Local Flood Risk Management Strategy for Oldham

A Living Document

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Oldham Council

Revision Schedule

Local Flood Risk Management Strategy for Oldham

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Glossary

Groundwater flooding	This occurs when levels of water in the ground rise above the surface. It is most likely to happen in areas where the ground contains aquifers. These are permeable rocks that water can soak into or pass through easily.
Local flood risk	Refers to flood risk from surface runoff, groundwater, sewer flooding (attributable to rainwater) and ordinary watercourses. This includes lakes, ponds or other areas of water which flow into an ordinary watercourse.
Main River	These are usually larger streams and rivers, but also include smaller watercourses of strategic drainage importance. The EA have primary responsibility for managing flood risk from these watercourses.
Ordinary watercourse flooding	This occurs when a watercourse cannot cope with the water draining into it from surrounding land. This includes lakes, ponds or other areas of water which flow into an ordinary watercourse.
Sewer flooding	This occurs when sewers are overwhelmed by heavy rainfall or when they become blocked. The chance of flooding depends on the capacity of the local sewer system and amount of rain that falls.
Surface water flooding	This occurs when rainwater does not drain away through the normal drainage system or soak into the ground, but lies on or flows over the ground surface instead.

1. Introduction

1.1. Background

1.1.1 As Lead Local Flood Authority, Oldham Council is required under the Flood and Water Management Act (FWMA), which came into effect in stages beginning August 2010, to develop, maintain, apply and monitor a Local Flood Risk Management Strategy (LFRMS).

1.1.2 The strategy is an important new tool to help understand and manage flood risk within the Borough. It principally aims to tackle 'local flood risk', which includes flooding from surface water, groundwater, ordinary watercourses, canals and reservoirs. This type of flooding is responsible for most of the households flooded in England, but until now there has been no duty on the Council or the Environment Agency (EA) to address these forms of risk in an organised way. The strategy aims to address this gap in knowledge and direct and manage the way forward.

1.1.3 Oldham Council as Lead Local Flood Authority (LLFA) has developed this strategy to highlight the steps that are to be taken to ensure this happens. Key to the success of this strategy are better co-operation between organisations involved in flood risk management and better communication with the public about those risks and what can be done both publically and privately to address them.

1.1.4 This strategy will be further developed over time and appropriate capital and operational policies confirmed. It should be reviewed at 6 yearly intervals with the next review in 2020 or at other intervals as circumstances dictate.

1.2. Consistency between Local Strategies and the National Strategy

1.2.1 The FWMA states that Local Strategies must be consistent with the National Strategy. The six guiding principles of the national strategy are reproduced in précis below.

- Community focus and partnership working
  Risk management authorities need to engage with communities to help them understand the risks, and encourage them to have direct involvement in decision-making and risk management actions. Working in partnership to develop and implement local strategies will enable better sharing of information and expertise, and the identification of efficiencies in managing risk.
- A catchment and coastal "cell" based approach
  In developing local strategies LLFAs should ensure that neighbouring LLFAs within catchments are involved in partnerships and decision making. Catchment Flood Management Plans (CFMPs) should be used to help set strategic priorities for local strategies.
- Sustainability
  LLFAs should aim to support communities by managing risks in ways that take account of all impacts of flooding and the whole-life costs of investment in risk management. Where possible, opportunities should be taken to enhance the environment and work with natural processes and be adaptable to climate change. Government guidance has been developed to set out the link between sustainable development and risk management to support the implementation of the strategy.

- Proportionate, risk-based approaches
  It is not technically, economically or environmentally feasible to prevent all flooding. A risk-based management approach targets resources to those areas where they have greatest effect. The assessment of risk should identify where the highest risks are and therefore the priorities for taking action.
- Multiple benefits
  In developing and implementing local strategies, LLFAs should help deliver broader benefits by working with natural processes where possible and seeking to provide environmental benefit as required by the Habitats, Birds and Water Framework Directive (WFD). Measures such as the use of Sustainable Drainage Systems (SuDS) to manage risk should be considered as they can also deliver benefits for amenity, recreation, pollution reduction and water quality.
- Beneficiaries should be encouraged to invest in local risk management
  In developing local strategies, LLFAs should consider opportunities to seek alternative sources of funding rather than relying on Government funds. This will enable more risk management activity to take place overall.

1.3. Guiding Principles

1.3.1 The following are the guiding principles on which flood risk management in Oldham will be based. It can be seen that there is a high degree of consistency between these and those in the national document as required by the Act:

1. Flooding is a natural process that will occur despite all efforts to prevent it. It is therefore important to focus both on reducing the risk and increasing community resilience to the residual risks. Risk reduction will be achieved by a combination of storing and directing water to safe areas and provision of appropriate defences. Resilience will be achieved by a number of means including sustainable land use, community awareness, timely warnings and appropriate emergency response.

2. Decisions on how, where and when local resources are deployed and focused should be evidence-based, made against clear criteria at catchment level and take full account of the local ecology, heritage and conservation. Community involvement has an increasingly important role to help make best use scarce resources.

3. Development of strong partnership arrangements and good communications with residents and relevant public agencies is essential for the success of long-term comprehensive flood risk management.

4. Improving the level of knowledge about flood risk across all stakeholders is a vital process which needs to be improved. Households and businesses should be informed about and encouraged to adopt methods of protecting their own assets, contribute to partnership schemes and have access to real time information when warnings are issued.

5. It is important that existing infrastructure is managed in a way that minimises flood risk. This includes rivers, streams, canals, reservoirs, the railway, highway and sewer networks and upland water bearing areas.

6. New development should be managed to prevent increase in flood risk and wherever possible to reduce it by sustainable means. This should be in accordance with Policy 19 of the Oldham Local Development Framework which deals with

Water and Flooding and sets out the guidelines for achieving these aims. The strategy should ensure that the objectives of that policy are implemented correctly.

7. Key to iterative development of the strategy over time is data. The Council should review and improve its data systems so that vital feedback about the effectiveness of adopted policies is retained and used. Data sharing with partner organisations and stakeholders should be a continuous process.

2. Legislative Context

2.1. History of Flood Risk Management

2.1.1 Responsibility for flood risk management has changed considerably over the past 50 years. Prior to 1989, the regulation of flood risk management, drainage and water quality was carried out by ten Regional Water Authorities (RWAs). After 1989 the National Rivers Authority (NRA) was set up, which was a national body that took over the roles and responsibilities of all the individual RWAs. Since 1996 the EA took over the responsibilities of the NRA.

2.1.2 Within England and Wales, recent flood risk management policy changes were accelerated by major flood events in 1998 and 2000, which led to the release of Planning Policy Guidance 25 (PPG25): Development and Flood Risk in 2001. PPG25 aimed to strengthen development planning with regard to flood risk and was succeeded by Planning Policy Statement 25 (PPS25) in 2006. Since 2012 this guidance has formed part of the National Planning Policy Framework (NPPF).

2.1.3 A comprehensive list of guidance documents is provided in Section 9.

2.2. Recent Drivers and Legislation

The Pitt Review (2008)

2.2.1 Sir Michael Pitt carried out an independent review of national flood risk management practices after the widespread and catastrophic floods during the summer of 2007, in which over 50,000 households were affected and damages exceeded £4billion. The Pitt Review was published in June 2008 and called for urgent and fundamental changes to the way flood risk was being managed. The report contained 92 recommendations for the Government, local authorities, Local Resilience Forums and other stakeholders which were based around the concept of local authorities playing a major role in the management of local flood risk, through co-operation with all relevant authorities.

The Flood Risk Regulations (2009)

2.2.2 The Flood Risk Regulations came into force in December 2009 and transpose the EU Floods Directive into law for England and Wales. The Flood Risk Regulations require three main pieces of work for areas identified at being at significant risk of flooding.

1. Preliminary Flood Risk Assessment (PFRA) - This involves collecting information on past and future floods from local sources, assembling the information into a PFRA report and identifying Flood Risk Areas.

2. Flood Hazard and Flood Risk Maps – Following the identification of significant Flood Risk Areas, the Environment Agency is required to produce hazard and risk maps by 22nd December 2013.

3. Flood Risk Management Plans - The final stage is to produce a Flood Risk Management Plan by 22nd December 2015.

2.2.3 The PFRA for Oldham has already been completed and submitted to the EA. The PFRA concluded that the EA's Greater Manchester indicative Flood Risk Area is representative of significant risk in Oldham and Oldham Council identifies this as their Flood Risk Area without any alteration. By having a Flood Risk Area covering Oldham items 2 and 3 above are required to be completed according to the stated timetable.

The Flood and Water Management Act (2010)

2.2.4 The FWMA gained royal assent on the 8th April 2010 and provides legislation for the management of risks associated with flooding. Many of the recommendations contained in the Pitt Review have been enacted through the Act which defines various bodies which are 'risk management authorities'. Those relevant to Oldham being as follows:

- a Lead Local Flood Authority
- the Environment Agency
- a water company
- a highway authority

2.2.5 It is pertinent that the Canal & River Trust (C&RT) is not a risk management authority under the act although the ownership and maintenance role played by the Rochdale and Huddersfield Narrow Canals could have significance in relation to local risk.

2.2.6 These roles are discussed further in Section 4.

National Planning Policy Framework (2012)

2.2.7 The NPPF is a relatively new document developed by the Department for Communities and Local Government (CLG). It is designed to streamline planning policy by substantially reducing the amount of planning guidance and bringing it all together in one coherent document. Each Local Planning Authority is required to draw up its Local Plan bearing the NPPF in mind but employing locally relevant policies.

3. Flood Risk Within Oldham

3.1. Physical Characteristics

3.1.1 Oldham has a total area of approximately 142km^2, with a total resident population of 224,900 (2011 Census). The most densely populated towns are Oldham, Failsworth/ Hollinwood, Chadderton, Royton/Shaw/Crompton and Saddleworth. In addition to being heavily urbanised in places parts of the borough are characterised by steep catchment slopes and narrow river valleys, which means that large volumes of floodwater travel quickly through the confined river system causing flash flooding.

3.1.2 During the summer and autumn months flooding is less frequent as numerous reservoirs in the upper river catchments store water. However, following a wet autumn, when the reservoir capacity is full, the watercourses are under more pressure in the following winter months and the catchment becomes much more susceptible to flooding. The main rivers in the area include the Rivers Beal, Irk, Medlock and Tame. Some reaches of the tributaries of these rivers have also been assigned main river status as listed in Appendix A.

3.1.3 Fourteen reservoirs with capacity exceeding 25,000m^3 are located within the Oldham Borough, the majority of these being the responsibility of United Utilities and C&RT. Reservoirs that are classed as high priority require on-site plans by the owner and off-site plans by the Emergency Planning Section of the Council. For security reasons the location of sites where specific plans are required are not published and therefore not included in the published Oldham Council Multi-Agency Flood Response Plan or the Emergency Management Plan. There are also a number of smaller reservoirs and ponds which are largely in private or Council ownership.

3.1.4 There are relatively few reported incidents of groundwater flooding in the borough. The EA water resources team were consulted for the production of the SFRA and stated that *'the risk posed by groundwater flooding is likely to remain remote within the sub-region; however, the impacts of increased development in Greater Manchester must be carefully assessed.'*

3.1.5 There are two canals within the borough, the Rochdale Canal and the Huddersfield Narrow Canal. The Rochdale Canal passes through the west of the Council Area in Chadderton, before joining the Bridgewater Canal in Central Manchester. The Huddersfield Narrow Canal passes through Saddleworth along the Tame valley to the Ashton Canal at Ashton-under-Lyne.

3.2. Types of Flood Risk

General

3.2.1 The combination of heavily urbanised areas and steep rural terrain in Oldham means that at times of widespread heavy rainfall areas of the borough can be at significant flood risk from both fluvial and surface water sources. Fluvial flooding is less of a problem in the borough due to the incised nature of the river valleys and limited floodplain in the upper reaches of the Rivers Beal, Irk, Medlock and Tame.

3.2.2 The SFRA identified the following surface water Critical Drainage Areas within the borough:

- Chadderton / Wince Brook
- Hollinwood / Moston Brook
- East Oldham / Wood Brook and Upper Tame
- Shaw / River Beal

3.2.3 The main sources of flood risk within the Borough are described below.

River Flooding

3.2.4 Rivers are categorised into Main Rivers, which are usually large watercourses, and ordinary watercourses.

3.2.5 Flooding from Main Rivers is referred to as fluvial flooding, this occurs when the river cannot accommodate the volume of water that is flowing into it. In Oldham this type of flooding has affected the same areas on a number of occasions and is therefore predictable. The EA may use its powers to carry out flood defence works primarily on Main Rivers.

3.2.6 Although such flooding is outside the scope of this strategy, high Main River water levels can restrict the flow from connecting storm sewers and local watercourses causing them to back up and overflow. It is therefore important that Oldham works with the EA to gain a good understanding of this flooding mechanism.

Ordinary Watercourses

3.2.7 Watercourses which are not classified as main rivers such as land drains, ditches and streams are classified as ordinary watercourses. Within Oldham those that drain to the Tame are typically steep and fast flowing and are a source of local flood risk. In other parts of the Borough gradients are less and watercourses are more likely to be culverted. However they are still possible sources of flood risk

3.2.8 Where the capacity of culverts and streams is exceeded or entrances blocked fast surface flows can occur. As many culverts form road rail and canal crossings, excess flows are often carried down the transport networks giving rise to potentially hazardous situations. This problem can be mitigated by regular maintenance.

Surface Water Flooding

3.2.9 Flooding from other water bodies, along with run-off from over land areas is classified as surface water or pluvial flooding. It is the LLFA's responsibility to manage the risks from this type of flooding.

3.2.10 Often referred to as flash flooding, this occurs when run-off flows over land and ponds in low lying areas. It is usually associated with high intensity rainfall events (typically greater than 30mm/hr) and can be exacerbated when the ground is saturated or when the drainage network has insufficient capacity to cope with the additional flow. There have been a number of surface water flood events in living memory; the most recent being in summer 2012 when significant flood damage occurred in urban areas across borough.

3.2.11 Due to the topography and urban nature of Oldham, large amounts of surface water runs off directly from impermeable surfaces and surrounding rural land and fields. Surface water run-off from the land can also be influenced by the management practices used in the uplands and by farmers.

3.2.12 If drainage systems have not been designed to carry these flows or are not well maintained, the flooding of highways and surrounding properties will be more severe as a result. Many smaller surface water flooding incidents are caused by blocked ditches or road gullies, producing localised flooding. This is often made worse in the autumn, when leaf fall is high, causing culverts and road gullies to block.

Sewer Flooding

3.2.13 Sewer flooding is the responsibility of the Water and Sewerage Company unless it is caused by the sewer network being inundated by other types of flooding in which cases the LLFA will investigate in order to determine responsibility. New sewers should be designed not to cause surface flooding in storms up to a 1 in 30 year return period.

3.2.14 Sewer flooding occurs when the sewer network cannot cope with the volume of water that is entering it or when blockages form. Water companies are required to keep a register of properties flooded due to restricted capacity (The DG5 register). The DG5 register (record snap shot in February 2011) includes 35 and 49 properties on the internal and external DG5 register respectively.

3.2.15 The DG5 register only requires recording of property flooding up to storms of 1 in 10 year return period However United Utilities maintain a database of all incidents on the sewer network.

3.2.16 Typical areas of under capacity occur where trunk sewers run at flatter gradients in the valley bottom and may be prone to siltation. These effects can be exacerbated in times of high flow when Combined Sewer Overflows which are designed to discharge excess flows to river are impeded by high fluvial flows.

Highway Flooding

3.2.17 Highway flooding is often caused by other forms of flooding but can also be the result of the highway gullies or their associated pipework becoming blocked or collapsed. Highway flooding is often at its worst in autumn when deciduous trees lose their leaves.

Groundwater Flooding

3.2.18 This occurs when water levels in the ground rise above the ground surface. Flooding of this type tends to occur after long periods of sustained heavy rainfall and can last for weeks or even months. This type of flooding is not a major issue in Oldham.

Wet Spots

3.2.19 A specific problem, which Oldham experiences, is the phenomenon of wet spots. These are minor discharges of water onto the highway from a range of sources which, during freezing conditions, form icy patches. These are a significant drain on resources during the winter maintenance season requiring extensive salting or attendance by maintenance gangs to re-direct flows.

Reservoir Flooding

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

3.3 Climate Change

3.3.1 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 county needs to be prepared for the risks arising from unexpected flash flooding.

3.3.2 Based on the UK climate projections 2009 (funded by DEFRA) medium emissions scenario and central estimate for 2020 to 2080, the West of England can expect wetter winters with a winter mean precipitation percentage change ranging from +6% to +16% and drier summers with a summer mean precipitation percentage changing ranging from -8% to -22%. The projections also show an increase in the sea level. The weather is likely to become more variable and there could be more frequent extreme events, such as flash flooding, storms and coastal erosion. Although these projections are not a definite forecast, there is still potential to change the projections for the 2050 and 2080 period through climate change mitigation.

3.3.3 With the significant changes in our weather patterns and our climate it is now essential to adapt our behaviour and plan for severe weather events and the likely implications, such as flooding to build resilience, reduce the potential damage and cost.

4. Risk Management Authorities

4.1. Introduction

4.1.1. The Flood and Water Management Act identified certain organisations as 'Risk Management Authorities' which have responsibilities associated with flooding. The Risk Management Authorities in Oldham are:

- Oldham Council
- The Environment Agency
- United Utilities
- The Highways England
- The Canal & River Trust – The C&RT is not a Risk Management Authority in the legislation but should be consulted in relation to local flood risk management.

4.1.2. The powers responsibilities of the different authorities are set out in the following sections.

4.2. Oldham Council

Introduction

4.2.1 Oldham Council has a range of different roles that are important for flood risk management. These include:

- Lead Local Flood Authority
- SuDS Approval Body (SAB)
- Emergency Planning
- Planning Authority
- Highways Authority
- Consenting Authority

Lead Local Flood Authority

4.2.2 The Flood and Water Management Act 2010 identified Oldham Council as the LLFA for the Borough. This gave the council a strategic role in overseeing the management of local flood risk i.e. flood risk from ordinary watercourses (such as streams and ditches), surface water runoff and groundwater. Other key roles are outlined below.

- The Flood Risk Regulations (2009) - require all Lead Local Authorities to produce a Preliminary Flood Risk Assessment (PFRA) as discussed in Section 3. The PFRA identifies any Indicative Flood Risk Areas in the borough. The Flood Risk Regulations also require that Flood Risk and Flood Hazard Maps are produced by the EA for any Indicative Flood Risk Areas which are to be published in December 2013. Oldham has completed its PFRA and does contain a Flood Risk Area as defined for this purpose.
- Investigating Flood Incidents - requires the collection of precise and useful records to assemble an accurate picture of flood events to enable the LLFA to assign responsibilities and examine whether Risk Management Authorities (RMA) exercised their functions in response to the flood. Their reports should preferably be published and relevant RMAs notified within 3 months of the flood event.

- Asset Register - Flood Risk Assets are structures or features which are considered to have an effect on flood risk and should be recorded within an asset register (available for inspection by the public at all reasonable times). This process will take a number of years to become complete. The Asset Register is a potential means to reduce confusion over ownership when problems occur and facilitate rapid response.
- Land Drainage Act (1991) – this Act remains unaltered by the new legislation with the exception of 2 sections which have been repealed. All the remaining provisions constitute permissive powers assigned to the LLFA. There are no statutory duties.

SuDS Approval Body

4.2.3 SuDS are mechanisms to ensure that development does not add to flood risk. SuDS detain peak surface water run-off for later discharge and/or deliver it back to the sub-strata. They are also an opportunity to ensure that water quality and amenity are considered with the same importance as managing volumes of water. SuDS may also be applied to other forms of drainage (e.g. Highway Drainage) and can be retrofitted to any surface water installation if conditions are appropriate.

4.2.4 The Department for Environment, Food and Rural Affairs (Defra) has said that LLFA`s will be given the role of SAB in April 2014 as Schedule 3 of the FWMA is commenced. Provided any ministerial order does not amend the provisions of the Act at commencement the SAB must:

- Approve all construction work which has drainage implications
- Adopt all SuDS schemes which connect more than one property
- Ensure that all adopted SuDS schemes are properly maintained

4.2.5 Defra has published guidance on both National Standards for SuDS and the approval process although the industry in general is not yet satisfied (February 2013) that these go far enough to ensure consistent standards across the country.

Emergency Planning

4.2.6 The Emergency Planning Team is responsible for ensuring Oldham Council is prepared and ready to provide support to the Emergency Services during an emergency incident, and lead in assisting the community in the recovery and return to normality after an incident. They do this by preparing, maintaining and updating the Council's Emergency and Business Continuity Plans.

4.2.7 Local Authorities have the following duties under the Civil Contingencies Act to:

- carry out **risk assessments** of all threats to local resilience;
- adopt **preventative measures** that will reduce, control or mitigate those threats;
- prepare **contingency plans** in order to mitigate the effects of any incident;
- **co-ordinate** multi-agency planning for reservoir inundation within Oldham;
- **respond** to any emergency incidents (or assist in that response);
- warn and inform the public during emergency incidents;
- prepare "**business continuity**" plans that will ensure our continuing ability to respond to incidents and continue to provide out services;
- **share information** with other local responders to enhance co-ordination;
- **co-operate** with all local responders to **enhance co-ordination** and efficiency; and
- provide advice and assistance to businesses and voluntary organisations about business continuity management.

4.2.8 Specific roles Oldham Emergency Planning carries out during a flood event are:

- Monitor and dissemination weather and flood warnings to relevant services for action
- Co-ordinate the council's response to the incident
- Liaise with various partner organisations in order to provide an effective response
- Warn and Inform the public
- Ensure the welfare of those affected is considered i.e. rest centres and transportation

Planning Authority

4.2.9 It is vital that local planning decisions consider risk from all forms of flooding. This is achieved by consultation with the Environment Agency, Water Companies and the Lead Local Flood Authority. The overall aim of this, linking in with a key aim of the national strategy, is to ensure that inappropriate development is avoided in areas where there is flood risk from local sources and that where possible flood risk is reduced as a result of development.

Highways Authority

4.2.10 As a Highway Authority, Oldham has the duty to drain the highway, but not in all flood conditions. The normal design standard in the UK has been for a 1 in 1 year storm event only. Newly designed systems would be expected to perform to higher standards.

4.2.11 In the event of a flood emergency the Council will arrange transport to assist Emergency Planning with evacuations and helping uninjured survivors at the scene of a major incident to travel home or to a place of safety. This is not a specific duty, under the Civil Contingencies Act the Council is only required to have regard for the potential situations. There are guidance documents that support the Act which include guidance on welfare provision such as rest centre and transport.

Consenting Authority

4.2.12 The LLFA is the consenting body for works adjacent to and within ordinary watercourses.

4.3 The Environment Agency

4.3.1 The EA is an executive, non-departmental public body responsible to the Secretary of State for Environment Food and Rural Affairs. Its principal aims are to protect and improve the environment, and to promote sustainable development. The EA take lead responsibility for risk-based management of flooding from Main Rivers and the sea and regulation of the safety of reservoirs with a storage capacity greater than 25,000m^3 (reducing to 10,000m^3 if the relevant parts of the FWMA are commenced).

4.3.2 The EA has both a strategic overview of flooding of all kinds and local operational roles when it comes to management of flooding from main rivers and reservoirs and is the consenting body for works within 8 metres of main rivers.

Main Rivers

4.3.3 Main Rivers are watercourses shown on the statutory Main River map held by the EA and Defra. Those in Oldham are as shown and listed in Appendix A. The EA has an annual programme of channel and asset maintenance to alleviate flooding problems from Main Rivers. It can also bring forward flood defence and improvement schemes through the Regional Flood and Coastal Committees, and it will work with LLFAs and local communities to shape schemes which respond to local priorities. Funding (partial) for this work is provided on qualification by Defra.

Reservoirs

4.3.4 The EA is responsible under the 1975 Reservoirs Act as an Enforcement Authority in England and Wales for reservoirs that are greater than 10,000m^3. The EA must ensure flood plans are produced for specified reservoirs. However responsibility for carrying out work to manage reservoir safety lies with the reservoir owner/operator who should produce the flood plans. The EA is also responsible for establishing and maintaining a register of reservoirs, and making this information available to the public.

Emergency Planning

4.3.5 The EA contributes to the development of multi-agency flood plans, which are developed by Local Resilience Forums (LRFs) to help the organisations involved in responding to a flood to work better together. It also contributes to the National Flood Emergency Framework for England which includes guidance on developing and assessing these plans. It works with the Met Office to provide forecasts and flood warnings of flooding in England.

Planning Process

4.3.6 The EA is a statutory consultee for providing advice to planning authorities in development and flood risk; providing fluvial and coastal flood warnings; monitoring flood and coastal erosion risks and supporting emergency responders when floods occur.

Consenting Authority

4.3.7 The EA is the consenting body for works adjacent to and within Main Rivers.

4.4 United Utilities

4.4.1 The principal responsibilities of Untied Utilities in relation to flood risk management are to:

- respond to flooding incidents involving their assets;
- maintain 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, as agreed with OFWAT;
- provide, maintain and operate systems of public sewers and works for the purpose of effectually draining an area;
- co-operate with other relevant authorities in the exercise of their flood and coastal erosion risk management functions; and
- Act consistently with the national strategy and have regard to local flood and coastal erosion risk management strategies.

4.5 The Highways England

4.5.1 Info The Highways England is responsible for the two motorways that cross the Borough, the M60 and M62, as well as one trunk road the A664. None of these routes is known to be particularly susceptible to flooding.

4.6 The Canal & River Trust

4.6.1 Responsibilities of the C&RT relate to its function as a navigation authority. It is not funded for flood risk management except in the context of maintaining the canals and ensuring their feeder streams, by-passes and discharge weirs are fit for purpose. It is responsible for both the Rochdale and Huddersfield Canals where they pass through Oldham.

4.7 Riparian Owners

4.7.1 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 be liable due to neglect of 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.

4.7.2 These steps include:

- Check whether their household is at risk from flooding from the river, coast or local flood sources.
- Ensure that preparations have been made in the event of a flood.
- Take measures to ensure that their house is protected from flooding, either through permanent measures such as sealants in the wall or temporary measures such as flood doors.
- Take measures to make sure the house is resilient to flooding so that if it does occur it does not cause too much damage.

4.7.3 Riparian owners have specific responsibilities with regard to flood lows across their land and maintenance and upkeep of adjacent watercourses. These roles are set out in the document Living on the Edge which is included in Appendix C.

5. Local Flood Risk Management

5.1. Introduction

5.1.1 A key aim of the LFRMS is to establish a programme of actions that can be taken forward that is consistent with the objectives and guiding principles of the national strategy. Flood risk management actions included in the Strategy fall into two categories:

- General actions across Oldham to improve the quality of information and understanding of and response to flood risk issues by all partners and stakeholders.
- Actions to address and where possible reduce specific flood risk issues in Oldham.

5.2. Improve Understanding of Local Flood Risk

Improve Understanding of Flood Risk

5.2.1 One of the key findings of the Pitt Report into the causes of the 2007 floods was that there was insufficient understanding about the nature of surface water flooding in most parts of the country. This is true for Oldham and building up this understanding is a key priority for the Council.

5.2.2 It is only through better understanding of local flood risks and causes that feasible measures can be identified to reduce the risk of flooding in locally significant areas. A Surface Water Management Plan has been completed for Greater Manchester which encompasses the area of Oldham, and has identified those areas most at risk. This is a high level document prepared for the Association of Greater Manchester Authorities (AGMA). It is the role of local strategies such as this document to take these findings forward and outline proposals for increasing knowledge of flood risk within Oldham Borough.

5.2.3 In some parts of Oldham, particularly the Tame Valley it can be difficult to separate surface water and fluvial risks, especially in the valley bottom. Consequently a partnership approach with the EA and other risk management authorities and stakeholders is essential to achieve a full understanding of risks in such areas

5.2.4 During 2013 therefore a number of important modelling initiatives are being completed which will improve the detailed knowledge of flood risk within Oldham. These cover three important types of risk as follows.

- Surface Water Flood Maps (EA) - The next generation of surface water flood maps for significant risk areas in England are required to be published by the EA toward the end of 2013. However the EA has commissioned the necessary modelling for the whole country and is inviting all LLFAs to provide local input. This will be a long process and expensive as the most important addition information required is the performance of ordinary watercourse culverts and major highway drainage systems which are not well catered for in the national scale model. Without local input the maps can only provide a general indication of areas at flood risk from surface water but they are aiming to be a

significant improvement on the previous mapping. They should be a valuable tool for focussing on areas that are most likely to be at risk.

- River Tame Model – A study is being undertaken to consider the justification and appropriate solutions for reducing flood risk in Mossley, Stalybridge and Diggle. The study will give proper consideration to other measures, as an alternative to raising existing expenses. These include flood resilience, flood proofing, flood warning and promoting self help to reduce the consequences rather than probability of flooding.

5.2.5 Using computer models and the other measures described will enable the Council to increase its understanding of flood risk and current issues and be in a better position to implement improvement works, routine maintenance and response mechanisms.

Raise Community Awareness

5.2.6 It is important to be able to communicate effectively and engage with local communities and members of the public in order to set realistic expectations and achievable outcomes of local flood risk management.

5.2.7 The overarching objective should be to increase knowledge and understanding of flooding and flood risk and inform residents how they can contribute to the effective management of it and to become more proactive in defence of their property and within their community. This is one of the objectives of both the local strategy and national strategies.

5.3. Actions

Capital Works

5.3.1 These will be developed in future iterations of the strategy as funding becomes available.

Revenue Activities

5.3.2 Develop proposals for continued and improved revenue activities by all risk management authorities to be managed and developed, within budget constraints, to support the tactical objectives and statutory duties of the Council and its partners in their various flood risk management roles.

Use of Planning Policy to Address Flood Risk

5.3.3 It is recognised that the Local Plan, as guided by the National Planning Policy Framework, must have serious regard to flood risk and appropriate local policies must be adopted. Development Control too must be mindful of the risks and continue to work with the LLFA and the EA to consider all types of flooding throughout the planning process.

5.3.4 The overall aim of this is to ensure that inappropriate development is avoided in areas where there is significant flood risk from local sources, that development is sustainable and avoids utilising formal and informal washland areas whenever possible.

Community Involvement

5.3.5 There are a number of different ways this can be achieved including public consultation events, newsletters and online resources such as council websites and social media. Setting up local flood groups and recruiting Flood Wardens are other useful actions.

6. Objectives for Managing Local Flood Risk

6.1. Objectives

6.1.1 The objectives of the strategy are as follows:

1. Ensure that the Council has adequate resource to discharge its duties under the FWMA (2010).

2. Build and maintain partnerships with Risk Management Authorities and stakeholders.

3. Communicating risk, warning and preparedness to all stakeholders and encourage self help.

4. Review, update and text existing warning systems and Emergency Management Plan.

5. Improve understanding of flood risk, flooding mechanisms and flow paths to inform development of solutions using all available 'tools'.

6. Establish guidelines for determining scheme priorities.

7. Aim to improve the long term performance of flood risk management assets within budgetary constraints.

8. Manage surface water flows.

9. Review planning controls, SUDS enforcement, and designation of washlands.

10. Improve resilience of key utility infrastructure to flood risk.

11. Encourage upland catchment management.

12. Carry out appropriate Environmental Assessment for flood risk management.

13. Carry out regular reviews of this strategy as prompted by circumstance or at no less than 6 yearly intervals.

7. Proposals for Improving Flood Risk Management

7.1. Proposals

Objective	Action
1. Ensure that the Council has adequate resources to discharge its duties under the Flood and Water Management Act 2010	1.1 Relevant staff participate in appropriate training/re-training sessions, workshops and seminars to expand the retained skill base 1.2 Progress of FRM legislation and regulation will be closely monitored to enable establishment to be matched to workload 1.3 Undertake succession planning to avoid skills gaps in future years
2. Build and maintain partnerships with Risk Management Authorities and stakeholders	2.1 Build relationships with partners and encourage sharing of data to improve knowledge and understanding of flood risk 2.2 Communicate information on flood risk in simple non-technical terms that can be clearly understood by both partners and stake holders
3. Communicating risk, warning and preparedness to all stakeholders and encourage self-help	3.1 Flood warning measures will continue to be reviewed to improve coverage of key areas at risk 3.2 Review plans for communicating information before, during and after events, and maximise liaison with RMA`s and emergency services 3.3 Encourage and assist private owners to be prepared for flood events and promote measures for property level protection
4. Review, update and test existing warning systems and Emergency Incident Management Plans	4.1 Ensure that the current flood response plans and other multi-agency plans continue to be reviewed and updated to reflect legislative changes
5. Improve understanding of flood risk, flooding mechanisms and flow paths	5.1 Update and expand the Asset Register to include all potential flood defence assets 5.2 Investigate the possible of integrated models of surface water sewer and watercourse flooding at risk locations in the Tame Valley 5.3 Determine appropriate responses to the risks

6. Establish guidelines for determining scheme priorities	6.1 Call on available data from existing plans and reports (e.g. Section 19, SWMPs) to establish guidelines for targeting investigations and investment to areas of greatest need 6.2 Investigate partnership funding to enable schemes to be included the EA Medium Term Plan for priority schemes/problems 6.3 Complete applications for entry to the EA Medium Term Plan for all known schemes/problems
7. Aim to improve the long term performance of flood risk management assets within budgetary constraints.	7.1 Develop regular maintenance programmes of critical assets to reflect the council's FRM priorities 7.2 Encourage other Risk Management Authorities, partners and riparian owners of non-critical assets to carry out appropriate maintenance
8. Manage surface water flows	8.1Investigate methods of channelling surface water flows to designated low risk runoff routes to reduce flooding 8.2 Work with land and asset owners to derive maximum detention and storage opportunities within the catchment
9. Review planning controls, SUDS enforcement, and designation of washlands	9.1 Continue to Work with the strategic planning section to update Local Plan and policies to support Flood Risk Management 9.2 Work with Development Control Section to ensure policies are implemented to their full effect 9.3 Establish a SUDS Approval Body and aim to maximise use of sustainable drainage on all developments
10. Encourage owners to improve resilience of key utility infrastructure to flood risk	10.1 Encourage United Utilities to develop schemes to prevent sewer flooding wherever network deficiency is identified. 10.2 Encourage utility owners to promote flood resilience at their key assets at flood risk
11. Encourage Upland Catchment Management	11.1 Work with Natural England and other partners to develop a land management strategy that will potentially reduce upland runoff 11.2 Develop initiatives with significant private landowners to implement upland runoff reduction measures

12. Carry out Environmental Assessment appropriate for the flood risk management strategy	12.1 Liaise with the EA, local environmentalists and other interested partner organisations to ensure that the document is succinct, practical and fit for purpose
13. Document Reviews	13.1 Review and maintain the LFRM Strategy at 6 yearly intervals after an initial review in summer 2014

8. Funding

8.1. General

8.1.1 Funding for Lead Local Flood Authorities to meet their new responsibilities has been allocated through Area Based Grants or local services support grants. The money is not ring fenced so individual authorities must decide how much of this grant to spend, subject to limits on overall budgets and the need for investment on other priorities. The amount of money allocated to individual authorities varies based on the overall risk within the relevant area.

8.2. Payment for Outcomes and FDGia

8.2.1 The Pitt Review recommended that 'Government should develop a scheme that allows and encourages local communities to invest in flood risk management measures'. DEFRA has been consulting on the future of funding for flood risk management from November 2010. The consultation document recognised that although the current system is efficient and delivers good value for money for the taxpayer, it also limits local input and responsibility and leaves many schemes with a long wait to secure funding. Under the new system, all schemes would be offered a fixed subsidy based on the benefits delivered when the outcomes are achieved; hence the term 'Payment for Outcomes'.

8.2.2 This new approach applies to all capital maintenance and defence projects seeking funding. The scheme aims to encourage communities to take more responsibility for the flood risk that they face and aims to deliver more benefit by encouraging total investment to increase beyond the levels that DEFRA alone can afford. This approach will see funding levels for each scheme (provided by DEFRA through Flood Defence Grant in Aid) relating directly to benefits, in terms of the number of households protected, the damages being prevented plus other scheme benefits such as environmental benefits, amenity improvement, agricultural productivity and benefits to business. In addition to these elements, payment rates for protecting households in deprived areas will be higher so that schemes in these areas are likely to receive more funding.

8.2.3 The underlying principles and objectives behind the new national funding system include:

- Encourage an increase in total investment in flood risk management by operating authorities, beyond levels provided by central Government alone, as recommended in the Pitt Review.
- Enable more local choice within the system and encourage innovative and cost-effective options to be promoted.
- Rather than some projects being fully funded and others not at all, now some funding will be available to all potential projects.
- Funds from central government should prioritise protecting those most at risk and least able to help themselves.
- All flood and coastal erosion projects should be treated equally based on the benefits delivered and damages avoided, regardless of the type of risk management authority involved.

- The general taxpayer should not pay to protect new development in areas at risk of flooding, now or in the future.
- Greater local input and decision making should not come at the expense of creating a stable pipeline or projects.
- All investment should be made within a nationally consistent framework to take account of policies and findings within CFMPs and SMPs.
- Maintain the widespread take-up of flood insurance by helping to keep insurance affordable through risks being managed properly.

8.2.4 The result of this new approach is that the majority of schemes will receive a proportion of the costs only. There is therefore a strong emphasis on the need for external contributions and the Council will continue to establish partnership working with key stakeholders including:

- DEFRA and the Environment Agency
- United Utilities
- European Union funding streams
- Private sector developers

9. Environmental Objectives

9.1. General

9.1.1 The FWMA states that the local strategy must specify how it will contribute to the achievement of wider environmental objectives and sustainable development. The Environmental Regulations (2009) also require that to achieve this, a Strategic Environmental Assessment (SEA) has been undertaken and is attached as Appendix D.

9.1.2 Environmental objectives that the local strategy will contribute to through the effective management of local risk flood are described below:

9.1.3 The WFD targets which are relevant to this local flood risk management strategy include but are not limited to:

- ensure no deterioration of surface water and groundwater and the protection of all water bodies;
- achieve 'good' ecological status by 2015 for surface water and groundwater;
- reduce pollution and hazardous substances in surface water and groundwater;
- reverse any upwards trends of pollutants in groundwater; and
- achieve standards and objectives set for protected areas.

9.2. Sustainable Development

9.2.1 All flood risk management authorities must aim to make a contribution towards the achievement of sustainable development. Sustainable development can be defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

9.2.2 Encouraging source control measures (such as SuDS) can be a key element in reduction of flood risk. However it can also help improve water quality through reducing runoff and diffuse pollution entering watercourses and drainage systems. This will also help to meet WFD targets for water quality as well.

9.2.3 Sustainable development can be achieved by considering a range of alternative ways to reduce risk. This can include focusing on increasing the awareness and preparedness of communities and businesses, improving emergency warning and response procedures, as well as employing effective development control to reduce the likelihood of new developments increasing risk, for example with the use of Sustainable Drainage Systems.

9.2.4 Consideration should be taken into how flood and coastal erosion risks can be managed in a manner which not only solves these issues, but also provides multiple benefits. An example of this would be if the developer provided a retention pond in a SuDS system which not only worked as a component of the system but also served as an amenity and an ecological habitat.

9.2.5 The following are other measures that can help sustainable development.

- Increasing awareness and preparedness of communities and businesses, as well as improving emergency warning and response procedures.
- Use of Planning and development control to reduce impact of new developments on risk.
- Considering how flood and coastal erosion risks can be managed in a manner which provides multiple benefits.
- Open appraisal of positive and negative impacts of management options, particularly when publicly funded.
- Recognition of role that sustainable development plays in all scale of projects, including local areas.
- Integrated working between Flood Risk Authorities and local communities.

9.2.6 When considering management options, decision processes should be transparent and make clear the route which was taken to reach the decision, particularly when publicly funded. It any trade-offs are made between forms of sustainable development then this should be clear and properly explained.

9.2.7 Recognition needs to be made of the role that sustainable development plays on all scales, for example by adapting and establishing the priorities of a project based on leading local issues whilst recognising wider societal objectives. For schemes to be effective it is important that local communities are engaged with Flood Risk Authorities in projects.

9.3. Biodiversity and Habitat Creation

9.3.1 The following are measures that will be encouraged as part of any flood risk reduction proposals. They will also assist with the Council`s duties to take reasonable steps to further the conservation and enhancement of SSSIs; and meet Biodiversity Action Plan (BAP) targets to ensure no loss of habitat through local flood risk management works.

- Enhance biodiversity and habitat creation within any future capital schemes, such as SuDS or flood storage areas. These schemes can also be used within urban areas to provide green spaces for amenity.
- Prioritise solutions to manage flooding from local sources that work with natural processes, encourage biodiversity enhancements and minimise adverse effects to the local environment.
- Incorporate mitigation adaptation to climate change in local flood risk management measures.
- Protect Sites of Special Scientific Interest (SSSIs) within Oldham.

10. Relevant Guidance and Information

- Framework to assist the development of the Local Strategy for Flood Risk Management, 'A Living Document', 2nd Edition, LGA, November 2011.
- National Flood and Coastal Erosion Risk Management Strategy for England, Environment Agency and Defra, July 2011.
- Flood and Water Management Act (FWMA), HMSO, 2010.
- Flood Risk Regulations (FRR), HMSO, 2009.
- Preliminary Flood Risk Assessment (PFRA), Oldham Council, May 2011.
- Oldham Hybrid Strategic Flood Risk Assessment (SFRA) Level 1 and Level 2, JBA Consulting, January 2010.
- Oldham Multi - Agency Flood Response Plan, Oldham Council, 2013.
- Emergency Management Plan Summary, Oldham Council, 2012.
- Building Trust with Others – a guide for staff, Environment Agency.
- Planning Policy Statement 25: Development and Flood Risk (PPS25), DCLG, March 2010.
- National Planning Policy Framework (NPPF), DCLG, March 2012.
- National Planning Policy Framework (NPPF), Technical Guidance, DCLG, March 2012.
- Irwell Catchment Flood Management Plan (CFMP), Environment Agency, 2009.
- Upper Mersey Catchment Flood Management Plan (CFMP), Environment Agency, 2009.
- North West River Basin Management Plan (RBMP), Environment Agency, 2009.
- Adapting to Climate Change: Advice for Flood and Coastal Erosion Risk Management Authorities, Environment Agency, August 2011.
- Guidance for risk management authorities on sustainable development in relation to their flood and coastal erosion risk management functions, Defra, October 2011.
- Oldham Local Plan, Joint Core Strategy, Oldham Council, November 2011.
- Greater Manchester Surface Water Management Plan (SWMP), Association of Greater Manchester Authorities, January 2012.

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11. Appendices

APPENDIX A - Main Rivers in Oldham

- River Beal (including Pencil Brook, Old Brook, Brook Street and Brushes Clough) rises in Higginshaw and runs in a northerly direction through open fields criss-crossing the Oldham - Rochdale railway as it meanders in the direction of Newtown and Shaw. Once past Shaw and whilst maintaining its northerly course, the river runs through a relatively open and wooded area towards the Piethorne Brook confluence at Milnrow in Rochdale, taking in Old Brook (upstream of the A663 Milnrow Road Bridge in Shaw) on the way.
- River Irk (including Long Clough, Plumpton Brook, Springs Brook and Wince Brook) rises near Shaw. It passes through Haggate and Chadderton Fold before flowing through Middleton (Rochdale Council) and then southwards towards Manchester city centre, where it joins the River Irwell.
- River Medlock (including Lords Brook, Wood Brook, Taunton Brook and Thornton Brook) rises in the hills to the east of the borough. It flows through the steep-sided wooded gorge that separates Lees from Ashton-under-Lyne and the Daisy Nook Country Park.
- River Tame (including Diggle Brook, Hull brook, Pickhill Brook, White Brook, Chew Brook and Clough Lane) rises near Denshaw in the northeast of the borough then flows generally south through Delph and Saddleworth.

Appendix B - Oldham Flood Risk Management Stakeholders

B.1 The following list of organisations and Council sections all have a role to play in ensuring that Flood Risk in the borough is minimised. At minimum documents such as this Strategy will be circulated for comment before finalisation and at maximum certain representatives of the organisations listed will be permanent members of the partnership project boards managing the whole recovery and risk reduction programme.

Oldham

Communications
People Strategy
Health, Safety and Wellbeing
People Relations
Partnerships and Policy
District Partnerships
Stronger Communities
District Working
Environmental Health, Trading Standards and licensing
Conservation
Waste Management
Highways Operations (Maintenance and Works Groups)
First Response
Contact Centre
Development Control and Building Control
Strategic Housing
Strategic Planning and Transportation
Corporate Property
Corporate Asset Management
Highways Operations
Unity Partnership Highways Services– Flood Risk Management and Projects Group (Lead section)
Unity Partnership Property Services
Emergency Planning
Finance
GIS

United Utilities

Development Control
Flood Risk Management

Environment Agency

Development Control
Operational Management
Flood Risk Management

Canal & River Trust

Management of Rochdale and Huddersfield Canals

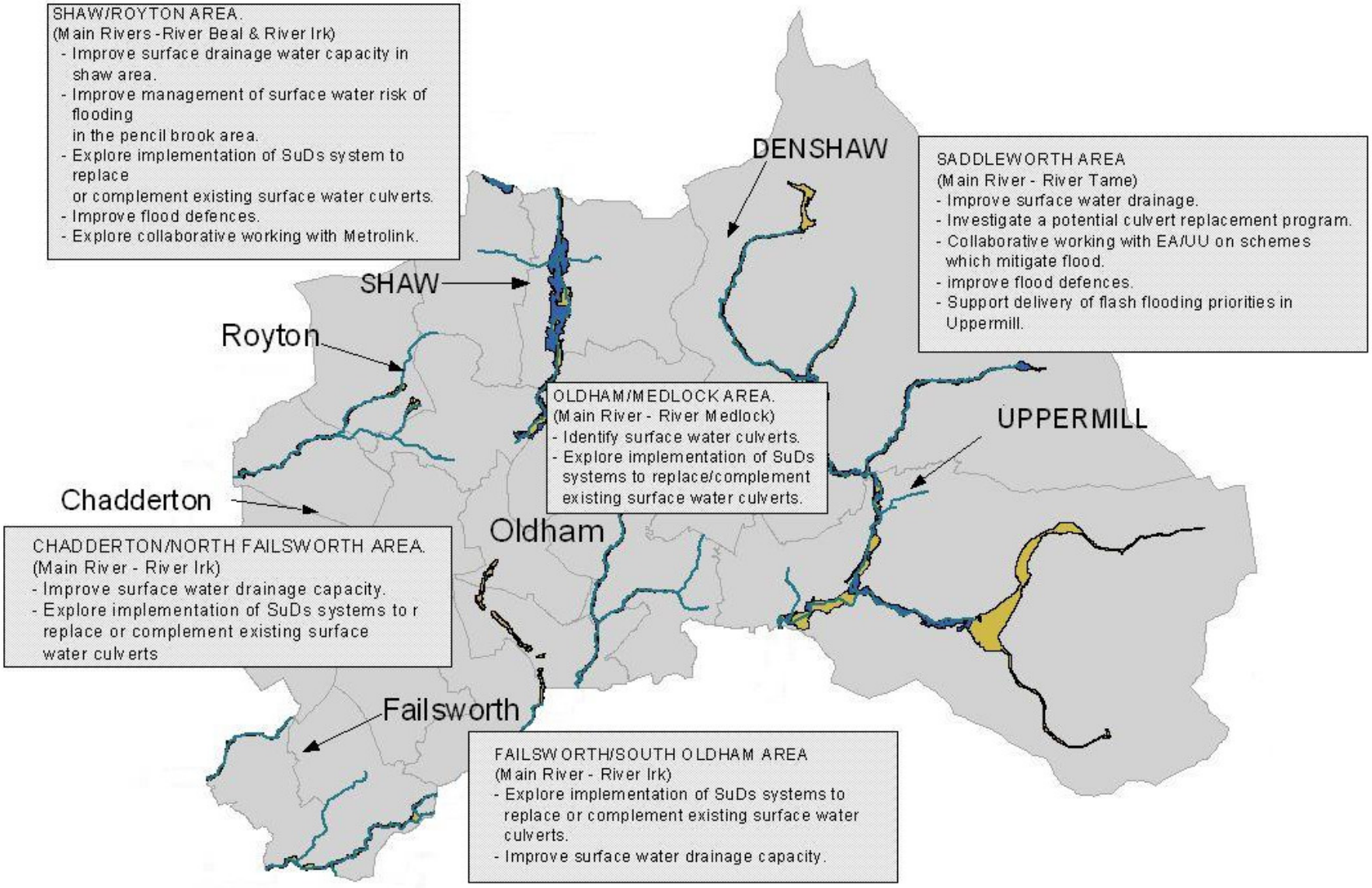
Highways England

M.62 Operations Manager

GM Police

GM Fire and Rescue Service

APPENDIX C – Strategic flood risk management priorities



APPENDIX C – Strategic flood risk management priorities

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Oldham Council

Local Flood Risk Management Strategy for Oldham

Strategic Environmental Assessment
Environmental Report

A living document

Date: March 2015

Revision Schedule

Local Flood Risk Management Strategy for Oldham

Version	Status	Author	Date	Checked by	Date	Approved by	Date
0.1	Draft	R.McEvan H.Roberts N.Kretschmer	05.03.15	N. Venema	06.03.15	N. Venema	06.03.15

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Abbreviations

BAP	Biodiversity Action Plan
BREEAM	Building Research Establishment Environmental Assessment Method
CEEQUAL	Civil Engineering Environmental Quality Assessment & Awards Scheme
DCLG	Department for Communities and Local Government
HRA	Habitat Regulations Assessment
LFRMS	Local Flood Risk Management Strategy
LLFA	Lead Local Flood Authority
LNR	Local Nature Reserve
PPP	Plans, Programmes and Policies
SAC	Special Area of Conservation
SEA	Strategic Environmental Assessment
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

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SUDS	Sustainable Urban Drainage Systems

Executive Summary

Under the requirements of the Flood and Water Management Act (2010) Oldham Council is defined as a Lead Local Flood Authority and they are required to *'develop, maintain, apply and monitor a strategy for local flood risk management in its area'*. In Oldham this has been named the Local Flood Risk Management Strategy.

This document details the Strategic Environmental Assessment (SEA) that has been undertaken in support of the development of the LFRMS. An SEA is an environmental appraisal of the predicted impacts of the LFRMS against environmental objectives that have been identified following consideration of the environmental issues affecting Oldham.

Environmental issues were presented within the SEA Scoping Report that was issued for consultation in March 2014. The Environmental issues were used to develop 11 SEA objectives that the strategic outcomes of the LFRMS were appraised against to test the potential environmental effects of implementation.

In considering the 13 strategic outcomes of the LFRMS, when compared to the 11 objectives of the SEA, it has been concluded that the Oldham Local Flood Risk Management Strategy will either lead to positive impacts upon environmental assets and interests within Oldham or will have neutral impacts. The SEA process has not identified any negative impacts upon the environment upon implementation of the Oldham Local Flood Risk Management Strategy.

Internal assessment of the objectives of the SEA and internal assessment of the strategic outcomes of the LFRMS has also been undertaken to assess whether they are compatible. This has identified that the internal outcomes of the LFRMS could have some unclear outcomes and therefore enhancement measures have been suggested within this Environmental Report to provide opportunities for environmental improvements and additional protection of resources.

Oldham Council

1 Introduction

1.1 Background

In December 2013 Oldham Council commissioned Mouchel to undertake a Strategic Environmental Assessment (SEA) of the emerging Local Flood Risk Management Strategy (LFRMS).

The SEA process is concerned with identifying possible effects that plans, programmes and strategies may have on the existing environment, and therefore increase the consideration of environmental issues in the decision making process.

One of the requirements of the SEA process is to prepare an Environmental Report. This document is the Environmental Report and details the SEA of the LFRMS. It sets out the framework for undertaking the SEA of LFRMS together with the scope of the assessment, evidence base and review of relevant plans, programmes and policies to inform the assessment. It includes a discussion of the likely significant effects of the implementation of the LFRMS and recommendations are made in relation to ways in which likely adverse effects on the environment can be reduced or beneficial effects can be enhanced. The report includes proposals for relevant environmental indicators to monitor the effects of the implementation of the LFRMS.

The findings of the SEA are being made available to stakeholders, including statutory consultees, local authorities, and the public, in order to help all those with an interest in flood risk management within Oldham to understand the effects of the proposed LFRMS. This report should be read alongside the LFRMS document.

1.2 Strategic Environmental Assessment

SEA is a statutory assessment process that incorporates environmental considerations into policies, plans and programmes. It ensures that significant environmental effects arising from policies, plans and programmes are identified, assessed, mitigated, communicated to decision-makers, monitored and that opportunities for public involvement are provided.

In the European Union an SEA is required for all member states on all plans and programmes by European Community Directive (2001/42/EC) '*on the assessment of the effects of certain plans and programmes on the environment', known as the 'SEA Directive*'. The Directive is implemented in

England through the Environmental Assessment of Plans and Programmes Regulations (Statutory Instrument 1633 2004).

Guidance released to assist the development of Local Flood Management Strategiesi outlines that '*the Local Flood Risk Management Strategy is likely to require statutory SEA, but this requirement is something the Local Lead Flood Authority must consider'.* Oldham as the Local lead Flood Authority LLFA) considers that its emerging LFRMS requires an SEA to be undertaken.

SEA is an iterative process and will ensure environmental considerations are integrated into the development of the LFRMS at the earliest opportunity, and that the strategy has, as far is as is practicable, met environmental concerns.

1.2.1 Compliance with the SEA Directive

This Environmental Report has been prepared in accordance with the SEA Directive;

[i] Local Government Association (2011). Framework to Assist the Development of the Local Strategy for Flood Risk Management.

Table 1.1 shows where the requirements of Directive have been addressed in this report.

1.2.2

Table 1.1 - SEA requirements and where they have been addressed in this report

Requirements / Where covered in Guide	(Section / Appendix / End notes)
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 for this purpose is referred to in Article 5 and Annex I of the SEA Directive.	This is the Environmental Report
a) An outline of the contents, main objectives of the plan or programme, and relationship with other relevant plans and programmes.	Sections 2.3 and 4.2
b) The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme.	Sections 4.3 and 4.4, Appendix 2
c) The environmental characteristics of areas likely to be significantly affected.	Sections 4.3 and 4.4, Appendix 2
d) Any existing environmental problems which are relevant to the plan programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC.	Sections 4.3 and 4.4, Appendix 2
e) The environmental protection objectives, established at international, Community or national level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation.	Section 4.2
f) The likely significant effects on the environment, including 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. (Footnote: These effects should include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects).	Section 5.6
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.	Section 8
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.	Section 4.6
i) A description of measures envisaged concerning monitoring in accordance with Article 10.	Section 7
The report shall include the information that may reasonably be required taking into account current knowledge and methods of assessment, the	Included in this report.

Requirements / Where covered in Guide	(Section / Appendix / End notes)
contents and level of detail in the plan or programme, its stage in the decision-making process and the extent to which certain matters are more appropriately assessed at different levels in that process to avoid duplication of the assessment (Article 5.2).	
Consultation: Authorities with environmental responsibility, when deciding on the scope and level of detail of the information to be included in the environmental report (Article 5.4).	An account of consultation undertaken in the scoping phase is provided in Appendix 1.
Authorities with environmental responsibility and the public shall be given an early and effective opportunity within appropriate time frames to express their opinion on the draft plan or programme and the accompanying environmental report before the adoption of the plan or programme (Article 6.1, 6.2).	The schedule for consultation is outlined in Table 3.1.
Other EU Member States, where the implementation of the plan or programme is likely to have significant effects on the environment of that country (Article 7).	N/A
Taking the environmental report and the results of the consultations into account in decision-making (Article 8).	Pending
Provision of information on the decision: When the plan or programme is adopted, the public and any countries consulted shall be informed and the following made available to those so informed: • The plan or programme as adopted; • A statement summarising how environmental considerations have been integrated into the plan or programme and how the environmental report pursuant to Article 5, the opinions expressed pursuant to Article 6 and the results of consultations entered into pursuant to Article 7 have been taken into account in accordance with Article 8, and the reasons for choosing the plan or programme as adopted, in the light of the other reasonable alternatives dealt with; and • The measures decided concerning monitoring (Articles 9 and 10).	Pending
Monitoring of the significant environmental effects of the plan's or programme's implementation (Article 10).	Proposals for monitoring are outlined in section 7.
Quality assurance: environmental reports should be of a sufficient standard to meet the requirements of the SEA Directive (Article 12).	Complete.

Oldham Council

1.3 Habitats Regulations Assessment

A Habitats Regulations Assessment (HRA) is undertaken during the development of a programme or plan that is likely to have an adverse effect on any designated Natura 2000 sites. Natura 2000 sites are designated by the EC Directive on the Conservation of Wild Birds 79/409/EEC 1979 (Special Protection Areas (SPAs) and the EC Directive on the Conservation of Natural Habitats of Wild Fauna and Flora 92/43/EEC 1992 (Special Areas of Conservation (SACs)).

If an internationally protected site within or near to Oldham is likely to be significantly affected by the LFRMS, an 'appropriate assessment' under the Conservation (Habitat, & c.) Regulations 1994 (as amended 1997, 2000) will be undertaken. This will determine whether the significant effects in the screening are likely to be 'adverse and whether mitigation is required. In order to comply with Article 6(3) of the Habitats Directive it is a requirement to ensure the LFRMS will not have any adverse effects on Natura 2000 sites in order for the plan to be adopted.

1.4 Structure of this Report

The Environmental Report sets out the findings of the assessment of the effects of implementing the LFRMS. The structure of this report follows guidance set out in 'A Practical Guide to the Strategic Environmental Assessment Directive (ODPM, 2005)' and comprises of the following sections:

Chapter 1 – this chapter describes the background to emergence of the LFRMS, the legislative requirement to undertake the SEA and how this report fulfils those requirements.

Chapter 2 – describes the study area, background to the strategy and its aims and objectives.

Chapter 3 – details the approach that has been used for SEA and the steps taken and tasks involved.

Chapter 4 – develops the strategic environmental framework that is used to evaluate the environmental effects of the LFRMS.

Chapter 5 – provides details on the compatibility of the LFRMS objectives against the SEA objectives, the internal compatibility of both sets of objectives. It then goes on to compare the LFRMS measures with SEA

objectives to identify the potential environmental effects of their implementation.

Chapter 6 – sets out the conclusions from the SEA process.

Chapter 7 – provides suggested monitoring to assess the implementation of the plan.

Additional to the main report, there are three appendices that provide additional information, these are:

Appendix 1 – consultation comments received following submission of the Scoping Report and how these have been addressed in this report.

Appendix 2 – updated scoping report.

Appendix 3 – internal compatibility of the SEA and LFRMS objectives matrices.

Appendix 4 – SEA matrices.

2 Oldham Council's Local Flood Risk Management Strategy

2.1 The Study Area

The study area is defined by the administrative boundary of Oldham Borough Council. It is situated in northern England, to the north east of Greater Manchester, covering an area of approximately 55 square miles. The borough contains a residential population of approximately 225,200, with approximately 90,000 households. The population is projected to increase to approximately 237,000 by 2021 due to aging population.

Neighbouring boroughs include Manchester and Rochdale in Greater Manchester and Kirklees and Calderdale in Yorkshire. The borough is one of significant contrast; the urban area of Oldham and its environs lie to the west and Pennine moorland to the east, part of which falls within the Peak Park. Oldham is the main town centre in the borough and together with the centres of Chadderton, Failsworth, Hill Stores, Lees, Royton, Shaw and Uppermill act as focal points for commercial, retail, social, civic, community and cultural activities. Other prominent areas are Saddleworth, Crompton, Medlock Vale and Hollinwood. These are also the main centres of population in the borough. Figure 2-1 shows the Oldham district.

Strategic road, rail, canal and other infrastructure links (such as natural gas and electricity networks) traverse the borough, including the A62, A627(M), A663, A671, A669, A635 and easy access to the M60 and M62. Metrolink, connected to the borough in 2013, will improve accessibility to surrounding areas

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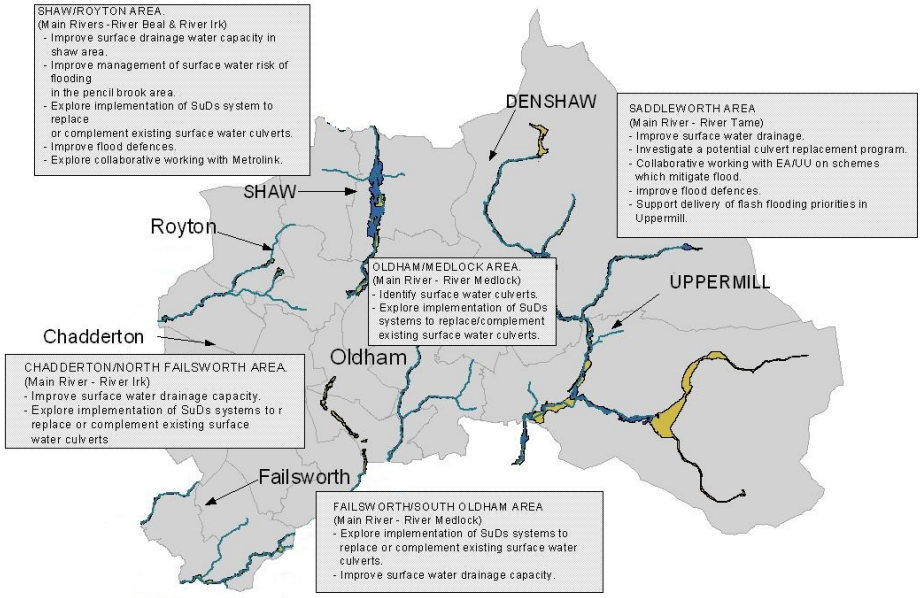
Figure 2-1 - Oldham District



Source: Local Flood Risk Management Strategy for Oldham, Local Flood Risk Management Strategy Report – A Living Document, 2013.

2.2 Background to the Strategy

In the summer of 2007, severe flooding in England, particularly in Yorkshire, Worcestershire, Gloucestershire and Oxfordshire prompted the Government to commission a review of flood risk management in England and Wales. The report published by Sir Michael Pitt 'Learning Lessons from the 2007 Floods' in June 2008 had its recommendations accepted in full by the Government, and this led to a new Act of Parliament, the Flood and Water Management Act (2010).

Under the requirements of the Flood and Water Management Act (2010) paragraph 7 (1), Oldham Council's position as LLFA means that they must 'develop, maintain, apply and monitor a strategy for local flood risk management in its area'. The strategy should be consistent with the National Flood and Coastal Erosion Risk Management Strategy but should respond to local needs and circumstances. The Act defines 'local flood risk' as that arising from:

- Surface run off;
- Groundwater; and
- 'Ordinary watercourses' including risks from a lake, pond or other area of

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water which flows into an ordinary watercourse.

In response to its responsibilities under the Act, Oldham Council is in the process of producing a LFRMS to provide strategic direction and proactively manage flood risk in the borough. It will be reviewed at 6 yearly intervals with the next review in 2020 or at other intervals as circumstances dictate.

2.3 Aims and Objectives of the Strategy

The LFRMS is an important new tool to help understand and manage flood risk within the borough. It principally aims to tackle 'local flood risk', which includes flooding from surface water, groundwater and ordinary watercourses, lakes, ponds, canals and reservoirs.

As a requirement of the flood and coastal erosion risk management appraisal process, Oldham Council is responsible for outlining a number of specific objectives for managing local flood risk. The 13 objectives outlined in the Oldham LFRMS are listed below:

- Ensure that the Council has adequate resource to discharge its duties under the FWMA (2010).
- Build and maintain partnerships with Risk Management Authorities and stakeholders.
- Communicating risk, warning and preparedness to all stakeholders and encourage self-help.
- Review, update and text existing warning systems and Emergency Management Plan.
- Improve understanding of flood risk, flooding mechanisms and flow paths to inform development of solutions using all available 'tools'.
- Establish guidelines for determining scheme priorities.
- Aim to improve the long term performance of flood risk management assets within budgetary constraints.
- Manage surface water flows.
- Review planning controls, SUDS enforcement, and designation of washlands.
- Improve resilience of key utility infrastructure to flood risk.
- Encourage upland catchment management.
- Carry out appropriate Environmental Assessment for flood risk management.

- Carry out regular reviews of this strategy as prompted by circumstance or at no less than 6 yearly intervals.

3 SEA Methodology

3.1 Approach to the SEA

The approach to the SEA stages completed to date (A to C) has been to provide an expert judgement based system of prediction and assessment that is transparent and auditable.

Current best practice guidance has been used to inform the process:

- A Practical Guide to the Strategic Environmental Assessment Directive (Department of Communities and Local Government, previously the Office of the Deputy Prime Minister, 2005).
- This guidance has been used in conjunction with other best practice guidelines that include:
- Sustainability Appraisal and the Historic Environment (English Heritage).
- Catchment Flood Management Plans and the Historic Environment (Environment Agency 2007).
- Strategic Environmental Assessment and Biodiversity: Guidance for Practitioners (Royal Society for the Protection of Birds 2004).

The SEA process is undertaken in five main stages as outlined in Table 3.1, to date Stage A has been completed, the table details the timescales of the work undertaken and future work to be completed.

3.2 Data Limitations

It should be noted that there is a large amount of environmental information available; this assessment has selected information on the basis it may be influential or affected by the LFRMS. Effort has been made to avoid including baseline information or plans or programmes which are of no clear relevance to the LFRMS.

Table 3.1 - Stages in the SEA and Work Undertaken

SEA Stages	SEA Tasks	Timescales and Work Undertaken
Stage A: Setting the context and objectives, establishing the baseline and deciding on the scope.	• **A1:** Identifying other relevant policies, plans and programmes, and SEA objectives.	**An SEA Scoping Report[ii] was prepared and consulted upon during a 5 week period from 24 March 2014. The Environment Agency, English Heritage and Natural England are statutory consultation bodies under the SEA Regulations and must be consulted on the scope and level of detail of information to be included in the Environmental Report.**
	• **A2:** Collecting baseline information	
	• **A3:** Identifying environmental problems.	
	• **A4:** Developing the SEA objectives.	
	• **A5:** Consulting on the scope of the SEA.	
Stage B: Developing and refining options and assessing effects	• **B1:** Testing the plan or programme objectives against the SEA alternatives.	**The LFRMS, including a full set of strategic outcomes (objectives), was appraised.** **Documented consultation responses relating to the Scoping Report were reviewed and addressed. A list of comments received from consultees, along with a description of how each one has been addressed, is provided in Appendix 1.**
	• **B2:** Developing the Strategic options.	
	• **B3:** Predicting the effects of the Draft plan or programme including alternatives.	
	• **B4:** Evaluating the effects of the Draft plan or programme including alternatives.	
	• **B5:** Considering ways of mitigating adverse effects.	

[ii] Strategic Environmental Assessment of the Oldham Local Flood Risk Management Strategy – Scoping Report (Mouchel, 2014)

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SEA Stages	SEA Tasks	Timescales and Work Undertaken
	• **B6:** Proposing measures to monitor the environmental effects of implementing the plan or programme.	
Stage C: Environmental Report	• **C1:** Preparing the Environmental Report.	**This is the Environmental Report**
Stage D: Consulting	• **D1:** Consulting on the draft plan and the Environmental Report.	**The SEA Environmental Report will be made available to the above statutory consultees, as well as being made available to other consultees as appropriate.** **Any responses received on the sustainability effects of the LFRMS and the content of the Environmental Report will be considered in producing the final LFRMS for adoption.**
	• **D2 (i):** Assessing significant changes.	
	• **D2 (ii):** Appraising significant changes resulting from representations.	
	• **D3:** Making decisions and providing information.	
Stage E: Monitoring the significant effects of implementing the plan on the environment	• **E1:** Finalising aims and methods for monitoring.	**Once the LFRMS is adopted it is the role of the SEA to ensure that the effects of the LFRMS are monitored. This will allow for any unforeseen significant adverse effects of the Action Plan Measures to be detected.** **The monitoring methods are outlined in Chapter 7.**
	• **E2:** Responding to adverse effects.	

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4 Developing the SEA Framework

4.1 Introduction

The SEA Framework provides a structure to describe, analyse and compare environmental effects of the LFRMS. It has been developed drawing on information collated during the review of relevant plans, programmes and policies (PPPs) (section 4.2), review of baseline information (section 4.3) and identification of key environmental issues (section 4.4). The SEA framework was prepared and consulted upon as part of the Scoping process,

4.2 Relationship with other Plans, Programmes and Policies

As part of the Scoping Stage of the SEA a review was undertaken of relevant plans, policies and programmes (PPPs) in relation to their implications for the LFRMS and this SEA. The Strategy may be influenced in many ways by other plans and programmes and by external sustainability objectives, such as those laid down in policies and legislation.

The task is a requirement of the SEA Directive Annex 1(a) where it states the Environmental Report should contain 'an outline of the (…..) relationship with other relevant pans or programmes'.

A wide range of PPPs have been identified during the Scoping Stage of the SEA, this has been updated further in light of consultation comments received on the Scoping Report. It is recognised that no list of PPPs can be definitive and as a result this report outlines the key documents that directly influence the LFRMS in

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Table 4.1.

A full review of international, national, regional and local PPPs is presented in the Scoping Report.

Table 4.1 - Key Plans, Programmes and Policies

International
EU Floods Directive 2007/60/EC
EU Water Framework Directive 2000/60/EC
EU Directive on the Conservation of Natural Habitats of Wild Fauna and Flora 92/43/EEC (1992). 'Habitats Directive'
EU Directive 2009/147/EC on the Conservation of Wild Birds 79/409/EEC (1979) 'Birds Directive'.
EU Directive 80/68/EEC Groundwater Directive (1979)
EU Directive 91/676/EEC Nitrates Directive (1991)
National
Flood and Water Management Act (2010)
Flood Risk Regulations (2009)
The National Flood and Coastal Erosion Strategy (2011)
National Planning Policy Framework (2012)
Wildlife and Countryside Act (1981) (as amended)
The Environmental Permitting (England and Wales) Regulations (2010)
The Countryside and Rights of Way Act (2000)
Conservation of Habitats and Species Regulations (2010) (as amended) 'Habitats Regulations'
Planning (Listed Buildings and Conservation Areas) Act (1990)
Ancient Monuments and Archaeological Areas Act (1979)
The Town and Country Planning (Local Development) (England) Regulations (2008) (Amended)
UK Climate Change Act (2008)
National Planning Policy Framework (NPPF)
UK Biodiversity Action Plan (1994)
National Flood and Coastal Erosion Risk Management Strategy (2011)
Regional
Irwell Catchment Flood Management Plan – Managing Flood Risk (Environment Agency, 2009)
Upper Mersey Catchment Flood Management Plan – Managing Flood Risk (Environment Agency, 2009)
Greater Manchester Surface Water Management Plan (2012)

Greater Manchester Biodiversity Action Plan (2009)
The Peak District Biodiversity Action Plan (BAP) 2011-2020
Peak District National Park Landscape Strategy and Action Plan 2009 – 2019
Local
Oldham Council Preliminary Flood Risk Assessment (2011)
Oldham Council Hybrid Strategic Flood Risk Assessment (2010) Volume I,II and III
Oldham Local Development Framework, Development Plan Document – Joint Core Strategy and Development Management Policies (adopted 2011)
Oldham Unitary Development Plan (adopted 2006)
Oldham Local Plan 'Options Report' Site Allocations Development Plan Document (2013)
Oldham Council Local Development Framework, Strategic Housing Land Availability Assessment (2012)
Oldham Climate Change Strategy 2013- 2020 Making the Transition
Tameside Unitary Development Plan (adopted 2004)

4.3 Updated Environmental Baseline

Baseline information was collected during 2014 to establish the current state of the study area, to identify trends in economic, environmental and social parameters and to assess current environmental and sustainability issues that are evident in the area.

It is a requirement of the SEA Directive Annex 1(b) (c) which outlines that the Environmental Report should provide information on 'the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme' and 'the environmental characteristics of areas likely to be significantly affected.'

In order to consider how the developing Strategy may affect the environment, it is essential to understand the current environment characteristics of the area and how the environment is likely to change in the future. The baseline information provides a basis for predicting and monitoring the effects of the implementation of the Strategy. It also helps to identify the environmental and sustainability issues and alternative ways of dealing with them.

Updated baseline information was collated during preparation of this Environmental Report and incorporates additional information included as a result of consultation comments made on the Scoping Report. An updated scoping report is provided as Appendix 2.

4.4 Identifying Key Environmental Issues

Environmental issues and problems have been identified from the baseline information to define the key social, environmental and economic issues that need to be taken into account when preparing the LFRMS. In some cases these are constraints which must be overcome, or impacts which must be avoided, in other cases these may be opportunities which should be pursued where possible, or supported indirectly by flood management policies in other instances.

The following Table 4.2 summarises the issues identified through the review of the relevant plans, policies and programmes and considering the baseline data available for Oldham.

Table 4.2 also outlines how each identified issue is likely to develop without the implementation of LFRMS and opportunities for mitigation and enhancement that should be considered in the LFRMS.

Table 4.2 - Key Issues

Key Environmental Issues	Likely Status without Strategic Action	Opportunities for Mitigation/Enhancement
Climate		
• Oldham has the lowest CO_2 emissions of all boroughs in the North West region. The North West region as a whole has an overall decreasing trend in CO_2 emissions since 2005. • Oldham Council as a Lead Authority on climate change for Greater Manchester will assist in reaching not only the borough's targets but that of Greater Manchester Authority as well.	This trend is likely to continue without the Strategy - the LFRMS does not include measures to address the causes of climate change. Instead the Strategy will be concerned with adapting to and mitigating the impacts of climate change. Without the implementation of the LFRMS the impacts of climate change in terms of flood risk could be more severe.	Flood risk management activities should aim to minimise greenhouse gas emissions and enable the wise use of natural resources. Oldham Council's role as lead authority on climate change presents an opportunity to continue lowering carbon emissions.
Biodiversity, Flora and Fauna		
• There are internationally protected Natura 2000 sites within the borough of Oldham; the South Pennine Moors SPA and SAC and Rochdale Canal SAC. • There are five SSSIs, generally classed by Natural England as being 'unfavourable recovering' condition. • Focus on protection of species and habitats included in the Greater Manchester BAP to enhance the unique habitats within Oldham.	Projected higher sea levels, storm surges and more frequent flood events could lead to further loss of habitats and species or temporary harm during flood events.	The LFRMS presents an opportunity to further protect the natural environment within Oldham by increasing the knowledge base on flood risk, particularly at a local level, and integrating communities into the flood management process. Any flood risk management measures should seek to avoid or minimise negative impacts on Natura 2000 sites to ensure their integrity remain intact. Opportunities for the enhancement of nature conservation sites and biodiversity should be encouraged through the LFRMS.

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Key Environmental Issues	Likely Status without Strategic Action	Opportunities for Mitigation/Enhancement
Geology and Soils		
• Lowside Brickworks SSSI is an important geological site within Oldham. • Many types of the soils in Oldham are prone to erosion, it is important to limit any damage that man-made activities may have on the areas to help preserve the environment.	Without the LFRMS flood risk in the county is likely to increase alongside projections. This could lead to more frequent and higher magnitude flood events with associated impacts on soil and agriculture.	The LFRMS will need to consider the potential effects of objectives and actions on the local geology and the risk of soil erosion. Where possible, the LFRMS should seek opportunities to regulate soil erosion, slow down run-off from the moorlands and increase the storage capacity of the soils by raising water table levels.
Water		
• The Irwell and Upper Mersey catchment watercourses achieving a good or better ecological status/potential are fewer than for the north west region as a whole • Flood defence measures have led to physical modification of water bodies which is considered to be a key challenge to the region's water environment. • The North West region is highly dependent on surface water sources like reservoirs, lakes and rivers for drinking water-accounting for around 85% of the total demand.	The requirement would need to be met without the implementation of the LFRMS.	Measures undertaken as a result of the LFRMS should seek to minimise any impacts on water bodies where possible and instead seek to achieve more natural functioning of wetland ecosystems, and to protect fish and their habitats through other means. The LFRMS should ensure that pollution to the water environment is not increased. Where possible the LFRMS should seek opportunities to improve water quality status by reducing pollution to the water environment. Development of catchment management schemes in Oldham has the potential to be a key component of future programmes.
• About 60% of water is abstracted from highly sensitive designated sites; therefore	The requirement would need to be met without the implementation of the LFRMS.	The LFRMS should seek to ensure that flood management measures do not have an adverse

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Key Environmental Issues	Likely Status without Strategic Action	Opportunities for Mitigation/Enhancement
it is a challenge for the region to maintain its water resources for people and environment.		impact on designated sites and thus water supplies in Oldham.
Population and Human Health		
• Oldham has a population density per square kilometre that is far greater than that for the average in England and Wales. The population is predicted to further grow by 12,000 by 2021. • The Oldham health profile identifies that priorities in the borough include reducing smoking, alcohol related harm and increasing physical activity. • Despite significant restructuring, the economy remains over-dependent upon relatively low-skilled and low-wage enterprise. • Encouragement for learning new skills is crucial to reducing unemployment and deprivation across Oldham. Oldham's deprivation levels have decreased since 2004. Oldham is ranked 46th on the IMD scale.	The LFRMS is unlikely to have an effect on this issue as it will not address population growth and development, it would likely continue as predicted.	The LFRMS should consider the requirement for new infrastructure to meet the demands of the growing population. The LFRMS should ensure that new development does not increase flood risk and that new development is designed to adapt to climate change. The LFRMS will need to consider the potential effects of objectives and actions on the local population and how these could impact on their health and wellbeing. Consideration should also be given to other vital economic and social elements such as the impact on the local economy, tourism and transport systems. Measures undertaken as a result of the LFRMS should provide opportunities for local employment and skills development. This could be part of apprentice schemes and longer term training opportunities. Where possible the LFRMS should seek to promote objectives and actions that enhance the socio-economic status of Oldham and improve and enhance its economy.
Material Assets		

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Key Environmental Issues	Likely Status without Strategic Action	Opportunities for Mitigation/Enhancement
• To improve the current cycle network Oldham is seeking to expand the network across the borough, adding on-road measures for cyclists but also promoting mountain biking in the North West. • There are potential impacts around agricultural runoff which can be contaminated with nitrogen and phosphorus, nutrients in manure and synthetic fertilizers. • There has been a shift in focus upon increasing sustainable travel, because the borough has a low car ownership rate. The borough could build on the amount of services available to people to encourage use of public transport as well as cycling and walking. • The Metrolink is an important asset in Oldham promoting travel within and to the borough.	Projected higher sea levels, storm surges and more frequent flood events could lead to increased flood risk to material assets. In the absence of flood risk management achieved through the LFRMS other flood management plans would still apply.	The LFRMS should seek to manage flood risk to the material assets in the borough including the population, transport network and housing. It should also consider access to and use of critical infrastructure. In addition, there may be opportunities for the LFRMS to achieve other objectives, such as improving sustainable transport networks. The LFRMS should consider how it can limit contaminated agricultural run-off. The LFRMS should ensure that measures do not impact on the operation of public transport services during construction or during flood events.
Cultural Heritage		
• There are a number of designated sites rich in heritage but the numbers are low in comparison with other boroughs nationally. It is therefore important to concentrate on protecting these culturally important sites. • Conservation Areas comprise a significant	Projected higher sea levels, storm surges and more frequent flood events could lead to increased flood risk to the historic environment. In the absence of flood risk management achieved through the LFRMS other flood management plans would still apply.	The LFRMS should ensure that flood management activities do not have adverse impacts on the heritage resource of the borough and where possible enhance/ protect it further.

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Key Environmental Issues	Likely Status without Strategic Action	Opportunities for Mitigation/Enhancement
area (256 hectares). As such preserving the character of these areas is important.		
Landscape		
• Three out of four Landscape Character Areas present in Oldham have been classed as diverging away from the original character.	Projected higher sea levels, storm surges and more frequent flood events could lead to increased flood risk to landscapes and green infrastructure. In the absence of flood risk management achieved through the LFRMS other flood management plans would still apply.	The LFRMS should seek opportunities to improve the enjoyment and understanding of the landscape, whilst also conserving landscape qualities / valuable historic and wildlife features.
• The Association of Greater Manchester Authorities (AGMA) and Natural England have endorsed the Greater Manchester Green Infrastructure Framework which helps identify Green Infrastructure (GI) assets, needs and opportunities in the Greater Manchester region.		The LFRMS should seek to, where possible, protect and enhance GI, for example, through the promotion of SUDS solutions for new development or redevelopment projects.

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4.5 SEA Objectives

The SEA objectives seek to address the key environmental issues and opportunities identified as important in Oldham. A total of 11 SEA objectives have been developed and these are listed in Table 4.3. Schedule 2 of the SEA Regulations provides a list of specific environmental topics to be addressed in the SEA. In drawing up the objectives it was ensured that all the relevant environmental topics are covered by the objectives.

Table 4.3 - SEA Objectives

SEA Objectives	SEA Environmental Issue
1. Adapt to and mitigate the impact of climate change, including flood risk.	**Climatic Factors**
2. To ensure that flood management related activities use natural resources more efficiently and sustainably, in particular land, mineral aggregates, water and fuel.	
3. To ensure protection and enhancement of biodiversity at designated and undesignated nature conservation sites.	**Biodiversity, Flora and Fauna**
4. Promote the conservation and wise use of land, and protect soil quality and quantity and soil erosion.	**Geology and Soils**
5. Prevent pollution to the water environment and protect resources and ensure that there is no deterioration in WFD status as a result of flood management measures.	**Water**
6. To safeguard and promote existing public access, navigation and recreational resources and to promote education on the environment.	**Population & Human Health**
7. To reduce the flood risk to population and properties and to contribute to flood risk management within Oldham.	
8. Reduce economic cost of flood damage	**Material Assets**
9. Ensure the potential impact of flooding on existing and future housing, public transport networks and critical infrastructure is minimised.	
10. Protect and enhance the historic environment, heritage assets and their setting (including architectural and archaeological heritage).	**Cultural Heritage**
11. To protect and enhance attractive landscapes in terms of both their visual quality and their character and to promote opportunities for additional green infrastructure.	**Landscape**

The LFRMS objectives were assessed against the SEA objectives to

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determine their compatibility and predicted environmental effects, as reported in Chapter 5 of this report.

4.6 Consideration of Alternatives

Normally, a high level assessment is undertaken to compare possible alternative strategic approaches for Oldham Council to manage flood risk within the borough. However, as there is no other reasonable alternative other than to produce a LFRMS, alternative approaches such as do nothing, maintain existing were not considered.

Therefore, it was concluded that the only realistic option is to take a pro-active approach to flood risk through the implementation of an LFRMS.

5 Assessment of the Oldham LFRMS Objectives

5.1 Introduction

Stage B1 of the ODPM SEA guidance requires the SEA to test the LFRMS objectives against the SEA objectives. This exercise identifies any tensions that exist between the different objectives, and any clear conflicts that should be addressed. It is primarily used to inform development of the LFRMS and, secondarily, to refine the LFRMS objectives.

Internal compatibility testing was also undertaken for both the LFRMS objectives (Section 5.2) and the SEA objectives (Section 5.3).

5.2 Testing the LFRMS Objectives against the SEA Objectives

The LFRMS objectives (section 2.3) have been tested for compatibility against the SEA objectives (Table 4.3) using a standard matrix approach, professional judgement and peer review.

The assessment outcomes were recorded as compatible, incompatible, unrelated or unclear (i.e. a relationship between exists, but there is no direct compatible or incompatible relationship).

Table 5.1 - Compatibility Key

Key	
	Compatible
	Unrelated
	Unclear
	Incompatible

Table 5.2 - LFRMS / SEA Objectives Compatibility Matrix

	SEA 1	SEA 2	SEA 3	SEA 4	SEA 5	SEA 6	SEA 7	SEA 8	SEA 9	SEA 10	SEA 11
LFRMS 1											
LFRMS 2											
LFRMS 3											
LFRMS 4											
LFRMS 5											
LFRMS 6											
LFRMS 7											
LFRMS 8											
LFRMS 9											
LFRMS 10											
LFRMS 11											
LFRMS 12											
LFRMS 13											

None of the LFRMS objectives are fundamentally incompatible with the SEA objectives. In general the objectives of the LFRMS are either compatible (47 / 156) or unrelated (99 / 156) to the objectives of the SEA.

LFRMS objectives 4 and 7 through to 11 have the highest compatibility with the SEA objectives and this reflect their aim to consider communities, future

development and environmental considerations into flood risk management, closely aligning with SEA objectives.

There are a number of uncertainties over LFRMS objective 8's compatibility with six SEA objectives. LFRMS objective 8 seeks to manage surface water flows through channelling, detention and storage opportunities, however without further details

LFRMS objectives 12 and 13 (relating to environmental assessment and strategy reviews) are least compatible being unrelated to any of the SEA objectives.

5.3 Internal Compatibility of LFRMS Objectives

Testing the internal compatibility of the LFRMS objectives has been undertaken on a compatible, neutral or incompatible basis, using the key below in Table 5.3. A compatibility matrix is provided as Table 5.4. The LFRMS objectives have been shown to have predominantly neutral effects, although it is noteworthy that objective 1, to ensure adequate resources, is compatible with all of the other objectives as it will aid compliance and their delivery.

Table 5.3 – LFRMS Internal Compatibility Key

	Compatible
	Neutral
	Incompatible

Table 5.4 - Internal Compatibility Matrix of the LFRMS Objectives

LFRMS Objectives	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												

LFRMS Objectives

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5.4 Internal Compatibility of SEA Objectives

The SEA objectives have been tested in relation to one another to assess their mutual compatibility. The results of this assessment are shown below in Table 5.6, using the colour coding system shown in Table 5.5.

There are limited opportunities for compatible or incompatible relationships between the SEA objectives as they have, by nature, been prepared to address the individual environmental and social issues that were identified in the SEA scoping report. Similarly to the internal compatibility of the LFRMS objectives, the SEA objectives have been shown to have predominantly neutral internal compatibility which demonstrates that they seek to address single environmental issues and therefore will not cross over the environmental disciplines.

The only 'Unclear' relationship that has been identified is that between SEA objectives 5 and 7 where there is the potential for the WFD status of watercourses to be affected through the reduction in flood risk. Whatever measures that are proposed could have either a positive or negative effect on the WFD status of a watercourse and more detailed consideration of this would be necessary prior to works commencing.

Table 5.5 – LFRMS Internal Compatibility Key

	Compatible
	Neutral
	Unclear
	Incompatible

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Table 5.6 – Internal Compatibility Matrix of the SEA Objectives

SEA Objectives	1	2	3	4	5	6	7	8	9	10	11
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
SEA Objectives											

5.5 Testing the LFRMS Objectives against the SEA Objectives

Testing of the objectives of the LFRMS against the SEA objectives has been undertaken using the method and scoring methodology outlined below in Table 5.7.

Table 5.7 - Measure of Impact of LFRMS Objectives on SEA Objectives

++	**Major Positive Impact** – when the LFRMS objectives are very closely allied in their purpose and intended outcome to the SEA objectives and will deliver a clear benefit.
+	**Minor Positive Impact** – when the LFRMS objectives are related to the SEA objectives and are likely to deliver some benefit as a result of their implementation.
–	**Minor Negative Impact** – when the LFRMS objectives will lead to a minor negative impact on the SEA objectives as a result of their implementation.
– –	**Major Negative Impact** – where there is a clear and unambiguously negative relationship between the aims of the LFRMS and the SEA objectives.
0	**'Unrelated'** – the aim of one of the LFRMS objectives does not impact on the aim of the SEA objective. This is neither a positive or negative effect.
?	**'Unclear'** – where there is a relationship identified between the LFRMS objective and the SEA objective, but it cannot be clarified whether this is positive of negative.

It is considered that all of the SEA objectives are of equal weight and that no one is more important than another. Therefore they must be achieved together to secure sustainable development.

The SEA regulations also require that consideration should be given to the short, medium and long term effects, permanent and temporary effects, positive and negative effects and secondary, cumulative and synergistic effects.

Therefore in testing the objectives due consideration has been given to all of these factors, although for the purposes of clarity have only been identified when these factors are present and when short, medium and long term effects are absent.

Table 5.28 below presents a summary of the LFRMS objectives compared with the SEA objectives.

Table 5.8 - LFRMS / SEA Objectives Compatibility Matrix

	SEA 1	SEA 2	SEA 3	SEA 4	SEA 5	SEA 6	SEA 7	SEA 8	SEA 9	SEA 10	SEA 11
LFRMS 1	++	?	0	0	0	0	+	+	+	0	0
LFRMS 2	+	0	0	0	0	0	++	+	+	0	0
LFRMS 3	++	0	0	0	0	0	++	++	+	0	0
LFRMS 4	+	0	0	0	+	0	++	+	+	0	0
LFRMS 5	+	0	0	0	0	0	+	0	0	0	0
LFRMS 6	0	0	0	0	0	0	++	+	+	0	0
LFRMS 7	++	0	0	0	+	0	++	++	++	0	0
LFRMS 8	++	?	?	?	++	?	++	++	++	?	?
LFRMS 9	++	0	0	0	++	0	++	++	+	0	0
LFRMS 10	++	0	0	0	++	0	++	++	++	0	0
LFRMS 11	++	?	?	?	+	0	++	+	++	0	0
LFRMS 12	0	0	0	0	0	0	0	0	0	0	0
LFRMS 13	0	0	0	0	0	0	0	0	0	0	0

5.6 Evaluating the Effects of the Strategy

Overall, none of the LFRMS objectives are deemed to have a negative effect on the SEA objectives. As would be expected for a strategy that aims to reduce flood risk, there are a number of positive effects associated with the adoption of the LFRMS on SEA objectives. These have the potential to

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be cumulative and synergistic in nature. Synergistic positive effects are anticipated upon reducing flood risk through the various measures proposed within the LFRMS with cumulative positive effects associated through encouraging sustainable tourism whilst similarly improving access and enhancing attractive landscapes and heritage assets.

The SEA matrix in Appendix 4 presents the detailed assessment of the objectives, and a summary of each is presented below in 5.9.

Table 5.9 - Analysis of Potential Effects of LFRMS Objectives

LFRMS Objective	Summary
LFRMS Objective 1 Ensure that the Council has adequate resource to discharge its duties under the FWMA (2010)	The LFRMS objectives are either unrelated, minor positive (SEA objectives 7, 8 and 11) or in the case of SEA objective 1, major positive impacts. One SEA objective (objective 2) is unclear. Considering the positive effects, LFRMS objective 1 allows for mitigating and adapting to the impact of climate change by addressing flood risk, contributes to flood risk management, reduces impact of flooding upon housing and other infrastructure and reduces the cost of flood damage.
LFRMS Objective 2 Build and maintain partnerships with Risk Management Authorities and stakeholders	The LFRMS objectives are either unrelated, minor positive (SEA objectives 1, 8 and 9) or in the case of SEA objective 7, major positive impacts. Considering the positive effects, LFRMS objective 2 allows for mitigating the impacts of climate change by building of relationships and making knowledge and information available to relevant parties. Building relationships with partners and sharing of data contributes to flood risk management, reduces impact of flooding upon housing and other infrastructure and reduces the cost of flood damage.
LFRMS Objective 3 Communicating risk, warning and preparedness to all stakeholders and encourage self help	The SEA objectives are either unrelated, minor positive (SEA objective 9) or major positive (SEA objectives 1, 7 and 8). Considering the positive effects, LFRMS objective 3 encourages preparedness for flood events thereby helping to adapt and mitigate the impact of climate change. The encouragement of private measures helps to reduce the flood risk to population and properties and hence is contribute to meeting this objective. The encouragement of measures for individuals to protect their property reduces the economic cost of flood damage.

LFRMS Objective	Summary
LFRMS Objective 4 Review, update and text existing warning systems and Emergency Management Plan	The SEA objectives are either unrelated, minor positive (SEA objectives 1, 5, 8 and 9) or major positive (SEA objective 7). Considering the positive effects, LFRMS objective 4 allows more robust emergency incident planning and more effective reaction to emergencies thereby mitigating the effects of climate change. Maintaining up to date systems helps to reduce flood risk, allows more effective response to flooding and hence reduce its likely economic cost and reduce the potential impact of flooding upon infrastructure.
LFRMS Objective 5 Improve understanding of flood risk, flooding mechanisms and flow paths to inform development of solutions using all available 'tools'	The SEA objectives are either unrelated or minor positive (SEA objectives 1 and 7). Considering the positive effects, LFRMS objective 5 helps to adapt to and mitigate for the change in flood risk as a result of climate change. It also reduces flood risk through a greater understanding.
LFRMS Objective 6 Establish guidelines for determining scheme priorities	The SEA objectives are either unrelated, minor positive (SEA objectives 8 and 9) or major positive (SEA objective 7). Considering the positive effects, LFRMS objective 6 contributes to flood risk management through prioritisation of flood defence schemes. Determining scheme priorities helps to identify target schemes where the cost of flood damage is higher and helps to deliver the greatest benefit in terms of minimising impacts upon infrastructure.
LFRMS Objective 7 Aim to improve the long term performance of flood risk management assets within budgetary constraints	The SEA objectives are either unrelated, minor positive (SEA objective 5) or major positive (SEA objectives 1, 7, 8 and 9). Considering the positive effects, LFRMS objective 7 will mitigate the impact of climate change and reduce flood risk by improving existing flood risk management assets. Improving assets will reduce the impact and economic cost of flooding. Reduced flooding will likely reduce pollution to the water environment.
LFRMS Objective 8 Manage surface water flows	The SEA objectives are either unrelated or major positive (SEA objectives 1, 5, 7, 8 and 9). Six SEA objectives (2, 3, 4, 6, 10 and 11) are unclear. Considering the positive effects, LFRMS objective 8 will help to adapt to and mitigate the impact of climate change, help protect downstream resources through deriving maximum retention of water higher in the catchment area, reduce the flood risk to population and properties and reduce the economic cost of flood damage.

Oldham Council

LFRMS Objective	Summary
LFRMS Objective 9 Review planning controls, SUDS enforcement, and designation of washlands	The SEA objectives are either unrelated, minor positive (SEA objective 9) or major positive (SEA objectives 1, 5, 7 and 8). Considering the positive effects, LFRMS objective 9 will help adapt to impacts of climate change, help to reduce flood risk, protect infrastructure and housing and reduce the economic cost of flooding. Development of Local Plan policies to support Flood Risk Management and the use of SUDS will protect resources and prevent pollution.
LFRMS Objective 10 Improve resilience of key utility infrastructure to flood risk	The SEA objectives are either unrelated, minor positive (SEA objectives 5 and 8) or major positive (SEA objectives 1, 7 and 9). Considering the positive effects, LFRMS objective 10 will encourage utility operators to reduce the risk of flooding and mitigate the impact of climate change. This will contribute to the prevention of pollution to the water environment, contribute to flood risk management, reduce the economic cost of flood damage and further protect critical infrastructure, such as that operated by utility owners.
LFRMS Objective 11 Encourage upland catchment management	The SEA objectives are either unrelated, minor positive (SEA objective 5) or major positive (SEA objectives 1, 7, 8 and 9). Four SEA objectives (2, 3, 4 and 11) are unclear. Considering the positive effects, LFRMS objective 11 will help adapt to and mitigate the impact of climate change as the risk of downstream will be reduced. Pollution to the water environment is likely to be reduced through a reduction in downstream flooding. Flood risk to the population and properties and the economic cost of flood damage is likely to be reduced as a result of upland catchment management (although there may be an, albeit lower, economic cost in the upland areas).
LFRMS Objective 12 Carry out appropriate Environmental Assessment for flood risk management	All SEA objectives are unrelated.
LFRMS Objective 13 Carry out regular reviews of this strategy as prompted by circumstance or at no less than 6 yearly intervals	All SEA objectives are unrelated.

Oldham Council

6 Conclusions

The conclusions of the SEA are generally positive, with none of the objectives in the LFRMS likely to have negative effects, either minor or significant, on any of the SEA objectives. The principle reason for this is because the overriding requirement and purpose of the LFRMS is to reduce the risk of fluvial flooding through more sustainable methods and more efficient working practices. The LFRMS takes a proactive approach to flood risk management and there is consideration to integrate environmental issues and opportunities into the objectives of the LFRMS.

Several of the proposed measures to deliver the LFRMS have the potential for direct and indirect environmental benefits. A number of major positive effects have been identified for SEA objectives 1 (adapt to and mitigate the impact of climate change, including flood risk), 5 (prevent pollution to the water environment and protect resources), 7 (reduce the flood risk to population and properties and to contribute to flood risk management), 9 (reduce economic cost of flood damage) and 10 (ensure the potential impact of flooding on existing and future housing, public transport networks and other critical infrastructure is minimised).

Many of the proposed measures to deliver the LFRMS do not have any direct bearing on the SEA objectives and have therefore been categorised as unrelated. For example proposals for: biodiversity protection and enhancement; the conservation and wise use of land: safeguarding and promoting existing public access and recreational resources: and protecting and enhancing the historic environment and landscapes are not specifically included in the LFRMS objectives. Opportunities to include aspects of these objectives have been identified in Table 4.2 where potential enhancement measures could be incorporated within any development programme.

Mitigation has also been identified for those areas where the relationship between objectives is unclear and therefore possible negative effects could occur without due consideration of the environmental impact.

It is recommended that the LFRMS provides further information on the methods that will be employed to mitigate the potential environmental effects of physical works. An example would be to develop measures incorporating an Environmental Management Plan across physical works schemes, including those that do not qualify for statutory Environmental Impact Assessment.

It is also recommended that although it is important to identify and prioritise areas that are at more severe risk of flooding, it is also important to ensure that as far as is feasibly possible all members of the community are made aware of flood risk and measures to reduce its impacts.

Following adoption of the LFRMS, an SEA Statement is produced which outlines how the SEA process has influenced the development of the Oldham LFRMS, how consultation comments were taken into consideration and how the Strategy will be monitored.

7 Monitoring

The SEA Directive requires 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).

Monitoring allows the actual significant environmental effects of the LFRMS to be tested against those predicted. It also allows for any unforeseen adverse effects to be identified and appropriate remedial action to be taken.

Aims and methods for SEA monitoring will be finalised during preparation of the SEA Statement which will accompany the adopted version of the LFRMS and the Environmental Report including changes resulting from consultations. The finalised monitoring arrangements will be designed to provide information that can be used to highlight specific performance issues and significant effects, and lead to more informed decision-making.

In order to monitor the effects of the LFRMS it is necessary to have indicators that can be assessed throughout the duration of the LFRMS. Table 7.1 sets out the indicators that have been agreed throughout the Council. It is noteworthy that reference is made to major proposals which is to allow for the recording and assessment of flood defence works carried out by the LLFA at a value of greater than £50,000.

Table 7.1 - SEA Objectives and Potential Indicators

SEA Objectives	Potential Indicators	Responsible Authority for collecting information
SEA Topic: Climatic Factors		
1. Adapt to and mitigate the impact of climate change, including flood risk.	Flood alleviation schemes implemented in the borough per annum.	Lead Local Flood Authority
	Number of properties protected through flood management measures per annum.	Lead Local Flood Authority
2. To ensure that flood management related activities use natural resources more efficiently and sustainably, in particular land, mineral aggregates, water and fuel.	Number of flood related construction developments accredited to CEEQUAL per annum.	Lead Local Flood Authority / Local Authority
SEA Topic: Biodiversity, Flora and Fauna		
3. To ensure protection and enhancement of biodiversity at designated and undesignated nature conservation sites.	Number of biodiversity enhancement schemes implemented through flood management related activities to promote priority species/habitats as a result of the construction of flood management schemes per annum.	Lead Local Flood Authority / Local Authority
	Number of major flood risk related projects where objections or recommendations for planning conditions have been proposed by GMEU.	Local Authority
	The number of flood management proposals which require a Habitats Regulations Assessment, with mitigation measures, to ensure no adverse effect on European Natura 2000 sites.	Local Authority
	Number of flood management schemes impacting on Sites of Special Scientific Interest (SSSIs).	Local Authority
SEA Topic: Geology and Soil		
4. Promote the conservation and wise use of land, and protect soil quality and quantity and soil erosion.	Number of new flood prevention measures implemented by the LLDFA developed to protect land at risk from flooding per annum.	Lead Local Flood Authority
	Change in the area of land provided with protection measures as a result of major schemes to protect from flooding.	Lead Local Flood Authority

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SEA Objectives	Potential Indicators	Responsible Authority for collecting information
SEA Topic: Water		
5. Prevent pollution to the water environment, protect resources and ensure that there is no deterioration in WFD status as a result of flood management measures.	Joint DPD Indicator 28ii – Number of new developments where agreed with the council incorporated Sustainable Urban Drainage System (SUDS)	Lead Local Flood Authority
	Reviews of the FRDMS	Lead Local Flood Authority / Local Authority
SEA Topic: Population & Human Health		
6. To safeguard and promote existing public access, navigation and recreational resources and to promote education on the environment.	New and additional footpaths, bridleways and rights of way provided as a result of flood management activities per annum.	Local Authority
	Joint DPD Indicator 37i and 37ii – Extent of protected Open Space and Percentage of quality and accessible open spaces meeting local standards.	Local Authority
7. To reduce the flood risk to population and properties and to contribute to flood risk management within Oldham.	Number of properties that have moved to a lower flood risk band as a result of the implementation of flood management activities per annum.	Environment Agency/Lead Local Flood Authority
SEA Topic: Material Assets		
8. Reduce economic cost of flood damage.	Economic cost of flood damage per annum in Oldham.	Defra/ Environment Agency
9. Ensure the potential impact of flooding on existing and future housing, public transport networks and other critical infrastructure is minimised.	Conflict with existing or proposed key transport routes (recreational and commercial) or infrastructure e.g. closures/ restrictions as a result of flood risk management activities per annum.	Local Highways Authority
	Joint DPD Indicator 28i – Number of planning permissions granted contrary to Environment Agency advice on flooding and water quality grounds.	Local Authority
SEA Topic: Cultural Heritage		

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SEA Objectives	Potential Indicators	Responsible Authority for collecting information
10. Protect and enhance the historic environment, heritage assets and their setting (including architectural and archaeological heritage).	Change in the area of designated sites, listed buildings and conservations areas at risk of flooding, provided with flood protection measures.	English Heritage/ Lead Local Flood Authority
SEA Topic: Landscape		
11. To protect and enhance attractive landscapes in terms of both their visual quality and their character and to promote opportunities for additional green infrastructure.	Joint DPD Indicator 27 - Number of planning applications refused on landscape character grounds.	Local Authority

Oldham Council

8 References

Local Government Association (2011). Framework to Assist the Development of the Local Strategy for Flood Risk Management.[i]
Mouchel (2014). Oldham Local Flood Risk Management Strategy - Strategic Environmental Assessment Scoping Report.[ii]

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9 Appendices

Appendix 1 - comments from Statutory Consultees on the Oldham LFRMS SEA Scoping Report.

Appendix 2 – Updated Oldham LFRMS SEA Scoping Report.

Appendix 3 - SEA Matrices.

Appendix 1

Comments from Statutory and other Consultees on the Oldham LFRMS SEA Scoping Report

APPENDIX C – Strategic flood risk management priorities

Table 1 - English Heritage

SEA Scoping Report Consultation Response	English Heritage
Contact Name	Emily Hrycan - Historic Environment Planning Adviser (North West)
Date Received	01 April 2014
Comment	**Response**
English Heritage has produced a document, which you might find helpful in providing guidance on the effective assessment of the historic environment in Strategic Environmental Assessments. This can be found at http://www.english-heritage.org.uk/publications/strategic-environ-assessment-sustainability-appraisal-historic-environment/.	Noted.
English Heritage recommends that an SEA Report should be tailored to the type, purpose and level of plan under consideration and include a clear and robust understanding of the following: • The significance of the heritage assets (including their settings) within and adjacent to the plan area. • How the sustainability objectives impact on the significance of heritage assets (including their settings) and the wider historic environment. • How the proposed plan policies and plan alternatives impact on the significance of the heritage assets (including their settings). • What steps can be taken to avoid or minimise any adverse impacts	Noted. The SEA Scoping report has sought to understand cultural heritage within Oldham, including its assets and any current issues or opportunities. An SEA objective and indicators have also been set out to ensure that the LFRMS considers cultural heritage matters. However, the LFRMS is not a detailed document containing land use policies or proposing flood risk management schemes. Therefore, at this stage it is not possible to understand the impact of any development on heritage

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SEA Scoping Report Consultation Response	English Heritage
Contact Name	Emily Hrycan - Historic Environment Planning Adviser (North West)
Date Received	01 April 2014
Comment	**Response**
on the significance of heritage assets (including their settings). • What steps can be taken to optimise any benefits to the significance of heritage assets (including their settings).	assets and/or their settings. When more detailed proposals are developed for flood risk management schemes, the relevant staff will be consulted as part of the planning application process, including at pre-application stage if necessary. Through the planning process, detailed input and comment can be made to ensure that any potential adverse impacts are minimised and opportunities for cultural heritage benefits are secured.
It is expected that the key findings of the appraisal process, including mitigation measures, should be set out in the main body of the Environmental Report and in the Non-Technical Summary rather than being confined to appendices. It is recommended that a topic-based approach, including a section on cultural heritage, be used in the report. Further information on this can be found in our guidance (page 15).	Noted
English Heritage strongly advises that the conservation staff of the local authority are closely involved throughout the preparation of the SEA of the management strategy. They are best placed to advise on local historic environment issues and priorities, including access to data held in the HER (formerly SMR); how the policy or proposal can be tailored to minimise potential adverse impacts on the historic environment; the	The relevant departments from Oldham Council have been consulted on the emerging LFRMS and the SEA Scoping report including Planning and Conservation staff. When more detailed proposals are developed for flood

SEA Scoping Report Consultation Response	English Heritage
Contact Name	Emily Hrycan - Historic Environment Planning Adviser (North West)
Date Received	01 April 2014
Comment	**Response**
nature and design of any required mitigation measures; and opportunities for securing wider benefits for the future conservation and management of historic assets.	risk management schemes, the relevant staff will be consulted as part of the planning application process, including at pre-application stage if necessary. Through the planning process, detailed input and comment can be made to ensure that any potential adverse impacts are minimised and opportunities for cultural heritage benefits are secured.
Finally, we should like to stress that this opinion is based on the information provided by you with your email dated 26th March 2014. To avoid any doubt, this does not affect our obligation to provide further advice and, potentially, object to specific proposals which may subsequently arise (either as a result of this consultation or in later versions of the management strategy) where we consider that, despite the SA/SEA, these would have an adverse effect upon the historic environment.	Noted.

Table 2 – Natural England

SEA Scoping Report Consultation Response	Natural England
Contact Name	Emma Brierley – Adviser, Lancashire, Merseyside, Greater Manchester and Cheshire Team
Date Received	04 April 2014
Comment	Response
Relevant Policies, Plans and Programmes We note the comprehensive list of policies, plans and programmes in Appendix A of the SEA Scoping Report. Natural England is broadly satisfied with the documents included and would like to suggest the following also be taken into consideration: • *Guidelines for Landscape and Visual Impact Assessment* produced by the Landscape Institute and the Institute of Environmental Assessment and Management in 2013 (3rd edition). • Adopted Local Plans in Oldham and Neighbouring authorities which are hydraulically linked.	The G*uidelines for Landscape and Visual Impact Assessment* will be considered as part of the Policies, Plans and Programmes and the SEA Scoping Document will be amended to reflect this. As the River Tame originates from Oldham and flows through Tameside to the Mersey, these boroughs can be described as being hydraulically linked. Therefore the following most up to date development plan document for Tameside Council has been added to the Policies, Plans and Programmes: • Tameside Unitary Development Plan, adopted November 2004.
Baseline Data Natural England agrees with the assemblage of baseline data listed under Appendix B which will be used to inform the SEA of the LFRMS.	Noted.

SEA Scoping Report Consultation Response	Natural England
Contact Name	Emma Brierley – Adviser, Lancashire, Merseyside, Greater Manchester and Cheshire Team
Date Received	04 April 2014
Comment	Response
Additional information sources for assessment of baseline data As noted at number 10.2.1 of the SEA Scoping report it is important to understand where species and protected sites are located and how flood risk management measures might have an impact on these. The Environmental Report, as part of the SEA process should thoroughly assess the potential for the proposal to affect designated sites. European sites (e.g. designated Special Areas of Conservation and Special Protection Areas) are afforded protection under the Conservation of Habitat and Species Regulations 2010, as amended (the "Habitat Regulations"). Also Paragraph 118 of the National Planning Policy Framework requires that potential Special Protection Areas (SPAs), possible Special Areas of Conservation (SACs), 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. Under Regulation 61 of the Conservation of Habitats and Species Regulations 2010 an appropriate assessments needs to be undertaken in respect of any plan or project which is (a) likely to have a significant effect on a European site (either alone or in combination with other plans or projects) and (b) not directly connected with or necessary to the	There are sites of nature conservation importance within the administrative boundaries of Oldham, including the Rochdale Canal SAC and the Pennine Moors SPA. However, there are no flood risk management development proposals contained within the LFRMS and therefore the potential for species and protected sites to be affected cannot be assessed at this stage. When more detailed proposals are developed for flood risk management schemes, the relevant staff will be consulted as part of the planning application process, including at pre-application stage if necessary. Through the planning process, detailed input and comment can be made to ensure that any potential adverse impacts are minimised and opportunities for potential species are secured. Nevertheless, the objectives of the LFRMS will be assessed in order that their potential to affect species and protected sites can be understood. Please refer to Appendix 2 of this Environmental Report.

SEA Scoping Report Consultation Response	Natural England
Contact Name	Emma Brierley – Adviser, Lancashire, Merseyside, Greater Manchester and Cheshire Team
Date Received	04 April 2014
Comment	Response
management of the site. Should a Likely Significant Effect on a European/Internationally designated site be identified or be uncertain, the competent authority (in this case the Local Planning Authority) may need to prepare an Appropriate Assessment, in additional to consideration of impacts through the SEA process. Due to the nature of flooding and interconnection between water bodies, Natural England recommends an approach where designated sites not only within the Oldham Council boundary, but also outside the boundary where hydrological linkages exist are included in such as assessment. This should also include Sites of Special Scientific Interest (SSSI).	
Protected Species Flood risk management work associated with the Oldham Council LFRMS could affect habitats that support either domestic or European Protected Species. Areas that are known to be wildlife habitats or corridors should be highlighted and scoped into the SEA to be considered. If strategic, large scale measures to protect known wildlife or their habitats are considered to be required, these should be included in the LFRMS to ensure a unified approach.	There are no flood risk management development proposals contained within the LFRMS and therefore the potential for habitats to be affected cannot be assessed at this stage. The appropriate assessments will therefore need to be undertaken at a later stage where schemes have been developed and more is known about their features. It should be noted that the LFRMS recognises the

SEA Scoping Report Consultation Response	Natural England
Contact Name	Emma Brierley – Adviser, Lancashire, Merseyside, Greater Manchester and Cheshire Team
Date Received	04 April 2014
Comment	Response
	importance of biodiversity and habitat creation. Section 9.3 *"Biodiversity and Habitat Creation"* of the LFRMS encourages the following measures as part of any flood risk reduction proposals to assist with the Council`s duties to take reasonable steps to further the conservation and enhancement of SSSIs; and meet Biodiversity Action Plan (BAP) targets to ensure no loss of habitat through local flood risk management works. • Enhance biodiversity and habitat creation within any future capital schemes, such as SuDS or flood storage areas. These schemes can also be used within urban areas to provide green spaces for amenity. • Prioritise solutions to manage flooding from local sources that work with natural processes, encourage biodiversity enhancements and minimise adverse effects to the local environment. • Incorporate mitigation adaptation to climate change in local flood risk management measures. • Protect Sites of Special Scientific Interest (SSSIs) within Oldham.

SEA Scoping Report Consultation Response	Natural England
Contact Name	Emma Brierley – Adviser, Lancashire, Merseyside, Greater Manchester and Cheshire Team
Date Received	04 April 2014
Comment	Response
Green Infrastructure We note that Green Infrastructure is discussed within Appendix B of the report at 10.8.6 and that Oldham has established GI corridors that are linked regionally, sub-regionally and locally. We advise that the SEA seeks opportunities to incorporate green infrastructure during the development of the LFRMS. Multi-functional green infrastructure can perform a range of functions including improved flood risk management, provision of accessible green space, climate change adaption and biodiversity enhancement. Natural England would encourage the incorporation of GI into this plan.	The importance of green infrastructure is noted. However, there are no flood risk management development proposals contained within the LFRMS and therefore the potential to provide opportunities for green infrastructure cannot be assessed at this stage. This can be highlighted at a later stage, preferably at feasibility to ensure it is given proper consideration. To monitor the extent of provision for green infrastructure, it is proposed to amend SEA objective 11 'Landscape' to now state: *"11. To protect and enhance attractive landscapes in terms of both their visual quality and their character and to promote opportunities for additional green infrastructure".* However, it is not considered appropriate or possible to monitor any change in green infrastructure because of the broad definition that can be applied to it. At present, Oldham Council do not have any records as to the quantity and quality of any GI that is present

SEA Scoping Report Consultation Response	Natural England
Contact Name	Emma Brierley – Adviser, Lancashire, Merseyside, Greater Manchester and Cheshire Team
Date Received	04 April 2014
Comment	Response
	within the Borough. Therefore monitoring any change in GI is likely to be fraught with difficulty and is likely to be highly subjective. Therefore, given that the Environment Agency has likewise proposed that GI ought to be a consideration in the SEA, Oldham Council is prepared to assess and promote the opportunity for GI creation on a case by case basis for all major flood management infrastructure that they commission. As the EA will be a stakeholder and consultee for these schemes the potential for GI will therefore be a topic for discussion at that stage.
Strategic Environmental Assessment Objectives Natural England welcomes and agrees with the chosen themes for the objectives of the SEA which are found within Table 7-1 of the sopping report. We have nothing more to add in relation to this.	Noted.
Strategic Environmental Assessment Indicators Natural England is broadly satisfied with the level of indicators given in the SEA document at Table 7-1. We would however suggest the following additions be added to monitor the SEA progress:	Additional monitoring will be included under SEA Objective 3 Biodiversity, Flora and Fauna contained within Table 7-1 of the SEA Scoping Report. Additional text will therefore be included as set out

SEA Scoping Report Consultation Response	Natural England
Contact Name	Emma Brierley – Adviser, Lancashire, Merseyside, Greater Manchester and Cheshire Team
Date Received	04 April 2014
Comment	Response
• 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 licences 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 of 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	below. This includes some change to wording to ensure it is clear how the indicator can be monitored. These indicators are considered to be suitable as the Greater Manchester Ecology Unit (GMEU) will be consulted upon for all planning applications that have the potential to impact upon protected species. Should there be any planning conditions recommended by GMEU it is likely that these are as a consequence of a potential impact upon protected species and therefore this serves as an indicator of their consideration. The wording of the revised indicator is: *"Number of major flood risk related projects where objections or recommendations for planning conditions have been proposed by GMEU."* In terms of the Habitats Regulation Assessment, the following indicator is proposed: *The number of flood risk proposals which require a Habitats Regulations Assessment, with mitigation measures, to ensure no adverse effect on European*

SEA Scoping Report Consultation Response	Natural England
Contact Name	Emma Brierley – Adviser, Lancashire, Merseyside, Greater Manchester and Cheshire Team
Date Received	04 April 2014
Comment	Response
indirectly or directly. Favourable condition should be maintained where appropriate or measures taken to enhance the units to achieve favourable condition.	*Natura 2000 sites.* For each indicator, the monitoring body is proposed to be the Local Authority.
Habitats Regulations Assessment The Local Flood Risk Management Strategy will cover an area which has Natura 2000 protected sites, some if which may include water via interlinked rivers, streams becks etc. Under the Habitat Regulations, competent authorities, i.e. any Minister, government department, public body, or person holding public office, have a general duty, in the exercise of their functions, to have regard to the EC Habitats Directive. The Habitats Regulations require that plans and projects are assessed for their effects on European sites. It should be noted that some projects may be proposed in the LFRMS and will need to be assessed when the plan is devised and consulted on in addition to when the project is implemented and that the European sites affected could be in or outside the relevant plan area. We recommend that consideration be given to carrying out a Habitats Regulations Assessment (HRA) at an early stage in the development of the Strategy so that the assessment influences the evolution of the	The LFRMS is a strategic, high level document with no site specific policies and therefore at this stage does not require assessment under the Habitats Regulations. It would not be possible to determine whether the strategy could lead to potentially significant effects on Natura 2000 sites and any assessment, at this stage, would be inconclusive.

SEA Scoping Report Consultation Response	Natural England
Contact Name	Emma Brierley – Adviser, Lancashire, Merseyside, Greater Manchester and Cheshire Team
Date Received	04 April 2014
Comment	Response
Strategy. In cases where work on the Strategy has already begun, the assessment should be introduced as soon as practicable and, in any event, completed before the Strategy is implemented. 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. So, what is expected is as rigorous an assessment as can reasonably be undertaken in accordance with the requirements of the Habitats Regulations and adopting the precautionary approach embedded in the Directive and Regulations.	

Table 3 – Environment Agency

SEA Scoping Report Consultation Response	Environment Agency
Contact Name	Stephanie Hall, Flood & Coastal Risk Management Officer
Date Received	27 February 2015
Comment	**Response**
In reviewing the document the Environment Agency found the document to be consistent with the National Flood Risk Management Strategy and reflects the ongoing positive discussions between the Environment Agency and Oldham Council regarding flood risk. The EA have no objections to the information presented, but have made the following informative comments below which you may find useful.	Noted.
Point 8 of Table 7.1, under 'SEA Topic: Material Assets' on page 32 of the Scoping Report names the EA as the authority responsible for collecting information regarding the economic cost of flood damage per annum in Oldham. I am uncertain as to whether we would be able to provide information about the total economic cost of flood damage – please can you clarify what information you would require / how you would wish to receive this?	Table 7-1 will be amended to reflect that the Environment Agency can provide data in relation to fluvial flooding, but not for other types of flooding.
The SEA scoping Report states that all waters need to reach Good Ecological Status by 2015. 2015 is the initial deadline for meeting environmental objectives. However, it may be worth acknowledging that where is not possible, and subject to the criteria set out in the Directive, the aim is to achieve good status by 2021 or 2027, 2027 being the final	The SEA Scoping Report has been amended to reflect this.

SEA Scoping Report Consultation Response	Environment Agency
Contact Name	Stephanie Hall, Flood & Coastal Risk Management Officer
Date Received	27 February 2015
Comment	**Response**
deadline for meeting objectives. Further to this, it may also be worth acknowledging that some surface water bodies are designated as 'artificial' or 'heavily modified', and that by definition, artificial and heavily modified water bodies are not able to achieve natural conditions. As such the classification and objectives for these water bodies, and the biology they represent, are measured against 'ecological potential' rather than status. For these water bodies the aim would be to reach 'Good Ecological Potential' rather than 'Good Ecological Status'	
At the time the Draft SEA Scoping Report was written (Feb 2014) you had not had the opportunity to view the EA Flood Risk Management Plan (FRMP). However, now that you have had the opportunity to view and comment on the EA FRMP, it is worth updating the SEA scoping document to reflect this.	The SEA Scoping Report has been amended to reflect this
It would be good to include all the water bodies within the Borough (which are important ecological networks and green infrastructure assets as recognised in UK Biodiversity 20/20 strategy) i.e. River Medlock, Beal, Irk, Tame; all of which are currently failing WFD objectives and to which majority are also heavily modified. Any future FRMS should also ensure there is no deterioration of such water bodies as part of future schemes.	To monitor the extent of any deterioration of the waterbodies set out, it is proposed to amend SEA Objective 4 'Water' to now state: *"4. Prevent pollution to the water environment, protect resources and ensure that there is no deterioration in WFD status as a result of flood management measures".*

SEA Scoping Report Consultation Response	Environment Agency
Contact Name	Stephanie Hall, Flood & Coastal Risk Management Officer
Date Received	27 February 2015
Comment	**Response**
	This is proposed to be monitored through the use of Joint DPD Indicator 28ii which monitors the number of new developments where SUDS have been incorporated. The use of SUDS by definition will contribute to WFD objectives and as the LFRMS does not proposed any specific works to main rivers, individual WFD monitors are not considered appropriate at this stage. The monitoring body is proposed to be the Lead Local Flood Authority/ Environment Agency.
There may be significant opportunities as part of future flood risk management works to achieve multiple ecosystem/green infrastructure benefits through improving floodplain connectivity, de-culverting watercourses, restoration of canalised water bodies, positive management and expansion of linking priority habitat i.e. peatland, blanket bog, upland meadow and woodland.	To monitor the extent of provision for multiple ecosystem/ green infrastructure, it is proposed to amend SEA objective 10 'Landscape' to now state: *"10. To protect and enhance attractive landscapes in terms of both their visual quality and their character and to promote opportunities for additional green infrastructure".*

SEA Scoping Report Consultation Response	Environment Agency
Contact Name	Stephanie Hall, Flood & Coastal Risk Management Officer
Date Received	27 February 2015
Comment	**Response**
	This is proposed to be monitored through the same approach as that suggested to Natural England namely that as the EA are a stakeholder and consultee to all major works undertaken by Oldham Council as LLFA, then the opportunity to incorporate GI will be investigated on a case by case basis at that point. The monitoring body is proposed to be the Local Authority.

Table 4 – Canal and River Trust

SEA Scoping Report Consultation Response	Canal and River Trust
Contact Name	Mark Heath, Senior Water Engineer
Date Received	21 May 2014
Comment	**Response**
With reference to the Strategic Environmental Assessment report, section 10.4.3. The Trust would like it made clear, that whilst the Trust has ownership of the Rochdale and Huddersfield Canals, both the Hollinwood and Fairbottom Canals are outside of the Trusts ownership and remit.	The SEA Scoping Report has been amended to reflect this

Consultation with Oldham Council

Proposed changes to the SEA Objectives and monitoring indicators have been discussed in detail with the development control and planning policy departments of Oldham Council, which has influenced the responses above. This is in terms of ensuring that the objectives and indicators are relative and measurable.

In terms of SEA Objective 8 which sought to "*provide opportunities for local training and skills development during implementation and management of flood defence measures*", this has now been deleted after discussion with Oldham Council. This is for the following reasons:

- The related indicator "*number of apprenticeships provided as a result of flood management activities per annum*" is difficult to measure as apprenticeships could come about as a result of work with the local authority or from a private contractor. In addition, employers would not necessarily report this information, such that it could be monitored.
- During assessment of the objective against proposals in the LFRMS, all impacts were measured as neutral, so its removal does not result in a situation where a significant effect was not being monitored and hence there is no conflict with the Assessment of Plans and Programmes Regulations.