drainage assets.	No SEA recommendation. However, wording has been amended following discussion to include local water bodies and drainage assets as well as local flood risk infrastructure.
Objective 4	To ensure appropriate development in areas of flood risk.	No SEA recommendation. Objective reworded to be more positive (i.e. ensure appropriate development rather than avoiding in appropriate development).
Objective 5	To develop a collaborative partnership approach to flood risk management, and cooperate with other Risk Management Authorities (RMAs) and key stakeholders working across catchments.	No SEA recommendation. Objective updated to cover RMAs and key stakeholders rather than just partners.
Objective 6	To assist communities in understanding information on flood risk and supporting themselves.	No SEA recommendation. Objective reworded slightly, meaning remains the same.
Objective 7	To encourage, support and provide flood risk management which seeks to protect and enhance the environment	SEA recommendation has been taken on board by SMBC.

8. Options Appraisal

8.1. Introduction

8.1.1. Stage B2 of the SEA process normally involves the generation and assessment of plan options. This exercise is undertaken in part to fulfil the requirements of the SEA Directive, which requires that the ER should consider:

'reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme' and give 'an outline of the reasons for selecting the alternatives dealt with' (Article 5.1 and Annex I (h)).

8.2. Development of Options

8.2.1. It is normal practice when developing a strategy to propose different ways (options) of fulfilling its objectives. The approach adopted in the formulation of the LFRMS must respond to the key objectives, high level principles and measures set out in the National Flood and Coastal Erosion Risk Management Strategy for England (FCERM). In addition, guidance from DEFRA and DCLG specifies particular approaches which the Council must follow.

8.2.2. These requirements leave little flexibility to develop 'real' strategic options for the LFRMS as the overall strategy has already been defined nationally. In reality, the LFRMS is a case of pursuing a series of alternative measures in parallel with the national measures. Some of these will be pursued to a greater extent, others to a lesser extent, depending on local priorities for each of the identified LFRMS objectives.

8.2.3. As part of the Stockport LFRMS development process, a number of alternative measures for each LFRMS's objectives were identified. The assessment has considered two possible options ('Do Nothing' and 'Do-More') to each alternative measure; the 'Do More' option being the proposed alternative measure and 'Do Nothing' being the non-adoption of the proposed alternative measure. The assessment of these measures against the SEA objectives is presented in Table 8.1.

8.3. Working Towards a Preferred Option

8.3.1. A high level assessment methodology has been used in order to give an indication of the most sustainable options. This approach assumes that all SEA Objectives are equally important and thus option(s) with the most compatibility overall are noted as being most sustainable, whilst those option(s) with less compatibility are noted as being less sustainable. This assessment has been undertaken using expert and professional judgement and based on the following assumptions:

- The options will be realised through the concurrent implementation of the LFRMS objectives, as outlined in Chapter 7.
- The HRA findings will be incorporated, which will aim to lead to the avoidance of deterioration to the most important sites for biodiversity and incorporation of appropriate mitigation where necessary.

8.4. Identification of Preferred Options

8.4.1. Table 8.1 identifies a preferred option for each of the measures and this is invariably the 'Do More' option, as the 'Do Nothing' option may not be compatible with the SEA objectives in most cases. A range of positive and negative effects have been identified for the options as discussed in Table 8.1. Recommendations for amendments and additional measures in order to enhance the environmental sustainability performance of the LFRMS are also provided in Table 8.1.

8.4.2. These assessments presented in Table 8.1 were also discussed with the Council in a workshop which took place on 13th January 2016; the final recommendations presented reflect the results of discussions at the workshop.

8.4.3. The following recommendations were made; overall, the consideration of the measures (and recommendations) proposed under Strategy Objective 7 will address many of the potential conflicts identified against SEA objectives.

- **LFRMS Strategy Objective 1**
  - An additional measure is recommended to create a priority list of flood mitigation interventions.
  - The wording of Measure 1c should be amended to include existing maintenance activities (by riparian land owners) and key flood drainage structures.

- **LFRMS Strategy Objective 2**
  - In order to clarify that only environmentally sustainable flood risk management schemes and activities will be put forward, Measure 1a should be reworded to read "To progress the actions of the SWMP and, where suitable, identify *environmentally sustainable* flood risk management schemes and seek funding for them"
  - Measure 2b should be reworded 'To work with partners to encourage *environmentally sustainable* flood management activities by riparian landowners on …". The wording of Measure 2b should also be amended to include drainage and maintenance, as well as the noted flood defence structures.
  - A further measure should be developed which would ensure the undertaking of proactive assessment of opportunities for de-culverting and addressing other constrictions in ordinary water courses.

- **LFRMS Strategy Objective 3**
  - Consider the inclusion of a new measure addressing the need to inspect and review drainage assets after flooding.
  - Consider a Measure which will require examination of existing infrastructure to improve its environmental performance if/when it is being maintained/upgraded to improve resilience. Measures 3a and 3b should be reworded slightly to include for inspection and debris clean up in Recovery Plans.

- **LFRMS Strategy Objective 4**
  - Measure 4b could be strengthened by inclusion of the consideration to promote opportunities for funding contributions that would increase the ability for implementation of flood risk schemes, Section106 and local levies should be considered.
  - A new measure should be developed recognising the wider environmental benefits that SUDS can bring. This should include natural opportunities to control run off such as green roofs and green walls.
  - A new measure should be developed to seek to influence the planning process through proactive pre-application discussions, seeking to ensure that developers avoid the flood plain except in exceptional circumstances, with appropriate design including 'offset' of lost floodplain.

- **LFRMS Strategy Objective 5 –**
  - Whilst it is recognised that Objective 6 is aimed at community engagement, the wording of these objectives could be strengthened by inclusion of wording to specifically require the need to proactively engage with and inform local communities/populations – in particular in areas of high flood risk. This would have a positive direct impact on flood risk management.
  - A new measure should be developed to promote / make links to health partners to ensure that response and recovery plans and actions take account of the potential effects on mental health.

- **LFRMS Strategy Objective 6**
  - A new measure should be developed to include seeking to work with small and medium sized enterprises to help improve their resilience to flood risk.
  - A new measure should be developed to focus on identifying vulnerable groups and developing communications and action plans to engage these groups would have a

particular positive effect in terms of reducing potential inequalities between social groups.

- **LFRMS Strategy Objective 7**

    - Measure 7a should be moved to Strategy objective 3 as it describes measures which improve the resilience of drainage assets.
    - Measure 7a should be replaced by a Measure which promotes flood risk management solutions which work with the natural and cultural environment and avoid or minimise impacts.
    - Measure 7c should be moved to Strategy Objective 5 as it relates to collaborative working. We suggest it is updated as follows “To promote early engagement with partners so opportunities for enhancing the natural and built environment as well as managing flood risk can be maximised.”
    - It is recommended that a Measure is included to ensure that Emergency Planning for flooding includes consideration of environmental issues. This will ensure that these issues do need to be considered during the emergency period.
    - A new measure should be added to ensure a catchment-based approach to flood risk management.
    - A new measure should be added to ensure that international, national and locally designated sites are not adversely affected by flood risk management activities.
    - A new measure should be added promoting the creation of blue/green infrastructure as part of flood risk management interventions recognising the multiple benefits developing green infrastructure delivers, such as flood risk management, urban cooling and enhancement of biodiversity.
    - An additional Measure should be added to ensure that Cultural Heritage is protected or enhanced when feasible. Equal consideration should also be given to the need to protect and enhance the landscape / townscape of the Borough.
    - A new measure should be added requiring the avoidance of permanent (irreversible) loss of the most highly productive agricultural soils.
    - A new measure should be added seeking to reduce the consumption of natural resources during construction of any flood scheme through encouraging the use of recycled or secondary materials and reducing energy consumption.
    - It would be beneficial to develop a new measure relating to WFD to ensure there is no deterioration in water body status through flood risk activities by ensuring that WFD assessments are undertaken where required for all local flood risk management schemes, and where possible look to enhance status through implementation of the recommendations of the River Basin Management Plans.

8.4.4. It should be noted that it is not the role of the SEA to determine which of the options should be chosen as the basis for the LFRMS Preferred Option – that responsibility falls to the LFRMS team preparing the plan. The SEA should, however, help to identify the most environmentally sustainable options overall, or different options that promote the different dimensions of environmental sustainability.

8.4.5. SMBC has developed a LFRMS Preferred Option which has took on board a number of the SEA recommendations above. The assessment of the LFRMS Preferred Options is discussed in Chapter 9.

Table 8.1 Options Appraisal

Key:

☹	conflict with SEA objectives - Measure is likely to have a negative effect on the SEA objective
😐	may / may not be compatible with SEA objectives - Measure may have a positive or negative effect on the SEA objective depending on implementation
☺	compatible with SEA objectives - Measure is likely to have a positive effect on the SEA objective
n/a	not applicable or not relevant to the SEA objective
neutral	no effect

The objectives of the SEA are as follows:

1. Protect and enhance biodiversity, blue/green infrastructure and geodiversity assets
2. Protect and enhance the international sites (HRA Specific Objective)
3. Promote good physical and mental health
4. Conserve soil and agricultural resources
5. Protect and enhance the water environment
6. Take account of a changing climate and reduce the consequential risk of flooding
7. Educate and encourage the population of Stockport to take action to manage the flood risks they face
8. Protect air quality
9. Reduce CO2 emissions and encourage development of CO2 'sinks'
10. Promote prudent use of natural resources, minimise the production of waste and support re-use and recycling
11. Maintain and enhance the quality and distinctiveness of Stockport's historic and cultural heritage
12. Protect and enhance the character and quality of Stockport's landscapes and townscapes

Strategy Objective 1: To better understand local flood risk and make best use of available information in order to better manage flood risk to people, businesses, property, infrastructure and the natural environment

Measure	Option	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Assessment/Recommendations
1a: To further develop the Surface Water Management Plan for Stockport to gain a better understanding of key flooding hotspots, risks and associated consequences.	Do Nothing	😐	😐	😐	😐	😐	😐	😐	n/a	😐	😐	😐	😐	Further development of the Surface Water Management Plan (Measure 1a) and working with partners (Measure 1b) would provide the information to aid in understanding the nature and locations of flooding in Stockport. These efforts, along with mapping current and past flooding issues (Measure 1d) would aid education initiatives and community resilience, with a positive consequence on public health etc. This could be further enhanced by a web based system of flood risk information to be accessed by key stakeholders (Measure 1e). The above noted measures would also allow the identification of improvement opportunities and the focusing of flood protection efforts on the most applicable areas – thereby cutting waste. This would be assisted by the implementation of a Register of Flood Risk Management Assets (Measure 1c). It is noted that Measures to improve knowledge and understanding are inherently positive, as they will improve resilience to flood risk. However, whilst the measures will strengthen understanding of the local flood risk and help with planning future flood management, there is no guarantee that schemes and structures will not lead to significant adverse environmental effects. It is noted that flood management activities (undertaken by public or private bodies) may not be compatible with a range of SEA objectives (though are still likely to result in
	Do-More	😐	🙂	🙂	😐	😐	😐	😐	n/a	😐	😐	😐	😐	
1b: To work with RMAs and key stakeholders to investigate locally significant flooding incidents and identify sources, pathways and receptors of flooding.	Do Nothing	😐	😐	😐	😐	😐	😐	😐	n/a	😐	😐	😐	😐	
	Do-More	😐	🙂	🙂	😐	😐	🙂	🙂	n/a	😐	😐	😐	😐	
1c: To further develop and continue to maintain a register of flood risk management assets with a record of significant structures with respect to flood risk, together with details of ownership and condition and	Do Nothing	😐	😐	😐	😐	😐	😐	😐	n/a	😐	😐	😐	😐	
	Do-More	😐	🙂	🙂	😐	😐	🙂	🙂	n/a	😐	😐	😐	😐	

where appropriate the designation of such structures or features, which may affect flood risk.													better physical and mental health by reducing the risk of flooding). This may particularly be the case in relation to private bodies who may not be receptive to any advice or guidance provided. <u>Recommendations</u> An additional measure to create a priority list of flood mitigation interventions is recommended. The wording of Measure 1c should be amended to include existing maintenance activities (by riparian land owners) and flood drainage structures.
1d: To map historical flooding incidences from all sources to identify recurrent flooding issues and hotspots which will assist in the prioritisation of flood mitigation intervention.	Do Nothing	😐	😐	😐	😐	😐	😐	😐	n/a	😐	😐	😐	😐
	Do-More	😐	😐	😐	😐	😐	😐	🙂	n/a	😐	😐	😐	😐
1e: To provide a web based system of flood risk information to be accessed by RMAs and key stakeholders.	Do Nothing	😐	😐	😐	😐	😐	😐	😐	n/a	😐	😐	😐	😐
	Do-More	😐	🙂	😐	😐	😐	🙂	🙂	n/a	😐	😐	😐	😐
1f: To review the Preliminary Flood Risk Assessment as required by the EU Floods Directive and Flood Risk Regulations 2009 and contribute to the other requirements.	Do Nothing	😐	😐	😐	😐	😐	😐	😐	n/a	😐	😐	😐	😐
	Do-More	😐	😐	😐	😐	😐	🙂	😐	n/a	😐	😐	😐	😐

Strategy Objective 2: To reduce the potential impact and costs of flooding in the Borough

Measure	Option	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Assessment/Recommendations
2a: To progress the actions of the SWMP and, where suitable, flood risk management schemes are identified and funding to be sought.	Do Nothing	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	Measures 2a and 2c would result in the development of a prioritised list of schemes which could potentially have a positive or negative effect on a range of SEA Objectives, depending upon the nature of the scheme and how it is implemented. These Objectives would cover issues such as Biodiversity, soil / agricultural resources, water environment, air quality, CO2 emissions, natural resources, cultural heritage and landscape. These schemes though are likely to result in positive impacts on physical and mental health (e.g. through reducing stress) and reduce the risk of flooding. Measure 2b would encourage engagement with a range of stakeholders and help educate the wider population on flood risk and help in the sharing of knowledge regarding these risks. It would also strengthen consenting and likely lead to a significant step in controlling adverse impacts of flood risk from new developments. However, flood management activities may not be compatible with a range of SEA objectives (though are still likely to result in better physical and mental health by reducing the risk of flooding). Measure 2d would also help physical and mental health by allowing people to better prepare (e.g. through better warning / education of the danger) and
	Do-More	😐	😐	🙂	😐	😐	🙂	😐	😐	😐	😐	😐	😐	
2b: To work with RMS and key stakeholders to encourage flood management activities by riparian landowners on ordinary watercourses and flood defence structures, as well as limiting the development of constrictions on ordinary watercourses through consenting and, if necessary, enforcement.	Do Nothing	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	
	Do-More	😐	😐	🙂	😐	😐	🙂	🙂	😐	😐	😐	😐	😐	

2c: To develop a risk based criteria to prioritise projects across Stockport to inform future grant applications to ensure flood risk management funding is directed to areas most at need and where solutions are more effective and prioritised alongside other needs.	Do Nothing	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	recover faster. Recommendations The consideration of the measures (and recommendations) proposed under Strategy objective 7 (see below) will address many of the potential conflicts identified against SEA objectives. In order to clarify that only environmentally sustainable flood risk management schemes and activities will be put forward, Measure 1a should be reworded to read "To progress the actions of the SWMP and, where suitable, identify environmentally sustainable flood risk management schemes and seek funding for them" and Measure 2b should be reworded 'To work with partners to encourage environmentally sustainable flood management activities by riparian landowners on …". It is proposed that the wording of Measure 2b is amended to include drainage and maintenance, as well as the noted flood defence structures. A further measure should be developed which would ensure the undertaking of proactive assessment of opportunities for de-culverting and addressing other constrictions in ordinary water courses.
	Do-More	😐	😐	🙂	😐	😐	🙂	😐	😐	😐	😐	😐	😐	
2d: To improve the detection, forecasting and issue of flood warnings, planning for and co-ordinating a rapid response to flood emergencies, and promoting faster recovery from flooding.	Do Nothing	n/a	n/a	😐	n/a	n/a	n/a	😐	n/a	n/a	n/a	n/a	n/a	
	Do-More	n/a	n/a	🙂	n/a	n/a	n/a	🙂	n/a	n/a	n/a	n/a	n/a	

Strategy Objective 3: To ensure resilience of the local flood risk infrastructure

Measure	Option	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Assessment/Recommendations
3a: To develop a maintenance plan for the regular clearing of trash screens at critical flood risk locations	Do Nothing	😐	😐	😐	n/a	😐	😐	😐	n/a	n/a	😐	😐	😐	Measure 3a would entail the removal of litter etc and as such would be beneficial for biodiversity, water quality, the setting of cultural heritage features, landscape/ townscape etc. It would also reduce the risk of flooding and thereby contribute to positive physical/mental health. Litter etc removed could be recycled as appropriate. Measure 3b could impact on Biodiversity if no consideration was made of species/ habitats along/in watercourses. Similarly this would interfere with natural processes and therefore potentially impact on soil/agricultural resources and may lead to sedimentation impacts elsewhere in the watercourse. De-vegetation may impact on the ability to sink carbon and could lead to visual impacts. Measures 3b and 3c would reduce flood risk and therefore be beneficial for physical/mental health. Measure 3c could also help protect the water environment and biodiversity from the removal of road runoff pollutants from gullies before they enter the watercourse. Use of existing infrastructure and improving its resilience (Measure 3d) would use less resources and would lead to good mental/physical health through reduced flood risk in future. It may also lead to reduced CO2 emissions and protect air and water quality through less construction activities but may impact on biodiversity if this is already causing an impact
	Do-More	☺	☺	☺	n/a	☺	☺	☺	n/a	n/a	☺	☺	☺	
3b: To develop a maintenance plan for the regular de-silting and de-vegetation of ordinary watercourses at critical flood risk locations	Do Nothing	😐	😐	😐	😐	😐	😐	😐	n/a	😐	😐	😐	😐	
	Do-More	😐	😐	☺	😐	☺	☺	☺	n/a	😐	☺	☺	😐	
3c: To develop a maintenance plan for the regular clearing of highway gullies based on a prioritised risk based approach	Do Nothing	😐	😐	😐	n/a	😐	😐	😐	n/a	n/a	n/a	n/a	n/a	
	Do-More	☺	☺	☺	n/a	☺	☺	☺	n/a	n/a	n/a	n/a	n/a	
3d: To develop a plan for improving existing local flood risk infrastructure so it is resilient to climate change	Do Nothing	😐	😐	😐	n/a	😐	😐	😐	n/a	😐	😐	😐	😐	
	Do-More	😐	😐	☺	n/a	☺	☺	☺	n/a	☺	☺	😐	😐	

														Recommendations Consider the inclusion of a new measure addressing the need to inspect and review drainage assets after flooding. Consider a Measure which will require examination of existing infrastructure to improve its environmental performance if/when it is being maintained/upgraded to improve resilience.

Strategy Objective 4: To ensure appropriate development in areas of flood risk

Measure	Option	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Assessment/Recommendations
4a: To work with RMAs and key stakeholders to produce local policies and guidance; and set standards to promote a positive impact on flood risk from new development, and to prevent any increase in flood risk, including the possible impacts of climate change.	Do Nothing	😐	😐	😐	😐	😐	😐	😐	n/a	n/a	😐	😐	😐	Overall these measures strengthen policy and the basis for planning application decisions that could have an adverse impact on flood risk. The measures help ensure that new development will be built to high standards, incorporating flood risk management measures, and that they are located appropriately. Measure 4a and 4b would have a positive impact on flood risk and thereby reduce physical/mental health threats. Working in the local area with local partners will help educate/inform the local community. Consideration of flood issues in new development will likely lead to positive impacts on the design of the new development and therefore be positive in landscape/townscape terms. Measure 4c would lead to SuDS which can have benefits for water quality, biodiversity, soil resources and can allow the development of CO2 sinks. Their careful
	Do-More	😐	😐	🙂	😐	😐	🙂	🙂	n/a	n/a	😐	😐	🙂	
4b: To maximise opportunities for contribution towards existing and proposed flood risk	Do Nothing	n/a	n/a	😐	n/a	n/a	😐	😐	n/a	n/a	n/a	n/a	😐	

management from new development to address local flood risk.	Do-More	n/a	n/a	☺	n/a	n/a	☺	☺	n/a	n/a	n/a	n/a	☺	design also lends itself to enhancing landscape/townscape. SuDS also help control flood risk and as such would aid physical and mental health through reduced risk.
4c: To work with RMAs and key stakeholders to promote SuDS measures for new developments through the role as LLFA statutory consultee on major planning applications.	Do Nothing	😐	😐	😐	😐	😐	😐	n/a	n/a	😐	😐	n/a	😐	<u>Recommendations</u> Measure 4b could be strengthened by inclusion of the consideration to promote opportunities for funding contributions that would increase the ability for implementation of flood risk schemes, such as Section106 and local levies should be considered. A new measure should be developed recognising the wider environmental benefits that SUDS can bring. A new measure should be developed to seek to influence the planning process through proactive pre-application discussions, seeking to ensure that developers avoid the flood plain except in exceptional circumstances, with appropriate design including 'offset' of lost floodplain. A new measure should be developed recognising other natural opportunities to control run off such as green roofs and green walls.
	Do-More	☺	☺	☺	☺	☺	☺	n/a	n/a	☺	☺	n/a	☺	

Strategy Objective 5: To develop a collaborative partnership approach to flood risk management, and cooperate with other Risk Management Authorities (RMAs) and key stakeholders working across catchments

Measure	Option	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Assessment/Recommendations

5a: To clarify local roles and responsibilities of Risk Management Authorities in Stockport and adjoining **authorities** and establish lines of communication to share information and resources and work collaboratively in a coordinated manner for flood risk management.	Do Nothing	n/a	n/a	n/a	n/a	n/a	n/a	😐	n/a	n/a	n/a	n/a	n/a	Measures 5a, 5b, 5c, 5d and 5e would all encourage and strengthen collaboration, the development and sharing of knowledge, information and data at both the local and the regional level. Measure 5b, 5c, 5d and 5e, could lead to flood management activities which may not be compatible with a range of SEA objectives (though are still likely to result in better physical and mental health by reducing the risk of flooding and also better education of some members of the local population). It is also noted that the while the catchment based approach of Measure 5d, could potentially allow greater opportunities for wider environmental benefits, it is unclear what the nature of the approach may be. <u>Recommendations</u> Whilst it is recognised that Objective 6 is aimed at community engagement, the wording of these objectives could also be strengthened by inclusion of wording to specifically require the need to proactively engage with and inform local communities/ populations – in particular in areas of high flood risk. This would have a positive direct impact on flood risk management. A new measure should be developed to promote/make links to health partners to ensure that response and recovery plans and actions take account of the potential effects on mental health.
	Do-More	n/a	n/a	n/a	n/a	n/a	n/a	☺	n/a	n/a	n/a	n/a	n/a	
5b: To work with RMAs and partners to encourage flood schemes by third parties, riparian landowners and stakeholders.	Do Nothing	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	
	Do-More	😐	😐	☺	😐	😐	😐	☺	😐	😐	😐	😐	😐	
5c: To lead on the implementation of local flood risk management schemes and to work with RMAs and key stakeholders to best utilise funding obtained through a prioritised risk-based approach.	Do Nothing	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	
	Do-More	😐	😐	☺	😐	😐	😐	☺	😐	😐	😐	😐	😐	
5d: To work with neighbouring Lead	Do Nothing	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	

Local Flood Authorities to ensure a catchment-based approach to local flood risk management.	Do-More	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	😐	☺	
5e: To work with key RMAs for managing flood risk from dam and canal infrastructure.	Do Nothing	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	
	Do-More	😐	😐	☺	😐	😐	😐	☺	😐	😐	😐	😐	😐	

Strategy Objective 6: To assist communities in understanding information on flood risk and supporting themselves

Measure	Option	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Assessment/Recommendations
6a: To provide educational material to the public and promote personal resilience.	Do Nothing	n/a	n/a	😐	n/a	n/a	n/a	😐	n/a	n/a	n/a	n/a	n/a	Measures 6a, 6b and 6d would result in enhanced work with and education of local communities. This would allow them to become more resilient and thereby help protect their physical and mental health. The scope of these measures is limited in the areas of SEA objectives that would be impacted. Measures 6c and 6e could lead to flood management activities which may not be compatible with a range of SEA objectives (though are still likely to result in better physical and mental health by reducing the risk of flooding and also better education of some members of the local population). Note that with Measure 6e the use of 'Temporary Flood Risk Management Measures' suggests that these could be implemented in emergency conditions
	Do-More	n/a	n/a	☺	n/a	n/a	n/a	☺	n/a	n/a	n/a	n/a	n/a	
6b: To work with RMAs and key stakeholders to reduce the harmful consequences of local flooding to communities and human health through pro-active actions, community activities and	Do Nothing	n/a	n/a	😐	n/a	n/a	n/a	😐	n/a	n/a	n/a	n/a	n/a	

education programmes that enhance preparedness and resilience to local flood risk, thereby promoting community cohesion and minimising community disruption.	Do-More	n/a	n/a	☺	n/a	n/a	n/a	☺	n/a	n/a	n/a	n/a	n/a	which may have the potential for negative environmental impacts. <u>Recommendations</u> A new measure should be developed to include seeking to work with small and medium sized enterprises to help improve their resilience to flood risk. A new measure to focus on identifying vulnerable groups and developing communications and action plans to engage these groups would have a particular positive effect in terms of reducing potential inequalities between social groups.
6c: To support local groups to manage local flood risk and increase the resilience of their communities to flooding.	Do Nothing	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	
	Do-More	😐	😐	☺	😐	😐	😐	☺	😐	😐	😐	😐	😐	
6d: To continue to work with RMAs and key stakeholders to improve communications and advice given before and during flooding events.	Do Nothing	n/a	n/a	😐	n/a	n/a	n/a	😐	n/a	n/a	n/a	n/a	n/a	
	Do-More	n/a	n/a	☺	n/a	n/a	n/a	☺	n/a	n/a	n/a	n/a	n/a	
6e: To work with RMAs and key stakeholders to establish a co-ordinated approach to the provision of temporary flood risk management measures.	Do Nothing	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	
	Do-More	😐	😐	☺	😐	😐	😐	☺	😐	😐	😐	😐	😐	

Strategy Objective 7: To encourage, support and provide flood management which seeks to protect and enhance the environment

Measure	Option	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Assessment/Recommendations
7a: To promote environmentally sustainable solutions including for example de-culverting, natural flood risk management, blue/green infrastructure, increased tree cover, catchment sensitive farming	Do Nothing	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	😐	Measures 7a, 7b, 7c and 7d would for the most part provide benefits across the SEA Objectives. However, no consideration is given the potential impact on cultural heritage and the outcome for this Objective is unclear. Measure 7b is particularly beneficial for the protection/enhancement of biodiversity, but could also realise other wider benefits e.g. in landscape. Measure 7c also aims to provide wider benefits, and while this does not specifically mention environmental benefits, these are addressed by Measure 7d. <u>Recommendations</u> Measure 7a should be moved to Strategy Objective 3 as it describes measures which improve the resilience of drainage assets. Measure 7a should be replaced by a Measure which promotes flood risk management solutions which work with the natural and cultural environment and avoid or minimise impacts. Measure 7c is moved to Strategy Objective 5 as it relates to collaborative working, and reworded as follows "To promote early engagement u so opportunities for enhancing *<u>the natural and built environment</u>* as well as managing flood risk can be maximised."
	Do-More	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	😐	😐	
7b: To aim to ensure a no net loss of biodiversity and where possible look to provide a net gain through habitat creation and enhancement, contributing to wider environmental objectives.	Do Nothing	😐	😐	😐	😐	😐	😐	n/a	😐	😐	😐	😐	😐	
	Do-More	☺	☺	☺	☺	☺	☺	n/a	☺	☺	☺	😐	☺	
7c: To promote any flood risk management projects that provide multiple benefits where it is cost proportionate	Do Nothing	😐	😐	😐	😐	😐	😐	n/a	😐	😐	😐	😐	😐	
	Do-More	☺	☺	☺	☺	☺	☺	n/a	☺	☺	☺	☺	☺	

7d: To promote early engagement so opportunities for enhancing the natural environment as well as managing flood risk can be maximised	Do Nothing	😐	😐	😐	😐	😐	😐	n/a	😐	😐	😐	😐	😐	It is recommended that a Measure is included to ensure that Emergency Planning for flooding includes consideration of environmental issues. This will ensure that these issues do not need to be considered during the emergency period. New measure should be added to ensure a catchment-based approach to flood risk management. New measure to ensure that international, national and locally designated sites are not adversely affected by flood risk management activities. New measure promoting the creation of green infrastructure as part of flood risk management interventions recognising the multiple benefits developing green infrastructure delivers, such as flood risk management, urban cooling and enhancement of biodiversity. New measure recognising the wider environmental benefits that SUDS can bring. An additional Measure to ensure that Cultural Heritage is protected or enhanced when feasible. Equal consideration should also be given to the need to protect and enhance the landscape / townscape of the Borough. A new measure requiring the avoidance of permanent (irreversible) loss of the most highly productive agricultural soils. A new measure seeking to reduce the consumption of natural resources during construction of any flood scheme through encouraging the use of recycled or secondary materials and reducing energy
	Do-More	☺	☺	☺	☺	☺	☺	n/a	☺	☺	☺	☺	☺	

														consumption. It would be beneficial to develop a new measure relating to WFD and ensuring no deterioration in water body status through flood risk activities by ensuring that WFD assessments are undertaken where required for all local flood risk management schemes, and where possible look to enhance status through implementation of the recommendations of the River Basin Management Plans.

9. Assessment of Preferred Strategy

9.1. Introduction

9.1.1. The SEA Directive states that in the ER, '*the likely significant effects on the environment of implementing the plan or programme….and reasonable alternatives….are [to be] identified, described and evaluated'* (Article 5.1). The ER should include information that may '*reasonably be required taking into account current knowledge and methods of assessment, the contents and level of detail in the plan or programme [and] its stage in the decision-making process'* (Article 5.2).

9.1.2. In addition, the SEA Directive requires the ER to outline measures to prevent, reduce and, as fully as possible, offset any significant adverse effects on the environment of implementing the plan or programme (Annex I (g)).

9.1.3. Existing SEA guidance recognises that the most familiar form of SEA prediction and evaluation is generally broad-brush and qualitative. It is recognised that quantitative predictions are not always practicable and qualitative predictions can be equally valid and appropriate. Examples of the prediction and evaluation techniques for assessing significance of effects are expert judgement, dialogue with stakeholders and public participation, geographical information systems (GIS), reference to legislation and regulations and environmental capacity.

9.1.4. Chapter 8 details how the SEA influenced the development of the Preferred Option. This chapter outlines the Preferred Option (henceforth referred to as Draft LFRMS) and provides a qualitative assessment of the proposals. The proposals that have been considered are those set in Section 5 and Appendix B of the LFRMS document that was produced by SMBC in February 2016.

9.1.5. The measures (and associated actions) to achieve strategy objectives that have been assessed are listed in Tables 9.1 to 9.7 and the assessment results are provided in the same Tables. Chapter 3 provides the methodology used in this assessment.

9.2. Assessment Results

9.2.1. The assessments in Tables 9.1 to 9.7 indicate that the February 2016 Draft LFRMS proposals are likely to result in positive or neutral environmental effects. This is because when Strategy Objectives 1 to 6, and their measures, are considered in parallel with Strategy Objective 7, which is aimed at protecting and enhancing the environment, this is likely to ensure that any potential conflicts will be minimised to satisfactory levels.

9.2.2. Significant positive effects are predicted with regards to the promotion of physical and mental health (SEA Objective 3), taking account of changing climate and reducing consequential risk of flooding (SEA Objective 6) and educating and encouraging the population of Stockport to take action to manage the flood risks they face (SEA Objective 7). There are also significant positive effects in relation to protecting and enhancing biodiversity and blue/green infrastructure (SEA Objective 1), protecting and enhancing the water environment (SEA Objective 5), conserving soils and agricultural resources (SEA Objective 4), promoting prudent use of natural resources (SEA Objective 10), maintaining and enhancing Stockport's landscape, townscapes and historic and cultural heritage (SEA Objectives 11 and 12).

9.2.3. These significant effects arise out of the measures and actions proposed under all LFRMS Objectives, with greater significant positive effects arising from Strategy Objectives 7 and 3, 4 and 5, and they are likely to ensure that:

- the level of information on local flood risk issues is improved;
- knowledge of local flood risk is improved and the results of the flood risk investigations shared with partners and collaboration is achieved;
- public participation in flood risk management is actively encouraged;

- information is shared and discussed with property owners with regards to flood resilience measures;
- critical areas requiring more urgent prioritization would be allocated funding;
- local policies, guidance and standards are produced to prevent flood risk arising from new development, which will strengthen the basis for rejection of planning applications that could have adverse impact on flood risk;
- the physical and mental health of communities is improved through improved knowledge, participation and action, and from the implementation of flood management interventions and improved maintenance regimes, thus reducing the risk of flooding;
- opportunities for funding contributions are identified and the ability for implementation of flood risk interventions is increased;
- SUDS and blue/green infrastructure are promoted and these schemes are potentially implemented;
- landscapes, townscapes and heritage are not adversely affected and may be enhanced through additional protection and the introduction of further blue/green infrastructure;
- enhancements to biodiversity and landscape through the promotion of more environmentally sustainable schemes that work with nature; and
- soils and water quality will be protected.

9.2.4. No significant adverse effects were predicted on any of the SEA objectives. Measures associated with Strategy Objective 2 could on its own result in proposals such as for funding to be sought for flood risk management schemes and the encouragement of flood management activities by riparian landowners potentially having adverse effects on some SEA objectives, such as biodiversity (SEA objective 1), soils (SEA objective 4), water (SEA objective 5) and landscape, townscape and heritage assets (SEA Objectives 11 and 12). However, when considered in parallel with Strategy Objective 7 there is likely to be a slight improvement on the wider environmental objectives on the assumption that understanding and protecting the existing environment will allow appropriate management to avoid adverse impacts on these features.

9.2.5. A number of measures within Strategy Objective 3, relating to developing maintenance plans such as clearing of trash screens (Measure 3b), improving existing local flood risk infrastructure (Measure 3e) and plans following review of assets post-flood events (Measure 3f) would potentially result in uncertain effects on a number of SEA objectives, including biodiversity (SEA objective 1), soils (SEA objective 4), water (SEA objective 5) and landscape, townscape and heritage assets (SEA Objectives 11 and 12). However, as above, when considered in parallel with Strategy Objective 7 there is likely to be a neutral or slight improvement on the wider environmental objectives as consideration of these features will allow them to be planned for in any proposals for maintenance.

9.2.6. Measures 7a-7i would deliver significant positive effects to many of the SEA objectives, and counteract the potential for negative effects identified for Strategy Objective 2.

9.2.7. Overall, large beneficial significant effects are not achieved in all cases as ultimately the measures in the draft LFRMS do not provide certainty that such solutions will be implemented, only that their potential will be promoted.

9.2.8. Following a review of the draft LFRMS, the following recommendations were made to SMBC in order to improve the environmental performance of the LFRMS. SMBC's response to the recommendations are also provided.

Recommendation

9.2.9. It is not clear that the information collected and reviewed in relation to Strategy Objective 1 will result in a priority list of flood risk management interventions, including all actions related to flood risk management not just the large projects.

9.2.10. It is therefore recommended that an additional measure is included to address this as follows:

Measure 1g: *"To use the better understanding of local flood risk to create a priority list of flood mitigation interventions"*

SMBC's response

9.2.11. This recommendation has been taken on board and the measure is included in Strategy Objective 1.

Recommendation

9.2.12. In order to clarify that only sustainable flood risk management schemes and activities will be put forward, we recommend that the wording to Measures 2a and 2b are amended. Furthermore, it is proposed that the wording of Measure 2b is amended to include drainage and maintenance, as well as noted flood defence structures. The amended wording proposed is as follows:

Measure 2a) – "*To progress the actions of the SWMP and, where suitable, sustainable flood risk management schemes are identified and funding sought."*

Measure 2b) - *To work with RMAs and key stakeholders to encourage sustainable flood management activities (including drainage and maintenance) by riparian landowners on ordinary watercourses and flood defence structures, as well as limiting the development of constrictions on ordinary watercourses through consenting and, if necessary, enforcement."*

SMBC's response

9.2.13. These recommendations have been taken on board and the wording of Measures 2a and 2b revised.

Recommendation

9.2.14. In order to strengthen ongoing maintenance plans, reference should also be made to the need to inspect and review drainage assets following a flood event. The amended wording proposed is as follows:

Measure 3b) – "*To develop a maintenance plan for the regular clearing of trash screens at critical flood risk locations including their inspection and clearing as part of a post-event Recovery Plan."*

Measure 3c) – *"To develop a maintenance plan for the regular de-silting and de-vegetation of ordinary watercourses at critical flood risk locations, including their inspection and clearing as part of a post-event Recovery Plan."*

SMBC's response

9.2.15. These recommendations have been taken on board and the wording of Measures 3b and 3c revised.

Recommendation

9.2.16. In order to strengthen measures related to Strategy Objective 6, consideration should be given to identifying vulnerable groups and developing communications and action plans to engage these groups in order to have a positive effect in terms of reducing potential inequalities between social groups.

SMBC's response

9.2.17. The recommendation has been taken on board, and the wording of Measures 6b and 6c have been revised as follows:

Measure 6b) – "*To work with RMAs and key stakeholders to reduce the harmful consequences of local flooding to communities, including vulnerable groups, and human health through pro-active actions; community activities and education programmes that enhance preparedness and*

resilience to local flood risk, thereby promoting community cohesion and minimising community disruption."

Measure 6c) – *"To support local groups and vulnerable people to manage local flood risk and increase the resilience of their communities to flooding."*

9.2.18. The above recommendations were taken on board fully, and have been included in the assessment set out in Tables 9.1 to 9.7. There are no recommendations for additional measures under LFRMS Strategy Objectives 1, 4, 5 and 7 as these result in positive or neutral environmental effects.

9.2.19. In order to strengthen the actions proposed in the Action Plan contained in Appendix B of the Draft LFRMS, a number of additional actions were also proposed as follows:

Recommendation

9.2.20. It is recommended that the following actions are included within Strategy Objective 1 to clarify the actions required to address the measures proposed:

To record local flooding incidents appropriately and use this information to manage risk – including ensuring that effective mechanisms and procedures exist for recording information about flooding from ordinary watercourses, groundwater and surface water, and for using this information to manage risk.

Complete a review of the Stockport PFRA.

Test and validate approach to prioritisation of flood investigations.

SMBC's response

9.2.21. The first two recommendations have been taken on board, and the following actions have been incorporated into Strategy Objective 1:

Record local flooding incidents appropriately and use this information to manage risk.

Review of the Preliminary Flood Risk Assessment for Stockport.

The final action has not been included as this approach has been ongoing for almost 4 years and is therefore already in place.

Recommendation

9.2.22. It is recommended that the following actions are included within Strategy Objective 2 to strengthen Measures 2a and 2b:

Develop a record of each structure, together with details of ownership, state of repair, and where appropriate, the designation of such structures or features which may affect flood risk.

Continue to consent work to ordinary watercourses in line with the LFRMS.

SMBC's response

9.2.23. These recommendations have been taken on board, and the following actions have been incorporated into Strategy Objective 2:

Develop a prioritised list of potential local flood risk management capital schemes to be taken forward for detailed analysis and development of options to reduce flood risk and develop business cases for potential capital schemes.

Consent works on ordinary watercourses and undertake enforcement to remove unapproved constrictions on ordinary watercourses.

Recommendation

9.2.24. It is recommended that the following actions are included within Strategy Objective 3 to strengthen Measures 3a, 3e and 3g:

Undertake desktop and where appropriate site investigations into local water bodies and drainage assets, in liaison with key stakeholders.

Develop a plan with priority locations for improving existing flood risk infrastructure, including ongoing maintenance and condition monitoring.

Identify key highways requiring protection during flood events.

SMBC's response

9.2.25. These recommendations have been taken on board, and the following actions have been incorporated into Strategy Objective 3:

To develop a record of local water body and drainage asset, together with details of ownership, state of repair, and where appropriate, the designation of such structures or features which may affect flood risk. Develop a procedure for the periodic review and update of the asset register.

To develop a plan with priority locations for improving existing flood risk infrastructure, including ongoing maintenance and condition monitoring.

To identify key highways requiring protection during flood events.

Recommendation

It is recommended that the following actions are included within Strategy Objective 4 to strengthen the Measures 4a and 4c:

Respond to local planning authorities on 80 major planning application consultations.

Engage where possible with developers at the earliest possible point in the planning process for major developments and seek to influence the planning process through proactive pre-application discussions.

SMBC's response

9.2.26. These recommendations have been taken on board, and the following actions have been incorporated into Strategy Objective 4:

Respond to strategic planning consultations including Local Plans and planning policy documents.

To engage where possible with developers at the earliest possible point in the planning process for major developments and seek to influence the planning process through proactive pre-application discussions.

Recommendation

It is recommended that the following actions are included within Strategy Objective 5 to strengthen the Measures 5a, 5b, 5e and 5h:

Identify partnership arrangements, setting out roles and responsibilities, protocols for communicating and working together and with other key stakeholders – with a proportionate approach that focuses on agreed priorities is likely to be needed.

Participate in national and regional LLFA best practice sharing groups.

Confirm responsibility for management of flood risk from dam and canal infrastructure, establish and agreeing roles and responsibilities.

Identify particularly vulnerable groups through meetings with health partners.

SMBC's response

9.2.27. These recommendations have been taken on board, and the following actions have been incorporated into Strategy Objective 5:

Identify partnership arrangements, setting out roles and responsibilities, protocols for communicating and working together and with other key stakeholders.

Participate in national and regional LLFA best practice sharing groups.

To confirm responsibility for management of flood risk from dam and canal infrastructure, establish and agreeing roles and responsibilities. Engage with neighbouring LLFAs who share canals.

Identify particularly vulnerable groups through meetings with health partners.

Recommendation

9.2.28. It is recommended that the following action is included within Strategy Objective 6 to strengthen the Measure 6d:

Promote the formation of new flood action groups where appropriate.

SMBC's response

9.2.29. This recommendation has been taken on board, and the following actions have been incorporated into Strategy Objective 6:

Promote the formation of new flood action groups.

9.2.30. No recommendations for actions were considered necessary for Strategy Objective 7.

9.2.31. The above recommendations were taken on board fully, and have been included in the Draft LFRMS and in the assessment set out in Tables 9.1 to 9.7.

Table 9.1 Draft LFRMS Assessment Objective 1

Assessment Scale	Assessment Category	Significance of Effect
+++	Large beneficial	Significant
++	Moderate beneficial	
+	Slight beneficial	Not Significant
0	Neutral or no obvious effect	
-	Slight adverse	
--	Moderate adverse	Significant
---	Strong adverse	
?	Effect uncertain/Requires further clarification	
n/a	Not relevant	

The objectives of the SEA are as follows:

1. Protect and enhance biodiversity, blue/green infrastructure and geodiversity assets
2. Protect and enhance the international sites (HRA Specific Objective)
3. Promote good physical and mental health
4. Conserve soil and agricultural resources
5. Protect and enhance the water environment
6. Take account of a changing climate and reduce the consequential risk of flooding
7. Educate and encourage the population of Stockport to take action to manage the flood risks they face
8. Protect air quality
9. Reduce CO2 emissions and encourage development of CO2 'sinks'
10. Promote prudent use of natural resources, minimise the production of waste and support re-use and recycling
11. Maintain and enhance the quality and distinctiveness of Stockport's historic and cultural heritage
12. Protect and enhance the character and quality of Stockport's landscapes and townscapes

Table 9.1 Draft LFRMS Assessment Objective 1

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations
Objective 1: To better understand local flood risk and make best use of available information in order to better manage flood risk to people, businesses, property, infrastructure and the natural environment														
Measure 1a) - To further develop the Surface Water Management Plan for Stockport to gain a better understanding of key flooding hotspots, risks and associated consequences.	• Undertake surveys and hydraulic modelling from waterways and sewers in Romiley West • Undertake surveys and hydraulic modelling from unknown waterways in Romiley East • Undertake surveys and hydraulic modelling from uncharted culverts in Bramhall • Undertake an investigation of flooding from the drainage network in Cheadle Hulme	+	+	+	+	+	++	+	n/a	0	+	+	+	Further development of the Surface Water Management Plan (Measure 1a) and working with partners (Measure 1b) would provide the information to aid in understanding the nature and locations of flooding in Stockport. These efforts, along with mapping current and past flooding issues (Measure 1d) would aid education initiatives and community resilience, with a positive consequence on public health etc. This could be further enhanced by a web based system of flood risk information to be accessed by key stakeholders (Measure 1e). The above noted measures would also allow the identification of improvement opportunities and the focusing of flood protection efforts on the most applicable areas (SEA Objective 6) – thereby cutting waste. This would be assisted by the implementation of a Register of Flood Risk Management Assets (Measure 1c).

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations
														However, whilst the measures will strengthen understanding of the local flood risk and help with planning future flood management, there is no guarantee that schemes will progress and therefore a large beneficial effect cannot be recorded. Slight positive effects on wider environmental objectives have been identified on the assumption that the associated consequences considered in the measure will include environmental consequences. This is particularly so when this Strategy Objective is considered in parallel with Strategy Objective 7.
Measure 1b) - To work with RMAs and other key stakeholders to investigate locally significant flooding incidents and identify sources, pathways and receptors of flooding.	• Record local flooding incidents appropriately and use this information to manage risk.	+	+	+	+	+	++	++	n/a	0	+	+	+	Similar to Measure1A above, Measure 1B would improve knowledge of flood risk issues and therefore allow for management and funding to support scheme implementation and share the results of the investigations with partners, thereby having a potential moderate positive effect on improving flood risk management (SEA Objective 6) and slight positive effects on the health and well-being of the local population (SEA objective 3) through

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations
														decreasing the proportion of the population at risk of flooding. Importantly, this measure involves working with partners which include flood action groups, residents and businesses and riparian landowners thus ensuring that local people and businesses get involved in flood risk management decisions (SEA objective 7).
Measure 1c) - To further develop and continue to maintain a register of flood risk management and drainage assets with a record of any significant structures with respect to flood risk, together with details of ownership, condition, maintenance regime and where appropriate the designation of such structures or features, which may affect flood risk.		+	+	+	+	+	++	++	n/a	0	+	+	+	A register of flood defence assets would lead to improved local knowledge on localised flooding and ascertain where further investigations are required to assess whether the risk or impacts associated with flooding can be minimised. Review of this record would ensure information is kept up to date, reflecting changes associated with development and climate change. The designation of structures which perform a flood management function but are not currently formerly recognised as such would safeguard these features and appropriate consent would be required for any alteration of them. This would have benefits for flood risk management and people at risk in these areas. Slight positive effects on

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations
														wider environmental objectives have been identified on the assumption that understanding the existing environment will allow appropriate management to avoid additional adverse impacts. This is particularly so when this Strategy Objective is considered in parallel with Strategy Objective 7.
Measure 1d) - To map historical flooding incidences from all sources to identify recurrent flooding issues and hotspots which will assist in the prioritisation of flood mitigation.	• To map historical flooding incidences from all sources to identify recurrent flooding issues and cluster areas which will assist in the prioritisation of flood mitigation intervention.	0	0	0	0	0	++	+	n/a	0	0	0	0	Measure 1D would ensure that high level information is up-to-date, contributing to the achievement of SEA Objectives 6 and 7.
Measure 1e) - To provide a web based system of flood risk information accessible by risk management authorities and other key stakeholders.	• To provide a web based system of flood risk information to be accessed by key stakeholders and others, e.g. developers.	+	+	+	+	+	++	++	n/a	+	0	+	+	This will allow data on all issues to be maintained in a central system, and therefore allow a better understanding of the implications of flood risk and management to avoid adverse impacts. Slight positive effects on wider environmental objectives have been identified on the assumption that understanding the existing environment will allow appropriate management to avoid additional adverse impacts. This is particularly so when this Strategy Objective is

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations
														considered in parallel with Strategy Objective 7.
Measure 1f) - To review the Preliminary Flood Risk Assessment as required by the EU Floods Directive and Flood Risk Regulations 2009 and contribute to the other requirements.	• Review of the Preliminary Flood Risk Assessment for Stockport	0	0	+	0	0	++	+	n/a	0	0	0	0	Measure 1D would ensure that high level information provided in the PFRA is current, therefore contributing to the achievement of SEA Objective 6 and 7.
Measure 1g) - To use the better understanding of local flood risk to create a priority list of flood mitigation interventions		0	0	++	0	0	++	+	n/a	0	0	0	0	The development of a prioritised list of schemes would have strong beneficial effects in the management of flood risk. Identifying the most urgent areas for scheme development would provide a strategy through which funding for those schemes could be achieved. This would have a significant positive effect on physical and mental health (SEA objective 3).

Table 9.2 Draft LFRMS Assessment Objective 2

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations
Objective 2: To reduce the potential impact and costs of flooding in the Borough														
Measure 2a) - To progress the actions of the SWMP and, where suitable, flood risk management schemes are identified and funding sought.	• Develop a prioritised list of potential local flood risk management capital schemes to be taken forward for detailed analysis and development of options to reduce flood risk and develop business cases for potential capital schemes. • Dingle Hollow Detention Basin • Implement Stage 2 of Cheadle Hot Spot Study • Rehabilitation of Bramhall Minor Culverts • Rehabilitation of Barlow Fold road culvert	+	+	++	+	+	++	+	+	+	+	+	+	The identification of flood management schemes and their funding would have beneficial effects in the management of flood risk (SEA objective 6). This would contribute towards ensuring that recommendations are realised and investment is appropriately allocated resulting in a decrease in the proportion of the population at risk of flooding and in beneficial effects on physical and mental health (SEA objective 3). The potential impact on a number of the SEA objectives could be uncertain, however when considered in parallel with Strategy Objective 7 there is likely to be a slight positive effects on wider environmental objectives on the assumption that understanding and protecting the existing environment will allow appropriate management to avoid adverse impacts.
Measure 2b) - To work with RMAs and key stakeholders to encourage flood management activities by riparian	• Consent works on ordinary watercourses and undertake enforcement to remove unapproved constrictions	+	+	+	+	+	++	++	+	?	?	+	+	This strategy measure aims to reduce flood risk through actively encouraging public participation in flood risk management activities. It would encourage

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations
landowners on ordinary watercourses and flood defence structures, as well as limiting the development of constrictions on ordinary watercourses through consenting and, if necessary, enforcement.	on ordinary watercourses													engagement with a range of stakeholders and help educate the wider population on flood risk and help in the sharing of knowledge regarding these risks. This approach would not only ensure that local landowners are included in flood risk management of their assets, but would allow very specific local flooding issues to be addressed through the local knowledge held by riparian owners. In turn, flood management practitioners would be able to share knowledge about flood risk management, further supporting SEA objectives 6 and 7. The measure would also strengthen the management of development and risks to a number of receptors, such as ecology, land use etc by working with various different stakeholders. When considered in parallel with Strategy Objective 7, positive environmental effects are likely.
Measure 2c) - To develop a risk based criteria to prioritise projects across Stockport to inform future grant applications to ensure flood		+	+	+	+	+	+++	++	+	+	+	+	+	The development of a prioritised list of schemes would have strong beneficial effects in the management of flood risk. Identifying the most urgent areas for scheme development would provide a strategy through

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations
risk management funding is directed to areas most at need and where solutions are more effective and prioritised alongside other needs.														which funding for those schemes could be achieved. Taken together with the measures above, and Strategy Objective 7, positive effects on wider environmental objectives have been identified on the assumption that understanding the existing environment will allow appropriate management to avoid adverse impacts on them.
Measure 2d) - To improve the detection, forecasting and issue of flood warnings; planning for and co-ordinating a rapid response to flood emergencies, and promoting faster recovery from flooding.		n/a	n/a	++	n/a	n/a	-	+	n/a	n/a	n/a	n/a	n/a	This will result in a decrease in the proportion of the population affected by flooding, and the time over which they may be affected by flooding, with beneficial effects on physical and mental health (SEA objective 3). However, as this is not aimed at preventing flooding, it will not have an impact on the other SEA Objectives.
Measure 2e) - To identify opportunities for natural flood management and the restoration of ordinary watercourses, including deculverting.		++	+	++	+	++	+++	+	+	+	++	+	+	This measure meets a large number of the SEA objectives through implementing environmentally sustainable solutions which would have the potential for wide ranging environmental benefits in addition to flood risk management. However, a significantly positive assessment cannot

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations
														be made across all the SEA Framework as the measure does not provide certainty that such solutions will be implemented, only that opportunities will be identified.

Table 9.3 Draft LFRMS Assessment Objective 3

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations
Objective 3: To ensure resilience of local water bodies and drainage assets														
Measure 3a) - To promote environmentally sustainable solutions including for example de-culverting, natural flood risk management, blue/green infrastructure, increased tree cover and catchment sensitive farming.	• To develop a record of local water body and drainage asset, together with details of ownership, state of repair, and where appropriate, the designation of such structures or features which may affect flood risk. Develop a procedure for the periodic review and update of the asset register.	+++	+	+++	+	++	++	+	+	+	++	+	+	This measure meets a large number of the SEA objectives through implementing environmentally sustainable solutions which would have the potential for wide ranging environmental benefits in addition to flood risk management. This would include positive benefits for biodiversity and landscape, and consequent positive effects on physical and mental health.
Measure 3b) - To develop a maintenance plan for the regular clearing of trash screens at critical	• To develop a maintenance plan for the regular cleansing of trash screens at critical	?	0	++	0	+	+	+	n/a	0	+	+	+	This measure ensures that critical flood risk locations are kept free of debris and therefore reduces the potential risk of and damage from flood events (SEA

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations
flood risk locations.	flood risk locations													objective 6), which in turn will have a positive impact on mental health (SEA Objective 3). Cleaning of trash will also have a positive impact on landscape character.
Measure 3c) - To develop a maintenance plan for the regular de-silting and de-vegetation of ordinary watercourses at critical flood risk locations.	• To develop a maintenance plan for the regular de-silting and de-vegetation of ordinary watercourses at critical flood risk locations	+	+	++	-	+/-	+	+	n/a	-	0	-	-	This strategy measure aims to reduce flood risk through actively encouraging maintenance and delisting regimes. However, it could have an impact on biodiversity if no consideration was made of species/habitats along / in watercourses. Similarly this could interfere with natural processes and therefore potentially impact on soils and may lead to sedimentation impacts elsewhere in the watercourse. De-vegetation may impact on the ability to sink carbon and could lead to adverse visual impacts. However, when taken into consideration with Strategy Objective 7 that aims to protect biodiversity and the environment and landscape, this is likely to result in a potential positive impact as these factors will be taken into consideration in the implementation of maintenance planning from the outset.
Measure 3d) - To develop a maintenance plan	• To develop a maintenance plan for the regular cleansing of	+	+	+	+	+	+	+	n/a	n/a	+	n/a	n/a	This measure would reduce flood risk and therefore be beneficial for physical and

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations
for the regular clearing of highway gullies based on a prioritised risk based approach.	highway gullies based on a prioritised risk based approach													mental health (SEA Objective 3). It could also protect the environment and biodiversity from the removal of road runoff pollutants from gullies before they enter the watercourse (SEA Objectives 1, 2 and 5).
Measure 3e) - To develop a plan for improving existing local flood risk infrastructure so it is resilient to climate change		+	+	+++	+	+	+++	+	+	+	+	+	+	This measure would reduce flood risk and therefore be beneficial for physical and mental health (SEA Objective 3). Improving flood risk infrastructure so its resilient to change will tie in with other Strategy objectives that encourage the use of blue/green infrastructure. It is unclear whether this would have a negative impact on other SEA objectives as for example it is not clear if the planned infrastructure will lead to significant adverse effects on landscape, however when taken in parallel with Strategy Objective 7 it should avoid significant adverse effects and may result in a slight positive effect as they will have been taken into consideration as part of the planning of flood risk management options.
Measure 3f) - To undertake review of flood risk and drainage assets and their maintenance plans following a	• To develop a plan with priority locations for improving existing flood risk infrastructure, including ongoing maintenance and	?	?	++	?	?	+	?	?	n/a	?	?	?	This measure would provide a clearly defined approach to responding to impacts following flood events. This would result in beneficial effects on health and wellbeing (SEA objective 3).

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations
flood event to ensure resilience.	condition monitoring.													Whilst Strategy Objective 7 should prevent any significant adverse effects on the other SEA Objectives, the nature of these measures is uncertain and therefore positive impacts cannot be concluded.
Measure 3g) - To identify and manage a resilient network of highways during a flood event.	• To identify key highways requiring protection during flood events.	n/a	n/a	++	n/a	n/a	++	n/a	n/a	n/a	n/a	n/a	n/a	This measure will seek to ensure the functioning of highways and therefore promote physical and mental health (SEA objective 3), and also allow for changing climate (SEA Objective 6). However, it will not directly contribute to any of the other SEA Objectives.

Table 9.4 Draft LFRMS Assessment Objective 4

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations
Objective 4: To ensure appropriate development in areas of flood risk														
Measure 4a) - To work with RMAs and key stakeholders to produce local policies and guidance; and enforce standards to promote a positive impact on flood risk from new development, and to prevent any	• To engage where possible with developers at the earliest possible point in the planning process for major developments and seek to influence the planning process through proactive pre-application	+	0	++	0	0	+++	++	0	0	+	0	+	This measure strengthens planning policy and would strengthen the basis for rejection of planning application decisions that could have an adverse impact on flood risk. Reducing the impacts of new development could reduce flood risk overall. This also contributes to taking into account climate change in new developments. This will

increase in flood risk, including the possible impacts of climate change.	discussions.													have a positive impact on physical and mental health. This also allows for the potential consideration of blue/green infrastructure within developments. Consideration of flood issues in new development will likely lead to positive impacts on the design of the new development and therefore be positive in landscape / townscape terms. This measure would reduce the risk of increasing surface water flooding and would also reduce the risk of introducing more people at flood risk through restricting new development in flood risk areas. Provision of clear guidance would reduce the risk of new developments increasing flood risk.
Measure 4b) - To maximise opportunities for contribution towards existing and proposed flood risk management from new development to address local flood risk.	• Establish an approach through the S106 process to ensure the adoption and continued maintenance of SuDS as part of the planning process for new developments to manage flood risk now and in the future.	+	0	++	0	0	+++	+	0	0	0	0	+	Identifying opportunities for funding contributions would increase the ability for implementation of flood risk schemes. Opportunities to use Section 106 and local levies would strengthen the ability to achieve this. This would have a beneficial effect on physical and mental health, and also contribute significantly to accounting for climate change and the consequential risk of flooding. This also allows for the potential consideration of blue/green infrastructure within developments.
Measure 4c) - To	• Respond to strategic	++	+	++	+	++	+++	++	+	+	++	+	++	Measure 4c would lead to SuDS which can have

work with relevant RMAs and key stakeholders to promote SuDS measures for new developments through the LLFA role as a statutory consultee on major planning applications.	planning consultations including Local Plans and planning policy documents.													benefits for water quality, biodiversity, soils resources and can allow the development of CO2 sinks. Their careful design also lends itself to enhancing landscape/townscape. SuDS can also help control flood risk and improve resilience to climate change, and as such would aid physical and mental health through reduced flood risk.
Measures 4d) - To identify exemplar projects to introduce innovative SuDS approaches through the use of green infrastructure.		+++	0	++	0	+	++	++	0	0	0	0	++	Measure 4d will encourage best design of SuDS, with similar benefits as identified for Measure 4c for SEA objectives 1, 3, 6 and 7. It will also contribute to identifying schemes with additional landscape/ townscape benefits. It will not have any direct impact on the other SEA objectives.

Table 9.5 Draft LFRMS Assessment Objective 5

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations
Objective 5: To develop a collaborative partnership approach to flood risk management, and cooperate with other Risk Management Authorities and key stakeholders working across catchments														
Measure 5a) - To clarify local roles and responsibilities of Risk Management Authorities in Stockport and adjoining authorities and establish lines of	• Identify partnership arrangements, setting out roles and responsibilities, protocols for communicating and working together and with other key stakeholders.	n/a	n/a	+	n/a	n/a	+	++	n/a	n/a	n/a	n/a	n/a	This measure would encourage and strengthen collaboration and the development and sharing of knowledge, information and data (SEA Objective 7). Understanding local level flood risk would assist in minimising the impacts of flooding and contribute to

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations
communication to share information and resources and work collaboratively in a coordinated manner for flood risk management.	• Establish responsibility for the management of flood risk from watercourses of unknown status.													improved management of flood risk (SEA Objective 6), having a positive impact on physical and mental health (SEA Objective 3). It will not directly contribute to any of the other SEA Objectives.
Measure 5b) - To work with RMAs and key stakeholders to encourage flood schemes by third parties, riparian landowners and stakeholders.	• Participate in national and regional LLFA best practice sharing groups.	+	+	++	+	+	++	+++	+	+	+	+	+	This measure would encourage and strengthen collaboration and the development and sharing of knowledge, This could lead to more sensitive development in relation to soils and agriculture. It could lead to flood management activities which may not be compatible with some of the SEA objectives such as the protection of biodiversity, however by working with all stakeholders this should result in a slight positive impact as it will contribute to avoiding adverse environmental impacts, especially when taken into consideration with Strategy Objective 7.
Measure 5c) - To lead on the implementation of local flood risk management schemes and to work with RMAs and key stakeholders to best utilise funding obtained through a prioritised risk-		+	+	+++	+	+	+++	++	+	+	+	+	+	The development of a prioritised list of schemes would have strong beneficial effects in the management of flood risk. Identifying the most urgent areas for scheme development would provide a strategy through which funding for those schemes could be achieved. It could lead to flood

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations
based approach.														management activities which may not be compatible with some of the SEA objectives such as the protection of biodiversity, however this should be a positive outcome when considered in parallel with Strategy Objective 7 as the environment will be a key consideration of proposed schemes.
Measure 5d) - To work with neighbouring Lead Local Flood Authorities to ensure a catchment-based approach to local flood risk management.		++	++	++	++	++	++	+	+	+	++	+	+	The advantages of partnership working are that it would allow SMBC to share knowledge and data, leading to a more efficient co-ordination of information and to develop a more clearly defined approach of how flood risk is to be managed. This measure has a more targeted audience at Local Authority level rather than the wider public. The development of a catchment-wide approach would provide greater opportunities for wider environmental benefits in particular blue/green infrastructure, with consequent benefits to physical and mental health beyond management of flood risk. However, while the measure could potentially allow greater opportunities for wider environmental benefits, it is unclear what the nature of those measures may be.
Measure 5e) - To work with key	• To confirm responsibility for	+	0	++	0	+	+	+	n/a	n/a	+	+	+	The advantages of partnership working are that

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations
RMAs for managing flood risk from dam and canal infrastructure.	management of flood risk from dam and canal infrastructure, establish and agreeing roles and responsibilities. Engage with neighbouring LLFAs who share canals													it would allow sharing of knowledge and data, leading to a more efficient co-ordination of information and to develop a more clearly defined approach to manage this specific risk from dams and canal infrastructure. However, it is unclear what the impacts may be on wider SEA objectives would be. When considered in parallel with SEA Objective 7 this should result in either no impact or a slight positive impact on the natural and historic environment.
Measure 5f) - To promote early engagement with partners so opportunities for enhancing the natural and built environment as well as managing flood risk can be maximised.		++	+	++	+	++	++	+	+	+	++	++	++	This measure meets a large number of the SEA objectives through the potential to include environmental opportunities into flood management schemes at the earliest opportunity, with the potential for wide ranging environmental benefits in addition to flood risk management. Taken together with Strategy Objective 7 this should result in significant positive impacts on the natural and historic landscape.
Measure 5g) - To work with Association for Greater Manchester Authorities to share best practice, to		++	+	++	+	++	++	+	+	+	+	+	+	The advantages of partnership working are that it would allow sharing of knowledge and data, leading to a more efficient co-ordination of information and allow a wider catchment based approach to be taken,

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations
identify funding opportunities and identify cross borough schemes for managing flood risk on a catchment scale.														with consequent benefits to blue/green infrastructure, physical and mental health, and potentially landscape character. Taken together with Strategy Objective 7 this should result in positive impacts on the wider natural and historic landscape.
Measure 5h) – To work with health partners to identify funding opportunities and quantify health and wellbeing benefits as part of the prioritisation of flood risk management schemes.	• Identify particularly vulnerable groups through meetings with health partners	+	n/a	+++	+	+	++	++	n/a	+	+	+	+	This measure will directly contribute to the consideration of physical and mental health in the development of flood management schemes. This could include slight improvements in relation to biodiversity (blue/green infrastructure) and promoting the conservation of landscape character, soils etc that contribute to the physical and mental health of people in Stockport.

Table 9.6 Draft LFRMS Assessment Objective 6

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations
Objective 6: To assist communities in understanding information on flood risk and supporting themselves														
Measure 6a) - To provide educational material to the public and promote personal resilience.	• Update website and produce leaflets for householders and businesses on preparing for floods with clear guidance on who to contact during a	n/a	n/a	++	n/a	n/a	+	++	n/a	n/a	n/a	n/a	n/a	This measure would result in enhanced work with and education of local communities. This would allow them to become more resilient and thereby help protect their physical and mental health. The scope of

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations
	flood event													this measure is limited in the areas of SEA objectives that would be impacted.
Measure 6b) - To work with RMAs and key stakeholders to reduce the harmful consequences of local flooding to communities and human health through pro-active actions; community activities and education programmes that enhance preparedness and resilience to local flood risk, thereby promoting community cohesion and minimising community disruption.		n/a	n/a	+++	n/a	n/a	+	+++	n/a	n/a	n/a	n/a	n/a	This measure would result in enhanced work with and education of local communities. This would allow them to become more resilient and thereby help protect their physical and mental health. The scope of this measure is limited in the areas of SEA objectives that would be impacted.
Measure 6c) - To support local groups to manage local flood risk and increase the resilience of their communities to flooding.	• Promote the formation of new flood action groups	+	+	+++	+	+	+	+++	+	+	+	+	+	This measure would result in enhanced work with and education of local communities. This would allow them to become more resilient and thereby help protect their physical and mental health. However, this could lead to flood management activities which may not be compatible with a range of SEA

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations
														objectives. This risk would be reduced when considered in parallel with Strategy Objective 7, and working together may have a positive impact on the natural and built environment by encouraging local communities to take the environment into account in the development of flood risk management measures.
Measure 6d) - To continue to work with RMAs and key stakeholders to improve communications and advice given before and during flooding events.		n/a	n/a	++	n/a	n/a	n/a	+	n/a	n/a	n/a	n/a	n/a	This measure would result in enhanced work with and education of local communities. This would allow them to become more resilient and thereby help protect their physical and mental health. Improvements in flood warnings would potentially reduce the consequences of flooding including risk of harm to local people, but would not reduce the risk of flooding itself. Flooding would still cause distress. The scope of this measure is limited in the areas of SEA objectives that would be impacted.
Measure 6e) - To work with RMAs and key stakeholders to establish a co-ordinated approach to the provision of temporary flood		+	0	++	+	+	+	+	0	0	+	+	+	This measure would result in enhanced work with and education of local communities. This would allow them to become more resilient and thereby help protect their physical and mental health. Improvements in flood warnings would

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations
risk management measures.														potentially reduce the consequences of flooding including risk of harm to local people, but would not reduce the risk of flooding itself. Flooding would still cause distress. Although there is a risk that temporary measures could have unknown/adverse impacts on a range of SEA objectives, depending on the measured proposed, when taken into consideration Strategy Objective 7 this will allow for consideration of environmental issues in advance of any temporary measures which overall would result in a more positive contribution to the SEA objectives than current temporary measures.

Table 9.7 Draft LFRMS Assessment Objective 7

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations
Objective 7: To encourage, support and provide flood risk management which seeks to enhance and protect the environment														
Measure 7a) - To promote environmentally sustainable flood risk management solutions which work with the natural and built environment, using a catchment based approach where applicable, and providing multiple benefits where possible	• Work with Healthy Waterways Trust to collaborate on ideas, Communications and projects to assist in the cleaning up of our watercourses, e.g. Micker Brook, Chorlton Brook. • Explore the potential for use of environmentally sustainable solutions in all Stockport led flood risk management schemes.	+++	+	+++	+	++	++	+	+	+	++	+	+	This measure would provide benefits across the SEA Objectives through implementing environmentally sustainable solutions which would have the potential for wide ranging environmental benefits in addition to flood risk management. This would include positive benefits for biodiversity and landscape, and consequent positive effects on physical and mental health. However, a significantly positive assessment cannot be made across all the SEA Framework as the measure does not provide certainty that such solutions will be implemented, only their potential will be promoted.
Measure 7b) - To ensure that Emergency Planning for flooding includes consideration of, and avoids damage or deterioration to, the natural and built environment, including landscape and townscape character and the historic		++	++	+	++	++	0	0	+	+	+	++	++	This measure would provide benefits across the SEA Objectives ensuring that impacts on the environment and cultural heritage have been considered in advance of any temporary measures proposed.

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations
environment.														
Measure 7c) - To promote the conservation, management and creation of green infrastructure as part of sustainable flood risk management solutions, recognising the multiple benefits green infrastructure delivers, such as flood risk management, urban cooling, climate change resilience and enhancement of biodiversity. This should include promotion in the built environment of retrofitting SUDS, green roofs and building integrated vegetation to manage run-off water.		+++	+	+++	+	++	++	+	+	+	++	+	+	This measure would provide benefits across the SEA Objectives through implementing environmentally sustainable solutions which would have the potential for wide ranging environmental benefits in addition to flood risk management. This would include positive benefits for biodiversity and landscape, and consequent positive effects on physical and mental health. However, a significantly positive assessment cannot be made across the SEA Framework as the measure does not provide certainty that such solutions will be implemented, only their potential will be promoted.
Measure 7d) - To promote flood risk management solutions that protect and enhance the landscape and built environment		++	n/a	++	+	n/a	n/a	n/a	n/a	+	+	+++	+++	This measure would provide benefit specifically for landscape and townscape, including cultural heritage. This could have a benefit on physical and mental health. This objective however has limited scope in relation to

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations
character of the Borough, including the historic environment and heritage assets														other SEA objectives.
Measure 7e) - To aim to ensure no net loss of biodiversity and where possible net gain through habitat creation and enhancement as a result of flood management solutions, contributing to the Borough's natural environment and biodiversity		+++	++	++	+	+	n/a	n/a	n/a	+	++	n/a	+	This measure would provide benefit biodiversity. This could have a benefit on physical and mental health. This could also have slight benefits on landscape character. This objective however has limited scope in relation to other SEA objectives.
Measure 7f) - To ensure that international, national and locally designated sites are not adversely affected by flood risk management activities		+++	+++	++	+	+	n/a	n/a	n/a	+	+	n/a	+	This measure would provide benefit to designated sites, This could have a benefit on physical and mental health. This could also have slight benefits on landscape character. This objective however has limited scope in relation to other SEA objectives.
Measure 7g) - To protect soil resources and avoid permanent (irreversible) loss of the best quality and most versatile agricultural land as a result of flood risk management		+	+	++	+++	+	n/a	n/a	n/a	n/a	+	n/a	+	This measure would provide benefit to soils and the protection of agricultural land This could have a benefit on physical and mental health. This could also have slight benefits on the water environment and landscape character. This objective however has limited scope in

Measures	Actions	SEA1	SEA2	SEA3	SEA4	SEA5	SEA6	SEA7	SEA8	SEA9	SEA10	SEA11	SEA12	Comments/ Recommendations
solutions														relation to other SEA objectives.
Measure 7h) - To seek to reduce energy consumption and minimise use of natural resources in the implementation of flood management schemes, through encouraging the re-use of materials, use of secondary materials and maximising recycling		+	+	+	+	+	n/a	n/a	+	+	+++	n/a	+	This measure would provide benefit to the use of natural resources. This could also have slight benefits on biodiversity, the water environment, soils and landscape character. This objective however has limited scope in relation to other SEA objectives.
Measure 7i) - To ensure that WFD assessments are undertaken where required for flood risk management schemes; with no deterioration in WFD waterbody status as a result of flood risk management activities and where possible enhancement of status through implementation of the recommendations of River Basin Management Plans		+	+	+	n/a	+++	n/a	n/a	n/a	n/a	+	n/a	n/a	The measure would also strengthen the management of development and risks associated water quality and will ensure that all work meets the requirements of the WFD and RBMP, potentially resulting in a moderate positive effect on SEA objective 5 (Protect and enhance the water environment). This in turn may have positive impacts for biodiversity (SEA Objective 1). This objective however has limited scope in relation to other SEA objectives.

10. Cumulative, Synergistic and Indirect Effects

10.1.1. The results of the assessment of the Draft LFRMS are presented in Chapter 9. The assessments primarily focused on direct and indirect (secondary) effects, acting in isolation. As required by the SEA Regulations, cumulative, synergistic and indirect effects have also been recorded and analysed during the appraisal. More details about the methodology utilised can be found in Chapter 3. Table 10.1 lists the results of the cumulative, synergistic and indirect effects analysis.

Table 10.1 Summary of Cumulative, Synergistic and Indirect Effects

Effects	Causes	Significance
Synergistic effects on improving health and wellbeing	When taken together, the measures proposed could lead to cumulative positive effects through the reduction of overall flood risk to both people and property. Direct measures such as the creation of flood action groups and increased flood warning systems could improve community awareness and resilience and help to reduce overall stress levels, in addition to reducing the potential for people to be negatively affected by flooding. In addition to this, community activities and education programmes could help to improve community cohesion, therefore creating an improved sense of wellbeing in the local community. This could further compound the beneficial effects when reacting to flood events, through the potential for increased resilience through mutual community support networks. Indirect benefits that could also add to overall community wellbeing could stem from an improvement in biodiversity and landscape measures. These measures could increase the areas of accessible open space available for recreation, which could lead to mental and physical health benefits.	Potentially significant positive effects likely over the medium and long term as proposals are delivered.
Cumulative effect on minimising the risk of and from flooding	Overall the measures within the LFRMS seek to reduce the risk of flooding. Should the majority of the measures be implemented and recommendations taken into account, it is likely that the risk from flooding to people and property, including infrastructure and heritage assets should reduce. The risk of/from flooding should also reduce, through the implementation of measures such as SuDS, blue/green infrastructure, changes to planning guidance, improved design and other measures taken in collaboration with other plans and strategies.	Potential medium to long term benefits as measures are implemented.
Cumulative effects on biodiversity	The measures create the potential for long term positive effects through the active management of flood risk, whilst enhancing assets in the natural environment. The measures should ensure that flood risk management measures do not lead to the loss of biodiversity assets. The effect should be enhanced through the particular importance placed on designated sites and protected habitats, as identified locally. The effect should also be enhanced through the importance placed on promoting environmentally sustainable solutions including SUDS and blue/green infrastructure.	Potential long term positive effects as measures are implemented.

Effects	Causes	Significance
Cumulative effect on protecting soils	Overall, the LFRMS should enable a reduction in overall flood risk. Taken together, the measures should therefore lead to an overall reduction in surface water run off which, in turn, should lead to an increased resilience to degradation. The measure to protect soils and avoid permanent loss of best quality farmland will also contribute to a positive effect on soils.	Positive effects in the medium to long term as measures are implemented.
Cumulative effects on improving water quantity, quality and flow	Overall the measures contained within the LFRMS seek to reduce flood risk, which may act as a pathway for pollutants to enter the water environment. The promotion of SUDS will contribute to a reduction in pollutants entering the water environment. Furthermore, the measures require WFD assessments for flood risk management schemes which will help protect and enhance water quality.	Potentially significant positive effects over the medium to longer term as measures are implemented.
Cumulative effects on landscape, townscape and cultural heritage	Overall the measures contained within the LFRMS seek to reduce adverse impacts on landscape, townscape and direct and indirect impacts on cultural heritage assets. In particular, the promotion of green/blue infrastructure will contribute positively to landscape/townscape.	Potential positive effects as measures are implemented that protect sites.

12. Mitigation

12.1.1. The term ‘mitigation’ encompasses any approach, which is aimed at preventing, reducing or offsetting significant adverse environmental effects that have been identified. In practice, a range of measures applying one or more of these approaches is likely to be considered in mitigating any significant adverse effects predicted as a result of implementing the LFRMS. In addition, it is also important to consider measures aimed at enhancing positive effects. All such measures are generally referred to as mitigation measures.

12.1.2. However, the emphasis should, in the first instance, be on proactive avoidance of adverse effects. Only once all alternative options or approaches to avoiding an effect have been examined should mitigation then examine ways of reducing the scale/importance of the effect.

12.1.3. Mitigation can take a wide range of forms, including:

- changes to the preferred measures, including bringing forward new options to address specific elements that cause adverse effects, or adding or deleting options;
- refining options in order to improve the likelihood of positive effects and to minimise adverse effects;
- technical measures (such as setting guidelines) to be applied during the implementation stage;
- identifying issues to be addressed in project environmental impact assessments for certain projects or classes of projects;
- proposals for changing other plans and programmes; and
- contingency arrangements for dealing with possible adverse effects.

12.1.4. Mitigation measures in the form of recommendations were identified in the individual assessments throughout the SEA process and are highlighted in the specific recommendations in Chapter 9.

13. Monitoring

13.1.1. The SEA Directive states that '*member states shall monitor the significant environmental effects of the implementation of plans and programmes…..in order, inter alia, to identify at an early stage unforeseen adverse effects, and to be able to undertake appropriate remedial action' (Article 10.1). In addition, the Environmental Report should provide information on a 'description of the measures envisaged concerning monitoring'* (Annex I (i)) (Stage E).

13.1.2. SEA monitoring will cover significant environmental effects and it involves measuring indicators which will enable the establishment of a causal link between the implementation of the plan and the likely effects (both positive and negative) being monitored. In line with the SEA Directive, these positive and negative effects should be monitored with the implementation of the LFRMS.

13.1.3. Existing guidance recommends monitoring to be incorporated into Local Authority's existing monitoring arrangements. It is therefore recommended that the monitoring of the SEA of the LFRMS is undertaken alongside other regular monitoring programmes.

13.1.4. The proposed Monitoring Programme in Table 13.1 contains indicators which have been identified taking the requirement for post-implementation monitoring into consideration and which should be considered by Stockport Metropolitan Borough Council when devising the LFRMS's Monitoring Programme.

13.1.5. There will be a need for careful consideration of the practicalities of monitoring to be taken into account when shaping the Monitoring Programme for the LFRMS, especially in the context of limited resources. The emphasis must be on creating a balanced, effective, yet achievable set of monitoring criteria.

Table 13.1 Monitoring Programme

No	Predicted Effect	Potential Indicators to Monitor Change	Target	Responsibility /frequency of monitoring
1	Protect and enhance biodiversity, blue/green infrastructure and geodiversity assets	Number of flood risk management interventions that work with natural processes	Increase	SMBC/Annual
		Number of new flood risk management interventions delivering green/blue infrastructure and length of blue/green infrastructure network	Increase	SMBC/Annual
		Number of new developments where SuDS have been installed (including SuDS, green corridors, rainwater harvesting, green roofs, land management, etc.)	Increase	SMBC/Annual
		Number of existing and redevelopment schemes incorporating SUDS	Increase	SMBC/Annual
		Area of green space important for wildlife corridors identified and safeguarded or enhanced as part of flood management	Increase	SMBC/Annual
		Number of new flood risk management interventions delivering habitat creation or enhancement	Increase	SMBC/Annual
		Area of BAP habitat created /managed which meet Biodiversity Action Plan targets as part of flood management	Increase	SMBC/Local Authorities/ Annual
		Number of SSSIs Favourable condition enhanced as a direct or indirect result of flood risk management interventions	Nil	SMBC/Annual
		Area of protected woodland and trees lost through flood risk management interventions	Nil	SMBC/Annual
		Area of SSSI lost to flood risk management interventions	Nil	SMBC/Annual
		Number of SSSI where favourable condition has declined due to direct or indirect impacts of flood risk management interventions	Nil	SMBC/Annual
		Area of LNR lost to flood risk management interventions	Nil	SMBC/Annual
		Area of BAP habitat lost to flood risk management interventions	Nil	SMBC/Annual
		Area of geodiversity assets lost to flood risk management interventions	Nil	SMBC/Annual
		Number of flood risk management proposals which require a Habitats Regulations Assessment with mitigation measures to ensure no adverse effect on European sites.	Reduce	WCC/Annual

No	Predicted Effect	Potential Indicators to Monitor Change	Target	Responsibility /frequency of monitoring
		Number of flood risk management proposals where plans with conditions are imposed to ensure working practices and works to protect/ enhance protected species	Reduce	WCC/Annual
2	Protect and enhance the International sites (HRA specific objective)	Number of flood risk management interventions which have an adverse effect on International Sites (through increased flood risk or flood management interventions)	Nil	SMBC/Annual
3	Promote good physical and mental health	Number of deaths/injuries resulting from flooding in the Borough annually	Reduce	SMBC/Annual
		Number of residential properties affected by flooding in the county annually.	Reduce	SMBC/Annual
		Number of community and economic assets affected by flooding in the county annually.	Reduce	SMBC/Annual
		Number of elderly people at risk of the adverse consequences of flooding	Reduce	SMBC/Annual
		Number of disabled people at risk of flooding	Reduce	SMBC/Annual
		Number of flood risk management schemes that reduce people's ability to access green spaces	Nil	SMBC/Annual
4	Conserve soil and agricultural resources	Area of Grade 1 and 2 agricultural land (hectares) lost as a result of food risk management interventions	Reduce	SMBC/Annual
		Number of serious soil erosion incidents annually caused by flood events.	Nil	SMBC/Annual
		Area of land provided with protection measures to protect from flooding	Increase	SMBC/Annual
5	Protect and enhance the water environment	Length of improved watercourse as part of flood risk management interventions	Increase	SMBC/Annual
		Number of surface water bodies in the Borough achieving 'good' ecological status.	Increase	SMBC/Annual
		Number of new developments generating an increase in surface water runoff	Nil	Local Authorities/Annual
6	Take account of a	Number of residential properties within flood risk areas	Reduce	SMBC/Annual

No	Predicted Effect	Potential Indicators to Monitor Change	Target	Responsibility /frequency of monitoring
	changing climate and reduce the consequential risk of flooding	Number of non-residential properties within flood risk areas	Reduce	SMBC/Annual
		Number of planning applications approved annually subject to sustained Environment Agency objections on flood risk grounds.	Reduce	Local Authorities/Annual
		Number of new flood prevention schemes developed	Increase	SMBC/Annual
		Number of incidents of road or railway line closures due to flooding annually.	Reduce	SMBC/Annual
7	Educate and encourage the population of Stockport to take action to manage the flood risks they face	Number of people who understand the consequences of flood risk and how to live with it (informed through number of public engagement events which have taken place e.g. flood fairs, flood action group meetings).	Increase	SMBC/Annual
		Number of households and businesses registered for flood warnings as a percentage of total number of households and businesses at risk of flooding	Reduce	SMBC/Annual
8, 9, 10	Protect air quality Reduce CO2 emissions and encourage development of CO2 'sinks'. Promote prudent use of natural resources, minimise the production of waste and support re-use and recycling	Number of registrations against recognised Environmental Building and/or Design Standards (e.g. BREEAM; Code for Sustainable Homes, CEEQUAL)	Increase	Planning Authority/Annual
		Carbon Reductions achieved from implemented flood risk management interventions	Increase	SMBC/Annual
		Number of flood management schemes promoting re-use and recycling	Increase	SMBC/Annual
11	Maintain and enhance the quality and distinctiveness of Stockport's historic and cultural heritage	Number of designated and non-designated heritage assets (listed buildings / ancient scheduled monuments / buildings of local interest, etc) harmed by flood risk management measures, including impacts on their settings.	Nil	SMBC/Heritage England/Annual
		Number of flood risk management measures implemented that conserve and enhance heritage assets including designated sites, listed buildings and conservations areas	Increase	SMBC/Heritage England/Annual
12	Protect and enhance	Number of consents for inappropriate development in the Green Belt	Reduce	SMBC/Annual

No	Predicted Effect	Potential Indicators to Monitor Change	Target	Responsibility /frequency of monitoring
	the character and quality of Stockport's landscapes and townscapes	Number of flood related applications refused because of adverse effects on the designated landscape areas	Reduce	SMBC/Annual
		Number of visual impact assessments undertaken as part of any flood risk related planning applications	Increase	SMBC/Annual
		Number of flood risk management interventions contributing to Natural England's Accessible Natural Green Space Standard - ANGsT	Increase	SMBC/Natural England/Annual
		Change in area of protected urban open space	No less	SMBC/Annual

14. Conclusions

14.1.1. The process of the SEA throughout the LFRMS's preparation has been thorough and comprehensive. Iterations of assessment have been employed, with continuous dialogue between the LFRMS team and the SEA team.

14.1.2. The Draft LFRMS document has been appraised against a set of SEA objectives and decision-making questions. These have also been used consistently throughout the successive assessments of the LFRMS proposals at different stages of preparation in order to determine and influence its environmental performance.

14.1.3. Following the assessment of the February 2016 Draft LFRMS, a number of recommendations were made as set in Chapter 11 and these have been taken into account by SMBC in the preparation of the Draft LFRMS that is being consulted upon.

14.1.4. It is therefore considered that the measures in the Draft LFRMS taken together will result in the sustainable reduction in local flood risk over the strategy period and are generally considered to offer positive effects overall (some potentially significant) against the SEA Objectives, in particular improving physical and mental health, minimising the risk of and from flooding, biodiversity gain, blue/green infrastructure, protecting soil, protecting landscape and townscape, as well as cultural heritage, and improving water quantity, quality and flow.

Appendix A. Review of relevant plans, programmes and environmental protection objectives

A.1.1. International Plans and Policies

Document	Key Objectives / Targets / Guidance relevant to the Strategy and the SEA	Implications for emerging Local Flood Risk Management Strategy	Implications for the Strategic Environmental Assessment
Habitats Directive (92/43/EEC)	Aims to protect wild plants, animals and habitats. Directive created a network of protected areas called Natura 2000 sites, including Special Areas of Conservation (SACs) – supporting rare, endangered or vulnerable natural habitats, plants and animals (other than birds), and Special Protection Areas (SPAs) – supporting significant numbers of wild birds and their habitats.	LFRMS should seek to conserve and enhance biodiversity, and avoid any significant impacts on Natura 2000 sites. In determining interventions, account should be taken of the particular sensitivities of each Natura 2000 site that could potentially be affected, and advice from Natural England should be sought.	Ensure biodiversity objective within SEA framework. HRA Scoping will assess whether full Appropriate Assessment is necessary.
Birds Directive (2009/147/EC)	Emphasises protection of habitats for endangered and migratory species, especially through the establishment of a coherent network of Special Protection Areas (SPAs).	LFRMS should seek to conserve and enhance biodiversity, and avoid any significant impacts on SPAs. In determining interventions, account should be taken of the particular sensitivities of each SPA site that could potentially be affected, and advice from Natural England should be sought.	Ensure biodiversity objective within SEA framework. HRA Scoping will assess whether full Appropriate Assessment is necessary.
Water Framework Directive (2000/60/EC)	Looks at the ecological health of surface water bodies as well as traditional chemical standards. In particular it will help deal with, amongst others diffuse pollution, habitat, ecology, hydromorphology, barriers to fish movement, water quality, flow and sediment. Successful implementation will help to protect all elements of the water cycle and enhance the quality of our groundwater, rivers, lakes, estuaries and seas.	LFRMS should be informed by the WFD's aims and objectives and should aim to improve water quality.	Ensure water quality forms part of SEA framework.
Groundwater Directive (2006/118/EC)	Establishes a regime which sets underground water quality standards and introduces measures to prevent or limit inputs of pollutants into groundwater. Establishes quality criteria taking account of local characteristics. Member States have to establish standards at the most appropriate level and take into account local or regional conditions. It requires groundwater quality standards to be established by the end of 2008; pollution trend studies to be carried out by using existing data and mandatory WFD data; pollution trends to be reversed so that environmental objectives are achieved by 2015; measures	LFRMS should seek to protect groundwater quality.	Ensure water quality objective within SEA framework.

Document	Key Objectives / Targets / Guidance relevant to the Strategy and the SEA	Implications for emerging Local Flood Risk Management Strategy	Implications for the Strategic Environmental Assessment
	to prevent or limit inputs of pollutants into groundwater; reviews of technical provisions of the directive to be carried out in 2013 and every six years thereafter; compliance with good chemical status criteria. This directive will be replaced by the WFD at the end of 2013.		
Air Quality Directive (2008/50/EC)	Merges most existing air quality legislation into a single directive that sets standards and target dates for reducing concentrations of fine particles, which together with coarser particles known as PM10 already subject to legislation, are among the most dangerous pollutants for human health. Under the directive Member States are required to reduce exposure to PM2.5 in urban areas by an average of 20% by 2020 based on 2010 levels. It obliges them to bring exposure levels below 20 micrograms/m^3 by 2015 in these areas. Throughout their territory Member States will need to respect the PM2.5 limit value set at 25 micrograms/m^3.	LFRMS should seek to protect air quality.	Ensure air quality objective within SEA framework.
Floods Directive (2007/60/EC)	Concerns the assessment and management of flood risk and requires Member States to assess if all water courses and coast lines are at risk from flooding, to map the flood extent and assets and humans at risk in these areas and to take adequate and coordinated measures to reduce this flood risk. Also reinforces the rights of the public to access this information and to have a say in the planning process.	LFRMS will provide many of the actions required under the Directive.	Ensure flooding objective within SEA framework.
European Landscape Convention (2000)	Promotes landscape protection, management and planning, and European co-operation on landscape issues. The Convention recognizes that the landscape is shaped by natural and cultural influences. Highlights the importance of developing landscape policies dedicated to the protection, management and creation of landscapes, and establishing procedures for the general public and other stakeholders to participate in policy creation and	LFRMS should seek to protect landscape from harmful development and should recognize the cultural and historic dimension of the landscape.	Ensure landscape objective within SEA framework.

Document	Key Objectives / Targets / Guidance relevant to the Strategy and the SEA	Implications for emerging Local Flood Risk Management Strategy	Implications for the Strategic Environmental Assessment
	implementation.		
Convention for the Protection of the Architectural Heritage of Europe (1985)	Reinforces and promotes policies for the conservation and enhancement of Europe's heritage.	LFRMS should ensure that the historic environment is conserved and enhanced. Interventions should take into account their impact on the historic environment, based on the significance of interest of architectural heritage. Where impacts on the historic environment are unavoidable, assessment and recording should be required where appropriate.	Ensure historic environment and design objective within SEA framework.
European Convention on the Protection of the Archaeological Heritage (1992)	Updates the previous 1969 Convention and makes conservation and enhancement of archaeological heritage a goal of urban and regional planning policies. It is concerned in particular with arrangements to be made for co-operation among archaeologists and town and regional planners in order to ensure optimum conservation of archaeological heritage. Sets guidelines for funding excavation and research work and publication of findings. Also deals with public access and educational actions to develop public awareness of the value of archaeological heritage.	LFRMS should ensure that the historic environment is conserved and enhanced. Development should be guided away from the most sensitive locations based on the significance of interest of archaeological heritage. Where impacts on historic environment are unavoidable, assessment and recording should be required where appropriate.	Ensure historic environment objective within SEA framework.
A Sustainable Europe for a Better World: A European Union Strategy for Sustainable Development (2001)	Strategy provides EU-wide policy framework to deliver sustainable development: to meet the needs of the present without compromising the ability of future generations to meet their own needs. It rests on four pillars – economic, social, environmental and global governance – which need to reinforce one another. The economic, social and environmental consequences of all policies thus need to be examined in a coordinated manner and taken into account when drawn up and adopted. The strategy is based on the following guiding principles: promotion and protection of fundamental rights, solidarity within and between generations, the guarantee of an open and democratic society, involvement of citizens, involvement of businesses and social partners, policy	LFRMS should be guided by sustainable development principles. It should foster an open and inclusive approach with opportunities for public participation and meaningful engagement It should seek to ensure that economic, social and environmental impacts are balanced wherever possible.	The SEA framework will, in part, test the sustainability of the LFRMS and help ensure it embodies sustainable development principles. It is in the nature of SEA that the economic aspect of the assessment will be less prominent than the social and environmental issues which must be addressed under the Directive.

Document	Key Objectives / Targets / Guidance relevant to the Strategy and the SEA	Implications for emerging Local Flood Risk Management Strategy	Implications for the Strategic Environmental Assessment
	coherence and governance, policy integration, use of best available knowledge, the precautionary principle and the polluter-pays principle.		
EU Biodiversity Strategy to 2020	2050 vision: By 2050, European Union biodiversity and the ecosystem services it provides — its natural capital — are protected, valued and appropriately restored for biodiversity's intrinsic value and for their essential contribution to human wellbeing and economic prosperity, and so that catastrophic changes caused by the loss of biodiversity are avoided. 2020 headline target: Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss.	Action 1: Complete the establishment of the Natura 2000 network and ensure good management: 1b) Member States and the Commission will further integrate species and habitats protection and management requirements into key land and water use policies, both within and beyond Natura 2000 areas.	Ensure biodiversity objective within SEA framework. HRA Scoping will assess whether full Appropriate Assessment is necessary

A.1.2. National Plans and Policies

Document	Key Objectives / Targets / Guidance relevant to the Strategy and the SEA	Implications for emerging Local Flood Risk Management Strategy	Implications for the Strategic Environmental Assessment
Wildlife and Countryside Act 1981	The Act [inter alia] prohibits certain methods of killing or taking wild animals; amends the law relating to protection of certain mammals; restricts the introduction of certain animals and plants; amends the Endangered Species (Import and Export) Act 1976; amends the law relating to nature conservation, the countryside and National Parks; and amends the law relating to public rights of way.	LFRMS should ensure protection and enhancement of biodiversity. Policies should also ensure that public rights of way are taken into account in considering flood risk management interventions.	Ensure biodiversity and accesses to services are covered by objectives within SEA framework.
Natural Environment and Rural	Section 40 of the Act requires all public bodies to have regard to biodiversity conservation when carrying out their functions.	LFRMS should seek to protect and enhance biodiversity through guiding interventions to avoid adverse impacts,	Ensure biodiversity objective within SEA framework.

Document	Key Objectives / Targets / Guidance relevant to the Strategy and the SEA	Implications for emerging Local Flood Risk Management Strategy	Implications for the Strategic Environmental Assessment
Communities Act 2006	This is commonly referred to as the 'biodiversity duty'. The aim of the biodiversity duty is to raise the profile of biodiversity in England and Wales, so that the conservation of biodiversity becomes properly embedded in all relevant policies and decisions made by public authorities.	and to seek net biodiversity gain.	
Guidance for Local Authorities on Implementing the Biodiversity Duty, DEFRA (2007)	The guidance is intended to assist local authorities in meeting the Biodiversity Duty. The conservation of biodiversity is highly dependent on the extent to which it is addressed in infrastructure and development projects and how well the planning process integrates biodiversity into planning and development control policies. Core Strategies and Local Development Plan Strategies set out the overarching policy framework for the plan area. Strategic objectives and policies should be developed for biodiversity, including objectives for enhancement. Consideration should also be given to how biodiversity enhancement can be used to bring about more sustainable development, through integration with other policy objectives and other land uses, for example housing and economic development, health, education and social inclusion.	LFRMS should be informed by the guidance in seeking to protect and enhance biodiversity.	Ensure biodiversity objective within SEA framework.
Climate Change Act 2008	The Act aims to improve carbon management, helping the transition towards a low-carbon economy in the UK and to demonstrate UK leadership internationally. Key provisions of the Act include: • a legally binding target of at least an 80% cut in greenhouse gas emissions by 2050 and a reduction in emissions of at least 34% by 2020 (both against 1990 baseline). • a carbon budgeting system that caps emissions over five-year periods; • creation of the Committee on Climate Change; • further measures to reduce emissions, including measures on biofuels;	LFRMS should seek to ensure that carbon emission are minimized, including through encouraging lower- carbon practices in flood risk infrastructure and operations.	Ensure climate change objective within SEA framework.

Document	Key Objectives / Targets / Guidance relevant to the Strategy and the SEA	Implications for emerging Local Flood Risk Management Strategy	Implications for the Strategic Environmental Assessment
	• a requirement for the Government to report at least every five years on the risks to the UK of climate change, and to publish a programme setting out how these will be addressed. The Act also introduces powers for Government to require public bodies and statutory undertakers to carry out their own risk assessment and make plans to address those risks;		
Localism Act 2011	The Localism Act takes power from central government and hands it back to local authorities and communities. Community organisations have the chance to bid to take over land and buildings that are important to them. Local communities can shape new development through Neighbourhood Plans. Once written, the plan will be independently examined and put to a referendum of local people for approval. Neighbourhood Plans will enable local people to ensure there are enough homes in their area by providing planning permission for homes in community ownership (particularly through the Community Right to Build). The 'general power of competence' gives local authorities the legal capacity to do anything an individual can do that isn't specifically prohibited.	LFRMS should seek to engage Parish Councils in consultation. Local communities should have adequate opportunities to become involved with the Strategy as it develops through a variety of consultation methods, including those aimed at hard-to-reach groups.	No direct implications for SEA.
Flood and Water Management Act 2010	The Act addresses the threat of flooding and water scarcity. It defines unitary/county councils as lead local flood authorities for their area, but enables this role to be delegated to another risk management authority by agreement. It creates a duty to establish and maintain a register of structures/features likely to have a significant effect on flood risk. Information on the structures/features, including ownership and state of repair, must also be recorded. The Act requires a lead local flood authority to develop, maintain, apply and monitor a strategy for local flood risk	LFRMS is being produced in accordance with statutory provisions, and will be informed by a range of evidence, including the register of structures and features.	Ensure flooding objective within SEA framework.

Document	Key Objectives / Targets / Guidance relevant to the Strategy and the SEA	Implications for emerging Local Flood Risk Management Strategy	Implications for the Strategic Environmental Assessment
	management in its area. The Act establishes a SuDS Approving Body (the "SAB"), with responsibility for approving proposed drainage systems in new Developments /redevelopments at county/unitary level. Approval must be given before the developer can commence construction. *Note: This has been amended to be incorporated as part of the Planning process with LLFA having a Statutory Consultee role for all major planning applications requiring SuDS.*		
Natural Environment White Paper (2011)	The Natural Environment White Paper has four ambitions: • Protecting and improving our natural environment; • Growing a green economy; • Reconnecting people and nature International; and • EU leadership. It looks at ecosystem services provided by natural systems and promotes a step-change in nature conservation which makes sustainable use of natural capital and natural networks by working at a landscape scale. It aims to ensure that by 2020 17% of England is managed effectively to safeguard biodiversity.	LFRMS should seek to conserve and enhance biodiversity and to take forward green infrastructure principles. LFRMS should be informed by the need to contribute to delivery of the key ambitions of the White Paper.	Ensure biodiversity and landscape form part of SEA framework.
Making Space for Water: Taking forward a new Government strategy for flood and coastal erosion risk management in England	The Government will, over the 20-year lifetime of the new strategy, implement a more holistic approach to managing flood and coastal erosion risks in England. The approach will involve taking account of all sources of flooding, embedding flood and coastal risk management across a range of Government policies, and reflecting other relevant Government policies in the policies and operations of flood and coastal erosion risk management. The aim will be to manage risks by employing an integrated portfolio of approaches which reflect both national and local priorities, so as to:	LFRMS should seek to take forward the broad aims of the Government's overall strategy for flood risk management, through reducing the threat to people and property, and through delivering the greatest environment, social and economic benefit.	SEA includes objectives for social and economic benefits, but addressing economic benefits is beyond the scope of the assessment.

Document	Key Objectives / Targets / Guidance relevant to the Strategy and the SEA	Implications for emerging Local Flood Risk Management Strategy	Implications for the Strategic Environmental Assessment
(March 2005)	• reduce the threat to people and their property; and • deliver the greatest environmental, social and economic benefit, consistent with the Government's sustainable development principles. Many of the approaches set out in this document have since been taken forward through policy and legislation, including the new role of LLFA through the Flood and Water Management Act 2010.		
House of Commons Environment, Food and Rural Affairs Committee: Managing Flood Risk, Third Report of Session 2013– 14, Volume I (2 July 2013)	Report on a House of Commons inquiry into the effectiveness of the Government's flood risk management policies. Recommendations include: Funding must be delivered more swiftly to local authorities. The current method for allocating funds is biased towards protecting property, largely in urban areas. This poses a risk to the security of UK food production. The Environment Agency must amend its scoring system so that agricultural land receives a higher proportion of funding. Defra must liaise more effectively with the Department for Communities and Local Government to stop planning rule changes, such as additional permitted development rights, having cumulative impacts on the ability of an area to absorb surface water.	LFRMS should recognize the value of protecting agricultural land as well as land in urban areas. The cumulative impact of development on an area's ability to absorb surface water should also be considered.	The SEA should include an objective on flooding and one which recognizes the value of agricultural land.
Environment Agency: National Flood and Coastal Erosion Risk Management Strategy (2011)	The strategy encourages more effective risk management by enabling people, communities, business, infrastructure operators and the public sector to work together to: • ensure a clear understanding of the risks of flooding and coastal erosion, nationally and locally, so that investment in risk management can be prioritized more effectively; • set out clear and consistent plans for risk management	The LFRMS must conform to the overarching approach of the national strategy.	An objective on flooding will be included within the SEA framework.

Document	Key Objectives / Targets / Guidance relevant to the Strategy and the SEA	Implications for emerging Local Flood Risk Management Strategy	Implications for the Strategic Environmental Assessment
	so that communities and businesses can make informed decisions about the management of the remaining risk; • manage flood and coastal erosion risks in an appropriate way, taking account of the needs of communities and the environment; • ensure that emergency plans and responses to flood incidents are effective and that communities are able to respond effectively to flood forecasts, warnings and advice; • help communities to recover more quickly and effectively after incidents.		
Spatial Planning for Sport and Active Recreation: Guidance on Sport England's Aspirations and Experience (2005)	Spatial planning creates opportunities for addressing the needs, and wider contribution, of sport and active recreation through the development of cross-cutting policies and plans; through multifaceted development proposals which include sports-related elements; through increasing recognition of the role of community interests in shaping space; and through greater partnership working in policy development and delivery. The guidance states that there is the prospect of delivering a planned approach to the provision of facilities, and in doing so adding value to the work of others and helping to deliver sustainable development goals, which might mean taking a broader view of the role of spatial planning as an enabling function which goes beyond the setting and delivery of land-use policy; identifying opportunities for delivering an enhanced quality of life for communities, in the short, medium and longer term; recognizing and taking full advantage of the unique ability of sport and active recreation to contribute to a wide array of policy and community aspirations; the development of partnership working stimulated by, and perhaps centred on, sport and active recreation as a common interest; and using sport and recreation as one of the building blocks of planning and delivery of sustainable communities.	LFRMS should wherever possible seek to protect and enhance existing sports and recreation.	A specific sports objective is not considered necessary, but SEA objectives on access to services and health will be included in the SEA framework.
Strategic	English Heritage (EH) will look to see how the historic	LFRMS should be informed by EH advice	Ensure historic environment

Document	Key Objectives / Targets / Guidance relevant to the Strategy and the SEA	Implications for emerging Local Flood Risk Management Strategy	Implications for the Strategic Environmental Assessment
Environmental Assessment, Sustainability Appraisal and the Historic Environment, English Heritage (2010)	environment is considered in SEA. This covers cultural heritage, including architectural and archaeological heritage, landscape and material assets. English Heritage recommends that Scoping Reports are tailored to the type, purpose, and level of plan under consideration. The tiering of Scoping Reports, through the use of an overarching report subsequently fine-tuned for particular documents, can help to reduce repetition and give a better focus to the appraisal framework. Recommends that a review of PPPs draws out implications for developing SEA/SA objectives, and draws out implications for relevant plans.	and ensure EH is fully consulted as the LFRMS develops.	objective within SEA framework.
Planning (Listed Buildings and Conservation Areas) Act 1990	Governs special controls in respect of buildings and areas of special architectural or historic interest. Any alteration, extension or demolition of a listed building in a way that affects its character as a building of special interest requires Listed Building Consent.	LFRMS should ensure that Listed Buildings and Conservation Areas are conserved and enhanced. This includes avoiding adverse impacts through location and design of flood risk management infrastructure.	Ensure historic environment objective within SEA framework.
Ancient Monuments and Archaeological Areas Act 1979	Under the Act a monument which has been scheduled is protected against any disturbance including unlicensed metal detecting. Permission must be obtained for any work which might affect a monument above or below ground. English Heritage gives advice to the Government on each application. In assessing an application the Secretary of State will try to ensure any works on protected sites are beneficial to the site or are essential for its long term sustainability.	LFRMS should ensure that Ancient Monuments and archaeology are conserved and enhanced. This includes avoiding adverse impacts through location and design.	Ensure historic environment objective within SEA framework.
National Planning Policy Framework, DCLG (2012)	Sets out Government planning policy for England. The purpose of the planning system is to contribute to the achievement of sustainable development, the three dimensions of which are: economic role – contributing to building a strong, responsive and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right	Although not a purely planning document in the sense of being a DPD or SPD, the LFRMS will have a key relationship with the planning system and should aim to contribute to the achievement of sustainable development.	SEA includes objectives for social and economic benefits, but addressing economic benefits is beyond the scope of the assessment.

Document	Key Objectives / Targets / Guidance relevant to the Strategy and the SEA	Implications for emerging Local Flood Risk Management Strategy	Implications for the Strategic Environmental Assessment
	time to support growth and innovation; and by identifying and coordinating development requirements, including the provision of infrastructure; a social role – supporting strong, vibrant and healthy communities, by providing the supply of housing required to meet the needs of present and future generations; and by creating a high quality built environment, with accessible local services that reflect the community's needs and support its health, social and cultural well-being; and an environmental role – contributing to protecting and enhancing our natural, built and historic environment; and, as part of this, helping to improve biodiversity, use natural resources prudently, minimize waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy. Local planning authorities should adopt proactive strategies to mitigate and adapt to climate change, taking full account of flood risk, coastal change and water supply and demand considerations. 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. Local Plans should be supported by Strategic Flood Risk Assessment and develop policies to manage flood risk from all sources, taking account of advice from the Environment Agency and other relevant flood risk management bodies, such as lead local flood authorities and internal drainage boards. Local Plans should apply a sequential, risk-based approach to the location of development to avoid where possible flood risk to people and property and manage any residual risk, taking account of the impacts of climate change, by: • applying the Sequential Test;	Any flood risk management intervention in Stockport should ensure that flood risk is not worsened elsewhere as a result.	

Document	Key Objectives / Targets / Guidance relevant to the Strategy and the SEA	Implications for emerging Local Flood Risk Management Strategy	Implications for the Strategic Environmental Assessment
	• if necessary, applying the Exception Test; • safeguarding land from development that is required for current and future flood management; • using opportunities offered by new development to reduce the causes and impacts of flooding; and • where climate change is expected to increase flood risk so that some existing development may not be sustainable in the long-term, seeking opportunities to facilitate the relocation of development, including housing, to more sustainable locations. The aim of the Sequential Test is to steer new development to areas with the lowest probability of flooding. Development should not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower probability of flooding. The Strategic Flood Risk Assessment will provide the basis for applying this test. A sequential approach should be used in areas known to be at risk from any form of flooding. If, following application of the Sequential Test, it is not possible, consistent with wider sustainability objectives, for the development to be located in zones with a lower probability of flooding; the Exception Test can be applied if appropriate. For the Exception Test to be passed: - it must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by a Strategic Flood Risk Assessment where one has been prepared; and • a site-specific flood risk assessment must demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall. Both elements of the test will have to be passed for		

Document	Key Objectives / Targets / Guidance relevant to the Strategy and the SEA	Implications for emerging Local Flood Risk Management Strategy	Implications for the Strategic Environmental Assessment
	development to be allocated or permitted. When determining planning applications, local planning authorities should ensure flood risk is not increased elsewhere and only consider development appropriate in areas at risk of flooding where, informed by a site-specific flood risk assessment following the Sequential Test, and if required the Exception Test, it can be demonstrated that: • within the site, the most vulnerable development is located in areas of lowest flood risk unless there are overriding reasons to prefer a different location; and • development is appropriately flood resilient and resistant, including safe access and escape routes where required, and that any residual risk can be safely managed, including by emergency planning; and it gives priority to the use of sustainable drainage systems. For individual developments on sites allocated in development plans through the Sequential Test, applicants need not apply the Sequential Test. Applications for minor development and changes of use should not be subject to the Sequential or Exception Tests but should still meet the requirements for site-specific flood risk assessments.		
Technical Guidance to the National Planning Policy Framework (2012)	This document provides additional guidance to local planning authorities to ensure the effective implementation of the planning policy set out in the National Planning Policy Framework on development in areas at risk of flooding and in relation to mineral extraction. The guidance gives further information on the sequential and exception tests. Flood resistance and resilience measures should not be used to justify development in inappropriate locations.	LFRMS should be informed by the approach to different types of development in different flood zones. Any proposed flood risk management measures should not be used to justify development that would be inappropriate in that flood zone.	Include SEA objective on flooding.

Document	Key Objectives / Targets / Guidance relevant to the Strategy and the SEA	Implications for emerging Local Flood Risk Management Strategy	Implications for the Strategic Environmental Assessment
Securing the Future: UK Sustainable Development Strategy (2005)	Four broad objectives: • Sustainable consumption and production – working towards achieving more with less. • Natural resource protection and environmental enhancement • From local to global, building sustainable communities • Climate change and energy Our landscapes and seascapes are inseparable from our culture, bearing the imprints of generations of land use. Our physical and mental health is reliant on the quality of the environment. There must also be access to a variety of well-managed and maintained green spaces for leisure, sport, recreation and general public benefit to help people choose healthy lifestyles, in urban as well as rural areas.	LFRMS should embody sustainability principles, and recognize the valuable contribution that flood prevention and alleviation can make to society, the economy and the environment.	The SEA process should help to ensure that sustainable development principles are considered in LFRMS preparation, and to help ensure the social, economic and environmental benefits are maximized, although the scope of SEA means there is less emphasis on the economic aspects.
A Strategy for England's Trees, Woods and Forests, DEFRA (2007)	Aims to provide a resource of trees, woods and forests where they can contribute environmental, economic and social benefits now and for future generations; to ensure that existing and newly planted trees, woods and forests are resilient to climate change and contribute to biodiversity and natural resources adjusting to a changing climate; to protect and enhance water, soil, air, biodiversity and landscape, and the cultural and amenity values of trees and woodland; to increase the contribution that trees, woods and forests make to quality of life; and to improve the competitiveness of woodland businesses and promote development of new/improved markets for sustainable woodland products and ecosystem services. It seeks to do this through the long-term sustainable management of trees, woods and forests; by seeking 'the right tree in the right place'; by effective use of public investment; and by ensuring synergies with other Government policies.	LFRMS should recognize the value of trees and should seek to avoid any loss where practicable through location and design policies. The potential contribution of trees in schemes should be explored and maximized.	Ensure flora and fauna objective within SEA framework.

Document	Key Objectives / Targets / Guidance relevant to the Strategy and the SEA	Implications for emerging Local Flood Risk Management Strategy	Implications for the Strategic Environmental Assessment
Flooding and Historic Buildings, English Heritage (2010)	Integrated flood-risk management is essential if the historic environment is to be protected from flood damage, and effective communication between all those involved is therefore vital in securing the appropriate response Despite substantial investment in flood management, large numbers of properties remain at significant risk of flooding. Estimates suggest that as many as half of all properties at high risk from flooding might be in areas where large-scale public defences cannot be justified or are unlikely to receive future funding. Private protection measures therefore have a significant part to play in reducing potential damage and the cost of future flood claims. It is estimated that property-level protection measures can reduce flood damage by between 50 and 80 per cent. Protection works must be applied with sensitivity to a historic building so that they do not damage the special interest or integrity of the building or any associated archaeological remains. In particular, the aim must be to retain and respect the existing structure and materials.	Development of the LFRMS should provide opportunities for consultation with historic environment representatives. Consideration should be given to sensitive solutions where the significance of heritage assets could be affected.	Ensure historic environment objective within SEA framework.
Developing the evidence base to describe the flood risk to agricultural land in England and Wales **Joint Defra/EA Flood and Coastal Erosion Risk Management**	The impact of flood and coastal erosion risk management (FCERM) on agriculture is increasingly becoming a high profile issue. Plans to manage flood risk through the further creation of flood storage areas on agricultural land or to reduce public FCERM investment in rural areas judged to be at low risk or to cease to defend or realign some stretches of eroding or low lying coastline may be strongly opposed by the farming industry and local community representatives concerned about implications for national food security. Traditionally, and noticeably since WWII, operating authorities have undertaken much work that directly or indirectly supports agricultural production through the construction and maintenance of river and coastal flood defences, through	Farming representatives should be included in consultations on the emerging LFRMS, which should consider the impact on agricultural production of any flood risk management measures. There is scope to further the evidence base by seeking to identify the location and amount of agricultural land at flood risk as described.	Include SEA objective which covers agricultural land considerations.

Document	Key Objectives / Targets / Guidance relevant to the Strategy and the SEA	Implications for emerging Local Flood Risk Management Strategy	Implications for the Strategic Environmental Assessment
R&D Programme (August 2011)	building and operating pumping stations draining low lying land, and through dredging and annual vegetation management in rivers. There are a number of public sources of information relevant to the flood risk to agricultural land and there is now an increasing need to consolidate and confirm them. In addition, much of the previous work has used differing methodologies with varying results. There is currently a lack of clarity on basic statistics such as the total area and grade of land under agricultural production that is at flood risk, currently protected by defences, given over to managed realignment schemes, or likely to be impacted in the future by changes in flood risk as a result of climate change. The national percentage of best and most versatile land (ALC Grades 1, 2 and 3) located in the floodplain is 13% in England. 58% of the total resource of Grade 1 agricultural land in England is within the floodplain. Of this Grade 1 land in England only 5% of that land in the floodplain is at very significant flood risk. In England 78% of Grade 1 land in the floodplain is at low flood risk, and 48% of the best and most versatile land in the floodplain is at low flow risk. Fluvial defences provide protection to agricultural land and reduce flood related agricultural losses in England by around £5m annually. 1180ha of land in England has been converted to intertidal habitat through managed realignment schemes (1991 to 2009). About 700ha of this was previously in arable use (in 1990). The total area of agricultural grade land within flood storage areas in England is 12,270ha.		
Safeguarding our Soils: A Strategy for	The soil strategy provides a vision that by 2030, all soils in England will be managed sustainably and degradation threats	Consideration should be given to the impact of flood risk management strategies on soils and seek to avoid	Include SEA objective which covers management and

Document	Key Objectives / Targets / Guidance relevant to the Strategy and the SEA	Implications for emerging Local Flood Risk Management Strategy	Implications for the Strategic Environmental Assessment
England (Defra, September 2009)	tackled successfully Soil is a fundamental and essentially non-renewable natural resource, providing the essential link between the components that make up our environment. Soils vary hugely from region to region and even from field to field. They all perform a number of valuable functions or ecosystem services for society including: • nutrient cycling • water regulation • carbon storage • support for biodiversity and wildlife • providing a platform for food and fibre production and infrastructure Soils in England continue to be degraded by human actions including intensive agriculture, historic levels of industrial pollution and urban development. This makes them vulnerable to erosion (by wind and water), compaction and loss of organic matter. As the climate (including temperature and rainfall patterns) changes in the future, it is likely soils have the potential to be further degraded. This will happen both as a result of the direct and indirect impacts of climate change, for example as land managers adapt their practices and the crops they grow. Current policies focus on protecting English soils and the important ecosystem services they provide. Research is focused on addressing evidence gaps to adapt and refine these policies in order to strengthen protection and their resilience as the climate changes.	degradation of soils as a result of these measures.	protection of soils.
Countryside and Rights of Way Act 2000	The Act provides for public access on foot to certain types of land, amends the law relating to public rights of way, increases measures for the management and protection for Sites of Special Scientific Interest (SSSI) and strengthens wildlife	Consideration should be given to public access to the countryside. The LFRMS should avoid adverse impacts on public access to the countryside, and recognize	The SEA and LFRMS should include for access to the countryside and improving green/blue infrastructure that

Document	Key Objectives / Targets / Guidance relevant to the Strategy and the SEA	Implications for emerging Local Flood Risk Management Strategy	Implications for the Strategic Environmental Assessment
	enforcement legislation, and provides for better management of Areas of Outstanding Natural Beauty (AONB). The Act is compliant with the provisions of the European Convention on Human Rights, requiring consultation where the rights of the individual may be affected by these measures. The Act provides a new right of public access on foot to areas of open land comprising mountain, moor, heath, down, and registered common land, and contains provisions for extending the right to coastal land. The Act also provides safeguards which take into account the needs of landowners and occupiers, and of other interests, including wildlife.	the contribution that flood prevention and alleviation can make to access to the countryside.	enables this.

A.1.3. Regional Plans and Policies

Document	Key Objectives / Targets / Guidance relevant to the Strategy and the SEA	Implications for emerging Local Flood Risk Management Strategy	Implications for the Strategic Environmental Assessment
Water for Life and Livelihoods – River Basin Management Plan – North West District	This plan is about the pressures facing the water environment in the North West River Basin District, and the actions that will address them. It has been prepared under the Water Framework Directive, and is the first of a series of six-year cycles of planning and action. This plan focuses on the protection, improvement and sustainable use of the water environment. Many organisations and individuals help to protect and improve the water environment for the benefit of people and wildlife. River basin management is the approach the Environment Agency is using to ensure the range of combined efforts achieve the improvement needed in the North West River Basin District.	LFRMS should seek to contribute to mitigating the effects of floods. For example, physical modification of rivers and changes to the structure of water bodies, such as for flood defence. In addition, abstraction and other artificial flow regulation problems related to taking water from rivers, reservoirs, lakes and groundwater. Rivers and estuaries have been significantly modified physically, to facilitate development, flood and coastal risk management or navigation. Physical modification needs to be addressed in more than 45 per cent of rivers and lakes, in order to achieve more natural functioning of wetland ecosystems, and to	These issues will be addressed through a number of objectives but principally those relating to Flooding and Water Quality

Document	Key Objectives / Targets / Guidance relevant to the Strategy and the SEA	Implications for emerging Local Flood Risk Management Strategy	Implications for the Strategic Environmental Assessment
		protect fish and their habitats.	
North West Landscape Character Framework	This Framework sets out to describe and map the diverse landscapes of the North West region and develop the idea of a landscape as a 'framework' to help joined up thinking about the environment. The key characteristics of each landscape type are described under 'physical landscape', 'biodiversity', 'historic character' and 'perceptual landscape' headings. It is the intention that this framework will be used for regional planning and management purposes. This strategy may be of relevance as options developed under the LFRMS may impact on the landscape.	The LFRMS should recognise that there is a need to consider landscape when developing any flood protection measures.	Landscape will be considered as an Objective within the SEA framework.
Greater Manchester Third Local Transport Plan (2011)	While this Plan is concerned with Transport in the Greater Manchester area, there is a recognition that a changing climate and likely more intense storm events will have implications for maintenance of the transport network. The plan therefore notes a range of measures such as a risk-based approach to highway gulley cleaning, to focus on flood risk. The plan also notes that the design of highway drainage will need to take account of future flood risk from a changing climate. The plan also recognises the vulnerability of strategic roads to flooding and notes that infrastructure such as bridges could be at risk from flood damage.	The LFRMS should recognise the need to protect strategic transport infrastructure from flood risk – particularly in light of a changing climate.	An objective on flooding will be included within the SEA framework.
Greater Manchester Joint Minerals Plan (2013)	This plan sets out an idea for mineral development in GM. It sets out to provide a mineral spatial planning framework which takes into account the unique features of Greater Manchester. This framework will facilitate economic development, whilst ensuring that the environment and community are protected from the impacts of mineral developments in order to deliver a steady and sustainable supply of minerals, safeguard mineral resources, enable Greater Manchester to contribute to its sub-regional apportionment of aggregates and facilitate greater use	LFRMS should seek to ensure that all proposals for mineral working or the provision of mineral infrastructure will be permitted where any adverse impacts on 'controlled waters and/ or flood risk management' can be appropriately mitigated or avoided.	Objectives relating to water quality and flooding will be included within the SEA framework.

Document	Key Objectives / Targets / Guidance relevant to the Strategy and the SEA	Implications for emerging Local Flood Risk Management Strategy	Implications for the Strategic Environmental Assessment
	of recycled aggregates and secondary mineral products. The Greater Manchester Authorities have produced a sound planning policy framework that provides a clear guide to minerals operators and the public about: The locations where mineral extraction may take place; The safeguarding of sensitive environmental features and of mineral resources with potential for future extraction; and all aspects of environmental amenity and resource protection including the sustainable transportation of minerals.		
Greater Manchester's Climate Change Implementation Plan (2011-2020)	This plan sets out to deliver the transition to a low carbon economy in GM. This strategy helps fuse together the various carbon reduction plans and adaptation strategies that have been crafted by the ten different districts of Greater Manchester and will drive forward a low carbon future alongside countless partners from all sectors.	The LFRMS should seek to ensure that Flood Risk and Surface Water Management Plans involve the Districts, the Environment Agency and other partners working together to identify areas at risk from surface water flooding and developing Flood Risk Assessments and a GM Flood Risk Management Strategy.	Objectives relating to climate change, carbon reduction and flooding will be included within the SEA framework.
Towards a Green Infrastructure Framework for Greater Manchester (2008)	This framework identifies the priority areas for GI across GM and identifies relationships with other plans and recommends next steps to improve GI assets. Furthermore it advises how green infrastructure (GI) might be embedded into the City-Region's spatial planning policy and practice; in order to enable and sustain growth.	The LFRMS should seek to provide a green infrastructure approach as a holistic view of the outdoor environment which meets the social, economic and environmental needs of communities by providing benefits such as flood control.	The issue of GI will be addressed in a number of objectives to the SEA
An Ecological Framework for Greater Manchester (2008)	The development of an Ecological Framework for Greater Manchester has four main aims: 1. To conserve and enhance biological diversity in Greater Manchester by repairing, creating and connecting habitats. 2. To provide guidance as to the best ways of enhancing biological diversity in Greater Manchester by repairing, creating and connecting habitats.	The LFRMS should seek to respond to the threat of flooding through the planning of development proposals in the light of strategic flood risk assessment. Additionally it should safeguard, enhance and promote access to the districts green spaces that are of strategic importance in terms of defining the district's character, supporting biodiversity, recreation and	The SEA will address Biodiversity issues. There will also be an HRA undertaken of the proposed LFRMS

Document	Key Objectives / Targets / Guidance relevant to the Strategy and the SEA	Implications for emerging Local Flood Risk Management Strategy	Implications for the Strategic Environmental Assessment
	3. To highlight the need for pro-active nature conservation in Greater Manchester. 4. To fulfil national and sub-regional land-use planning obligations and contribute to the requirement in Policy EM1 of RSS to achieve a step change increase in biodiversity resources.	other benefits i.e. flood defence/ alleviation GI.	
Greater Manchester Joint Waste Plan (2012)	The purpose of the plan is to set out a waste planning strategy to 2027 which enables the adequate provision of waste management facilities in appropriate locations for local authority collected, commercial and industrial, construction and demolition and hazardous wastes.	The LFRMS should aim to assist in adaptation/mitigation of climate change through directing any new waste developments away from places that are likely to flood.	The SEA will have an objective relating to Material Assets which will need to address waste issues.
North West River Basin District Consultation on the draft Flood Risk Management Plan, Environment Agency (October 2014)	This draft Flood Risk Management Plan (FRMP) sets out the proposed measures to manage flood risk in the North West river basin district (RBD) from 2015 to 2021 and beyond. It highlights the hazards and risks from rivers, the sea, surface water, groundwater and reservoirs and set out how Risk Management Authorities (RMAs) will work together with communities to manage flood risk. This plan set out where and how to manage flood risk to provide most benefit to communities and the environment. The FRMP will help deliver the requirements of the National Flood and Coastal Erosion Risk Management Strategy in England by setting out the measures to manage flood risk now and in the future. The FRMP will: - Help develop and promote a better understanding of flood and coastal erosion risk - Provide information about the economic and environmental benefits to inform decision makers - Identify communities with the highest risk of flooding so that investment can be targeted at those in most need	The LFRMS should be consistent with this document.	The LFRMS should ensure that it is consistent with this document and builds in the actions identified in this Plan.

A.1.4. Local Plans and Policies

Document	Key Objectives / Targets / Guidance relevant to the Strategy and the SEA	Implications for emerging Local Flood Risk Management Strategy	Implications for the Strategic Environmental Assessment
Stockport Core Strategy (2011) & associated LDF and DPD	The Core Strategy is a planning policy document. It will deliver spatial planning policy for the Borough as part of the Local Development Framework (LDF), which is a series of documents which will determine where and how development will take place in the Borough up to 2026. This means that policies in the Core Strategy, which sets the overall vision and strategy for the LDF, will determine where housing, employment, essential services, retail and leisure development will be delivered. It will also protect the natural and historic environments, whilst ensuring provision of green and open space. Within the Strategy, Core Policies are as follows: • CS1 Overarching Principles: Sustainable Development – Addressing inequalities and Climate Change • CS2 Housing Provision • CS3 Mix of Housing • CS4 Distribution of Housing • CS5 Access to Services • CS6 Safeguarding and Strengthening the Service Centre Hierarchy • CS7 Accommodating Economic Development • CS8 Safeguarding and Improving the Environment • CS9 Transport and Development • CS10 An effective and sustainable Transport Network • CS11 Stockport Town Centre	This Strategy sets out the where and how development will take place in the Borough and includes a range of policies which may be impacted by or have an interaction with flood risk – for example 'Distribution of Housing'. The LFRMS therefore needs to consider the implications of all relevant policies contained within the LFRMS.	The Core Strategy will have a bearing on a range of objectives within the SEA
Stockport Unitary Development	Note that while the majority of the Stockport UDP has been replaced by the Stockport Core Strategy, some policies remain in place. Key among these is policy EP1.7	It is the case that Within "Areas at Risk of Flooding", development will not be permitted unless a particular location is essential (e.g. water-based recreation, transport or utilities	An objective on flooding will be included within the SEA framework.

Document	Key Objectives / Targets / Guidance relevant to the Strategy and the SEA	Implications for emerging Local Flood Risk Management Strategy	Implications for the Strategic Environmental Assessment
Plan (2006)	Development and Flood Risk. The Council will not permit development, including the raising of land, where it would: (i) be at risk from flooding; (ii) increase the risk of flooding elsewhere; (iii) hinder future access to watercourses for maintenance purposes; (iv) cause loss of the natural floodplain; (v) result in extensive culverting; (vi) affect the integrity of existing flood defences; or (vii) significantly increase surface water run-off unless the applicant can demonstrate that satisfactory and sustainable measures will be implemented to overcome the adverse effects. All development which is likely to have an impact on drainage patterns should incorporate, as far as is practicable, sustainable drainage systems taking account of current Government advice. This policy also notes relevant National planning policies and guidance.	uses) or the development would form part of an area which is already extensively developed and provided with adequate flood defences. Within "Areas at Risk from Extreme Flooding Events", special consideration will need to be given to proposals for civil infrastructure such as hospitals, fire and ambulance stations, and depots to ensure that access can be guaranteed in times of flood emergency. Where development in flood risk areas is permitted following consultation with the Environment Agency, appropriate flood protection or mitigation measures will be required as part of the development unless existing flood defences can be shown to be adequate. Developers will be required to carry out a Flood Risk Assessment (FRA) for any development within the flood risk areas shown on the Proposals Map. In addition an FRA will be required for developments outside this area where there may be significant implications for flood risk, and in cases where Environment Agency advice indicates that an assessment is necessary.	
Stockport Town Centre Urban Green Infrastructure Enhancement Strategy (2015)	It was recognised that throughout Stockport town centre there is a lack of 'Green Infrastructure'. This strategy sets out to deliver a bespoke theoretical framework through the implementation of a series of thematic and project interventions it is proposed that the existing network of urban green spaces can evolve to deliver a full spectrum of ecosystem services to residents, visitors and nature. The Urban Green Infrastructure project interventions are	This Strategy sets out a range of Green Infrastructure that will allow the 'creative management of water'. Proposed infrastructure includes a range of features relevant to flooding issues. The list of potential interventions includes: • Sustainable urban drainage	An objective on flooding will be included within the SEA framework.

Document	Key Objectives / Targets / Guidance relevant to the Strategy and the SEA	Implications for emerging Local Flood Risk Management Strategy	Implications for the Strategic Environmental Assessment
	site specific and symbiotically linked to the regeneration of the Town Centre through existing proposed and future 'Investing in Stockport' regeneration initiatives.	from buildings • Nature based water filtration such as reed beds • Porous paving surfaces • Rain gardens and swales • Natural irrigation of green walls and roofs • Redesigning parks and gardens as flood holding areas • Water features in urban design • (e.g. water clocks, functional art, play fountains) There will also be a range of surface and groundwater interventions such as management guidelines.	
Future Stockport – Supplementary Planning Document for the town centre master plan (2006)	Although this document is a little dated (having been produced in 2006), it is still worth noting as it references Flood Risk and builds upon the original UDP. The UDP is still the relevant document as the provisions within this have not been replaced by the Core Strategy. This document is only relevant to Stockport town centre.	See notes above in relation to the Stockport Unitary Development Plan.	See notes above in relation to the Stockport Unitary Development Plan.

Appendix B. Baseline Conditions

Introduction

In order to assess the potential impact of the Stockport Local Flood Risk Management Strategy on the environment of the Plan area (administrative area of Stockport Metropolitan Borough Council), it is necessary to establish a baseline against which predicted environmental impacts can be assessed, and then to identify issues and trends that are related to each of the environmental interests that may be affected by the proposed plan.

The SEA Directive lists the following environmental interest areas as potentially requiring assessment:

- Biodiversity (including fauna and flora)
- Population & Economic Development
- Human Health
- Soil & Agriculture
- Water
- Air
- Climatic Factors
- Material Assets
- Cultural Heritage (including architectural & archaeological)
- Landscape

The following sections look at each of the above environmental interest areas in turn in relation to the Stockport plan area and where appropriate further afield into Greater Manchester and beyond.

Biodiversity

Although perceived as an urban area, there are a wide variety of habitats, species and designated sites across Stockport which warrant protection and enhancement. This variety of natural features and ecosystems are considered to be important for their contribution to enhancing and protecting the biological diversity of the Borough. Linear and continuous structures function as stepping stones, contributing towards a Borough-wide network of natural greenspace. Their role is crucial in providing essential habitat for Biodiversity Action Plan species, their migration and dispersal and, also, the contribution they make towards protection against pollution, flooding, climate change and other environmental change. In addition these sites contribute to providing clean air and water for human benefit, as well as making the Borough an attractive place to visit and do business.

These habitats, species and designated sites are located in a wide variety of land use types and landscapes, examples of which are urban and urban fringe, river corridors, ancient woodlands, reservoirs and waterbodies.

It is important to note that there are no Sites designated for nature conservation purposes at the International scale (European – SAC / SPA etc) in the Stockport Metropolitan Borough Council area. There are only five such Sites within a 15km of the Borough. The number of designated sites in Stockport is as follows:

Type of Site	2008-9	2009-10	2010-11	2011-12	2012-13	2013-14
SSSI	2	2	2	2	2	2
SBI	65	64	65	67	66	66
LNR	12	13	13	13	13	13

As noted in the table above, there are a range of sites at the National and local level which are designated for their nature conservation value. For example there are two Sites of Special Scientific Interest (SSSI) in the Marple area of the Borough (with a total area of 14.11ha – note this has not changed in area as per the 2013 Annual Monitoring Report. There are also a range of Local Nature Reserves (such as that in Bramhall designated for Ancient Woodland) and Sites of Biological Importance. The 13 Local Nature Reserves (LNR)

in the Stockport area total 314.5 ha, while Stockport retains 66 Sites of Biological Importance (SBI) with a total area of 724.3 ha.

For the most part these Local Nature Reserves, Sites of Special Scientific Interest and Sites of Biological Importance have remained the same or increased in area, in the Borough, over recent years, though during the review period of 2013 there was a partial loss at Bruntwood Park SBI which was not as a result of planning development.

In addition positive conservation management takes place on a range of undesignated sites – including sites that have their primary purpose for an activity not related to biodiversity. Such sites include car parks, roads and gardens.

Gardens and Green Space are of particular importance as these offer links and corridors between established habitats and offer habitat, feeding opportunities etc to wildlife in their own right. Green Space is a significant part of the Borough, though a large percentage of this type of area is tightly mown amenity grassland, which has reduced value for biodiversity.

Population

The population of Stockport is 285,032 (2013), with a projected population of 289,000 by 2037. Life expectancy for females is 83.1 years (2012), while it is 79.8 years for males (2012). Stockport had the highest increase (3.9 years) in life expectancy of all the Greater Manchester local authorities during the period 2002 to 2012. This was above national, regional and sub-regional averages.

The population has an ethnicity of 94.2% White, 3.1% South Asian or mixed, 1.4% Black or mixed and 1.0% Chinese or other (estimated mid-2014). Religious breakdown is 63.2% Christian, with a further 31.6% of No Religion or Not stated. The rest of the population is made up of a range of religious belief, with Muslim at 3.3% of most note.

Of the population, more than half are aged over 40 with more than 28% aged 40 to 59. The working age population has remained steady, with predicted slight losses up to 2020, rising again slowly after that. The number of people economically active (aged 16-64) is 122,400 or 76.9% (2014).

There is a spatial variation across the borough in terms of population – the smallest ward population is about two thirds of the highest ward population. The vast majority of the population (over 90%) lives in areas classed urban, with the rural population predominantly located in the east of the Borough. It is anticipated that the number of households in the Stockport borough area will increase from 123,000 in 2012 to 143,000 by 2037, an increase of 14%.

Stockport has areas which fall within the 5% most deprived in England, although overall, it ranks as a reasonably affluent Borough on a National scale (coming 167 out of 326 in the Indices of Multiple Deprivation) and is noted within the Greater Manchester area as having a high level of professional occupations in comparison to its neighbouring local authority areas. Stockport also experienced a 7.9% rise in professional occupations between 2004 and 2014. Consequently there are lower levels of process, plant and machine operatives than neighbouring areas. As with population as a whole, there are spatial variations in income across the Borough – with the wealthiest wards having an average income nearly twice that of the most deprived wards.

2011 data shows that more than 50% of those surveyed (80.4% of existing households in Stockport) earn £30,000 per annum or below with 25% on £15,000 or below. The average house prices in 2008 ranged from nearly £117,000 to more than £338,000, with an average of £194,144. According to the Stockport Housing Needs Assessment in 2011 the average house price was £196,619.

The dominant industry type in Stockport is Services, with 83.5 percent of employment in this area (2014), with Construction (4.4%), Energy & Water (3.5%) and Manufacturing (8.5%) playing much smaller roles in employment terms. Note that while the Stockport area has fairly considerable mineral reserves, these are often not readily workable or are of limited quality – this results in a very low percentage of people employed in the extractive industry. A similar negligible amount of people are employed in agriculture. A majority of people in employment who live in the borough work outside the Borough area, with Manchester city and Manchester airport being key locations, though of course, other people travel from surrounding areas to work in Stockport.

Despite the impact of the recent economic recession, Stockport's unemployment figures remain one of the lowest levels of unemployment in the Greater Manchester region. Unemployment stood at 8,100 in 2014, with 2,908 JSA claimants and 10,082 NEETs in the same period. Unemployment is spatially diverse across the Borough with the Brinnigton ward having the highest rates of unemployment in 2014 (and indeed over the previous 10 years).

As of 2011, the borough had 57.46 hectares of employment land identified as available for development in and around existing sites. Office development is available in the town centre, Bredbury, the Heatons, Bramhall and Cheadle with limited capacity in Marple and Hazel Grove. The total amount of additional employment floorspace delivered in 2013/14 was 37,564m^2 of which 187m^2 was in the Town Centre while an average of 17,946 square metres of Industrial / Commercial floorspace was developed in Stockport each year between 2004 – 14 (though note this average figure masks the greater amount delivered in the early years of this period).

Human Health, Community Satisfaction and Cohesion

As with the rest of England, health and social care in Stockport is provided by the NHS, the local authority (Stockport Metropolitan Borough Council) and private providers. Emergency services are provided by Greater Manchester Fire and Rescue Service, Greater Manchester Police and the North West Ambulance Service.

Stockport has an ageing population, with a third of households in the Borough housing a pensioner. Perhaps a reflection of this and the general affluence of the Borough, Stockport has the highest level (73.2%) of houses owned outright or with a mortgage in the Greater Manchester area. The extent of need for affordable accommodation in the Borough continues to be high with the delivery of smaller one and two bed properties, as well as larger family accommodation recommended. The majority of housing need is for smaller properties, but there is such a shortage of affordable family accommodation in the Borough that turnover is very low. There continues to be a particular need for supported and specialist accommodation. Improving choices for older people in the Borough and those with physical disabilities is increasingly important.

There is evidence of poor health and unemployment linked to more deprived areas, with a wide gap between the poorer and wealthier parts of the Borough. Access to services is an issue with residents in certain parts of the Borough having further to travel to access basic health and lifestyle needs, whilst more heavily populated centres can place a strain on service provision. It is estimated (2013-14) that around 13-15 years of life are spent in poor health for men, and around 17-18 years of life are spent in poor health for women in the Borough.

There are a number of risk factors that decrease life expectancy and increase premature deaths. These indices include smoking, alcohol misuse, poor diet, low levels of physical activity and poor mental health. Additional factors include low income, fuel poverty, unemployment and social isolation. As with the National and Regional picture, it is to be expected that the most deprived wards within Stockport, will be impacted most negatively by such indices.

For example, smoking prevalence aligns with deprivation, with (in 2010) 40.1% of the population in the most deprived ward (Brinnington) smoking, compared to 6.9% in the least deprived ward (Bramhall South). Similarly, mental health scores, as is typical across the UK, tended to improve with affluence.

Obesity is also an issue across the country, including in Stockport, though it has been shown that the figures for obese children in Stockport peaked in 2008.

It was noted in 2011 that Stockport has the greatest health difference between its most affluent quintile and its more deprived quintile, in the Greater Manchester area and it was recognised that the gap was widening. Life expectancy for both males and females in the most deprived wards is significantly less than the more affluent area – a trend which mirrors the national picture. Between 2011 and 2013 it was shown that life expectancy in Brinnington (the most deprived ward) was just over 72.0 years for males and just under 77.0 years for women. Bramhall South (the most affluent ward) had life expectancy in the same period of approximately 85.0 years for males and over 86.0 years for females.

On a national level, Stockport outperforms the average for some indicators such as those numbers of people with diabetes, though it is worse in other areas such as the number of binge drinkers.

Provision for sporting activities is one way of tackling health issues. However, provision for formal sports in the Borough is generally below recommended national standards, although there is an oversupply of senior football pitches. There is also a significant amount of public sector indoor sports provision in the Borough and this tends to be well used. Again though, quality of provision has on occasion reflected the distribution of deprivation, with poorer quality in more deprived areas. These areas are also less likely to have access to and make use of private provision. Overall though 26.2% of the adult (aged 16 and over) population in the local area participate in sport and active recreation, at moderate intensity, for at least 30 minutes on at least 12 days of the prior 4 weeks (equivalent to 30 minutes on 3 or more days a week) (2011-13).

As noted in the AMR, Stockport is considered a safe place to visit with (in 2014) 94% of respondents who had visited Stockport Town Centre in the last 12 months felt safe when visiting in the evening. Respondents who had visited the town centre in the last 12 months who reported not feeling safe in the Town Centre at night, gave the following as the most common reasons: anti-social / drunken behaviour, lack of street lighting, it was very quiet, people loitering and a lack of police presence.

The Access to Services policies of the Core Strategy (Policies CS5, CS6 and DMP AS-1) encourage the development and enhancement of leisure facilities including bar, café-bar, restaurant, health and fitness as well as cinema provision in the town centre. These are facilities that often open during the evening, thereby helping people to feel safer in Stockport Town Centre at that time of the day.

Stockport is also well provided with Community facilities – for example 98% of residents are within 1.5km and 74% are within 1km of a health and wellbeing centre.' At December 2012, 98.30% of Stockport residents live within 1.5 km of a health centre, and 88.60% live within 1.0 km of a health centre, based on GP registered population figures. It has also been shown that Stockport Council has continued to maintain a network of facilities that are sufficient to provide a 'comprehensive and efficient' public library service to the Borough. Work is also ongoing in developing further sporting facilities and community allotments.

Land use, Soil & Agriculture

Land Resources & Green Infrastructure

Land is recognised as one of the most important resources across Greater Manchester and Stockport is no different. The variety of land use types is reflective of the geographical area of Stockport borough which stretches from the borders of the Peak District National Park and the Pennine foothills to the Manchester City boundary, and bordering the Cheshire plain to cover an area of 126km^2.

There is a mix of urban density and open rural areas within the borough. The rural areas tend to be toward the eastern and southern areas of the Borough. Over 46% of the Borough area is designated as green belt (5,857 hectares in 2014) which performs the following five key functions:

- to check the unrestricted sprawl of large built-up areas;
- to prevent neighbouring towns merging into one another;
- to assist in safeguarding the countryside from encroachment;
- to preserve the setting and special character of historic towns; and
- to assist in urban regeneration, by encouraging the recycling of derelict and other urban land.

There have been no inappropriate developments granted planning permission in the Borough's Green Belt during the last monitoring period except in situations where 'very special circumstances' were demonstrated to clearly outweigh the potential harm by reason of inappropriateness and any other harm. There has been no loss of Green Belt in terms of overall area or benefit, in so far as no development has been allowed which has resulted in land no longer fulfilling the purposes of its inclusion within the Green Belt.

The Greater Manchester area was very heavily impacted by and a driver of the Industrial Revolution. This has left a legacy of contamination in some areas such as former industrial sites or derelict land. It was noted that for Stockport, the proportion of developed land that was vacant or derelict for more than 5 years was 1.07% (2009), though it is to be recognised that not all of these sites would be contaminated, while others, still occupied may be contaminated.

Stockport has a wide range of Green Infrastructure assets such as rivers and canals, ancient woodlands, SSSIs, SBIs Conservation Areas, Public Open Spaces, undeveloped land in Flood Zones 2 and 3 etc.

Access to open and green space enhances health as well as biodiversity and these spaces provide adaptation to the impacts of climate change, helping to reduce the Urban Heat Island effect and holding rainwater in natural systems, especially controlling flooding from rapid rain water accumulation in the built environment. Natural England's Accessible Natural Green Space Standard or ANGsT recommends that everyone, wherever they live, should have accessible natural greenspace:

- of at least 2 hectares in size, no more than 300 metres (5 minutes walk) from home;
- at least one accessible 20 hectare site within two kilometre of home;
- one accessible 100 hectare site within five kilometres of home; and
- one accessible 500 hectare site within ten kilometres of home; plus
- a minimum of one hectare of statutory Local Nature Reserves per thousand population.

A total of 1,705 households out of Stockport's total 126,477 households meet none of the ANGsT requirements. The following levels were recorded in 2011:

- 27% of households within Stockport have access to a site of at least 2 hectares within 300 metres
- 95% of households within Stockport have access to a site of at least 20 hectares within 2 kilometres
- 71% of households within Stockport have access to a site of at least 100 hectares within 5 kilometres
- 0% of households within Stockport have access to a site of at least 500 hectares within 10 kilometres
- 0% of households within Stockport have all of their ANGsT requirements met
- 1% of households within Stockport have none of their ANGsT requirements met

While the majority of the borough is classified as being urban, the eastern and southern areas of the Borough are largely rural, with the southern area typically having agricultural land of Grade 3 and the eastern area typically having Grade 4. It is estimated that a third of the Borough is under intensive agriculture – mainly improved grassland utilised for grazing livestock, though it is to be recognised that agricultural land in the Borough is now being targeted for enhancement in terms of biodiversity.

As noted, over 46% of the Borough is designated as Green Belt and as this is concentrated in the south and east of the Borough, large parts of this would be agricultural.

Water resources

All the water bodies within the Stockport area and indeed the wider Greater Manchester area, fall within the area known as the North West River Basin District under the terms of the Water Framework Directive.

Within the North West River Basin District, main rivers in the Stockport area include the River Goyt, River Mersey, River Tame, River Etherow and a range of tributaries examples of which are the Micker Brook, Gatley Brook, Ochreley Brook, Poise Brook, Forkington Brook, Otter Brook and Black Brook. There are also a wide range of small tributaries, becks and ditches which feed into these main rivers. All these watercourses fall within the Upper Mersey Catchment and as would be expected in an area with a mix of urban and rural landuse, there is a mix of open channels and culverted sections.

Within this catchment there are also a range of 'man made' water resources such as canals (for example the Macclesfield Canal and the Peak Forest Canal) and a number of reservoirs. Many of the water resources are utilised for water abstraction purposes.

In the context of the Water Framework Directive, the water environment includes rivers, lakes, estuaries, groundwater and coastal waters out to one nautical mile. For the purposes of river basin management, these waters are divided into units called water bodies and the following details the types of water body in the North West River Basin District:

Type of waterboby	**Water body types**					
	Rivers, canals and surface water	**Lakes and reservoirs**	**Estuaries (transitional)**	**Coastal**	**Groundwater**	**Total**

	transfers					
Natural Water bodies	296	30	4	3	18	351
Artificial water bodies	63	18	0	2	n/a	83
Heavily modified water bodies	188	116	8	3	n/a	315
Total	547	164	12	8	18	749

Water has played an important role in the growth of the towns, cities and associated industries across the region. However, this development was typically at the cost of poor water quality. Progress has been made in protecting the natural assets of the North West River Basin District and cleaning up many of the problems for the water environment – this includes progress in the Stockport area where for example there is ongoing work to tackle poor emissions.

However, a range of challenges remain, which will need to be addressed to secure the predicted improvements. These include:

- diffuse pollution from agricultural activities;
- point source pollution from water industry sewage works;
- diffuse pollution from urban sources;
- physical modification of water bodies;
- point source pollution from industrial discharges;
- water abstraction and artificial flow regulation.

As with the River Basin District as a whole, the water bodies within the Stockport borough area will face these challenges.

Water quality is generally fair in Stockport and is reflective of conditions in neighbouring local authority areas.

Of the different water body types within the River Basin District noted in the table above, 218 surface water bodies and 222 of all water bodies are at good or better overall status/potential. For groundwater bodies, currently 61 per cent are at good quantitative status and 44 per cent are at good chemical status.

219 surface water bodies (30 per cent) are at good or better ecological status/potential.

431 surface water bodies are assessed for biology. 160 (37 per cent) of those are at good or better biological status.

In the North West River Basin District, 27 per cent of 398 artificial and heavily modified water bodies are currently classified as at good or better ecological potential, compared to 35 per cent of 333 natural surface water bodies having good or better ecological status.

Covering a significant part of urban Manchester and encompassing parts of the South Pennine Moors Special Protection Area and Special Area of Conservation, the Upper Mersey catchment is one of contrasts. The internationally protected conservation sites support rare and endangered habitats and bird species. Salmon are returning to the River Bollin following installation of two new fish passes and the River Goyt supports the Mersey's only known population of juvenile Atlantic salmon.

River and Lake water bodies – Upper Mersey Catchment	2009	2015*
% at good ecological status or potential	18	22
% assessed at good or high biological status (36 water bodies assessed)	24	32
% assessed at good chemical status (8 water bodies assessed)	63	75
% at good status overall (chemical and ecological)	18	22
% improving for one or more element in rivers		48

*anticipated

Status objectives for rivers and lakes in the Upper Mersey river catchment are as follows:

	Status objective				
Water body category	Good or High in 2015	Good or High in 2021	Good or High in 2027	Less than good in 2015	Total No. of water bodies
Rivers	7	7	23	16	23
Lakes	0	0	4	4	4
Heavily Modified water bodies	12	12	58	46	58
Artificial water bodies	0	0	0	0	0

SuDS are promoted for new developments across the Borough. For example, of the 70 major applications in the latest monitoring period, 28 stated that SUDS would be provided (including soakaways) for their development.

Approximately half the Stockport borough area is classed as a major aquifer (as noted on the EA Groundwater Vulnerability maps). It is also the case that the underlying aquifer in the west is a major sandstone aquifer, whilst there is a coal measures aquifer classified as a secondary aquifer underlying the eastern part of the borough. The following are the key hydro geological units beneath Stockport:

System and Lithostratigraphical Division		Aquifer Unit
Quaternary	Alluvium	Variable, but probably not an aquitard
	River terrace deposits	Variable, but probably not an aquitard
	Fluvio-glacial deposits	Variable, but probably not and aquitard
	Glacial sand and gravel	Variable, but probably not an aquitard
	Till	Variable, but probably not an aquitard
Triassic	Ormskirk / Helsby Sandstone	Aquifer

	Formation	
	Wilmslow Sandstone Formation	Aquifer
	Chester Pebble Beds	Aquifer
	Kinnerton Sandstone Formation	Aquifer
Permian	Manchester Marl Formation	Mainly aquitard / aquifer
	Collyhurst Sandstone Formation	Aquifer
Carboniferous	Coal Measures	Multilayered with aquitard and aquifer units
	Millstone Grit	Multilayered with aquitard and aquifer units

Flooding

Flooding can naturally occur in any area, with impacts compounded by a complex interaction of factors such as, for example, storm / rainfall intensity, topography, ground conditions, soil type and land use. Man made factors such as increasing urbanisation, culverting of water courses and capacity of the sewer network also act to increase the impact that flooding can have. These factors are all present in Stockport. Flooding can destroy homes and businesses and can have serious implications for the health of a population – either directly through hazards during the flood, or indirectly through the stress and anguish it can cause to those impacted by it.

Stockport has been and continues to be impacted by flooding. For example, historically, notable flooding occurred in the Stockport area in 1965, 1973 and again in 1998, with lesser flooding occurring at various other times.

The topography of the Borough plays an important role in that it has been shown that the risk of fluvial (river) flooding within the district is generally low. This is due to the incised nature of the Rivers Goyt, Tame and Mersey meaning that the spread of the flood zones beyond the river banks is generally limited by the narrow valleys.

The areas at greatest risk of fluvial flooding are in Cheadle and upstream of the confluence of the Goyt and the Tame within the Stockport Town Centre development area.

Pluvial (overland) flow causing flooding is a more widespread risk in the Borough with a wide distribution of areas susceptible to surface water flooding. Areas susceptible to pluvial flooding include Gatley, Cheadle, Cheadle Hulme, Bramhall, Hazel Grove, Reddish and part of Stockport Town. Romiley, Marple, High Lane and part of Bredbury are shown to be less susceptible to surface water flooding.

In general, the low lying areas along the river valleys and along the course of culverted watercourses as well as natural low spots appear to be most susceptible. The low-lying areas near the confluence of the Mersey, Micker Brook, Chorlton Brook and Gatley Brook appear to be the most susceptible to surface water flooding.

Out of sewer flooding is also a risk, but it is unclear the extent to which this is an issue within the Stockport Borough area.

It is considered that the risk of flooding from canals is generally low due to their regulated nature, though in some instances, should it occur, the level of impact could have severe implications e.g. it has been assessed in the Strategic Flood Risk Assessment for Stockport that failure of the aqueduct crossing Green Lane, which links Romiley to the Bredbury Green area or the aqueduct crossing the River Goyt during a flood event could

potentially have severe implications for the highway network and increase the flood risk along the River Goyt. Both the Macclesfield and Peak Forest Canal have a small number of potentially vulnerable locations for breaching.

While there are a range of reservoirs in the Stockport area, these are generally smaller in scale i.e. under 25,000m^3. Flooding from reservoirs is also considered low due to the regulatory regime in which these are managed.

Note that there are no documented records of groundwater flooding within the Stockport borough area, though, like most flooding, this cannot be entirely ruled out – for example, while much of the borough is covered with a blanket of till which acts to prevent groundwater movement, where the aquifers are present at outcrop, there is a potential for groundwater flooding. Similarly areas of drift deposits can contain perched groundwater tables that may be in hydraulic continuity with surface water courses (and indeed can form an important source of base flow to rivers).

Air

The largest proportion of air pollution in Greater Manchester arises from road traffic and it is expected that air quality in Stockport Borough reflects this situation. It has been demonstrated that particular air quality issues are reflective of the regions' motorway network, though negative impacts are experienced across the urban area and at particular 'hotspots' such as the airport (which, while not in the Borough, is in close proximity to the Stockport Borough boundary and as such may contribute to air quality issues in the Borough). The route of the M60 (and other main routes) through the urban area of Stockport borough has resulted in large areas of the Borough (in particular around the town centre) being subject to Air Quality management. Large areas of the borough are also designated smoke free zones which only permit the burning of certain types of fuel.

Air Quality is continuously measured at one local authority funded monitoring site in Stockport – Hazel Grove. In terms of air quality, Stockport Council's own records indicate a trend of general reduction in volume of emissions of Nitrous quality Oxides (NOx), mainly from vehicles. However information and sites of concern remain across the Borough national including: Civic Centre; A6 Norwood Road; Kingsway; Bramhall Lane; Debenhams; Gorton Road, Kenilworth Road and Finney Lane.

Nitrogen dioxide (NO_2) emissions are of particular concern but PM10 emissions are also a major issue, with emissions from cars and motorcycles being identified as a significant source (with buses also contributing particularly on busier routes).

Air Quality Management Areas (AQMA) have been established across all the GM authorities (including in Stockport) and their boundaries tend to reflect the motorway network, with additional extensions along some main roads. A GM Air Quality Action Plan has been developed to improve air quality in the AQMA, but so far has not achieved compliance with legal limits, despite downward trends. Note this AQMA Action Plan is now integrated with the GM Local Transport Plan.

GM is not expected to meet requirements of the European Air Quality Directive in terms of NO2 pollution until after 2020.

Poor air quality can have adverse consequences across many areas, but is most closely linked to health and biodiversity problems. There are habitats of ecological value, notably designated sites of nature conservation importance adjacent to key routes and AQMA.

Climatic Factors

A changing climate is an accepted fact and this will impact on Stockport, as with the rest of the country and the world. Models of prediction impact are still subject to variability and it is particularly difficult to look below the region, or even country scale.

As noted in the Greater Manchester Spatial Framework, the UKCP09 projections for the United Kingdom set out the anticipated impacts of climate change. In summary, the main messages are:

- Central England Temperature has risen by about a degree Celsius since the 1970s, with 2006 being the warmest on record. It is likely that there has been a significant influence from human activity on the recent warming.

- Annual mean precipitation over England and Wales has not changed significantly since records began in 1766. Seasonal rainfall is highly variable, but appears to have decreased in summer and increased in winter, although with little change in the latter over the last 50 years.
- All regions of the UK have experienced an increase over the past 45 years in the contribution to winter rainfall from heavy precipitation events; in summer all regions except NE England and N Scotland show decreases.
- Severe windstorms around the UK have become more frequent in the past few decades, though not above that seen in the 1920s.
- Sea-surface temperatures around the UK coast have risen over the past three decades by about 0.7 ºC.
- Sea level around the UK rose by about 1mm/yr in the 20th century, corrected for land movement. The rate for the 1990s and 2000s has been higher than this.

In relation to Greater Manchester, it was noted that increased risk of extreme flooding on buildings and infrastructure and more extreme weather events from higher temperatures and increased wind and rain in winter months, are likely to be most pertinent. These will impact on Stockport as with the other local authorities of the region. It is important to note that there will also be a range of indirect impacts e.g. stress and associated health impacts caused to householders / business owners from flooding of property, or from increases in temperature.

As a part of the Greater Manchester area, Stockport is committed to securing the transition to a low carbon economy and as part of the Greater Manchester Authority, will work towards a target of reducing CO_2 emissions by 48% by 2020 from a 1990 baseline. It is of note that domestic emissions in Stockport are amongst the highest of the Greater Manchester local authorities (along with Manchester, Wigan and Bolton). In 2007, it was estimated that these contributed 40% of Stockport's CO_2 emissions, with Industry / Commercial making up 33% and Road Transport 27%. Overall there had been, across Greater Manchester, moderate reductions in CO2 emissions, until 2011 when a slight increase was observed.

Stockport's emissions in Kt of CO_2 for 2012 were as follows:

- Industry & Commercial = 500
- Domestic = 675
- Road Transport = 418
- Per capita (t) = 5.6

Material Assets

Maintaining a high quality public realm and built environment is considered vital if Stockport and the wider Greater Manchester area is to continue as an attractive place to live, work and visit. For the purposes of this Scoping report, the term material assets is taken to mean utility infrastructure, extractive resources, transport, waste and land resources (including green infrastructure).

Utility Infrastructure

The electricity mix in Greater Manchester (and by extension, Stockport) reflects that of the rest of the country. Energy is provided via an electricity network, with power lines of varying capacity / voltage and generation is through a mix of sources such as Natural Gas, Nuclear, Coal and Renewables. It is worth noting that Greater Manchester has a relatively small amount of large scale energy generation, with most energy being imported to the region (including Stockport). Stockport, nonetheless, has some generation capacity – with an Anaerobic Digestion plant being located in the Borough, with plans for more being developed. There is also some hydro-electric generation within the Borough area. For example, in 2013/14 planning permission was granted for a micro hydro development at Stringer's Weir for an Archimedean Screw type scheme which has a peak output of 70kW. In addition there are also individual energy sources linked to particular buildings, scattered across the Borough with these including ground heat source pumps and solar panels. For example data on installed renewable energy from the Feed in Tariff scheme showed that from 2010 to 2012 there were 2,928 applications for FIT resulting in an installed capacity of 7.50 Mwe - this is recorded as the highest installed capacity within the Greater Manchester area.

Electricity use across Greater Manchester declined by 9% between 2005 and 2010, with the commercial sector achieving the greatest efficiencies. Similarly Gas usage has reduced by 17% over the same period.

Potable water is supplied across Greater Manchester by United Utilities. This company is also responsible for dealing with waste water in the region. Water supply to Stockport and dealing with subsequent waste water is therefore managed on a regional basis, with the typical water distribution and sewage networks / infrastructure present.

Modern communications are available throughout Stockport and this is also managed on a regional basis, for example with the Greater Manchester Broadband and Digital programme having the objective to provide basic broadband to all premises across the region by 2015. Superfast and Ultrafast broadband will also be provided wherever possible.

Extractive resources

While the Stockport area has fairly considerable mineral reserves, these are often not readily workable or are of limited quality. The main reserves are as follows:

- Sand / gravel - concentrated in the Etherow and Goyt valleys, with small pockets east of Marple Bridge, at Chadkirk and at Bramhall Park. Sand and gravel are the only minerals currently extracted within the borough, at Offerton Sand & Gravel off Marple Road;
- Sandstone / gritstone - outcrops along upland eastern edge of the borough, east of Compstall, Marple Bridge and Mellor;
- Clay / shale - widespread but of limited quality, generally not suitable for brick-making; and
- Coal - measures lie beneath the eastern part of the borough. Whilst there are no active workings or proposals, the eastern part of Stockport has previously experienced mining activities in some locations which have left an environmental legacy that needs to be taken into account in the consideration of the design/layout of development proposals.

Mineral planning is managed across the Greater Manchester, Merseyside and Warrington region, of which Stockport is a part and the aggregate crushed rock landbank as at 31 December 2013 was 15.4 years (20.32mt), while for crushed sand and gravel for the same period it was 9.9 years (4.27mt).

There were no losses of known mineral resources to development within Stockport during the last monitoring period.

Transport

The Stockport Borough area is generally well served by public transport, with good radial routes from the bus station to the west of the town centre to a wide range of destinations within the Borough and beyond.

The town is also served by rail, with a station in the town centre providing frequent services into the centre of Manchester, as well as interchange opportunities for services to more distant locations in the region and across the country.

There are a number of issues with rail provision though. For example, apart from the main part of the Borough, other parts of the Borough lack a direct rail provision. The rail station also has access issues in that it is uphill from the main bus station and the main shopping areas in the town centre.

Stockport also benefits from the wider transport network across the Greater Manchester region. These transport opportunities include the motorway network, with for example, the M60 running adjacent to the town centre. Air travel is also very well provided for by the location of Manchester Airport in close proximity to the borough boundary.

Despite efforts to make a modal shift, across the Greater Manchester area, the dominant mode of transport is the private car, followed by bus use and then walking. This use of private cars results in considerable congestion across the Greater Manchester area and on many routes within Stockport. Efforts continue to make progress in reducing use of the private car and encourage other modes.

Waste

Planning for waste is achieved at a strategic level with the Greater Manchester Joint Waste Plan, adopted in 2012. This plan highlights the relative proportions of principal waste streams in Greater Manchester as follows:

- Commercial Waste = 33%
- Industrial Waste = 17%
- Municipal Waste = 24%
- Construction, demolition and excavation waste = 21%
- Agricultural and other waste = 5%

Waste across the Greater Manchester area (including Stockport) is managed by the Greater Manchester Waste Disposal Authority.

In relation to the amount of municipal waste arising, a total of 101,912.01 tonnes of municipal waste was managed in Stockport for the last monitoring period. As with other local authorities and regions across the United Kingdom, significant efforts have been made in recent years to manage waste in a manner other than just disposal to landfill. For example there are three household waste recycling centres (Civic Amenity Sites) in the Stockport borough area. Of the collected waste in Stockport, 61.1% was either composted, recycled or re-used, compared to 61.4% and 63.3% in the previous years respectively.

The amount and type of waste recycled in 2011-14 is as follows:

Type of recycling tonnage	2011-12	2012-13	2013-14
Brown Bin - glass, tins, cans, aerosols, plastic bottles, aluminium foil / trays	12,300	12,331	12,421
Blue Bin - paper, card, cardboard including cartons	16,100	15,224	15,007
Green Bin - garden and solid food waste	35,800	34,370	36,159

Cultural Heritage

Stockport has a rich and varied cultural heritage, with evidence of human settlement in the area spanning 8,000 years. This legacy is a result of the geographical location and resources of the Borough, with for example, humans utilising the rivers for transport routes and a source of food or utilising the local stone for building. The proximity to Manchester city and the legacy of the Industrial Revolution in the Greater Manchester area have been and continue to be strong influences on the cultural heritage of Stockport.

This rich heritage has resulted in there being 37 Conservation Areas designated across the Borough (a total of 8.41km^2). These afford protection to the character and appearance of areas because of their particular architectural or historic interest. Of the Conservation Areas, there are 12 with Article 4 directions, 34 with Character Appraisals and 10 with Management Plans. As of 2014, the Conservation Areas within Stockport are:

- Alexandra Park, Edgeley
- All Saints, Marple
- Barlow Fold, Romiley
- Bramall Park
- Bramhall Lane South
- Brook Bottom
- Brooklyn Crescent, Cheadle
- Cale Green
- Chadkirk
- Cheadle Royal
- Cheadle Village
- Church Lane, Romiley
- Compstall
- Davenport Park
- Dodge Hill

- Egerton Road/ Frewland Ave
- Gatley Green
- Greave Fold, Romiley
- Green Lane, Heaton Norris
- Hatherlow
- Heaton Mersey
- Heaton Moor
- Hillgate
- Houldsworth
- Macclesfield Canal
- Markets/ Underbanks
- Marple Bridge
- Mauldeth Road
- Mellor/ Moor End
- Mill Brow
- Peak Forest Canal
- St Georges, Heaviley
- St Peters
- Station Road / Winnington Road
- Swan Lane / Hulme Hall Road / Hill Top Ave
- Syddal Park, Bramhall
- Town Hall

As of 2014, there are also 388 entries on the list of buildings of special architectural or historic interest, 468 locally listed buildings of architectural or historic interest (a substantial rise since the 131 listed in 2007) and 6 Scheduled Monuments. There are also over 3,618 sites noted on the Greater Manchester Sites and Monuments Record. Stockport possesses a wide range of designed landscapes, graveyards, parks and gardens of national regional and local significance, including 2 registered historic parks.

There are also historic navigable canals within the Borough such as the Macclesfield canal and Peak Forest canal, which form part of the 'Cheshire Ring' and which link to the wider canal network across Greater Manchester and beyond. Features of note on this canal network in the Stockport area include the Marple Aqueduct over the River Goyt. This wider canal network is recognised as being a valuable contributor to the local economy and supports a range of jobs in the leisure and tourism sectors.

Landscape

Stockport has a mix of landscape types as recognised by the Landscape Character Designations which cover 13 areas of the Borough. These designations built upon earlier work relating to the North West Joint Character Areas which described a complex mix of landscape types for the Stockport area such as Urban and Industrial landscapes of urban river valleys, industrial foothills and fringes and urban areas. In addition there are farmed lowland and valley landscapes, upland fringes.

Regional Landscape Character Areas for the Stockport area included Manchester Conurbation, North Cheshire Plain, Manchester Mill Towns and Pennine Fringe, Dark Peak High Moors and South West Peak.

The Landscape Character Areas (LCAs) relevant to Stockport are as follows:

- Woodford
- Heald Green Fringe
- Ladybrook Valley
- River Mersey
- Tame Valley
- Brinnington East
- Goyt Valley
- Offerton / Poise Brook
- Hazel Grove / High Lane
- Mellor Moor

- Marple Bridge
- Ludworth Moor
- Etherow Parklands

Particular protection is provided to the Borough's four main river valleys of the Mersey, Tame, Etherow / Goyt and Ladybrook.

Appendix C. Consultation Responses to Scoping Report

Question	Representation	Response	Action
Respondent: Historic England (10 December 2015)			
Comments on Scoping Report			
Comments on Scoping Report	Provided link to a guidance document on assessment of historic environment in SEAs. Propose that a topic based approach (inc. a chapter on cultural heritage) should be followed in the SEA Report. Provided a series of points that they would like to see addressed in the SEA: - The significance of heritage assets (including their settings) within and adjacent to the plan area. - How the sustainability objectives impact on the significance of heritage assets (including theirs settings) and the wider historic environment - How the proposed plan policies and plan alternatives impact on the significance of heritage assets (including theirs settings) - What steps can be taken to optimise any benefits to the significance of heritage assets (including theirs settings) Request that findings are set out in main body of report and not appendices. Strongly advise that heritage team of SMBC are closely involved. HE reserve the right to object at a later stage to proposals if they consider these to have adverse effect on historic environment.	The significance of heritage assets has been considered in the SEA. At this stage given that no specific flood mitigation measures are proposed as part of the Strategy, it is not possible to address the impact of measures on specific features. However, the SEA has recommended the strengthening of the Strategy Objectives to protect and enhance cultural heritage features.	The SEA has recommended that the protection and enhancement of heritage assets and townscape features are considered specifically within the Strategy Objectives. This recommendation has been taken on board by SMBC.
Respondent: Natural England (07 January 2016)			
Comments on Scoping Report	The outcomes of the SEA should feed into the development of the LFRMS and there should be clear linkages between the two, they should not be done in isolation. As such Natural England requests that the SEA be submitted with the Draft LFRMS at the next consultation stage, at which stage we will make more detailed comments.	Noted	The SEA Report and Draft LFRMS will be issued for consultation at the same time.
Comments on Scoping Report			
Q1. Have there been any significant omissions of plans, programmes or	The below may also need to be considered within the SEA:	Noted.	These Plans, where relevant, have been included in Appendix A of this Environmental Report. This includes a

Question	Representation	Response	Action
environmental protection objectives relevant to the scoping of this report?	- Adopted Local Plans in neighbouring authorities which are hydraulically linked - Countryside and Rights of Way Act (2000) - The Northwest Flood Risk Management Plan – this is being developed by the Environment Agency and may still be at consultation stage - Safeguarding our Soils: A Strategy for England (Defra, 2009). The soil strategy provides a vision that by 2030, all soils in England will be managed sustainably and degradation threats tackled successfully		review of their influence on the SEA. On the basis of an SEA recommendation, Strategy Objective 7 has been revised to include a measure (7g) to protect soil resources and avoid permanent loss of best quality and most versatile agricultural land.
Q2. Do you agree with the selection of key environmental issues for the Stockport Metropolitan Borough Council area?			
Q3. Do you agree that the baseline data that have been, or will be collected, are relevant and of sufficient detail to support the assessment?	Natural England note that European designated sites (also commonly referred to as Natura 2000 sites) within and within 15km of the Stockport area are being considered with regards to effects, however consideration has only been given to Sites of Special Scientific Interest (SSSIs) within the Stockport area. Due to the nature of flooding and interconnection between water bodies, Natural England recommends an approach where designated sites not only within the Stockport boundary, but also within proximity of the area be included. This includes Sites of Special Scientific Interest (SSSI). SSSI notified features and more detailed information regarding each SSSI can be found on the Natural England SSSI pages here http://www.sssi.naturalengland.org.uk/Special/sssi/search.cfm Please note that paragraph 118 of the National Planning Policy Framework requires that potential Special Protection Areas, possible Special Areas of Conservation, listed or proposed Ramsar sites, and any site identified as being necessary to compensate for adverse impacts on classified, potential or possible SPAs, SACs and Ramsar sites be treated in the same way as classified sites.	The HRA screening has included all international sites within 20 km of the boundaries of the metropolitan borough of Stockport. This covers sites identified within the NPPF.	No further action required.

Question	Representation	Response	Action
Q4. Are there any key baseline data available that are or could be used in support of the issues that have not been identified? Are you aware of any appropriate targets that the report should cite?			
Q5. Do the SEA objectives and decision making questions provide a sound framework against which to assess the environmental credentials of the emerging LFRMS?	Natural England welcome the intention to provide indicators for which the performance of the plan will be measured against (decision making questions). However, the use of indicators should monitor the success of the SEA. They should help assess the impacts of the Plan and its actions as well as provide an indication of the level of sustainability achieved and should provide an indication of the need for further enhancement or mitigation measures within the Plan. This is an iterative process to ensure that the Plan, if refined to improve performance against sustainability objectives, does not then have an adverse effect on the environment. Presently the decision making questions are not suitably worded to provide this monitoring. Below are example indicators which could be used to monitor an SEAs progress: • Protected species – Quantified data might include numbers of flood risk related projects where protected species are considered; numbers of plans with conditions imposed to ensure working practices and works to protect/ enhance protected species and numbers of planning applications/EA licenses issued which result in the need for a protected species licence in order for the work to be carried out. This will indicate that protected species are being given appropriate consideration within the planning system and begin to build up information on their occurrence within the plan area. The number of flood risk proposals which require a Habitats Regulations Assessment with mitigation measures to ensure no adverse effect on European sites. • Number of flood risk schemes impacting on Sites of Special Scientific Interest (SSSIs) - Information on the condition of designated sites can be obtained at SSSI unit level by selecting condition of SSSI units from County downloadable data. Relevant component SSSI Units for international nature conservation designations can be identified from the Natural England's nature on the map website http://www.magic.gov.uk/. There is a Public Service Agreement (PSA) target for 95% of SSSIs to be in favourable or recovering condition. • Development should not result in the loss/damage to features of interest, either indirectly or	The decision making question have been developed to assist in assessing how far each aspect of the LFRMS will satisfy the SEA objectives at this stage in the preparation of the LFRMS (i.e. policies where no physical interventions are proposed). These questions are not intended to be worded to provide monitoring of the implementation of the plan, as the LFRMS does not propose any specific schemes and therefore it would not be possible as part of the SEA of the LFRMS to quantify for example the number of flood risk projects where protected species are considered. We do however agree that indicators are an essential element of the monitoring of the SEA and LFRMS progress. As part of the SEA (and SEA Report) a monitoring	A review of the indicators has been undertaken and appropriate indicators included in the Monitoring Programme in the SEA Report.

Question	Representation	Response	Action
	directly. Favourable condition should be maintained where appropriate or measures taken to enhance the units to achieve favourable condition. In relation to the PSA target the conditions are simplified into 2 categories: Favourable ('Favourable' and 'Unfavourable recovering') and 'Adverse' (the remaining unfavourable and destroyed categories). • BAP habitat – identify areas created/ managed as result of granting planning permission (monitored via planning obligations) and which meet Biodiversity Action Plan targets.	programme will be prepared that includes potential indicators to monitor change. We welcome the example indicators and will incorporate these into the Monitoring programme in the SEA Report.	
Q6. Are there any major development proposals within the study area that need to be considered as part of the SEA for the Stockport LFRMS?			
Habitats Regulations Assessment	Provided latest guidance on SSSI Impact Risk Zones. Natural England welcomed that a HRA screening exercise was being undertaken in parallel to the SEA and that the results will inform the SEA. The Habitats Regulations Assessment should not be subsumed into the different processes of Strategic Environmental Assessment (SEA) under the SEA Regulations. It is prudent to mesh the procedural requirements of the different assessments in order to maximise use of resources, for example in information gathering and public consultation, but the Habitats Regulations Assessment must be clearly distinguishable from the SEA processes and all should be separately compliant with the respective statutory requirements.	Comments noted. This has been our approach to the, a separate HRA and SEA Report have been prepared.	A separate HRA Report has been prepared.
Respondent: Environment Agency			
Comments on Scoping Report			
	No comments received on the Scoping Report		

APPENDIX B-2

HABITAT REGULATIONS ASSESSMENT STAGE 1 SCREENING

Stockport Local Flood Risk Management Strategy

Habitat Regulations Assessment Stage 1 Screening

Stockport Metropolitan Borough Council

February 2016

Plan Design Enable

ATKINS

Notice

This report has been prepared by Atkins Limited for the sole and exclusive use of **Stockport Metropolitan Borough Council** in response to their particular instructions.

No liability is accepted for any costs claims or losses arising from the use of this document, or any part thereof, for any purpose other than that which it has specifically been prepared or for use by any party other than **Stockport Metropolitan Borough Council**.

The information which Atkins Limited has provided has been prepared by an environmental specialist in accordance with the Code of Professional Conduct of the Chartered Institute of Ecology and Environmental Management. Atkins Limited confirms that the opinions expressed are our true and professional opinions.

This document does not purport to provide legal advice.

Atkins Limited

This document has 43 pages including the cover.

Document history

Job number: 5145509.120			**Document ref: P:\GBEMB\Mandl\Assessment\Project Folders\Sustainability Projects\514 5509 Stockport LFRMS SEA HRA\HRA\Stockport LFRMS HRA Stage 1Screening**			
Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
Rev 1.0	Draft for Client Comment	AW	JB	JB		February 2016

Table of contents

Chapter		Pages
1.	**Introduction**	**4**
1.1.	Background to this Assessment	4
1.2.	Background to HRA	4
1.3.	Structure of this Report	4
2.	**Methodology**	**6**
2.1.	The Plan	6
2.2.	Determination of International Sites included in the HRA	6
2.3.	Obtaining Information on International Sites with the Potential to be Affected	6
2.4.	Obtaining Information on Other Projects and Plans	6
2.5.	Assessing the Impacts of the Plan 'Alone' and 'In Combination'	7
3.	**The International Sites**	**8**
3.1.	Peak District Dales SAC	8
3.2.	South Pennines Moors SAC	8
3.3.	Rixton Clay Pits SAC	8
3.4.	Rochdale Canal SAC	8
3.5.	Manchester Mosses SAC	8
3.6.	Peak District Moors (South Pennines Moors Phase 1 and 2) SPA	9
3.7.	Rostherne Mere Ramsar Site	9
3.8.	Midland Meres and Mosses Phase 1 Ramsar Site	9
3.9.	Mersey Estuary Ramsar Site	9
3.10.	Mersey Estuary SPA	9
4.	**Project Details**	**10**
4.1.	Proposed Plan	10
4.2.	Brief Description of Plan	10
4.3.	Provisions within the Plan that Protect the International sites	11
5.	**In-Combination Assessment**	**12**
6.	**Stage 1 - Screening Results**	**15**
7.	**Conclusions**	**18**
Appendices		**19**
Appendix A.	**The International Sites**	**20**
Appendix B.	**Findings of Stage 1 Screening Assessment**	**27**

1. Introduction

1.1. Background to this Assessment

Atkins Limited (Atkins) has been commissioned by Stockport Metropolitan Borough Council to undertake a Habitats Regulations Assessment Stage 1 Screening of the Local Flood Risk Management Strategy (LFRMS) for Stockport, hereafter referred to as 'the Strategy'. The Local Flood Risk Management Strategy is an important tool to help everyone understand and manage risk within Stockport and is therefore of relevance to everyone who lives in, works in, visits or travels through the area. Its main focus is on 'local flood risk', flooding caused by surface water, ground water and ordinary watercourses.

The main aim of the Strategy is to reduce the risk of flooding and economic damage that flooding causes, in a sustainable manner. Any flood management activities carried out will aim to enhance the built and natural environment.

1.2. Background to HRA

Habitats Regulation Assessment (HRA) is required by Regulation 61 the Conservation of Habitats and Species Regulations 2010 (as amended) (the Habitats Regulations) for all plans and projects which may have likely significant effects on a European site and are not directly connected with or necessary to the management of the European site. The Strategy itself is not directly connected with, or necessary to, the nature conservation management of any European sites.

European sites include Special Areas of Conservation (SAC), Special Protection Areas (SPA) and listed Wetlands of International Importance (Ramsar sites). HRA is also required, as a matter of UK Government policy for potential SPAs (pSPA), candidate SACs (cSAC) and proposed Ramsar sites (pRamsar) for the purposes of considering plans and projects, which may affect them[1]. Hereafter all of the above designated nature conservation sites are referred to as 'international sites'.

In general, the stages of HRA process are:

- **Stage 1 – Screening**: To test whether a plan or project either alone or in combination with other plans and projects is likely to have a significant effect on an international site;
- **Stage 2 – Appropriate Assessment**: To determine whether, in view of an international site's conservation objectives, the plan (either alone or in combination with other projects and plans) would have an adverse effect (or risk of this) on the integrity of the site with respect to the site structure, function and conservation objectives. If adverse impacts are anticipated, potential mitigation measures to alleviate impacts should be proposed and assessed;
- **Stage 3 – Assessment of alternative solutions**: Where a plan is assessed as having an adverse impact (or risk of this) on the integrity of an international site, there should be an examination of alternatives (e.g. alternative locations and designs of development); and,
- **Stage 4 – Assessment where no alternative solutions remain and where adverse impacts remain**: In exceptional circumstance (e.g. where there are imperative reasons of overriding public interest), compensatory measures to be put in place to offset negative impacts.

This report comprises the Stage 1 – Screening of the Strategy.

1.3. Structure of this Report

Following this introduction:

- Section 2 outlines the methodology used for the HRA Stage 1 Screening;
- Section 3 provides details of the relevant international sites, including their qualifying features and Conservation Objectives;
- Section 4 outlines the Strategy;
- Section 5 assessment of in-combination effects;

[1] *National Planning Policy Framework*. Department for Communities and Local Government. March 2012. .

- Section 6 Stage 1 – Screening Results;
- Section 7 concludes the assessment.

2. Methodology

2.1. The Strategy

All available information about the Plan was gathered in order to analyse whether the Plan is likely to have any likely significant effects on the international sites.

2.2. Determination of International Sites included in the HRA

All the international sites within the metropolitan borough of Stockport and up to 20 km from its boundaries were identified. There are no international sites within the metropolitan borough of Stockport and there are 8 international sites within 20 km of the boundaries of the metropolitan borough of Stockport. Using the precautionary principle, a further international 2 sites hydrologically downstream of the boundaries of Stockport were identified and have been included in the assessment. These international sites and their distance from the metropolitan borough of Stockport are listed below:

- Peak District Dales SAC, located approximately 15.3 km from the metropolitan borough of Stockport;
- South Pennines Moors SAC located approximately 2.8 km from the metropolitan borough of Stockport;
- Rixton Clay Pits SAC located approximately 15.1 km from the metropolitan borough of Stockport;
- Rochdale Canal SAC located approximately 5.6 km from the metropolitan borough of Stockport;
- Manchester Mosses SAC located approximately 15.6 km from the metropolitan borough of Stockport;
- Peak District Moors (South Pennines Moors Phase 1 and 2) SPA located approximately 2.8 km from the metropolitan borough of Stockport;
- Rostherne Mere Ramsar Site located approximately 8.8 km from the metropolitan borough of Stockport;
- Midland Meres and Mosses Phase 1 Ramsar Site located approximately 9.4 km from the metropolitan borough of Stockport.
- Mersey Estuary Ramsar Site located approximately 33.4 km from the metropolitan borough of Stockport;
- Mersey Estuary SPA located approximately 33.4 km from the metropolitan borough of Stockport.

2.3. Obtaining Information on International Sites with the Potential to be Affected

Information was gathered on the international sites to be included in the HRA. This includes:

- obtaining information on the qualifying features of each international site from the Joint Nature Conservation Committee (JNCC) website (www.jncc.gov.uk);
- obtaining information from the Natural England website[2] for the Conservation Objectives and Favourable Conditions Tables for each international site.

2.4. Obtaining Information on Other Projects and Plans

In accordance with the Habitats Regulations, there is a need to consider the potential for effects of the Strategy 'in combination' with other projects and plans.

Statutory bodies surrounding, or in close proximity to, the international sites listed above in section 2.2 were contacted for details of any projects or plans that have been subject to HRA. This is in order to determine if there is the potential for a cumulative impact on these international sites.

[2] http://publications.naturalengland.org.uk/category/4582026845880320

The following organisations have been contacted for details of other plans and projects which have the potential for adverse effects upon the integrity of the international sites:

- Cheshire East Council;
- Derbyshire County Council;
- Tameside Metropolitan Borough Council;
- Peak District National Park;
- Stockport Metropolitan Borough Council.

A web based search of HRA Screenings and Appropriate Assessments was also undertaken.

2.5. Assessing the Impacts of the Strategy 'Alone' and 'In Combination'

Following the gathering of information on the Plan and the international sites, an assessment has been undertaken to predict the likely significant effects of the Plan on the international sites 'alone'. In order to inform this process, all parts of the Plan were assessed to see if they could result in likely significant effects on the international sites. This HRA assesses each of the allocation sites.

Each of the objectives have been examined in detail to see if the proposals could have a significant effect on the conservation objectives of the qualifying features of the international site.

The potential for likely significant effects of the allocation site 'in combination' with other projects and plans for each international site has also been considered in this HRA. As part of this process, all HRAs that have been completed due to possible impacts on the international sites included in this HRA were reviewed in order to determine whether there is the potential for in combination effects (see Section 4).

Likely significant effects are assessed by reference to the conservation objectives of the qualifying feature (interest feature) of the international site. Any plan or project that causes the cited interest features of a site to fall into unfavourable condition can be considered to have a likely significant effect on the site. Stage 1 of the HRA process does not assess effects on the integrity of international sites (this forms Stage 2 of the HRA process). However the definition of integrity provided below has been taken into account during the assessment of likely significant effects:

> *"'…the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified."*[3]

Plans or projects can adversely affect an international site by:

- Causing delays in progress towards achieving the conservation objectives of the site;
- Interrupting progress towards achieving the conservation objectives of the site;
- Disrupting those factors that help to maintain the favourable conditions of the site; and
- Interfering with the balance, distribution and density of key species that are the indicators of the favourable condition of the site.

[3] Part I, Section B, Paragraph 20 of *ODPM Circular 06/2005* accompanying *Planning Policy Statement 9: Biodiversity and Geological Conservation*

3. The International Sites

This section includes a summary about the international sites included within this assessment. A full description of the international sites is provided in Tables A1 – A8 in Appendix A.

3.1. Peak District Dales SAC

The Peak District Dales SAC comprises thirteen separate dales, supporting ten interest features regarded as rare or threatened in a European context. The greatest in extent are the ash woodlands and the calcareous grasslands, and the relationship and balance between these features is reflected in the diversity of species and habitats found across the dales. Lead rakes and screes support important and specialised grassland communities, and crevices within rock outcrops support rare fern communities. Where the calcareous grassland is overlain by more acidic soils, acid grassland and heath has developed and springs and flushes support important and localised alkaline fen communities. Rivers dissect several of the dales and these support species of European importance such as bullhead.

3.2. South Pennines Moors SAC

The South Pennines Moors SAC primarily lies between the southern Pennines and the Peak District. The moorlands are on a rolling dissected plateau formed from rocks of Millstone Grit at altitudes of between 300 m to 600 m and a high point of over 630 m at Kinder Scout.

The SAC is representative of upland dry heath which covers extensive areas, occupies the lower slopes of the moors on mineral soils or where peat is thin, and occurs in transitions to acid grassland, wet heath and blanket bogs. The site also supports extensive areas of acid grassland largely derived from dry and wet heath. In the cloughs, or valleys, which extend into the heather moorlands, a greater mix of dwarf shrubs can be found together with more lichens and mosses. The moors support a rich invertebrate fauna, especially moths, and important bird assemblages.

The site also contains areas of blanket bog, although the bog vegetation communities are botanically poor. Bog pools provide diversity and are often characterised by common cottongrass. Substantial areas of the bog surface are eroding, and there are extensive areas of bare peat. In some areas erosion may be a natural process reflecting the great age (up to 9000 years) of the South Pennine peats.

3.3. Rixton Clay Pits SAC

The SAC is situated to the east of Warrington, and comprises parts of an extensive disused brickworks quarry excavated in glacial boulder clay. The excavation has left a mosaic of water-filled hollows and clay banks. Long-abandoned areas have undergone natural succession to scrub and woodland while more recently worked areas support calcareous grassland. The SAC is important for great crested newt and holds the county's largest known breeding population.

3.4. Rochdale Canal SAC

The Rochdale Canal contains important habitats for submerged aquatic plants and emergent vegetation, including extensive colonies of the nationally scarce floating water-plantain. The SAC also supports a diverse assemblage of aquatic flora, in particular nine species of pondweed. The plant communities found in the Rochdale Canal are characteristic of mesotrophic water bodies, i.e. those which are moderately nutrient-rich.

3.5. Manchester Mosses SAC

Mossland formerly covered a very large part of Greater Manchester, Merseyside, south Lancashire and north Cheshire, and provided a severe obstacle to industrial and agricultural expansion. While most has been converted to agriculture or lost to development, several examples have survived as degraded raised bog, such as Risley Moss, Astley and Bedford Mosses, and Holcroft Moss on the Mersey floodplain. Their surfaces are now elevated above adjacent land due to shrinkage of the surrounding tilled land, and all except Holcroft Moss have been cut for peat at some time in the past. While past drainage has produced dominant

purple moor-grass, bracken and birch scrub or woodland, wetter pockets have enabled peat-forming species to survive.

3.6. Peak District Moors (South Pennines Moors Phase 1 and 2) SPA

The SPA is an extensive tract of moorland and moorland-fringe habitat. It includes most of the unenclosed moorland areas of the north, eastern and south-western Peak District, where it also extends into enclosed farmland of wet rushy pasture, hay meadows and small wetlands in the valley bottoms. The moorland habitats include extensive tracts of blanket bog and dry heath, which together with wet heath, acid grassland, small flushes, gritstone edges and boulder slopes, streams and moorland reservoirs, fringing semi-natural woodland and enclosed farmland, represents the full range of upland vegetation characteristic of the South Pennines. The SPA supports several important species assemblages, including higher plants, lower plants and insects, as well as breeding birds. Many physical features are of geological interest.

3.7. Rostherne Mere Ramsar Site

Rostherne Mere is the deepest, one of the largest and the most northerly of the meres of the Cheshire Plain. It lies in a hollow surrounded by thick deposits of glacial drift overlying triassic marls and saltbeds.

3.8. Midland Meres and Mosses Phase 1 Ramsar Site

The Meres & Mosses form a geographically discrete series of lowland open water and peatland sites in the north-west Midlands of England. These have developed in natural depressions in the glacial drift left by receding ice sheets which formerly covered the Cheshire/Shropshire Plain. The 16 component sites of the Ramsar Site include open water bodies (meres), the majority of which are nutrient-rich with associated fringing habitats; reed swamps, fen, carr & damp pasture. Peat accumulation has resulted in nutrient poor peat bogs (mosses) forming in some sites in the fringes of meres or completely infilling basins. In a few cases the result is a floating quaking bog or schwingmoor. The wide range of resulting habitats support nationally important flora & fauna.

3.9. Mersey Estuary Ramsar Site

The Mersey is a large, sheltered estuary which comprises large areas of saltmarsh and extensive intertidal sand and mudflats, with limited areas of brackish marsh, rocky shoreline and boulder clay cliffs, within a rural and industrial environment. The intertidal flats and saltmarshes provide feeding and roosting sites for large and internationally important populations of waterfowl. During the winter, the Ramsar Site is of major importance for duck and waders. The site is also important during spring and autumn migration periods, particularly for wader populations moving along the west coast of Britain.

3.10. Mersey Estuary SPA

The SPA includes both marine areas (ie land covered continuously or intermittently by tidal waters) and land which is not subject to tidal influence.

4. Project Details

4.1. Proposed Strategy

Under the Flood and Water Management Act (2010) ('the Act') Stockport Metropolitan Borough Council (SMBC) became a Lead Local Flood Authority (LLFA), responsible for managing local flood risk from surface water, ground water and ordinary watercourses in Stockport. One of the new duties placed upon SMBC as LLFA is to 'develop, maintain, apply and monitor' a Local Flood Risk Management Strategy' to assist in the management of local flood risk.

The Local Flood Risk Management Strategy is an important tool to help everyone understand and manage risk within Stockport and is therefore of relevance to everyone who lives in, works in, visits or travels through the area. Its main focus is on 'local flood risk', flooding caused by surface water, ground water and ordinary watercourses.

Its main aim is to reduce the risk of flooding and economic damage that flooding causes, in a sustainable manner. Any flood management activities carried out will aim to enhance the built and natural environment.

This Strategy builds on existing and developing approaches to flood and coastal risk management and promotes the use of a wide range of measures to manage risk. Risk should be managed in a co-ordinated way within catchments and balance the needs of communities, the economy and the environment.

The Strategy also shows how communities can be more involved in local flood risk management and emphasises the need to consider national and local activities and funding.

4.2. Brief Description of Plan

Defining Flood Risk in Stockport

The Plan aims to provide an overview and assessment of local flood risk in Stockport, setting out objectives and measures for how SMBC will manage and reduce local flood risk.

The Plan will seek to define what "locally significant flood risk" is in Stockport, however, there can be no simple single definition of what constitutes significant flooding. Measures such as magnitude, impact, frequency, duration or exceeding of a threshold could all be used individually or in combination to describe the significance of a flood event.

Evaluation of significant risk depends on context and may vary between organisations and individual perceptions. A householder who has been flooded would certainly see the event as significant however in terms of allocating limited resources, a single domestic property will need to be assessed in the context of the overall number of properties at risk of flooding in Stockport. In areas with a potential risk of significant flooding due to surface water runoff such properties will be a higher factor than those in other areas.

Significance can be described using a variety of measures which could include value or potential value of damage due to flooding, number of people directly affected, number of people indirectly affected through infrastructure failure or disruption of transport networks and factors such as pollution or other environmental impacts.

Linked to significance is the need to develop thresholds to define events such as flooding incidents or the inclusion of structures and features on the local register. These thresholds will be used to trigger actions as well as providing a methodology for the prioritisation of areas where flood risk management work will be carried out. The determination of appropriate thresholds will take account of two main considerations, firstly the degree of judgement and discretion that SMBC as the LLFA has to apply its powers in relation to the activity being considered and secondly the practical limitations of capacity and resources to undertake the required actions.

4.3. Provisions within the Plan that Protect the International sites

Within the Plan, the following measures under Objective 7 contain a number of provisions which seek to protect the international sites either directly or indirectly:

- Measure 7a: To promote environmentally sustainable flood risk management solutions which work with the natural and built environment, using a catchment based approach where applicable, and providing multiple benefits where possible;
- Measure 7b: To ensure that Emergency Planning for flooding includes consideration of, and avoids damage or deterioration to, the natural and built environment, including landscape and townscape character and the historic environment;
- Measure 7c: To promote the conservation, management and creation of green infrastructure as part of sustainable flood risk management solutions, recognising the multiple benefits green infrastructure delivers, such as flood risk management, urban cooling, climate change resilience and enhancement of biodiversity. This should include promotion in the built environment of retrofitting SUDS, green roofs and building integrated vegetation to manage run-off water;
- Measure 7d: To promote flood risk management solutions that protect and enhance the landscape and built environment character of the Borough, including the historic environment and heritage assets;
- Measure 7e: To aim to ensure no net loss of biodiversity and where possible net gain through habitat creation and enhancement as a result of flood management solutions, contributing to the Borough's natural environment and biodiversity;
- Measure 7f: To ensure that international, national and locally designated sites are not adversely affected by flood risk management activities;
- Measure 7g: To protect soil resources and avoid permanent (irreversible) loss of the best quality and most versatile agricultural land as a result of flood risk management solutions;
- Measure 7h: To seek to reduce energy consumption and minimise use of natural resources in the implementation of flood management schemes, through encouraging the re-use of materials, use of secondary materials and maximising recycling;
- Measure 7i: To ensure that Water Framework Directive (WFD) assessments are undertaken where required for flood risk management schemes; with no deterioration in WFD waterbody status as a result of flood risk management activities and where possible enhancement of status through implementation of the recommendations of River Basin Management Plans.

5. In-Combination Assessment

The consultation with the relevant authorities identified twelve other projects or plans for which Habitat Regulations Assessments have been undertaken.

Every reasonable effort has been made to obtain information on potentially relevant other plans and projects, and to find out further details of named projects where possible. Based on the consultation, Table 1 below provides information about plans and projects that could act in combination with the Strategy to create likely significant

No details of any other plans or projects that may have in combination effects were received from the consultees prior to completion of this HRA report.

Table 1. Findings of in combination assessment for the International Sites

Organisation	HRA Details	Result of HRAs	Potential for In Combination effects with the Strategy
Manchester City Council	Local Flood Risk Management Strategy	The assessment concluded that there was limited potential for the Rochdale Canal Special Area of Conservation to be affected by the implementation of the Manchester Local Flood Risk Management Strategy. It was concluded that a minor amendment to the Plan would provide sufficient safeguard to ensure that the implementation of the Manchester Local Flood Risk Management Strategy will not have any significant impact on the special interest of the European Protected Site.	The Strategy is a high level strategic document providing no guidance on the exact nature of future development, however, the strategy does provides protection to international sites. Therefore no in combination effects are anticipated.
	Habitats Regulations Assessment Screening (Stage 1) of the Greater Manchester Minerals DPD: Publication Report March 2011	The assessment concluded that none of the Policies within the Plan were identified as potentially having a damaging effect any of these European Sites. All recommendations made in previous iterations of the HRA have been incorporated into the Plan.	The Strategy is a high level strategic document providing no guidance on the exact nature of future development, however, the strategy does provides protection to international sites. Therefore no in combination effects are anticipated.
	LDF Core Strategy (Adopted)	The Assessment concluded that, providing mitigating plans, policies and strategies are adopted and implemented appropriately through the development management process, development within the identified areas could proceed without harm being caused. Recommendations on how the strategy policies should be amended were made.	The Strategy is a high level strategic document providing no guidance on the exact nature of future development, however, coupled with the policies in the core strategy and the Strategy which seek to protect the international sites there is no potential for in combination effects.
	Appropriate Assessment Report of the Greater Manchester Joint Waste Development Plan Document Final December 2010	The assessment concluded that with minor changes to policy wording there would be no adverse effects on the integrity of European sites.	The Joint Waste DPD HRA primarily considered air quality impacts. The Strategy is a high level strategic document providing no guidance on the exact nature of future development and is unlikely to result in any air quality impacts other than localised impacts during any construction. Therefore it is considered that there is no potential for in combination effects.
Cheshire East Council	None	-	N/A
Derbyshire County Council;	Derbyshire Local Transport Plan 3 2011 – 2026 Habitats Regulations Assessment Statement October 2010	The assessment specifically considered potential effects from increased recreation, air quality and water quality. The assessment concluded the following: • no likely significant effects from increased recreation as footpath could be repaired and studies had shown that the birds associated with the South Pennine Moors SPA were increasing despite increasing numbers of visitors. • no likely significant effects as a result of changes in air quality as it was predicted that over time emissions from vehicles was likely to improve. • no likely significant effects as any instances of traffic-related water pollution is likely to be localised and not a strategic issue for further consideration.	The Strategy is a high level strategic document providing no guidance on the exact nature of future development, however, it is considered unlikely that any schemes arising from the Strategy would have an effect on the designated sites in respect of recreation and air quality and the international sites are upstream of Stockport and therefore there is no potential for in combination effects.
	Derbyshire Local Transport Plan 3 2011 – 2026 Habitats Regulations Assessment Supplementary Evidence: Nitrogen Deposition February 2011	The assessment concluded that LTP3 will be implemented over a period in which modelling already predicts a substantial fall in NO_2 emissions across the plan period. The assessment did not identify any actions that are likely to increase emissions within or around European sites. Therefore, it was concluded that a further appropriate assessment is not required.	At a strategic level, the preferred LTP3 strategy has sustainability and the protection of the natural environment at its core and there the Strategy also includes for the protection of the international sites. Therefore it is considered that there is no potential for in combination effects.
Tameside Metropolitan Borough Council	Habitats Regulations Assessment of the Impact on European Protected Sites of Tameside Council's Joint Core Strategy & Development Management Polices (Issues & Options Paper) January 2012	The assessment concluded that strategy had the potential to affect the Rochdale Canal SAC and the South Pennine Moors SAC/SPAs. All three strategic spatial options identified in the Plan have potential effects on these European Sites. However, further more detailed assessment of these effects cannot be identified at this time due to the very broad nature of the proposals. It was therefore recommended that further HRA is undertaken when more detailed proposals are available.	Like the Core Strategy the Strategy is a high level strategic document providing no guidance on the exact nature of future development, however, it is considered unlikely that any schemes arising from the Strategy would have an effect on the designated sites in respect of recreation and air quality and the international sites are upstream of Stockport and therefore there is no potential for in combination effects.
	Screening opinion on the Impact of the Ashton Town Centre Strategy Supplementary Planning Document (SPD) on the South Pennine Moors Special Area of Conservation (SAC), the South	The assessment concluded that it is not possible to carry out a fully comprehensive Habitats Regulations Assessment for the SPD because the document does not refer to	The strategy relates to the Ashton Town Centre only which 6km from an international site and there are no foreseen potential impacts to the international sites,

Organisation	HRA Details	Result of HRAs	Potential for In Combination effects with the Strategy
	Pennine Moors Special Protection Area (SPA) and the Rochdale Canal SAC.	details of the type of operation or development that will be controlled and, second, the document is purely focused on town centre development in Ashton, and no other part of the Borough. The HRA Concluded that there will be no significant damaging effects arising from the implementation of the document on the special interests of the South Pennine Moors SAC/SPA and the Rochdale Canal SAC.	therefore there is no potential for in combination effects.
Peak District National Park	LDF Core Strategy - submission draft	The assessment concluded that with the slight amendment of some policy wording any effects would be mitigated.	Slight amendments were recommended to add protection to the environment. The Strategy is a high level strategic document providing no guidance on the exact nature of future development with the policies in the Strategy which seek to protect the international sites. Therefore it is considered that there is no potential for in combination effects.
	Bradwell Neighbourhood Plan (BNP), Habitat Regulations Assessment Screening Report December 2014	The assessment concluded that the Bradwell neighbourhood plan is in conformity with the Peak District National Park Authority's core strategy. The core strategy has undergone its own HRA – both a screening statement and for some polices a fuller 'appropriate assessment'. Therefore it was concluded that where the HRA for the core strategy has determined that a particular policy is 'unlikely to have an adverse effect on the integrity of a relevant Natura 2000 site', any BNP policy that conforms with it, similarly, is unlikely to have an adverse effect.	The Bradwell neighbourhood plan is in conformity with the Peak District National Park Authority's core strategy and therefore will have no likely significant effects on the international sites. The Strategy is a high level strategic document providing no guidance on the exact nature of future development, however, the strategy does provides protection to international sites. Therefore no in combination effects are anticipated.
Stockport Metropolitan Borough Council	LDF Core Strategy	The assessment concluded that although there was the potential for in-combination effects with other adjoining core strategies these could be fully mitigated.	The core strategy is aimed at ensuring development is undertaken in an environmentally friendly way and those known developments (at the time of publishing) would be subject to their own HRA. Therefore as the Strategy is a high level strategic document providing no guidance on the exact nature of future development includes for the protection of international sites it is considered unlikely that there is any potential for in combination effects.
	Habitats Regulations Assessment Screening Report for the Sustainable Transport Supplementary Planning Document Adopted December 2007	The assessment concluded that the Sustainable Transport Supplementary Planning Document is not directly connected with or necessary to the management of the site, and is not likely to have a significant effect on a European Site (in combination with other plans or projects). This being based on the fact the Supplementary Planning Document is designed to mitigate the likely effects that would be caused by transport to development as far as possible and there for should assist in the protection of the protected areas from the possible long distance pollution effects that could be attributed to transport increase due to development happening within the borough of Stockport.	The Strategy is a high level strategic document providing no guidance on the exact nature of future development with the policies in the Strategy which seek to protect the international sites. The Supplementary Planning Document is designed to mitigate the likely effects that would be caused by transport to development as far as possible and there for should assist in the protection of the protected areas from the possible long distance pollution effects that could be attributed to transport increase due to development happening within the borough of Stockport. Therefore it is considered that there is no potential for in combination effects.

6. Stage 1 - Screening Results

The tables below outline the findings of the Stage 1 – Screening results for the international sites. Tables B1 to B7 in Appendix B provide the justification for the conclusions drawn below.

The HRA screening assessment for the Strategy is provided in Table 2 below.

Table 2. HRA Screening Results

Site Designation Status	• Peak District Dales SAC; • South Pennines Moors SAC; • Rixton Clay Pits SAC; • Rochdale Canal SAC ; • Manchester Mosses SAC; • Peak District Moors (South Pennines Moors Phase 1 and 2) SPA; • Rostherne Mere Ramsar Site; • Midland Meres and Mosses Phase 1 Ramsar Site; • Mersey Estuary Ramsar Site; • Mersey Estuary SPA.

Describe the individual elements of the Plan likely to give rise to impacts on the international Site	Any development that would have an adverse impact on a designated site, an important habitat or species, and/or a habitat network, including its capacity to adapt to climate change (for example, preventing the relocation of a species by creating a greater distance between ecological networks), should be avoided as far as possible. If this cannot be achieved, the adverse impacts must be adequately mitigated, or, as a last resort, compensated for. It will not be possible to mitigate any proposals that would result in the loss of an irreplaceable habitat, such as ancient woodland. In these instances development will not be supported unless it can be demonstrated that the benefits of the development in that location would clearly outweigh the loss of habitat.'
	In the case of international designated sites, a *Habitat Regulations Appropriate* Assessment is required for any proposals that are likely to have significant effects on such a site. Any development that cannot demonstrate that it would not adversely affect the integrity of such a site will be refused. Notwithstanding an adverse effect on the integrity of an international site, if there is no alternative solution and there are imperative reasons of over-riding public interest for the project, the application will be referred to the Secretary of State. If the authority and/or the Secretary of State is minded to approve any proposals notwithstanding their adverse effect described above, compensatory measures to protect the site must be put in place, in consultation with Natural England.
	28 of the 44 measures identified in the Plan will not lead directly to development; these are listed below:
	• Objective 1:
	  • Measure 1a;
	  • Measure 1b;
	  • Measure 1c;
	  • Measure 1d;
	  • Measure 1e;
	  • Measure 1f.
	• Objective 2:
	  • Measure 2c;

	• Measure 2d.
	• Objective 3:
	  • Measure 3b;
	  • Measure 3d;
	  • Measure 3f;
	  • Measure 3g.
	• Objective 4:
	  • Measure 4a;
	  • Measure 4c;
	  • Measure 4d.
	• Objective 5:
	  • Measure 5a;
	  • Measure 5h.
	• Objective 6:
	  • Measure 6a;
	  • Measure 6b;
	  • Measure 6d.
	• Objective 7:
	  • Measure 7a;
	  • Measure 7b;
	  • Measure 7c;
	  • Measure 7d;
	  • Measure 7e;
	  • Measure 7f;
	  • Measure 7g;
	  • Measure 7h;
	  • Measure 7i.
	A total of 15 of the 44 measures will lead to development by the delivery of physical flood defence works. These are measures:
	• Objective 2:
	  • Measure 2a;
	  • Measure 2b;
	  • Measure 2e.
	• Objective 3:
	  • Measure 3a;
	  • Measure 3c;
	  • Measure 3e.
	• Objective 4:
	  • Measure 4b.
	• Objective 5:
	  • Measure 5b;
	  • Measure 5c;
	  • Measure 5d;
	  • Measure 5e;
	  • Measure 5f;
	  • Measure 5g.
	• Objective 6:
	  • Measure 6e;
	  • Measure 6e.
	The screening assessment has identified, using the precautionary principle, that none of the measures within the Strategy will lead to likely significant effects on the international sites.
	
	One of the 44 measures seeks solely to protect the international sites. This is

	Objective 7, Measure 7f, which states the following: *'To ensure that international, national and locally designated sites are not adversely affected by flood risk management activities'* The Initial AA Screening Results in Tables B1 – B7 in Appendix B give the justification of the conclusions drawn for each of these policies.
Describe any likely direct, indirect or secondary impacts of the Plan on the International Site by virtue of: • Size and scale; • Land take; • Resource requirements (i.e. water extraction etc); • Emissions (disposal to land, water or air); • Excavation requirements; • Duration of construction, operation, decommissioning etc.; and • Other.	The Plan seeks to protect international sites (Objective 7, Measure 7f). Due to the very high level strategic nature of the Plan only basic outline information on future development is given and it is not possible at this stage to provide further detail. Future development resulting from the Plan will only be taken forward if it can be proven through HRA that there will be no adverse effect on the integrity of the International Sites. Any adverse effects on integrity must be effectively mitigated.
Describe any likely changes to the International site arising as a result of: • Reduction of habitat area; • Disturbance to key species; • Habitat or species fragmentation; • Reduction in species density; • Changes in key indicators of conservation value (e.g. water quality); and • Climate change	This assessment has concluded that using a precautionary approach none of the objectives will have a likely significant effect on the international sites.
Describe from the above those elements of the project, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is not known	The assessment of in-combination effects is based on the relative level of detail in each Plan or project. Due to the high level strategic nature of the Strategy it is only possible to obtain a broad understanding of the future development possibly arising from the objectives and associated measure contained within the document. This means that an in-combination assessment can be included within the HRA albeit a detailed assessment of 'in combination' effects cannot be made at this stage. However, the Plan commits to protecting international sites through Objective 7, Measure 7f, which seeks to ensure that international, national and locally designated sites are not adversely affected by flood risk management activities.

7. Conclusions

Atkins has been commissioned by Stockport Metropolitan Borough Council to undertake a Habitats Regulations Assessment Stage 1 Screening of the Local Flood Risk Management Strategy for Stockport, hereafter referred to as the 'Strategy'.

Habitats Regulations Assessment (HRA) is required by Regulation 61 of the Conservation of Habitats and Species Regulations 2010 (as amended) for all plans and projects which may have likely significant effects on international sites. This Stage 1 – Screening assesses whether the project is likely to lead to significant effects on the following international sites with reference to the conservation objectives of the qualifying features of the site:

- Peak District Dales SAC;
- South Pennines Moors SAC;
- Rixton Clay Pits SAC;
- Rochdale Canal SAC;
- Manchester Mosses SAC;
- Peak District Moors (South Pennines Moors Phase 1 and 2) SPA;
- Rostherne Mere Ramsar Site;
- Midland Meres and Mosses Phase 1 Ramsar Site;
- Mersey Estuary Ramsar Site;
- Mersey Estuary SPA.

Following the Stage 1 – Screening, it is considered that the Strategy as it currently stands will not lead to likely significant effects on any of the international sites (see Tables 13 to 19 in Appendix B for justifications of these conclusions).

In combination effects have been considered as part of this assessment. None of the other plans identified in Section 5 will lead to likely significant effects on the international sites in combination with the Strategy.

In conclusion, it is considered that the Strategy will have no likely significant effects on the international sites considered in this assessment.

Appendices

Appendix A. The International Sites

Table A1: Information about the Peak District Dales SAC

Site Designation Status	Peak District Dales SAC
Location of International Site	The Peak District Dales SAC is located Derbyshire and covers an area of approximately 2,326.33 hectares.
Brief Description of the International Site	Annex I habitats that are a primary reason for selection of this site • Semi-natural dry grasslands and scrubland fascies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) • *Tilio-Acerio*n forests of slopes, screes and ravines Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site • European dry heaths • Calaminarian grasslands of the *Violetalia calaminariae* • Calcareous and calcshist screes of the montane to alpine levels (*Thlaspietea rotundifolii*) • Calcareous rocky slopes with chasmophytic vegetation Annex II species that are a primary reason for selection of this site • White-clawed (or Atlantic stream) crayfish (*Austropotamobius pallipes*) Annex II species present as a qualifying feature, but not a primary reason for site selection • Brook lamprey (*Lampetra planeri*) • Bullhead (*Cottus gobio*)
Vulnerabilities of the International Site	In summary the site is vulnerable to: • Inappropriate grazing management resulting in either neglect or invasion by scrub, or overgrazing and the loss of the important vegetation communities. • Proposed developments have the potential to interfere with drainage patterns within the site. • Existing permission for limestone or mineral extraction is a potential threat to some of the woodlands on one part of the site. • Woodlands within the SAC are vulnerable to grazing by livestock.
Conservation Objectives	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of qualifying natural habitats and habitats of qualifying species • The structure and function (including typical species) of qualifying natural habitats • The structure and function of the habitats of qualifying species • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely • The populations of qualifying species, and, • The distribution of qualifying species within the site. This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed

Table A2: Information about the South Pennines Moors SAC

Site Designation Status	South Pennines Moors SAC
Location of International Site	This site covers the key moorland blocks of the Southern Pennines from Ilkley Moor in the north to the Peak District in the south and covers an area of 64,983.13 hectares.
Brief Description of the International Site	Annex I habitats that are a primary reason for selection of this site • European dry heaths] • Blanket bogs (* if active bog) • Old sessile oak woods with Ilex and Blechnum in the British Isles Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site • Northern Atlantic wet heaths with *Erica tetralix* • Transition mires and quaking bogs
Vulnerabilities of the International Site	In summary the site is vulnerable to: • Recreation; • overgrazing by sheep; • burning as a tool for grouse moor management and inappropriate drainage through moor-gripping; • Atmospheric pollution; • Grazing in woodland and Rhododendron invasion.
Conservation Objectives	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of the qualifying natural habitats • The structure and function (including typical species) of the qualifying natural habitats, and, • The supporting processes on which the qualifying natural habitats rely.

Table A3: Information about the Rixton Clay Pits SAC

Site Designation Status	Rixton Clay Pits SAC
Location of International Site	The site is situated to the east of Warrington and covers an area of 13.99 hectares.
Brief Description of the International Site	Annex II species that are a primary reason for selection of this site • Great crested newt (*Triturus cris*tatus)
Vulnerabilities of the International Site	In summary the site is vulnerable to: • Conflict between grassland management and great crested newts.
Conservation Objectives	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of the habitats of qualifying species • The structure and function of the habitats of qualifying species • The supporting processes on which the habitats of qualifying species rely • The populations of qualifying species, and, • The distribution of qualifying species within the site.

Table A4: Information about the Rochdale Canal SAC

Site Designation Status	Rochdale Canal SAC
Location of International Site	The site is located in greater Manchester and covers an area of 25.55 hectares.
Brief Description of the International Site	Annex II species that are a primary reason for selection of this site • Floating water-plantain (*Luronium natans*)
Vulnerabilities of the International Site	In summary the site is vulnerable to: • Restoration and future boat movements
Conservation Objectives of the International Site	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of the habitats of qualifying species • The structure and function of the habitats of qualifying species • The supporting processes on which the habitats of qualifying species rely • The populations of qualifying species, and, • The distribution of qualifying species within the site.

Table A5: Information about the Manchester Mosses SAC

Site Designation Status	Manchester Mosses SAC
Location of International Site	Manchester Mosses SAC consists of three sites (Risley Moss, Holcroft Moss and Astley and Bedford Mosses).
Brief Description of the International Site	Annex I habitats that are a primary reason for selection of this site • Degraded raised bogs still capable of natural regeneration
Vulnerabilities of the International Site	In summary the site is vulnerable to: • Drainage, particularly from boundary ditches; • Scrub invasion; • Water abstraction, mineral extraction and waste management; • Air quality.
Conservation Objectives of the International Site	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of qualifying natural habitats • The structure and function (including typical species) of qualifying natural habitats, and, • The supporting processes on which qualifying natural habitats rely

Table A6: Information about the Peak District Moors (South Pennines Moors Phase 1 and 2) SPA

Site Designation Status	Peak District Moors (South Pennines Moors Phase 1 and 2) SPA
Location of International Site	The site is an extensive tract of moorland and moorland-fringe habitat. It includes most of the unenclosed moorland areas of the north, eastern and south-western Peak District and covers an area of 45,270.52 hectares.
Brief Description of the International Site	Articles 4.1 Qualification (79/409/EEC) During the breeding season the area regularly supports: *Asio flammeus* at least 2.2% of the GB breeding population

	count as at 1990 and 1998 *Falco columbarius* at least 2.3% of the GB breeding population count as at 1990 and 1998 *Pluvialis apricaria* (North-western Europe - breeding) at least 1.9% of the GB breeding population count as at 1990 and 1998
Vulnerabilities of the International Site	Major urban and industrial centres near to the Peak District Moors provide significant visitor pressure and approximately two-thirds of the moorlands are open to public access. Habitat damage through physical erosion or fire, combined with disturbance of breeding birds, can be significant. Initiatives for sustainable recreation are being developed. Many habitats are sub-optimal (in vegetation terms) as a consequence of historic air pollution, high grazing pressure and wildfire burns. Grazing pressure is generally being lowered and appropriate burning encouraged by two separate ESAs which encourage and support habitat restoration. Notwithstanding these schemes, evidence suggests that breeding birds in the south-west of the area may be declining on both open moorland and enclosed rough grazing land, possibly due to general agricultural improvement of the surrounding areas which are used by some species for some of their habitat requirements; e.g. golden plovers feed on in-bye land off the moor. It is also worth noting that the site has been identified as a possible SAC for habitats such as blanket bog and there will be a need to balance the management of the different interests across the whole site.
Conservation Objectives of the International Site	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring; • The extent and distribution of the habitats of the qualifying features • The structure and function of the habitats of the qualifying features • The supporting processes on which the habitats of the qualifying features rely • The population of each of the qualifying features, and, • The distribution of the qualifying features within the site.

Table 3. Information about the Rostherne Mere Ramsar Site

Site Designation Status	**Rostherne Mere Ramsar Site**
Location of International Site	The site is situated 16 km south-west of the centre of Manchester, close to the southern outskirts of Greater Manchester, 5 km north of Knutsford
Brief Description of the International Site	Ramsar criterion 1 Rostherne Mere is one of the deepest and largest of the meres of the Shropshire-Cheshire Plain. Its shoreline is fringed with common reed (*Phragmites australis)*.
Vulnerabilities of the International Site	The site is vulnerable to the following: • Eutrophication; • Introduction/invasion of exotic animal species.

Table 4. Information about the Midland Meres and Mosses Phase 1 Ramsar Site

Site Designation Status	**Midland Meres and Mosses Phase 1 Ramsar Site**
Location of International Site	The site has 16 component sites are located in the Shropshire/Cheshire Plain, south-west of Manchester and northwest of Birmingham.
Brief Description of the	Ramsar criterion 1

International Site	The site comprises a diverse range of habitats from open water to raised bog. Ramsar criterion 2 Supports a number of rare species of plants associated with wetlands including five nationally scarce species together with an assemblage of rare wetland invertebrates (three endangered insects and five other British Red Data Book species of invertebrates).
Vulnerabilities of the International Site	The site is vulnerable to the following: • Eutrophication; • Introduction/invasion of non-native plant species.

Table A7: Information about the Mersey Estuary Ramsar Site

Site Designation Status	**Mersey Estuary Ramsar Site**
Location of International Site	The Mersey Estuary is located in north-west England between the counties of Cheshire and Merseyside
Brief Description of the International Site	Ramsar criterion 5 - Assemblages of international importance: Species with peak counts in winter: • 89,576 waterfowl (5 year peak mean 1998/99-2002/2003) Ramsar criterion 6 – species/populations occurring at levels of international importance. Qualifying Species/populations (as identified at designation): Species with peak counts in spring/autumn: • Common shelduck, (*Tadorna tadorna*) NW Europe, 12,676 individuals, representing an average of 4.2% of the population (5 year peak mean 1998/9-2002/3) • Black-tailed godwit, (*Limosa limosa islandica)*, Iceland/W Europe 2,011 individuals, representing an average of 5.7% of the population (5 year peak mean 1998/9-2002/3) • Common redshank, (*Tringa totanus tetanus)*, 6,651 individuals, representing an average of 2.6% of the population (5 year peak mean 1998/9-2002/3) Species with peak counts in winter: • Eurasian teal, (*Anas crecca)*, NW Europe 10,613 individuals, representing an average of 2.6% of the population (5 year peak mean 1998/9-2002/3) • Northern pintail, (*Anas acuta)*, NW Europe 565 individuals, representing an average of 2% of the GB population (5 year peak mean 1998/9-2002/3) • Dunlin, (*Calidris alpina alpine)*, W Siberia/W Europe 48,364 individuals, representing an average of 3.6% of the population (5 year peak mean 1998/9-2002/3)
Vulnerabilities of the International Site	None
Conservation Objectives of the International Site	The objectives are to ensure that, subject to natural change, the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the wise use of wetlands across the UK, by maintaining or restoring: • the extent and distribution of qualifying habitats and habitats of qualifying species • the structure and function of qualifying habitats and habitats of

	qualifying species • the supporting processes on which qualifying habitats and habitats of qualifying species rely • the populations of qualifying species, and, • the distribution of qualifying species within the site.

Table A8: Information about the Mersey Estuary SPA

Site Designation Status	Mersey Estuary SPA
Location of International Site	The Mersey Estuary is located in north-west England between the counties of Cheshire and Merseyside
Brief Description of the International Site	Article 4.1 Qualification (79/409/EEC) Over winter, the area regularly supports: • *Pluvialis apricaria* (North-western Europe - breeding) 1.2% of the GB population 5-year peak mean, 1993/94–1997/98 Article 4.2 Qualification (79/409/EEC) Over winter, the area regularly supports: • *Anas acuta* (North-western Europe) 1.9% of the population 5-year peak mean, 1993/94–1997/98 • *Anas crecca* (North-western Europe) 2.9% of the population 5-year peak mean, 1993/94–1997/98 • *Anas penelope* (Western Siberia/North-western/North-eastern Europe) 4.2% of the population in Great Britain 5-year peak mean, 1993/94–1997/98 • *Calidris alpina alpine* (Northern Siberia/Europe/Western Africa) 3.6% of the population 5-year peak mean, 1993/94–1997/98 • *Limosa limosa islandica* (Iceland - breeding) 1.6% of the population 5-year peak mean, 1993/94–1997/98 • *Numenius arquata* (Europe - breeding) 1.1% of the population in Great Britain 5-year peak mean, 1993/94–1997/98 • *Pluvialis squatarola* (Eastern Atlantic - wintering) 2.3% of the population in Great Britain 5-year peak mean, 1993/94–1997/98 • *Podiceps cristatus* (North-western Europe - wintering) 1.4% of the population in Great Britain 5-year peak mean, 1993/94–1997/98 • *Tadorna tadorna* (North-western Europe) 2.2% of the population 5-year peak mean, 1993/94–1997/98 • *Tringa tetanus* (Eastern Atlantic - wintering) 2.8% of the population 5-year peak mean, 1993/94–1997/98 • *Vanellus vanellus* (Europe - breeding) 0.7% of the population in Great Britain 5-year peak mean, 1993/94–1997/98 On passage. the area regularly supports: • *Charadrius hiaticula* (Europe/Northern Africa - wintering) 1.7% of the population in Great Britain 5-year peak mean, 1993–1997 • *Tringa tetanus* (Eastern Atlantic - wintering) 3.8% of the population 5-year peak mean, 1993–1997
Vulnerabilities of the International Site	Wintering bird numbers and associated intertidal flats are robust to day-to-day change. Nevertheless, the estuary is subject to multiple uses; it is heavily industrialised, a substantial urban conurbation, has multiple transport requirements and increasing recreational activities. The site is vulnerable to physical loss through land-claim and development, physical damage caused by navigation capital and maintenance dredging, agricultural requirements, non-physical loss, toxic and non-toxic contamination and biological

	disturbance by wildfowling. The Special Protection Area status, requirements for Environmental Impact Assessment and the estuary management plan should, however, safeguard the site.
Conservation Objectives of the International Site	The objectives are to ensure that, subject to natural change, the integrity of the site is maintained or restored as appropriate, and that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring: • the extent and distribution of the habitats of the qualifying features • the structure and function of the habitats of the qualifying features • the supporting processes on which the habitats of the qualifying features rely • the populations of the qualifying features • the distribution of the qualifying features within the site

Appendix B. Findings of Stage 1 Screening Assessment

Table B1: Objective 1 Screening

Objective 1 - To better understand local flood risk and make best use of available information in order to better manage flood risk to people, businesses, property, infrastructure and the natural environment			
Objective Wording A clear understanding of local flood risk in Stockport is crucial to ensuring that it can be effectively managed. This involves understanding where flooding may occur, how frequently it may happen and what impact it may have. In order to better understand flood risk within Stockport, further assessments of the areas at risk and the sources and extent of that flood risk will need to be completed. Recognising that some areas will have a greater level of flood risk than others, it will be necessary to prioritise the areas to be assessed. Whilst parts of Stockport are at risk of flooding from a variety of sources, those associated with main rivers are well documented through the Environment Agency's own flood zone maps and the management of that risk is set out in the Catchment Flood Management Plans. Therefore any further assessment and collection of data undertaken by Stockport will focus on local sources of flood risk, with the opportunity for the sources of information to be combined as part of future partnership projects. Further assessment will initially take place through the Surface Water Management Plan process. Through this objective, information on sources of flood risk in Stockport will improve and better records will be available for historic flooding, to provide a clearer understanding of the overall flood risk in the borough. With local flood risk expected to increase due to climate change, greater understanding will enable Stockport to plan for the future, mitigating against potential problems and advising strategic development plans.			
Measure Reference	**Measure Wording**	**Likely Significant Effects on the International Sites?**	**Justification of Finding**
Measure 1a	To further develop the Surface Water Management Plan for Stockport to gain a better understanding of key flooding hotspots, risks and associated consequences.	No	This measure will not itself lead to development and relates to obtaining a better understanding of flooding and consequences only. This measure is considered to have no likely significant effects on the International sites.
Measure 1b	To work with RMAs and other key stakeholders to investigate locally significant flooding incidents and identify sources, pathways and receptors of flooding.	No	This measure will not itself lead to development and relates to obtaining a better understanding of flooding and consequences only. This measure is considered to have no likely significant effects on the International sites.
Measure 1c	To further develop and continue to maintain a register of flood risk management and drainage assets with a record of any significant structures with respect to flood risk, together with details of ownership, condition, maintenance regime and where appropriate the designation of such structures or features,	No	This measure will not itself lead to development and relates to understanding existing flood structures only. This measure is considered to have no likely significant effects on the International sites.

	which may affect flood risk.		
Measure 1d	To map historical flooding incidences from all sources to identify recurrent flooding issues and hotspots which will assist in the prioritisation of flood mitigation.	No	This measure will not itself lead to development and relates to obtaining a better understanding of flooding to help inform future planning. This measure is considered to have no likely significant effects on the International sites.
Measure 1e	To provide a web based system of flood risk information accessible by risk management authorities and other key stakeholders	No	This measure will not itself lead to development and relates to obtaining a better understanding of flooding only. This measure is considered to have no likely significant effects on the International sites.
Measure 1f	To review the Preliminary Flood Risk Assessment as required by the EU Floods Directive and Flood Risk Regulations 2009 and contribute to the other requirements.	No	This measure will not itself lead to development and the measure is considered to have no likely significant effects on the International sites.

Table B2: Objective 2 Screening

Objective 2 - To reduce the potential impact and costs of flooding in the Borough			
Objective Wording Local flood risk will be managed via a risk-based and evidence-based programme, incorporating proportionate and practical measures. Measures used should be multi-beneficial as far as possible, integrating flood risk management solutions alongside sustainable development and social and environmental benefits. Flood risk management funding will be directed to areas most at need or where solutions will be most effective and flood risk management will guide other funding decisions and be appropriately prioritised alongside other needs. Information on local flood risk will be used to allow informed decisions to be made on the level of funding allocated to flood risk management resources within Stockport. Potential funding for flood risk management projects will be prioritised according to cost-benefit and a range of weighting factors to take into account the evidence of flooding and sustainability of the proposed solution. This will ensure that resources are dedicated in areas where it will be most effective. Whilst every effort will be made to reduce local flood risk across the borough, limited resources will require some prioritisation. Protecting commercial properties, built and cultural heritage, and the natural environment are also important, but with limited resources not everything can be a priority; in this context, individual properties are unlikely to be priorities. Contributory funding from beneficiaries can help make schemes deliverable; however, it is important that public funding remains focused on areas of greatest risk. Information on local flood risk will be made available to assist in preparing for flood events, roles and responsibilities in a flood event will be clear and well-rehearsed and the cause of flood events will be effectively investigated. The improved information on flood risk will be used to ensure that emergency responders better understand the nature of local flood risk and can use the information to improve			
Measure Reference	**Measure Wording**	**Likely Significant Effects on the International Sites?**	**Justification of Finding**
Measure 2a	To progress the actions of the SWMP and, where suitable, flood risk management schemes are identified and funding sought.	No	This measure could lead to development, however, this measure does not outline any development proposals and the exact details of where development may be located other than the general area, their design and/or when (or if) these sites will be constructed upon are not stated. The measures for objective 7 seek to protect international sites, therefore, should development arise from this measure, its will need to ensure that the international sites are not adversely affected. This measure is considered to have no likely significant effects on the International sites.
Measure 2b	To work with RMAs and key stakeholders to encourage flood management activities by riparian landowners on ordinary	No	This measure could lead to development, however, this measure does

	watercourses and flood defence structures, as well as limiting the development of constrictions on ordinary watercourses through consenting and, if necessary, enforcement.		not outline any development proposals and the exact details of where development may be located other than the general area, their design and/or when (or if) these sites will be constructed upon are not stated. The measures for objective 7 seek to protect international sites, therefore, should development arise from this measure, its will need to ensure that the international sites are not adversely affected. This measure is considered to have no likely significant effects on the International sites.
Measure 2c	To develop a risk based criteria to prioritise projects across Stockport to inform future grant applications to ensure flood risk management funding is directed to areas most at need and where solutions are more effective and prioritised alongside other needs.	No	This measure will not itself lead to development as it relates to the development of a risked based criteria to inform grant applications. This measure is considered to have no likely significant effects on the International sites.
Measure 2d	To improve the detection, forecasting and issue of flood warnings; planning for and co-ordinating a rapid response to flood emergencies, and promoting faster recovery from flooding.	No	This measure will not itself lead to development as it relates to flood warnings only. This measure is considered to have no likely significant effects on the International sites.
Measure 2e	To identify opportunities for natural flood management and the restoration of ordinary watercourses, including de-culverting.	No	This measure could lead to development, however, this measure does not outline any development proposals and the exact details of where development may be located other than the general area, their design and/or when (or if) these sites will be constructed upon are not stated. The measures for objective 7 seek to protect international sites, therefore, should development arise from this measure, its will need to ensure that the international sites are not adversely affected. This measure is considered to have no likely significant effects on the International sites.

Table B3: Objective 3 Screening

Objective 3 - To ensure resilience of local water bodies and drainage assets			
Objective Wording A risk based and proportionate approach to local flood risk management requires an up-to-date and appropriately detailed understanding of the current condition of local water bodies and drainage assets and their maintenance. Local water bodies and drainage infrastructure will only operate effectively if it is adequately maintained, and regular ongoing inspections linked to maintenance programmes are an essential part of managing local flood risk. RMAs are responsible for their individual assets, e g. United Utilities are responsible for the sewer network, the Highway Authorities are responsible for Highway drains and Navigation Authorities are responsible for the maintenance of their canal networks, whilst Riparian Landowners are generally responsible for the maintenance of watercourses (main river and ordinary watercourses) passing by or adjoining their land. The implications of a growing population on the resilience of water bodies and drainage assets will be important to consider along with the recognition that severe storm events are likely to increase in the future with climate change. Stockport will work in partnership with key stakeholders to develop effective inspection procedures linked to maintenance works for water bodies and drainage assets to ensure future resilience.			
Measure Reference	**Measure Wording**	**Likely Significant Effects on the International Sites?**	**Justification of Finding**
Measure 3a	To promote environmentally sustainable solutions including for example de-culverting, natural flood risk management, blue/green infrastructure, increased tree cover and catchment sensitive farming.	No	This measure could in the long term lead to development, however, this measure does not outline any development proposals and the exact details of where development may be located. The measure looks to ensure that environmentally sustainable solutions which by definition should seek to protect the international sites. The measures for objective 7 also specifically seek to protect international sites, therefore, should development arise from this measure, its will need to ensure that the international sites are not adversely affected. This measure is considered to have no likely significant effects on the International sites.
Measure 3b	To develop a maintenance plan for the regular clearing of trash screens at critical flood risk locations.	No	This measure will not itself lead to development as it relates to the maintenance of existing structures only. This measure is considered to have no likely significant effects on the International sites.

Measure 3c	To develop a maintenance plan for the regular de-silting and de-vegetation of ordinary watercourses at critical flood risk locations.	No	This measure could lead to development, however, this measure does not outline any development proposals and the exact details of where development may be located other than the general area, their design and/or when (or if) these sites will be constructed upon are not stated. The measures for objective 7 seek to protect international sites, therefore, should development arise from this measure, its will need to ensure that the international sites are not adversely affected. This measure is considered to have no likely significant effects on the International sites.
Measure 3d	To develop a maintenance plan for the regular clearing of highway gullies based on a prioritised risk based approach.	No	This measure will not itself lead to development as it relates to the maintenance of existing structures only. This measure is considered to have no likely significant effects on the International sites.
Measure 3e	To develop a plan for improving existing local flood risk infrastructure so it is resilient to climate change.	No	This measure could lead to development, however, this measure does not outline any development proposals and the exact details of where development may be located other than the general area, their design and/or when (or if) these sites will be constructed upon are not stated. The measures for objective 7 seek to protect international sites, therefore, should development arise from this measure, its will need to ensure that the international sites are not adversely affected. This measure is considered to have no likely significant effects on the International sites.
Measure 3f	To undertake review of flood risk and drainage assets and their maintenance plans following a flood event to ensure resilience.	No	This measure will not itself lead to development as it relates to the maintenance of existing structures only. This measure is considered to have no likely significant effects on the International sites.
Measure 3g	To identify and manage a resilient network of highways during a flood event.	No	This measure will not itself lead to development as it relates to the maintenance of existing structures only. This measure is considered to have no likely significant effects on the International sites.

Table B4: Objective 4 Screening

Objective 4 - To ensure appropriate development in areas of flood risk			
Objective Wording The planning process has a significant role to play in ensuring that new developments do not increase flood risk and ensuring that they are not at risk from flooding. In order to ensure new development is safe and does not have detrimental impacts on local flood risk, particularly in areas of known flood risk, it should ideally be considered at the pre-application stage and the relevant flood risk management authorities should be involved in these discussions. RMAs will be required to ensure that the principle of 'no new flood risk' is taken into account as part of new developments and infrastructure, managing the effects of climate change and further reducing flood risk where possible. The NPPF is the key piece of legislation that sets out the requirements for managing flood risk in new development. This sets out the requirement that the planning process should be informed by the SFRA for Stockport at all stages. As LLFA, Stockport is statutory consultee on surface water drainage for major planning applications, whilst the local planning authority maintains responsibility for assessing surface water drainage for all other types of development.			
Measure Reference	**Measure Wording**	**Likely Significant Effects on the International Sites?**	**Justification of Finding**
Measure 4a	To work with RMAs and key stakeholders to produce local policies and guidance; and enforce standards to promote a positive impact on flood risk from new development, and to prevent any increase in flood risk, including the possible impacts of climate change.	No	The measure will seek to provide policies and guidance and enforce standards for new development. This is likely to have a positive impact on the international sites as coupled with the measures given for objective 7 the international sites and potential effects of development will be addressed. This measure is considered to have no likely significant effects on the International sites.
Measure 4b	To maximise opportunities for contribution towards existing and proposed flood risk management from new development to address local flood risk.	No	This measure could lead to development, however, this measure does not outline any development proposals and the exact details of where development may be located other than the general area, their design and/or when (or if) these sites will be constructed upon are not stated. The measures for objective 7 seek to protect international sites, therefore, should development arise from this measure, its will need to ensure that the international sites are not adversely affected. This measure is considered to have no likely significant effects on the International sites.

Measure 4c	To work with relevant RMAs and key stakeholders to promote SuDS measures for new developments through the LLFA role as a statutory consultee on major planning applications.	No	This measure will not itself lead to development as it relates to the promotion of SuDS. This measure is considered to have no likely significant effects on the International sites.
Measures 4d	To identify exemplar projects to introduce innovative SuDS approaches through the use of green infrastructure	No	This measure will not itself lead to development as it relates to the promotion of SuDS. This measure is considered to have no likely significant effects on the International sites.

Table B5: Objective 5 Screening

Objective 5 - To develop a collaborative partnership approach to flood risk management, and cooperate with other Risk Management Authorities and key stakeholders working across catchments			
Objective Wording Stockport has a partnership approach to flood risk management, and co-operates with other partnerships on working across catchments, recognising that engagement and collaborative working sit at the heart of a viable catchment based approach. A valuable partnership will be formed for Stockport both with RMAs and affected local communities to target resources and provide co-ordination of expertise and funding. The partnership will recognise that management of flood risk may need to be brought together across the catchment and authority boundaries, whilst continuing to recognise local priorities. A partnership approach will provide opportunities to build links with wider plans, avoid transfer of flood risk elsewhere, and provide multi-benefit schemes. There will be a partnership approach to flood response ensuring that roles are clear. Stockport as LLFA will undertake investigations into flood events where it is necessary to understand the cause of flooding.			
Measure Reference	**Measure Wording**	**Likely Significant Effects on the International Sites?**	**Justification of Finding**
Measure 5a	To clarify local roles and responsibilities of Risk Management Authorities in Stockport and adjoining authorities and establish lines of communication to share information and resources and work collaboratively in a coordinated manner for flood risk management.	No	This measure will not itself lead to development as it relates to improved communications between authorities on the issue of risk management only. This measure is considered to have no likely significant effects on the International sites.
Measure 5b	To work with RMAs and key stakeholders to encourage flood schemes by third parties, riparian landowners and stakeholders.	No	This measure could lead to development, however, this measure does not outline any development proposals and the exact details of where development may be located other than the general area, their design and/or when (or if) these sites will be constructed upon are not stated. The measures for objective 7 seek to protect international sites, therefore, should development arise from this measure, its will need to ensure that the international sites are not adversely affected. This measure is considered to have no likely significant effects on the International sites.
Measure 5c	To lead on the implementation of local flood risk management schemes and to work with RMAs and key	No	This measure could lead to development, however, this measure does not outline any development proposals and the exact details of where

	stakeholders to best utilise funding obtained through a prioritised risk-based approach.		development may be located other than the general area, their design and/or when (or if) these sites will be constructed upon are not stated. The measures for objective 7 seek to protect international sites, therefore, should development arise from this measure, its will need to ensure that the international sites are not adversely affected. This measure is considered to have no likely significant effects on the International sites.
Measure 5d	To work with neighbouring Lead Local Flood Authorities to ensure a catchment-based approach to local flood risk management.	No	This measure could lead to development, however, this measure does not outline any development proposals and the exact details of where development may be located other than the general area, their design and/or when (or if) these sites will be constructed upon are not stated. The measures for objective 7 seek to protect international sites, therefore, should development arise from this measure, its will need to ensure that the international sites are not adversely affected. This measure is considered to have no likely significant effects on the International sites.
Measure 5e	To work with key RMAs for managing flood risk from dam and canal infrastructure.	No	This measure could lead to development, however, this measure does not outline any development proposals and the exact details of where development may be located other than the general area, their design and/or when (or if) these sites will be constructed upon are not stated. The measures for objective 7 seek to protect international sites, therefore, should development arise from this measure, its will need to ensure that the international sites are not adversely affected. This measure is considered to have no likely significant effects on the International sites.
Measure 5f	To promote early engagement with partners so opportunities for enhancing the natural and built environment as well as managing flood risk can be maximised.	No	This measure could lead to development, however, this measure does not outline any development proposals and the exact details of where development may be located other than the general area, their design and/or when (or if) these sites will be constructed upon are not stated. The measures for objective 7 seek to protect international sites, therefore, should development arise from this measure, its will need to ensure that the international sites are not adversely affected. This measure is considered to have no likely significant effects on the International sites.
Measure 5g	To work with Association for Greater Manchester Authorities to share best practice, to identify funding opportunities and identify cross borough schemes for managing flood risk on a	No	This measure could lead to development, however, this measure does not outline any development proposals and the exact details of where development may be located other than the general area, their design

	catchment scale.		and/or when (or if) these sites will be constructed upon are not stated. The measures for objective 7 seek to protect international sites, therefore, should development arise from this measure, its will need to ensure that the international sites are not adversely affected. This measure is considered to have no likely significant effects on the International sites.
Measure 5h	To work with health partners to identify funding opportunities and quantify health and wellbeing benefits as part of the prioritisation of flood risk management schemes.	No	This measure will not itself lead to development. This measure is considered to have no likely significant effects on the International sites.

Table B6: Objective 6 Screening

Objective 6 - To assist communities in understanding information on flood risk and supporting themselves			
Objective Wording While Stockport has a big role to play in the management of local flood risk, it is important that communities are prepared to deal with flood events if they happen and are best placed to recover as quickly as possible. An improved understanding of local flood risk from the measures outlined under Objective 1 will allow Stockport to advise local communities, ensuring they are aware of the risks they face and enabling them to take appropriate action when necessary. We will optimise existing communication activities being delivered by partners and to explore opportunities for joint working, thereby securing efficiencies and savings. We will make sure that all audiences have a clear understanding of the key messages, how to access the right information, and how communities can take the necessary precautions before, during and after flood events. As improved information becomes available this will be effectively conveyed to local communities to ensure they have a full understanding of the flood risk in their area, allowing them to make informed decisions for managing their own flood risk. It is important to communicate to residents and businesses what can be done to prepare for flooding. Properties can be made more resilient to flooding, warning and alert systems can be established, and with effective maintenance of drainage and flood defence infrastructure and assets, and additional works (which eventual beneficiaries could contribute towards) the existing risk can be managed effectively. As part of the new partnership funding mechanisms for flood defence, local contributions are likely to be required for flood alleviation schemes to go ahead. Where local flood alleviation schemes are identified, communities will be engaged via local stakeholders in the project process to influence the design, bring in contributions and maximise the schemes potential. Communities and individuals will be supported to take part in preparing for flood events, forming local action groups and planning for future flood risks. Communities will be encouraged to engage with the RMAs and others, such as by reporting flood incidents or blocked drains / watercourses, to help RMAs to respond to incidents before problems arise.			
Measure Reference	**Measure Wording**	**Likely Significant Effects on the International Sites?**	**Justification of Finding**
Measure 6a	To provide educational material to the public and promote personal resilience.	No	This measure will not itself lead to development. This measure is considered to have no likely significant effects on the International sites.
Measure 6b	To work with RMAs and key stakeholders to reduce the harmful consequences of local flooding to communities and human health through pro-active actions; community activities and education programmes that enhance preparedness and resilience to local flood risk, thereby	No	This measure will not itself lead to development. This measure is considered to have no likely significant effects on the International sites.

	promoting community cohesion and minimising community disruption.		
Measure 6c	To support local groups to manage local flood risk and increase the resilience of their communities to flooding.	No	This measure could lead to development, however, this measure does not outline any development proposals and the exact details of where development may be located other than the general area, their design and/or when (or if) these sites will be constructed upon are not stated. The measures for objective 7 seek to protect international sites, therefore, should development arise from this measure, its will need to ensure that the international sites are not adversely affected. This measure is considered to have no likely significant effects on the International sites.
Measure 6d	To continue to work with RMAs and key stakeholders to improve communications and advice given before and during flooding events.	No	This measure will not itself lead to development. This measure is considered to have no likely significant effects on the International sites.
Measure 6e	To work with RMAs and key stakeholders to establish a co-ordinated approach to the provision of temporary flood risk management measures.	No	This measure could lead to development, however, this measure does not outline any development proposals and the exact details of where development may be located other than the general area, their design and/or when (or if) these sites will be constructed upon are not stated. The measures for objective 7 seek to protect international sites, therefore, should development arise from this measure, its will need to ensure that the international sites are not adversely affected. This measure is considered to have no likely significant effects on the International sites.

Table B7: Objective 7 Screening

Objective 7 - To encourage, support and provide flood risk management which seeks to enhance and protect the environment			
Objective Wording Stockport contains a range of environmental assets which promote multiple social, economic and environmental benefits. Where opportunities are available to implement flood risk management solutions which work with natural processes and make environmental enhancements these will be explored to establish if they are economically viable and can form part of a sustainable approach to local flood risk management in Stockport. These will be prioritised to ensure that the most beneficial solutions are implemented first. Flood management solutions should pay high regard to important local natural and built environment assets, including biodiversity, soil, the historic environment and landscape and townscape character, and contribute to address key issues such as climate change and water pollution. The provision of SuDS as part of new developments or through retrofitting can have positive effects in enhancing and protecting the environment through the provision of green infrastructure. The provision of more conventional green infrastructure, such as planting of trees at appropriate locations in streets can help reduce flood risk. Flood risk management schemes in ordinary watercourses must comply with the requirements of the Water Framework Directive, and with the recommendations of the River Basin Management Plans.			
Measure Reference	**Measure Wording**	**Likely Significant Effects on the International Sites?**	**Justification of Finding**
Measure 7a	To promote environmentally sustainable flood risk management solutions which work with the natural and built environment, using a catchment based approach where applicable, and providing multiple benefits where possible	No	This policy will not itself lead to development as it is intended to protect the natural environment, including biodiversity. This policy is considered to have no likely significant effects on the International sites.
Measure 7b	To ensure that Emergency Planning for flooding includes consideration of, and avoids damage or deterioration to, the natural and built environment, including landscape and townscape character and the historic environment.	No	This policy will not itself lead to development as it is intended to protect the natural environment, including biodiversity. This policy is considered to have no likely significant effects on the International sites.
Measure 7c	To promote the conservation, management and creation of green infrastructure as part of sustainable flood risk management solutions, recognising the multiple benefits green infrastructure delivers, such as flood risk management, urban cooling, climate change resilience and enhancement of biodiversity. This should include promotion in the built environment of retrofitting SUDS, green roofs and building	No	This policy will not itself lead to development as it is intended to protect the natural environment, including biodiversity. This policy is considered to have no likely significant effects on the International sites.

	integrated vegetation to manage run-off water.		
Measure 7d	To promote flood risk management solutions that protect and enhance the landscape and built environment character of the Borough, including the historic environment and heritage assets	No	This policy will not itself lead to development as it is intended to protect the natural and built environment. This policy is considered to have no likely significant effects on the International sites.
Measure 7e	To aim to ensure no net loss of biodiversity and where possible net gain through habitat creation and enhancement as a result of flood management solutions, contributing to the Borough's natural environment and biodiversity	No	This policy will not itself lead to development as it is intended to protect the natural environment, including biodiversity. This policy is considered to have no likely significant effects on the International sites.
Measure 7f	To ensure that international, national and locally designated sites are not adversely affected by flood risk management activities	No	This policy will not itself lead to development as it is intended to protect the natural environment, including biodiversity. This policy is considered to have no likely significant effects on the International sites.
Measure 7g	To protect soil resources and avoid permanent (irreversible) loss of the best quality and most versatile agricultural land as a result of flood risk management solutions	No	This policy will not itself lead to development as it is intended to protect the natural environment. This policy is considered to have no likely significant effects on the International sites.
Measure 7h	To seek to reduce energy consumption and minimise use of natural resources in the implementation of flood management schemes, through encouraging the re-use of materials, use of secondary materials and maximising recycling	No	This policy will not itself lead to development as it is intended to protect the natural environment. This policy is considered to have no likely significant effects on the International sites.
Measure 7i	To ensure that WFD assessments are undertaken where required for flood risk management schemes; with no deterioration in WFD waterbody status as a result of flood risk management activities and where possible enhancement of status through implementation of the recommendations of River Basin Management Plans	No	This policy will not itself lead to development as it is intended to protect the natural environment, including biodiversity. This policy is considered to have no likely significant effects on the International sites.

Atkins Limited
Chadwick House
Birchwood Park
Warrington
WA3 6AE
England

Contact: ecology@atkinsglobal.com

Appendix C

CONSULTATION LETTER

STOCKPORT
METROPOLITAN BOROUGH COUNCIL

Services to Place
4th Floor, Fred Perry House
SK1 3XE
Stockport

Date: 14th March 2016

Dear Sir/Madam,

Stockport Draft Local Flood Risk Management Strategy Consultation: 14th March to 1st April 2016

Stockport Metropolitan Borough Council is consulting with local communities and stakeholders to inform the development of its Draft Local Flood Risk Management Strategy (LFRMS) and supporting documents. We are writing to you to request your feedback on the documents as part of the consultation process.

This letter provides background information on the draft LFRMS. To view the full draft and supporting documents and respond to the consultation please visit www.stockport.gov.uk/consultation.

Under the Flood and Water Management Act (2010) Stockport Council became a Lead Local Flood Authority (LLFA) responsible for managing local flood risk from surface water, ground water and ordinary watercourses in Stockport. One of the new duties placed upon Stockport Council to assist in the management of local flood risk as LLFA is to 'develop, maintain, apply and monitor a Local Flood Risk Management Strategy'.

The LFRMS is intended to demonstrate Stockport Council's understanding and role in managing the flood risk within the borough of Stockport and its role in working with other key stakeholders and the local community.

The draft LFRMS includes information on potential flooding risks in Stockport, the legislative background and duties of Stockport Council with respect to managing flood risk and the objectives of the strategy. The objectives are supported by a number of measures and an action plan.

Recent flood events in the UK have highlighted further the fact that flood risk in England is expected to increase due to climate change and development in areas at risk. 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, the environment and infrastructure.

Flood risk from Main Rivers such as the Mersey, Goyt and Tame, although a concern and duty for Stockport Council, are still under the management of the Environment Agency. It is predominantly what is classed as Ordinary Watercourses, Surface Water and Ground Water flooding that the LFRMS seeks to address.

Stockport Council will take a proportionate risk-based approach using the budget and resources available to reduce both the likelihood of flooding and the impacts of flooding should it occur.

A fundamental aim of the LFRMS is that Stockport Council embraces and supports its role as LLFA. This means taking the lead in helping with infrastructure development and re-development and working with other bodies in dealing with flood risk. Stockport Council wants to encourage and wherever possible enforce current thinking and guidance, and be

able to provide improvements through working better together in terms of supporting communities to help themselves.

As part of this consultation, we are also seeking feedback on the Strategic Environmental Assessment and Habitat Regulations Assessment Stage 1 Screening that have been produced as supporting documents to the LFRMS.

Please provide your feedback on the draft LFRMS and background documents by completing the online questionnaire, accessible via www.stockport.gov.uk/consultation. The closing date for responses to the consultation is Friday 1st April 2016.

Once finalised, the LFRMS will be a 'live' document that will be reviewed periodically as the measures and actions detailed therein are developed and implemented.

During the consultation, the draft LFRMS will be presented at Open Forums at Stockport Council's Area Committees on the following dates:

Monday 14th March, 6pm	**Tuesday 15th March, 6pm**	**Wednesday 16th March, 6pm**	**Thursday 17th March, 6pm**
Werneth *(Dining Room, Woodley Civic Hall, Hyde Road, Woodley, SK6 1QG)*	Stepping Hill *(Committee Room 2, Stockport Town Hall, Edward Street, SK1 3XE)*	Marple *(Main Hall, Marple Senior Citizen's Hall, Memorial Park, Marple, SK6 6BA)*	Central Stockport *(Committee Room 2, Stockport Town Hall, Edward Street, SK1 3XE)*
Heatons & Reddish *(Committee Room 2, Stockport Town Hall, Edward Street, SK1 3XE)*	Cheadle *(Ladybridge Park Residents Club, Edenbridge Road, Cheadle, SK8 5PX)*		Bramhall & Cheadle Hulme South *(Bramhall Village Club, 2 Melbourne Rd, Bramhall, SK7 1LR)*

If you have any questions about the consultation please contact us by emailing emma.hughes@stockport.gov.uk or calling 0161 474 2299.

If you would like to meet with representatives of Stockport Council to discuss the LFRMS further, please contact us via the above email address or phone number so that we can arrange a suitable time to meet.

Yours faithfully,

Susan M. Stevenson

Sue Stevenson
Investing in Growth Manager

Appendix D

CONSULTATION RESPONSES

APPENDIX D-1

EMAIL RESPONSES

Subject: FW: Virgin media - Interest in flood prevention strategy

From:
Sent: 21 March 2016 09:14
To: Emma Hughes
Subject: Virgin media - Interest in flood prevention strategy

Good morning Emma

I hope all is well?

I was passed your details from our head office who have recently been contacted about proposals from Stockport CC to consult on a Flood Risk Management Strategy.

I look after Virgin Media's claims department who deal with a range of matters where our apparatus is affected by damage / flooding or other degradation.

I am keen to become involved at this early stage to the extent that our subsurface apparatus may be affected by your proposals. I see this as a valuable opportunity to consult on prevention of damage to avoid unnecessary harm to our network as a result of water ingress.

Please let me know whether there is anything further I or Virgin Media ought to do at this stage.

Best regards

| Claims Operations Manager
Virgin Media | Virgin Media Services,

---

or the person responsible for delivery of the message to the above named, please delete or destroy the email and any attachments immediately and inform the sender of the error.

Subject: FW: LFRMS response from Historic England
Attachments: Stockport LFRMS SEA.doc; Stockport LFRMS.doc

From:
Sent: 29 March 2016 11:24
To: Emma Hughes
Subject: LFRMS response from Historic England

Dear Emma

Please find attached the responses from Historic England to your recent consultation.

Regards

| Business Officer
Direct Line:

Historic England |

www.HistoricEngland.org.uk
@HE_NorthWest

Have Your Say on Stockport Market (7th March – 1st April 2016). We want to hear your views on Stockport Market and how it could grow and develop for the future - www.stockport.gov.uk/haveyoursay

Historic England

By email: emma.hughes@stockport.gov.uk

Our ref:
Your ref:

Telephone
Fax

Dear Ms Hughes

STOCKPORT DRAFT LOCAL FLOOD RISK MANAGEMENT STRATEGY CONSULTATION

Thank you for consulting Historic England on the above document. At this stage we have no comments to make on its content.

If you have any queries about any of this matter or would like to discuss anything further, please do not hesitate to contact me.

Yours sincerely,

Historic Environment Planning Adviser (North West)
Historic England
Telephone:
e-mail:

Historic England

By email: emma.hughes@stockport.gov.uk

Our ref:
Your ref:

Telephone
Fax

Dear Ms Hughes

STOCKPORT DRAFT LOCAL FLOOD RISK MANAGEMENT STRATEGY CONSULTATION – SEA SCREENING

Thank you for consulting Historic England on the above document. At this stage we have no comments to make on its content.

If you have any queries about any of this matter or would like to discuss anything further, please do not hesitate to contact me.

Yours sincerely,

Historic Environment Planning Adviser (North West)
Historic England
Telephone:
e-mail:

Subject: FW: Draft Flood Risk Management Strategy Consultation: 14 March - 1 April 2016
Attachments: Local Flood Risk Management Strategy.pdf; NE Feedback Form- 181257.pdf; ATT00001.txt

From:
Sent: 30 March 2016 12:09
To: Emma Hughes
Subject: Draft Flood Risk Management Strategy Consultation: 14 March - 1 April 2016

Dear Emma,

Draft Flood Risk Management Strategy

Please find Natural England's response in relation to the above mentioned consultation attached herewith

Please note:
SSSI Impact Risk Zones
The Town and Country Planning (Development Management Procedure) (England) Order 2015, which came into force on 15 April 2015, has removed the requirement to consult Natural England on notified consultation zones within 2 km of a Site of Special Scientific Interest (Schedule 5, v (ii) of the 2010 DMPO). The requirement to consult Natural England on "*Development in or likely to affect a Site of Special Scientific Interest*" remains in place (Schedule 4, w). Natural England's **SSSI Impact Risk Zones** are a GIS dataset designed to be used during the planning application validation process to help local planning authorities decide when to consult Natural England on developments *likely to affect a SSSI.* The dataset and user guidance can be accessed from the gov.uk website.

Kind regards

From: Emma Hughes [mailto:emma.hughes@stockport.gov.uk]
Sent: 14 March 2016 14:22

To: Emma Hughes
Subject: Draft Flood Risk Management Strategy Consultation: 14 March - 1 April 2016

Dear Sir/Madam,

Stockport Metropolitan Borough Council is consulting with local communities and stakeholders to inform the development of its Draft Local Flood Risk Management Strategy (LFRMS) and supporting documents. Please find the attached letter which provides background information on the draft LFRMS and details of how to respond to the consultation. **The closing date for responses is Friday 1st April 2016.**

Yours faithfully,
Sue Stevenson
Investing in Growth Manager

Have Your Say on Stockport Market (7th March – 1st April 2016). We want to hear your views on Stockport Market and how it could grow and develop for the future - www.stockport.gov.uk/haveyoursay

Have Your Say on Stockport Market (7th March – 1st April 2016). We want to hear your views on Stockport Market and how it could grow and develop for the future - www.stockport.gov.uk/haveyoursay

Date: 30 March 2016
Our ref: 181257
Your ref: Local Flood Risk Management Strategy Consultation

Customer Services
Hornbeam House
Crewe Business Park
Electra Way
Crewe
Cheshire
CW1 6GJ

T 0300 060 3900

Stockport Council
emma.hughes@stockport.gov.uk

BY EMAIL ONLY

Dear Ms Hughes,

Planning consultation: Local Flood Risk Management Strategy Consultation
Location: Stockport

Thank you for your consultation on the above dated and received by Natural England on 14 March 2016.

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

Natural England has no substantive comments to make in respect of this consultation document; however, we offer the following general comments:

Draft Local Flood Risk Management Strategy (LFRMS)
Natural England are pleased to note the inclusion of objective 7: to encourage, support and provide flood risk management which seeks to enhance and protect the environment.

We broadly support the objectives identified in the strategy.

Strategic Environmental Assessment (SEA)
The approach and methodology used are appropriate and in line with advice that would be offered by Natural England, covering the topics and issues we would like to see considered in such a document. Relevant legislation has been identified and sourced together with appropriate designated sites being identified and referenced.

We are pleased to note that the submitted SEA has taken into account the recommendations/advice given in our SEA scoping response (dated 7 January 2016). Natural England concurs with the conclusions of the assessment.

Habitat Regulations Assessment (HRA)
Natural England concur with the conclusion that the Strategy will have no likely significant effect on the international sites considered in this assessment.

We would be happy to comment further should the need arise but if in the meantime you have any queries please do not hesitate to contact us.

For any queries relating to the specific advice in this letter only please contact Kathryn Kelsall on

020 802 68397. For any new consultations, or to provide further information on this consultation please send your correspondences to consultations@naturalengland.org.uk.

We really value your feedback to help us improve the service we offer. We have attached a feedback form to this letter and welcome any comments you might have about our service.

Yours sincerely

Cheshire, Greater Manchester, Merseyside and Lancashire Area Team

Subject: FW: Draft Flood Risk Management Strategy Consultation: 14 March - 1 April 2016 - comments

From:
Sent: 25 April 2016 16:25
To: Emma Hughes
Subject: RE: Draft Flood Risk Management Strategy Consultation: 14 March - 1 April 2016 - comments

Hi Emma

Apologies for the delay in responding. I'm aware that the deadline has passed and the report is going to the Executive tomorrow.

I've completed reading the comprehensive report and strategy.

Some minor points / comments / possible amendments:

Report:

Para 6.35: I wonder why Rochdale is mentioned. However I understand that there is partnership work taking place across Greater Manchester.

Para 6.36 (and page 31 in Strategy): Worth adding? The desk-top testing of Stockport's Multi-Agency Flood Plan took place in June 2015. This was a multi-agency event with representatives from key agencies attending the training session in Stockport Town Hall.

Para 6.36 (and page 31 in Strategy): Worth adding? Greater Manchester borough Multi-Agency Flood Plans were invoked following widespread flooding across the county at the end of last year. The flooding of domestic properties and businesses began on Boxing Day and the recovery, in some cases, is ongoing. (NB Stockport escaped the flooding on this occasion – it affected the Irwell catchment and not the Mersey catchment in GM).

Strategy:

Page 13: The map is unclear. Do you have a higher resolution image as it seems to be very informative. The key needs some explanation as it may be unclear what the figures in each borough relate to.

Page 31: Worth adding? The desk-top testing of Stockport's Multi-Agency Flood Plan took place in June 2015. This was a multi-agency event with representatives from key agencies attending the training session in Stockport Town Hall.

Page 31: Worth adding? Greater Manchester borough Multi-Agency Flood Plans were invoked following widespread flooding across the county at the end of last year. The flooding of domestic properties and businesses began on Boxing Day and the recovery, in some cases, is ongoing. (NB Stockport escaped the flooding on this occasion – it affected the Irwell catchment and not the Mersey catchment in GM).

Finally, is it worth mentioning somewhere that there are documents relating to flood risk including the Stockport Multi-Agency Flood Plan, the Greater Manchester Multi-Agency Flood Plan, and the Greater Manchester Multi-Agency Offsite Reservoir Emergency Plan.

Regards

CSS Manager (Civil Resilience)

From: Emma Hughes
Sent: 14 March 2016 14:22
To: Emma Hughes
Subject: Draft Flood Risk Management Strategy Consultation: 14 March - 1 April 2016

Dear Sir/Madam,

Stockport Metropolitan Borough Council is consulting with local communities and stakeholders to inform the development of its Draft Local Flood Risk Management Strategy (LFRMS) and supporting documents. Please find the attached letter which provides background information on the draft LFRMS and details of how to respond to the consultation. **The closing date for responses is Friday 1st April 2016.**

Yours faithfully,
Sue Stevenson
Investing in Growth Manager

We would like your views on how we can make our online services and websites even better. Please take a moment to fill in our survey by visiting www.stockport.gov.uk/haveyoursay

We would like your views on how we can make our online services and websites even better. Please take a moment to fill in our survey by visiting www.stockport.gov.uk/haveyoursay

We would like your views on how we can make our online services and websites even better. Please take a moment to fill in our survey by visiting www.stockport.gov.uk/haveyoursay

Subject: FW: Draft Flood Risk Management Strategy Consultation: 14 March - 1 April 2016

From:
Sent: 04 May 2016 09:59
To: Emma Hughes
Cc:
Subject: RE: Draft Flood Risk Management Strategy Consultation: 14 March - 1 April 2016

Dear Emma

I appreciate greatly the additional time you have given me to review the above document and provide comments. Please see below a few comments:

Page 4:
The last sentence of the 5th paragraph has a typing error. See below the paragraph in question:

The role the Council has is to collect data and process information and make it availa the public and is therefore fundamentally about raising risk awareness. Although the Council has already proven to be proactive by using its Powers to provide solutions it only continue to do so where it is practical, affordable and realistic within the current future funding mechanisms. There will be certainly other bodies involved and these a outlined in the report. There would not be a one-stop shop but a Lead from the Coun with direction and advice and we cannot necessarily fund improvements but will try to identify funding to do so.

Page 22 talks about coastal erosion but this is not applicable to Stockport Council, please remove.

Page 23
The Flood Defence Consent under Section 109 of Water Resources Act 1991 has now been replaced by the Environmental Permitting Regulations. All the details are available from https://www.gov.uk/guidance/flood-risk-activities-environmental-permits

Page 25
The following paragraph

- Planning Authority - the borough council prepare a local plan to guide development. Flood risk is taken into account based on a Strategic Flood Ris Assessment which must consider flood risk from all forms of flooding.

We would recommend that "...all forms of flooding" is replaced by "...all sources of flooding"

Page 41
The 4th paragraph needs revising as the wording is unclear. See below:

The Authority is working with other bodies to work together and to try to combine contributions and will look to other funding streams such as the Water Framework Directive. Working in partnership with other RMAs is a requirement.

Also, the last paragraph needs revising:

Since 2010 Stockport Council has fully engaged with its new duties and has establish priority risk-based assessment to provide and annual funded programme of studies ar works to help us to understand the infrastructure and flood risk and possibly look to re the risk or to mitigate this.

I hope these comments will be useful and if you wish to seek clarifications please do not hesitate to contact me.
Many thanks

Flood Risk Officer
Partnerships & Strategic Overview Team
Greater Manchester, Merseyside and Cheshire Area

PLEASE NOTE MY NEW PHONE NUMBER **02030250985**
MY NEW INTERNAL NUMBER **50985**

From: Emma Hughes [mailto:emma.hughes@stockport.gov.uk]
Sent: 14 March 2016 14:22
To: Emma Hughes
Subject: Draft Flood Risk Management Strategy Consultation: 14 March - 1 April 2016

Dear Sir/Madam,

Stockport Metropolitan Borough Council is consulting with local communities and stakeholders to inform the development of its Draft Local Flood Risk Management Strategy (LFRMS) and supporting documents. Please find the attached letter which provides background information on the draft LFRMS and details of how to respond to the consultation. **The closing date for responses is Friday 1st April 2016.**

Yours faithfully,
Sue Stevenson
Investing in Growth Manager

Have Your Say on Stockport Market (7th March – 1st April 2016). We want to hear your views on Stockport Market and how it could grow and develop for the future - www.stockport.gov.uk/haveyoursay

We would like your views on how we can make our online services and websites even better. Please take a moment to fill in our survey by visiting www.stockport.gov.uk/haveyoursay

From:
Sent: 20 June 2016 17:25
To: Sue Stevenson; John Rowland; Sharon Duke
Subject: Information for the draft local flood risk strategy

Dear Sue,
from the Friends of Tangshutt.

I didn't see your Draft Local Flood Risk Strategy before 1st April but have some info that may still be useful.

As a qualified geologist and with a masters degree in ecotoxicology and pollution monitoring I hope this information will be useful.

The draft mentions the underlying geology as an influence. Although the draft mentions the sandstones in the west of the borough there are also sandstones to the east of the borough e.g exposures at Werneth Low, Marple Ridge and Mellor but these sandstones of Upper Carboniferous age are also interbedded with much less permeable shales and mudstones which affect groundwater flow and drainage. The younger Permian and Triassic sandstones to the west of Stockport (e.g.) those exposed in motorway cutting at Stockport and along part of the Goyt Valley/Poise Brook area along side the Red Rock Fault don't tend to be interbedded with shales and mudstones like the older sandstones, There are a few marl layers (lime rich clay) interbedded with the younger Permian and Triassic sandstones but on the whole the sandstones are permeable and water stored in them has long been used as a source of water in Stockport's breweries. I think Robinson's brewery still has a borehole taking water from these younger rocks. Much of Stockport, both east and west is cloaked in clay, mainly Boulder Clay left behind after the ice ages of the Pleistocene. This clay as the draft mentions is impermeable and does not allow the free drainage of water to the rocks below.

The draft also mentions culverts and I would like to mention the culvert of the stream running through Tangshutt, further down stream of Dingle Hollow in Romiley.
The culvert at Tangshutt, close to the railway line has blocked up many times. People recall it being so bad sometimes that they could sail dingy's on the 'lake' that formed as a result. Increased pore water pressure from flooding in this area could lead to increased land slip along this valley, part of which supports the popular Safe Route to School through Tangshutt. There's already a sizable landslip on the Council managed land up stream of where the Safe Route to School crosses the stream.

I regularly survey the biological life in the stream through Tangshutt which indicates that the water quality is generally good but with episodes of pollution. I can give you more details of this if you wish. There is also a small regular seepage of iron ochre into the stream just below where the path crosses the stream. This could, as in other areas be associated with ground water moving through local coal bearing rocks of the Upper Carboniferous and/or with former coal mining.

The draft also mentions sewage flooding into properties and there has for many years been a problem with this along certain parts of Cherry Tree Estate in Romiley. Gotherage Lane in particular has had problems with sewage in residents gardens and sewer collapses on Gotherage Lane and on the junction with Cherry Tree Lane and Compstall Road. There was also a road collapse on Cherry Tree Lane. All these within approx the last five years. A resident on Gotherage Lane had their own independant survey done of the sewage and drainage and was told the number of houses was far too large for the existing infra structure to support. I can get you more details on this if you wish. United Utilities should also have recorded these on the DG5 register. There have been regular visits of emergency call out staff seen at the pumping station recently near the bottom of Heathcote Gardens.

Hope any of this is useful.

All the best,

APPENDIX D-2

ONLINE SURVEY RESPONSES

Stockport Draft Local Flood Risk Management Strategy (LFRMS)

Q1. Please indicate below why you are interested in flooding. Please tick all which apply.

It has/could affect the wider environment

Q2. To what extent do you agree or disagree with the structure of the LFRMS?

No Feeling Either Way

Q3. To what extent do you agree or disagree that that the information presented in the LFRMS is clear and coherent?

Disagree

If you disagree/strongly disagree that the information presented is clear and coherent, please explain why below:
Be specific above 'sustainable development' Surely it should be no development or a return to permeable surfaces

Q4. On a scale of 1-5 (1= very unimportant, 5= very important) how important do you think the following objectives for the LFRMS are?

	1 (very unimportant)	2	3	4	5 (very important)	Don't know
To better understand local flood risk and make best use of available information in order to better manage flood risk to people, businesses, property, infrastructure and the natural environment.				X		
To reduce the potential impact and costs of flooding in the Borough.				X		
To ensure resilience of local water bodies and drainage assets.				X		
To ensure appropriate development in areas of flood risk.					X	
To develop a collaborative partnership approach to flood risk management, and cooperate with other Risk Management Authorities (RMAs) and key stakeholders working across catchments.				X		

To assist communities in understanding information on flood risk and supporting themselves.			X			

Q5. Do you think that the measures identified in LFRMS will allow the objectives to be met?

	Yes	No	Don't know
To better understand local flood risk and make best use of available information in order to better manage flood risk to people, businesses, property, infrastructure and the natural environment.	X		
To reduce the potential impact and costs of flooding in the Borough.		X	
To ensure resilience of local water bodies and drainage assets.		X	
To ensure appropriate development in areas of flood risk.		X	
To develop a collaborative partnership approach to flood risk management, and cooperate with other Risk Management Authorities (RMAs) and key stakeholders working across catchments.	X		
To assist communities in understanding information on flood risk and supporting themselves.		X	

Q6. Can you suggest any additional measures to support the objective to better understand local flood risk and make best use of available information in order to better manage flood risk to people, businesses, property, infrastructure and the natural environment?

Encourage home owners not to pave over gardens....council tax?

Q7. Can you suggest any additional measures to support the objective to reduce the potential impact and costs of flooding in the Borough?

More trees in the moors. Stop heather burning. Overspill sites.

Q8. Can you suggest any additional measures to support the objective to ensure resilience of local water bodies and drainage assets?

Overspill areas

Q9. Can you suggest any additional measures to support the objective to ensure appropriate development in areas of flood risk?

No development except ones that improve the drainage

Q10. Can you suggest any additional measures to support the objective to develop a collaborative partnership approach to flood risk management, and cooperate with other Risk Management Authorities (RMAs) and key stakeholders working across catchments?

Tax breaks for green roofs and permeable surfaces

Q11. Can you suggest any additional measures to support the objective to assist communities in understanding information on flood risk and supporting themselves?

Leaflets to households

Q12. Do you have any other comments on the LFMRS?

No Response

Q13. Do you have any comments on the supporting Strategic Environmental Assessment?

No Response

Q14. Do you have any comments on the supporting Habitat Regulations Assessment Stage 1 Screening?

Restore the rivers original course where possible

Q15. In what capacity are you responding to this consultation?

As an individual

Q16. Please provide the following information about yourself.

Name:

Organisation (if applicable):

Telephone No.:

Email Address:

Postal Address:

Post Code:

Q17. What is your gender?

Male

Q18. What is your age?

45-54

Q19. Do you consider yourself to have a disability or a limiting long-term illness?
No

Stockport Draft Local Flood Risk Management Strategy (LFRMS)

Q1. Please indicate below why you are interested in flooding. Please tick all which apply.

It has/could affect your home

It has/could affect your business

It has/could affect your travel

It has/could affect the wider environment

Other (please specify):
Also responding on behalf of Stockport UNISON Environmental Reps

Q2. To what extent do you agree or disagree with the structure of the LFRMS?

No Feeling Either Way

Q3. To what extent do you agree or disagree that that the information presented in the LFRMS is clear and coherent?

Disagree

If you disagree/strongly disagree that the information presented is clear and coherent, please explain why below:
While the information in the document is fine as far as it goes, it generally focuses on reactive processes or interventions to the detriment of mitigating actions.

Q4. On a scale of 1-5 (1= very unimportant, 5= very important) how important do you think the following objectives for the LFRMS are?

	1 (very unimportant)	2	3	4	5 (very important)	Don't know
To better understand local flood risk and make best use of available information in order to better manage flood risk to people, businesses, property, infrastructure and the natural environment.				X		
To reduce the potential impact and costs of flooding in the Borough.				X		
To ensure resilience of local water bodies and drainage assets.			X			
To ensure appropriate development In areas of flood risk.				X		

To develop a collaborative partnership approach to flood risk management, and cooperate with other Risk Management Authorities (RMAs) and key stakeholders working across catchments.					X	
To assist communities in understanding information on flood risk and supporting themselves.				X		

Q5. Do you think that the measures identified in LFRMS will allow the objectives to be met?

	Yes	No	Don't know
To better understand local flood risk and make best use of available information in order to better manage flood risk to people, businesses, property, infrastructure and the natural environment.	X		
To reduce the potential impact and costs of flooding in the Borough.	X		
To ensure resilience of local water bodies and drainage assets.	X		
To ensure appropriate development in areas of flood risk.	X		
To develop a collaborative partnership approach to flood risk management, and cooperate with other Risk Management Authorities (RMAs) and key stakeholders working across catchments.		X	
To assist communities in understanding information on flood risk and supporting themselves.	X		

Q6. Can you suggest any additional measures to support the objective to better understand local flood risk and make best use of available information in order to better manage flood risk to people, businesses, property, infrastructure and the natural environment?

In understanding flood risks more needs to be mentioned of the science of climate change, e.g. reference to the work of the Tyndall Centre

Q7. Can you suggest any additional measures to support the objective to reduce the potential impact and costs of flooding in the Borough?

There is little or no mention of proactive interventions of community groups such as Moors for the Future which are taking actions to reduce flooding at source

Q8. Can you suggest any additional measures to support the objective to ensure resilience of local water bodies and drainage assets?

We would suggest that a different balance between sustainable drainage and hard infrastructure - more of the former perhaps!

Q9. Can you suggest any additional measures to support the objective to ensure appropriate development in areas of flood risk?

No Response

Q10. Can you suggest any additional measures to support the objective to develop a collaborative partnership approach to flood risk management, and cooperate with other Risk Management Authorities (RMAs) and key stakeholders working across catchments?

We would like to see more reference to working with partners that are 'literally upstream' from us, i.e. thoise seeking to prevent flooding in the first place. Prevention is better than cure.

Q11. Can you suggest any additional measures to support the objective to assist communities in understanding information on flood risk and supporting themselves?

Would like to see reference to working with academic sources and climate change groups with reference to being more informed of the causes of climate change and flooding, and actions that can be taken to prevent it happening

Q12. Do you have any other comments on the LFMRS?

Council needs to promote grey water technology and green roofs, and removal of bound driveways. We would like to suggest that the Council considers reducing businesses rates to enable such 'green' businesses to provide these services. Additionally provide residents with incentives to, e.g. grants, to install these solutions. This should be a cost neutral program

Perhaps consider working with local colleges in providing courses to enable residents to take sustainable actions to reduce flooding.

.

Is 'once in 100 years' terminology meaningful?
Is there a reason why the Mersey can't flood Stockport Town Centre in the way that the Roch did in Rochdale? Run model that has highest intensity UK winter 2015/16 rainfall on local rivers, and re-calibrate Stockport flood risk areas as necessary.

Would like to see reference to the fact that environmentally sustainable flood management can a long-term source of skilled job creation (search 'One Million Climate Jobs')

Q13. Do you have any comments on the supporting Strategic Environmental Assessment?

No Response

Q14. Do you have any comments on the supporting Habitat Regulations Assessment Stage 1 Screening?

No Response

Q15. In what capacity are you responding to this consultation?

On behalf of an organisation (please state):
Stockport UNISON Environmental Reps

Q16. Please provide the following information about yourself.

Name:

Organisation (if applicable): Stockport UNISON

Telephone No.:

Email Address:

Postal Address:

Post Code:

Q17. What is your gender?

Male

Q18. What is your age?

Prefer not to say

Q19. Do you consider yourself to have a disability or a limiting long-term illness?

Prefer not to say

Stockport Draft Local Flood Risk Management Strategy (LFRMS)

Q1. Please indicate below why you are interested in flooding. Please tick all which apply.

Other (please specify):
Marple Civic Society Trustee - the society has an interest in matters affecting Marple

Q2. To what extent do you agree or disagree with the structure of the LFRMS?

Agree

Q3. To what extent do you agree or disagree that that the information presented in the LFRMS is clear and coherent?

Strongly Agree

Q4. On a scale of 1-5 (1= very unimportant, 5= very important) how important do you think the following objectives for the LFRMS are?

	1 (very unimportant)	2	3	4	5 (very important)	Don't know
To better understand local flood risk and make best use of available information in order to better manage flood risk to people, businesses, property, infrastructure and the natural environment.					X	
To reduce the potential impact and costs of flooding in the Borough.					X	
To ensure resilience of local water bodies and drainage assets.					X	
To ensure appropriate development in areas of flood risk.					X	
To develop a collaborative partnership approach to flood risk management, and cooperate with other Risk Management Authorities (RMAs) and key stakeholders working across catchments.					X	
To assist communities in understanding information on flood risk and supporting themselves.					X	

Q5. Do you think that the measures identified in LFRMS will allow the objectives to be met?

	Yes	No	Don't know

Q5. Do you think that the measures identified in LFRMS will allow the objectives to be met?

	Yes	No	Don't know
To better understand local flood risk and make best use of available information in order to better manage flood risk to people, businesses, property, infrastructure and the natural environment.	X		
To reduce the potential impact and costs of flooding in the Borough.	X		
To ensure resilience of local water bodies and drainage assets.	X		
To ensure appropriate development in areas of flood risk.	X		
To develop a collaborative partnership approach to flood risk management, and cooperate with other Risk Management Authorities (RMAs) and key stakeholders working across catchments.	X		
To assist communities in understanding information on flood risk and supporting themselves.	X		

Q6. Can you suggest any additional measures to support the objective to better understand local flood risk and make best use of available information in order to better manage flood risk to people, businesses, property, infrastructure and the natural environment?

Improved consultation with local groups and stakeholders. Two weeks consultation period for the draft strategy is not sufficient. The presentation to Marple Area Committee was cursory - no presentation, explanaton or discussion. This is not satisfactory for a document of such importance to our community and it does not do justice to the amount of work that has clearly gone into preparing the document.

Q7. Can you suggest any additional measures to support the objective to reduce the potential impact and costs of flooding in the Borough?

See above

Q8. Can you suggest any additional measures to support the objective to ensure resilience of local water bodies and drainage assets?

See above

Q9. Can you suggest any additional measures to support the objective to ensure appropriate development in areas of flood risk?

A robust planning policy on development in flood risk areas in a Neighbourhood Plan for Marple would help.

Q10. Can you suggest any additional measures to support the objective to develop a collaborative partnership approach to flood risk management, and cooperate with other Risk Management Authorities (RMAs) and key stakeholders working across catchments?

See above

Q11. Can you suggest any additional measures to support the objective to assist communities in understanding information on flood risk and supporting themselves?

Improve the consultation process.
It is suggested that personal contact with an officer is desirable as part of the consultation to enable communities to engage in a meaningful way.

Q12. Do you have any other comments on the LFMRS?

No

Q13. Do you have any comments on the supporting Strategic Environmental Assessment?

No

Q14. Do you have any comments on the supporting Habitat Regulations Assessment Stage 1 Screening?

No

Q15. In what capacity are you responding to this consultation?

On behalf of an organisation (please state):
Marple Civic Society

Q16. Please provide the following information about yourself.

Name:

Organisation (if applicable): Marple Civic Society

Telephone No.:

Email Address:

Postal Address:

Post Code:

Q17. What is your gender?

Male

Q18. What is your age?

65+

Q19. Do you consider yourself to have a disability or a limiting long-term illness?

Q19. Do you consider yourself to have a disability or a limiting long-term illness?
No

Stockport Draft Local Flood Risk Management Strategy (LFRMS)

Q1. Please indicate below why you are interested in flooding. Please tick all which apply.

It has/could affect your travel

It has/could affect the wider environment

Q2. To what extent do you agree or disagree with the structure of the LFRMS?

Strongly Agree

Q3. To what extent do you agree or disagree that that the information presented in the LFRMS is clear and coherent?

Strongly Agree

Q4. On a scale of 1-5 (1= very unimportant, 5= very important) how important do you think the following objectives for the LFRMS are?

	1 (very unimportant)	2	3	4	5 (very important)	Don't know
To better understand local flood risk and make best use of available information in order to better manage flood risk to people, businesses, property, infrastructure and the natural environment.				X		
To reduce the potential impact and costs of flooding in the Borough.				X		
To ensure resilience of local water bodies and drainage assets.					X	
To ensure appropriate development in areas of flood risk.				X		
To develop a collaborative partnership approach to flood risk management, and cooperate with other Risk Management Authorities (RMAs) and key stakeholders working across catchments.					X	
To assist communities in understanding information on flood risk and supporting themselves.				X		

Q5. Do you think that the measures identified in LFRMS will allow the objectives to be met?

Q5. Do you think that the measures identified in LFRMS will allow the objectives to be met?

	Yes	No	Don't know
To better understand local flood risk and make best use of available information in order to better manage flood risk to people, businesses, property, infrastructure and the natural environment.	X		
To reduce the potential impact and costs of flooding in the Borough.	X		
To ensure resilience of local water bodies and drainage assets.	X		
To ensure appropriate development in areas of flood risk.	X		
To develop a collaborative partnership approach to flood risk management, and cooperate with other Risk Management Authorities (RMAs) and key stakeholders working across catchments.	X		
To assist communities in understanding information on flood risk and supporting themselves.	X		

Q6. Can you suggest any additional measures to support the objective to better understand local flood risk and make best use of available information in order to better manage flood risk to people, businesses, property, infrastructure and the natural environment?

No Response

Q7. Can you suggest any additional measures to support the objective to reduce the potential impact and costs of flooding in the Borough?

No Response

Q8. Can you suggest any additional measures to support the objective to ensure resilience of local water bodies and drainage assets?

No Response

Q9. Can you suggest any additional measures to support the objective to ensure appropriate development in areas of flood risk?

No Response

Q10. Can you suggest any additional measures to support the objective to develop a collaborative partnership approach to flood risk management, and cooperate with other Risk Management Authorities (RMAs) and key stakeholders working across catchments?

No Response

Q11. Can you suggest any additional measures to support the objective to assist communities in understanding information on flood risk and supporting themselves?

Q11. Can you suggest any additional measures to support the objective to assist communities in understanding information on flood risk and supporting themselves?

No Response

Q12. Do you have any other comments on the LFMRS?

No Response

Q13. Do you have any comments on the supporting Strategic Environmental Assessment?

No Response

Q14. Do you have any comments on the supporting Habitat Regulations Assessment Stage 1 Screening?

No Response

Q15. In what capacity are you responding to this consultation?

No Response

Q16. Please provide the following information about yourself.

No Response

Q17. What is your gender?

No Response

Q18. What is your age?

No Response

Q19. Do you consider yourself to have a disability or a limiting long-term illness?

No Response

Stockport Draft Local Flood Risk Management Strategy (LFRMS)

Q1. Please indicate below why you are interested in flooding. Please tick all which apply.

Other (please specify):
Statutory consultee (Natural England)

Q2. To what extent do you agree or disagree with the structure of the LFRMS?

Agree

Q3. To what extent do you agree or disagree that that the information presented in the LFRMS is clear and coherent?

Agree

Q4. On a scale of 1-5 (1= very unimportant, 5= very important) how important do you think the following objectives for the LFRMS are?

No Response

Q5. Do you think that the measures identified in LFRMS will allow the objectives to be met?

No Response

Q6. Can you suggest any additional measures to support the objective to better understand local flood risk and make best use of available information in order to better manage flood risk to people, businesses, property, infrastructure and the natural environment?

No Response

Q7. Can you suggest any additional measures to support the objective to reduce the potential impact and costs of flooding in the Borough?

No Response

Q8. Can you suggest any additional measures to support the objective to ensure resilience of local water bodies and drainage assets?

No Response

Q9. Can you suggest any additional measures to support the objective to ensure appropriate development in areas of flood risk?

No Response

Q10. Can you suggest any additional measures to support the objective to develop a collaborative partnership approach to flood risk management, and cooperate with other Risk Management Authorities (RMAs) and key stakeholders working across catchments?

No Response

Q11. Can you suggest any additional measures to support the objective to assist communities in understanding information on flood risk and supporting themselves?

No Response

Q12. Do you have any other comments on the LFMRS?

No Response

Q13. Do you have any comments on the supporting Strategic Environmental Assessment?

No Response

Q14. Do you have any comments on the supporting Habitat Regulations Assessment Stage 1 Screening?

No Response

Q15. In what capacity are you responding to this consultation?

No Response

Q16. Please provide the following information about yourself.

No Response

Q17. What is your gender?

No Response

Q18. What is your age?

No Response

Q19. Do you consider yourself to have a disability or a limiting long-term illness?

No Response