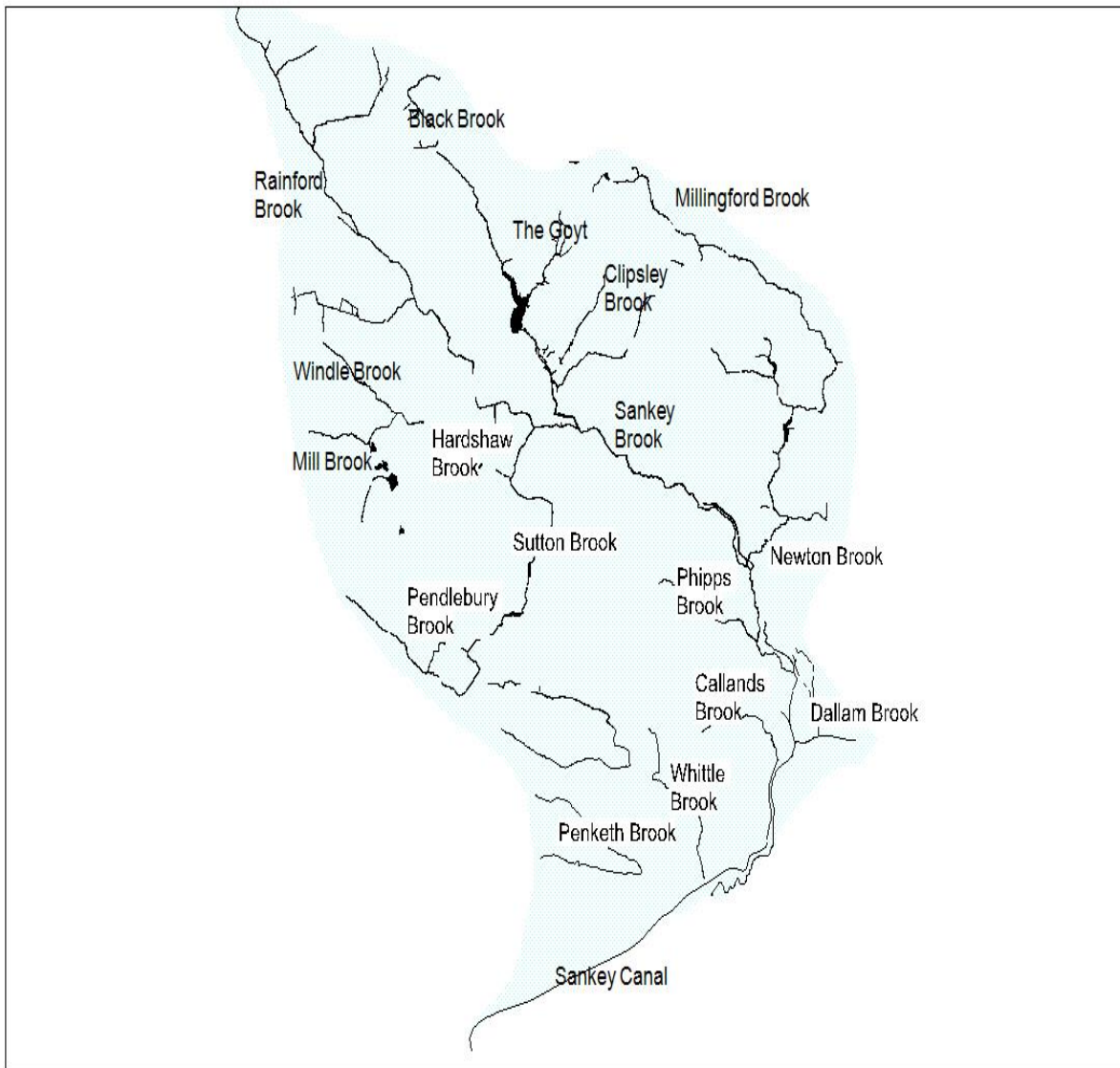


# Sankey Catchment Action Plan



*The Sankey Catchment Partnership*

*2018*

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# SECTION1 - CONTEXT

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## 1.1 Introduction

Focusing on water management, water quality improvements and water dependant biodiversity, the Sankey Catchment Action Plan provides a framework for long-term integrated water management across the whole Sankey catchment. The catchment plan, which is self-standing, underpins a broader enhancement strategy for the strategically important Sankey Canal Corridor from Carr Mill in St Helens, through Warrington to Spike Island at Widnes. The enhancement strategy for the canal corridor embraces the integrated themes of biodiversity enhancement, economy, access, heritage, health and recreation and water management between Carr Mill in St Helens and Spike Island in Halton.

As the Sankey Brook is the main channel draining the catchment, to address the issues of water quality and flood management in the Sankey Corridor it is necessary to address issues across the whole catchment through a broad partnership of organisations.

## 1.2 Catchment Management Drivers

### 1.2.1 Water Framework Directive

The EU Water Framework Directive (WFD) establishes a framework for the protection and enhancement of all inland surface water bodies, estuaries, coastal water and groundwater. Specifically the WFD aims to:

- protect/enhance all waters (surface, ground and coastal waters);
- achieve "good status" for all waters;
- manage water bodies based on river basins or catchments; and
- involve the public

The delivery mechanism for the framework is River Basin Management Plans. The UK is divided into River Basin Districts with the Sankey Catchment in the North West River Basin District (NWRBD).

The NWRBD Plan identifies the following challenges, which need to be met in order to achieve EU WFD targets:

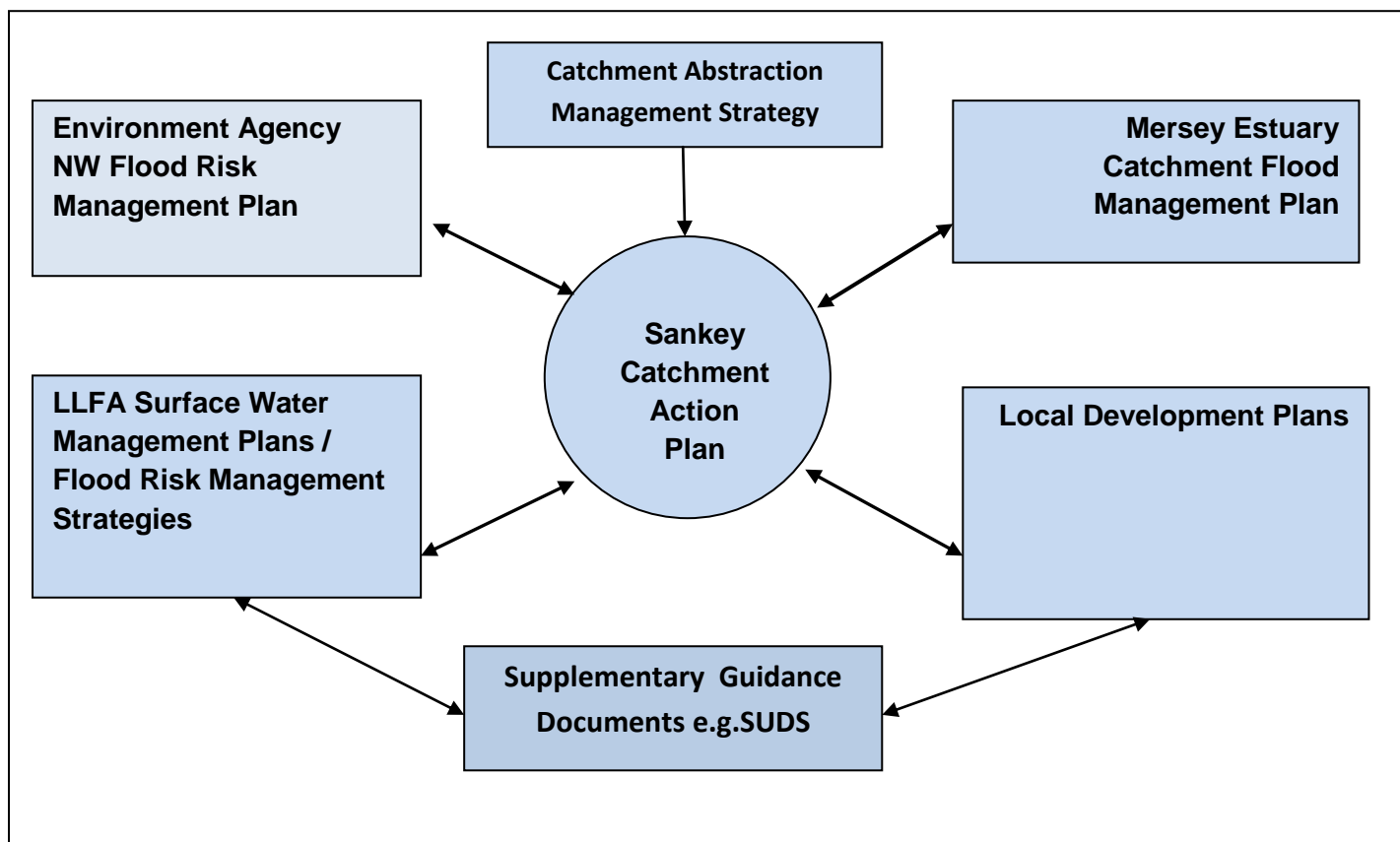
- diffuse pollution from agriculture;
- point source pollution from water industry sewage works;
- diffuse pollution from urban sources;
- physical modification of water bodies;
- point source pollution from industrial discharges;
- water abstraction and artificial flow regulation.

### 1.2.2 Flood Management Plans

The Environment Agency NW Flood Risk Management Plan sets a strategic context on flooding issues in the region with the Mersey Estuary Catchment Flood Plan providing a more detailed picture of numbers of houses at risk from flooding in the Upper and Middle Sankey Catchment. The Local Authorities of St Helens, Halton and Warrington are The Lead Local Flood Authorities (LLFA) dealing with flooding from non-main river sources and advising the Local Planning Authorities on drainage schemes relating to new development proposed in the Local Plans of each council.

Each LLFA undertakes Preliminary Flood Risk Assessments and produces a Surface Water Management Plan. Rather than a disjointed approach based on LLFA boundaries, a Preliminary Flood Risk Assessment has been carried out for the Sankey Catchment<sup>1</sup>.

**Figure1 - Relationship between the Sankey Catchment Action Plan and Flood Management and Development Plans.**



### 1.2.3 Eel Regulations

The Eels (England and Wales) Regulations 2009 implement Council Regulation (EC) No 1100/2007 of the Council of the European Union, establishing measures for the recovery of the stock of European eel.

- (i) The requirement to notify the Environment Agency of the construction, alteration or maintenance of any structure likely to affect the passage of eels;
- (ii) Where any structure exists, the requirement to construct and operate an eel pass to allow free passage of eels;
- (iii) the removal of any obstruction, if deemed necessary;
- (iv) The use of eel screens to exclude eels from water abstraction and discharge sites;
- (v) If necessary, the use of a by-wash to return excluded eels to the water they came from..

### 1.2.4 National Planning Policy Framework

Paragraph 93 of the NPPF indicates that Planning has a key role to play in providing resilience to the impacts of climate change. Paragraph 94 states “*Local planning authorities should adopt proactive strategies to mitigate and adapt to climate change, taking full account of flood risk*”. Paragraph 99 indicates that Local Plans should take account of climate change over the long term, including factors such as flood

<sup>1</sup> Sankey Valley Catchment Preliminary Flood Risk Assessment 2017-2023



risk and states “New development should be planned to avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which is vulnerable, care should be taken to ensure that risks can be managed through suitable mitigation measures, including through the planning of green infrastructure.”

### 1.2.5 Natural Environment and Rural Communities Act 2006

The Natural Environment and Rural Communities Act 2006 placed a statutory duty on all public bodies to have regard to biodiversity in all activities including plan and strategy making, land and water management and infrastructure development.

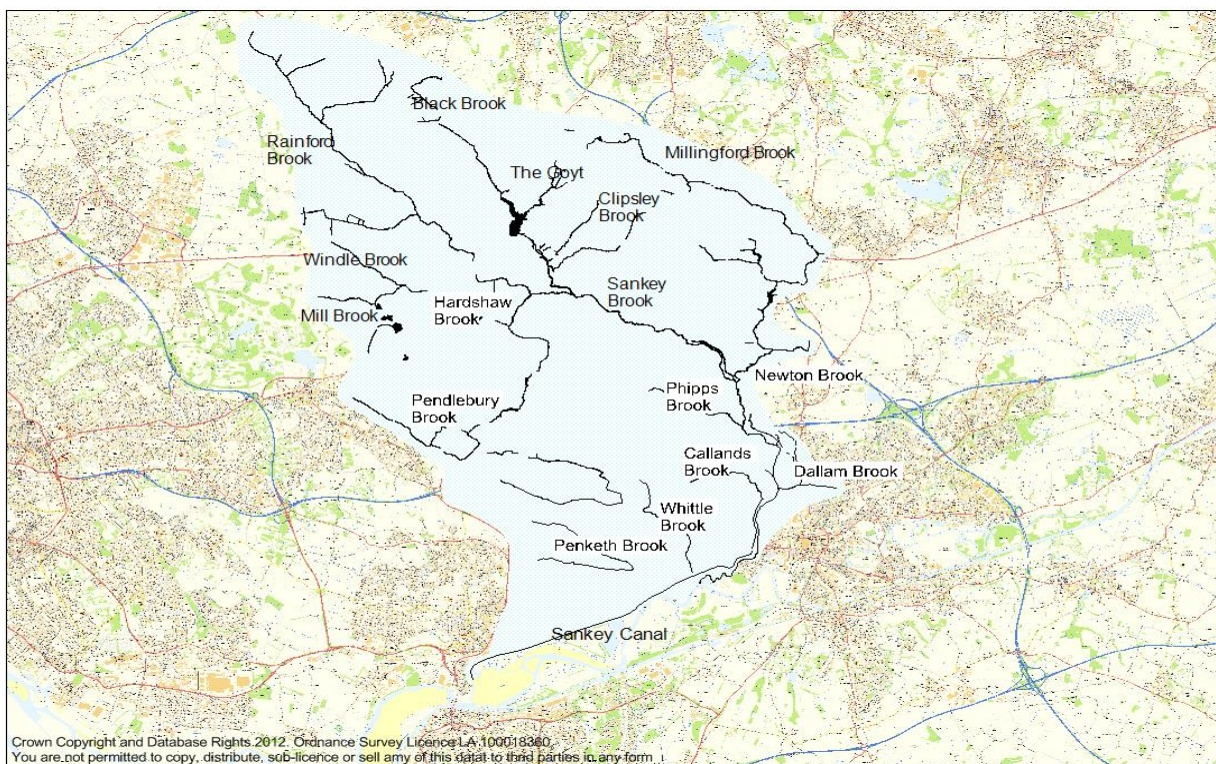
### 1.2.6 Duty to Cooperate

The duty to cooperate places a legal duty on local planning authorities, County Councils in England and other public bodies to engage constructively, actively and on an ongoing basis to maximise the effectiveness of Local and Marine Plan preparation in the context of strategic cross boundary matters.

## 1.3 Sankey Catchment Overview

The Sankey Catchment covers approximately 179km<sup>2</sup> and has 126km of Main River flowing, generally in a west to east orientation, through a mixture of open agricultural land and urban settlements. The Sankey Brook originates at the confluence of Sutton and Hardshaw Brooks in St Helens and flows into the River Mersey at Sankey Bridges in Warrington.

**Figure 2: Sankey Catchment**



A number of tributaries feed the Sankey Brook including:

- Rainford Brook
- Windle Brook
- Callands Brook
- Hardshaw Brook

- Black Brook
- Millingford Brook
- Clipsley Brook
- Dallam Brook
- Sutton Brook
- Newton Brook
- The Goyt
- Whittle Brook

Appendix 1 provides detailed river profiles.

Hydraulically linked to Black Brook, Sankey Brook and Callands Brook, the Sankey (St Helens) Canal, which opened in 1757, was constructed to link the collieries around Haydock and Parr to the markets in Cheshire and Liverpool via the River Mersey at Sankey Bridges. Extensions were made, firstly to Fiddlers Ferry, and later, to Woodend (Spike Island) in Widnes by 1830 in order to overcome difficulties accessing the river lock at neap tides. Extensions in St Helens to Ravenhead and Stanley Bank in the 1770s were also cut. The latter utilised Carr Mill Dam as a headwater. The canal was officially abandoned in 1963 and was partially infilled. Halton, Warrington and St Helens Council restored sections of the canal as part of land reclamation works in the 1970s and 1980s but the hydrology remains largely disconnected. The current and potential role of the canal within flood management in the Sankey Catchment needs consideration to understand how extra capacity for flood storage can be created and how hydraulic connectivity can be achieved to maintain the current canal heritage and habitat.

Historical heavy industry including coal mining, glass and chemical production sparked by the cutting of the canal has left a legacy of contamination, which still affects the water quality within the catchment. Diffuse pollution from agricultural run-off and urban drainage, including wrongly connected domestic appliances and highways run-off, all contribute to moderate to poor water quality within the catchment.

### 1.3.1 Summary of Waterbody Classification in the Sankey Catchment

Water Body ID	River Name	Overall 2016 Waterbody Classification
GB112069061230	Black Brook (Mersey Estuary)	Moderate
GB112069061210	Hardshaw (Windle) Brook	Moderate
GB112069061220	Millingford (Newton) Brook	Moderate
GB112069061240	Rainford Brook	Moderate
GB112069061170	Sutton Brook	Moderate
GB112069061180	Sankey Brook (Hardshaw Brook to Rainford)	Moderate
GB112069061200	Sankey Brook (Rainford Brook to Mersey)	Poor
GB71210055	Sankey Canal	Moderate
GB71210088	St Helens Canal	Moderate
GB112069060990	Whittle Brook (Mersey Estuary)	Moderate
GB41201G101700	Lower Mersey Basin and North Merseyside Permo-Triassic Sandstone Aquifers	Poor
GB41202G100100	Sankey and Glaze Carboniferous aquifers	Poor

St Helens, Warrington and Halton Councils define a “flood of harmful consequences” would have one or more of the following characteristics:

Impact of flooding on:	Category	Consequence
Human Health	Number of individuals	≥ 200
Economic activity	Number of critical services	≥ 2
	Number of residential properties	≥83
	Number of non-residential properties	≥20

Whilst flooding in the Sankey Catchment is not of a nationally significant scale as was seen in Cumbria in 2015, there are significant recurring local effects in St Helens and Warrington, which cause extensive property damage and have insurance implications for homeowners. In at least one case at West End Road, modelling undertaken in 2016<sup>2</sup> suggests potential for risk to life in the most extreme event.

The Sankey Catchment Preliminary Flood Risk Assessment indicates that there has been 3 flood events identified by local sources that have been deemed to have “significant consequences”. Analysis of Environment Agency data on future flood risk in the catchment indicates the following:

		Total numbers at risk by criteria		
Flood Risk	Criteria	Residential	Business	Critical Services
Surface Water	1 in 100 year rainfall event	2,619	350	48
River	Flood Zone 3 (1 in 100year or greater risk of probability)	2,442	683	107

The most serious incidents occur at:

Rainford – Beech Gardens area;  
 Blackbrook - West End Road;  
 Gerrards Bridge – College Street;  
 Dallam – Higham Avenue area; and  
 Sankey Bridges – Liverpool Road area.



Beech Gardens , Rainford 2015

Environment Agency figures<sup>3</sup> indicate a need to store 720,000m<sup>3</sup> in the catchment to prevent all flooding at Sankey Bridges (at the bottom of the catchment) in a 1 in 100-year (1% chance of occurrence in any

<sup>2</sup> Sankey Valley Park, St. Helens Flood Management Study. Waterco January 2016

<sup>3</sup> Sankey overtopping flows for Communities at Risk in the Sankey Catchment. Quantifying flood risks for Communities at Risk for a strategic catchment assessment. Brown D. Whitworth A. Environment Agency 2018



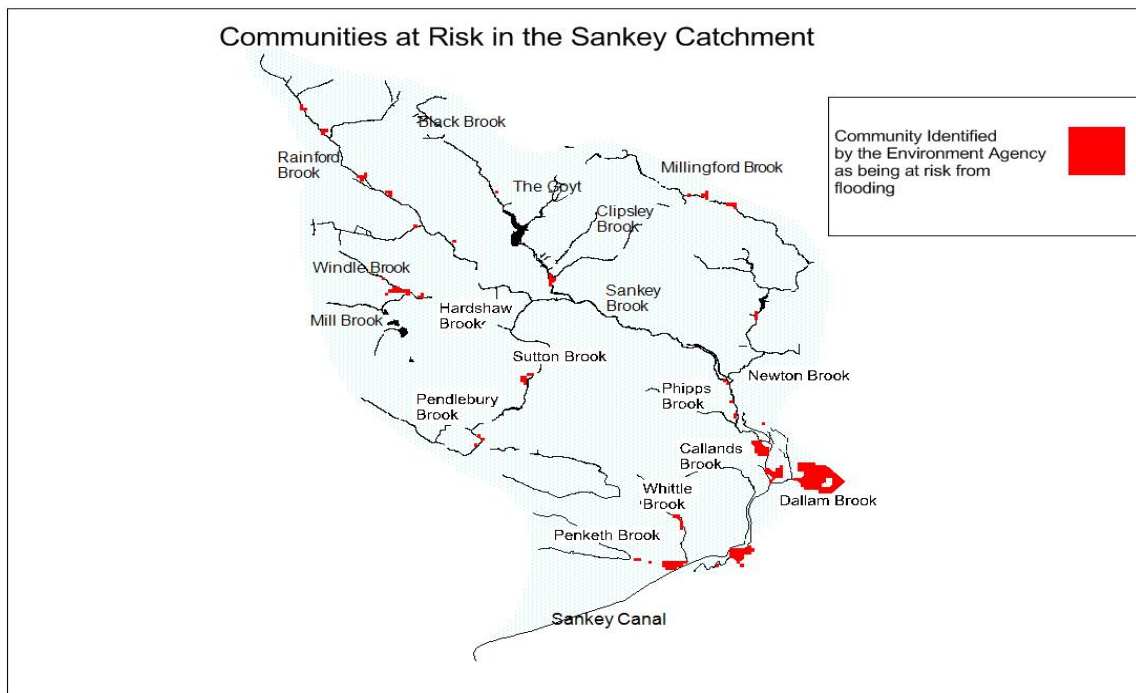
year) event. Upstream of Eccleston / Denton's Green there is a need to store 10,000m<sup>3</sup> during the peak of a 1 in 100-year storm event.

To prevent all flooding at West End Road during a 1 in 100-year event, there is a need to store 249,000m<sup>3</sup> at the peak of the storm event.

Climate Change is likely to increase the volumes by 20%.

The River Mersey exerts a tidal influence on the Sankey Brook beyond the A57 on high Spring Tides creating a barrier to river drainage when coinciding with heavy storm conditions, causing water to back up and flood. Sediment filled and heavily vegetated channels such as the Gerrards Bridge section of Rainford Brook have reduced storage capacity making the situation worse whilst high winds pushing the west–east flow exacerbate the situation further.

**Figure 3: Communities at Risk**



### 1.3.2 Predicted Effects of Climate Change on the Catchment

Currently in England and Wales around 50,000 hectares of farmland are at risk of frequent flooding (once every three years). This is predicted to rise to 200,000 hectares (1% of total) by the 2080s. The area of agricultural land at risk of 1 in 10 year flooding is projected to double by 2050 to 400,000 hectares and to 500,000 by 2080 suggesting farmers will need to take an increasingly active role in flood management.<sup>4</sup>

The UK Climate Change Risk Assessment predicts higher summer soil moisture deficits, increasing demand for irrigation to maintain crop yields and quality and increased competition for water resources in the summer owing to reduced summer rainfall.

Environmental Flow Indicators (EFI) are used to indicate where abstraction pressure may start to cause an undesirable effect on river habitats and species. A climate change risk assessment (Appendix 2) baseline

<sup>4</sup> UK Climate Change Risk Assessment : Government Report 2012 Defra

on brooks in the Sankey Catchment reveals that currently there is a moderate surplus of flow above the Environmental Flow Indicator in most brooks in the catchment. Sutton Brook currently has a flow deficit.

Projections for the 2050 climate suggest that flows on Sankey Brook, Newton Brook, Sutton Brook, Rainford Brook and Whittle Brook are all likely to fall below the EFI threshold with Newton and Sutton Brooks particularly badly affected. Only Black Brook's flow would continue in surplus, although this would be significantly reduced. The effect of these reduced flows would be that there is less water available to dilute pollutants such as phosphates but also to support aquatic and riparian habitats.

## 1.4 Biodiversity in the Sankey Catchment:

The Natural Environment and Rural Communities Act 2006 placed a statutory duty on all public bodies to have regard to the conservation of biodiversity.

This plan prioritises key species and habitats, which are clearly reliant on riverine or riparian wet habitats that can be influenced for better or worse by river management practices. Wider biodiversity issues within the Sankey Canal Corridor are addressed as part the biodiversity theme of the Sankey Corridor Enhancement project, which will overlap with and compliment the Sankey Catchment Plan.

### 1.4.1 Priority Species:

#### (i) Water Voles (*Arvicola aquaticus*)

Water voles are included on the list of priority species published by the Secretary of State under S41 of the Natural Environment and Rural Communities Act 2006 and are legally protected under the Wildlife and Countryside Act 1981 (as amended).

Historically, water voles have been widely recorded throughout the Sankey catchment. A 1997 catchment survey undertaken for the Sankey NOW River Valley Initiative by TEP<sup>5</sup> indicated presence on Sankey Brook, Dallam Brook, Newton Brook, Sutton Brook Black Brook and Windle Brook. The Sankey Canal, with extensive reed beds in Warrington and Halton, is also known to provide water vole habitat.

On agricultural land, the survey found a strong correlation between water vole absence and cultivation to the bank top. Causes for absence could be a lack of terrestrial habitat, decreased cover leading to greater predation or the weight of machinery collapsing burrows.

In 2008/9 the NW Water Vole project found water voles to be present on Gemini ponds and Causey Brook at Winwick Quay, with possible presence on Clipsley Brook and Havannah Flashes. Re-surveys at Stanley Bank appear to indicate water voles have disappeared from the site. As the habitat remained constant, anecdotal evidence of American Mink at the site suggests predation to be the cause.

Whilst the current distribution of the water vole population in the Sankey Catchment is unknown, it is reasonable to assume the following combination of issues affects water vole populations in the catchment:

- Predation by American Mink (*Neovison vison*);
- Reduced habitat quality;
- Population fragmentation;
- Extreme flooding.



Water vole ©Mike Roberts

<sup>5</sup> A Natural Assets Register for the Sankey Catchment. TEP –The Environment Practice 1998 Table 5.1

(ii) Eel (*Anguilla anguilla*)

Eels are included the IUNC list of critically endangered species and are also included on the list of priority species published by the Secretary of State under S41 of the Natural Environment and Rural Communities Act 2006.

The Eels (England and Wales) Regulations 2009 aim to restore eel populations across the European Union.

Anecdotal evidence suggests eels are present in the catchment but there is no clear picture of population density or distribution at present. Under the regulations, a number of blockages to the passage of eels have been identified and mitigation measures for these features needs to be undertaken. However, it is likely that some passages are bypassed by eels using terrestrial habitat in wet conditions but the extent to which eels overcome these obstacles is currently unknown. Survey work could identify the barriers in most need of mitigation measures.

(iii) Bullhead (*Cottus gobio*)

Bullheads tend to occur in cool, moderately flowing, oxygen rich streams with stony substrates. Shade and cover is an important component of Bullhead habitat. Within the catchment, Bullhead has been recorded in the Goyt and Black Brook. Excessive nutrient levels causing eutrophication could be detrimental if stony substrates become coated in filamentous algae. Bullheads are not strong swimmers and require areas of refuge in periods of high flow.

The species is protected EU Habitat Regulations.

(iv) Otter (*Lutra lutra*)

Although there is a record of an otter on Newton Lake in 2004, the widely reported recolonization of many rivers by otters is yet to occur in the Sankey Catchment. However, with otters confirmed on the River Mersey is highly probable that colonisation of the Sankey Catchment will occur at some point in the future. There is some evidence to suggest that otters can have a significant effect on mink population density and distribution<sup>6</sup>.

Otters are included on the list of priority species published by the Secretary of State under S41 of the Natural Environment and Rural Communities Act 2006 and are fully protected under the Wildlife and Countryside Act 1981(as amended).

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<sup>6</sup> Bonesi L. & Macdonald D.W. (2004) Impact of released Eurasian otters on a population of American mink: a test using an experimental approach. *Oikos*, 106, 9-18

(v) Willow Tit (*Poecile montanus*)

Often found in willow thickets in damp places, Willow Tits are widespread in the Sankey Catchment.

Due to dramatic population decline, the species is of the highest conservation concern and is included on the list of priority species published by the Environment and Rural Communities Act 2006.

Habitat loss is thought to be one of the reasons for this decline, including the "tidying up" of rotting wood from wet woodlands.



Willow Tit © Mike Roberts

Wild birds, their nests and their eggs are protected under the Wildlife and Countryside Act 1981 (as amended).

#### 1.4.2 Priority Habitats:

(i) Wet woodland

Generally characterised by a canopy of alder or willow, wet woodland occurs on poorly drained or seasonally wet soils. This is a habitat often found along river valley flood plains and is associated with standing or running water.

Bog Wood at Bewsey, Red Brow Wood in the Sankey Valley and parts of Naylor's Wood on Newton Brook are examples within the catchment.

Wet woodland is included on the list of priority habitats published by the Secretary of State under S41 of the Natural Environment and Rural Communities Act 2006.

(ii) Reedbed

Reedbeds are wetlands dominated by Common Reed (*Phragmites australis*) where the water table is above ground for most of the year. The Sankey Valley is of major importance for this type of habitat with extensive areas at Havannah Flash and Waterways Wetland Nature Reserve. A broad fringe of reed is present on the canal off-side at Sankey Bridges/ Penketh and Fiddlers Ferry.



Havannah Flash St Helens

Reedbed is included on the list of priority habitats published by the Secretary of State under S41 of the Natural Environment and Rural Communities Act 2006.

(iii) Raised Mire

In Merseyside, only two sites actively growing bogs survive. One of these, the Sutton Moss / Bold Moss complex (Colliers Moss Common) is within the Sankey Catchment. In addition, Kings Moss is a drained but relatively unmodified habitat, covering around 16hectares. Mosses have the ability to store water and carbon helping to adapt to climate change.

Lowland Raised Bog is included on the list of habitats of principle importance published by the Secretary of State under S41 of the Natural Environment and Rural Communities Act 2006 and is protected under Annex 1 of the European Habitat Directive.

#### 1.4.3 Key Sites:

##### (I) Sites of Special Scientific Interest

There is one Special Scientific Interest (SSSI) within the Sankey catchment. Adjacent to the Black Brook valley; Stanley Bank Meadows at Blackbrook, St Helens, is an area of damp neutral grassland important for plants such as Yellow wort, Spiked Sedge and Adders Tongue Fern. Stanley Bank Meadows SSSI is in favourable Management Condition.

##### (II) Local Nature Reserves

There are three Local Nature Reserves (LNR) that directly relate to the river catchment. Situated along Black Brook, **Stanley Bank LNR** encompasses Stanley Bank Meadows an area of damp neutral grassland, Stanley Bank Wood and Glasshouse Close Wood, both of which are ancient semi-natural woodland and Stanley Brook a minor watercourse that was dammed in the 18<sup>th</sup> century to provide a power source for Stanley Mill.

**Parr Hall Millennium Green LNR** in Parr is an area of marsh and wet grassland, which encompasses a section of Rainford Brook between Park Road and Islands Brow, which used to form the Gerrards Bridge section of the Sankey (St Helens) Canal. This section of brook supports a population of water voles.

**Mill Brow LNR** at Eccleston comprises of Mill Wood and Eccleston Parish Nature Reserve, both of which are linked by Mill Brook. Mill Wood is wet woodland whilst the parish nature reserve is a riparian strip of grassland with wet woodland and wet scrapes good for amphibians. There are records of water voles along Mill Brook.

##### (iii) Local Wildlife Sites

There are 35 sites of local ecological importance, which can be linked to the Catchment Plan. Many of these are Main River such as Black Brook, Rainford and Sutton Brook, which provide habitat for water voles. The St Helens Canal is also important for the area of reedbed habitat and much of its length is designated as Local Wildlife Site (or equivalent). Whilst degraded, remnant mosslands in the north of the catchment such as at Kings Moss and Bold / Sutton Mosses are important habitats, which help to store water and lock up carbon.

Appendix 3 describes the Local Wildlife Sites in the catchment

##### (iv) Liverpool City Region Ecological Network Nature Improvement Area

The Liverpool City Region Ecological Network Nature Improvement Area (NIA) identifies the Black Brook and Sankey Valley Corridor as one of eighteen focus areas in the city region. The network identifies re-naturalising rivers and brooks as a habitat creation priority along with enhancing watercourses through habitat management.

The NIA also focuses on the mosslands in St Helens as a habitat priority. Creation of lowland bog / fen is the highest priority whilst habitat management at Colliers Moss in Parr, Kings Moss, Reeds Moss and Moss would improve the quality of the habitat whilst increasing potential to attenuate overland flow of surface water.



Appendix 4 shows the NIA focus areas.

#### (vi) Invasive Species

Of the three main non-native invasive plant species considered to be invasive, Giant Hogweed (*Heracleum mantegazzianum*) does not appear to be a problem in the catchment with only occasional records of the plant, such as at Wharf Road St Helens in 2016.



Himalayan Balsam (*Impatiens glandulifera*)

The presence of Japanese knotweed (*Fallopia japonica*) and Himalayan Balsam (*Impatiens glandulifera*) was found by TEP in 1997, to be strongly connected to the urban areas of the catchment with a striking absence of these species in the agricultural areas.

TEP also found that Himalayan Balsam was not extensive downstream of the Sankey Brook and Newton Brook confluence. However, the plant has spread downstream in the intervening years. The extent across the catchment is now so great that the only realistic control measure is the use of biological control methods such as the fungal rust *Puccini* sp.

American Mink is known to be present in the catchment but there is no clear picture of numbers and distribution. The 1989/1990 national water vole survey<sup>7</sup> found that over the Mersey Catchment (including the Sankey) only a few sites showed mink to be present. There is some evidence that as Otters recolonise rivers, mink populations could start to decline.

## 1.5 Greenspace in the Catchment

Across the catchment, there is approximately 950 hectares of parks and green spaces, which assists in water management. Some areas such as the Sankey Valley Park in Warrington provide essential water storage capacity in flood conditions. The patchwork of green spaces also helps to filter and slow storm water run-off and increase water infiltration into the ground; particularly important as the number of intense and often localised weather events increases with climate change.

Surface attenuation is a key benefit of green infrastructure and it has been shown that trees and grassland can decrease peak flows by up to 60%<sup>8</sup>.

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<sup>7</sup> The Water Vole *Arvicola Terrestris* in Britain 1989-1990: Its Distribution and Changing Status. Strachan R, Jeffries D.J. The Vincent Wildlife Trust 1993

<sup>8</sup> CIRIA <http://www.opengreenspace.com/opportunities-and-challenges/climate-change/flood-management/>

## SECTION 2: AIMS AND OBJECTIVES

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This plan provides a framework for a long-term partnership approach towards enhancement and management of the water environment of the Sankey Catchment.

### 2.1 Aim

The aim of the Catchment Plan is to develop an improved hydrological catchment, which minimises the frequency and intensity of flooding, assists in improving the quality of the water environment and maximises water for biodiversity needs.

### 2.2 Objectives:

- (i) To reduce the reactive nature of the Sankey catchment in flood conditions;
- (ii) To increase flood water storage capacity in the catchment;
- (iii) To minimise sources of diffuse and point source pollution throughout the catchment;
- (iv) To ensure new development contributes positively to catchment management objectives;
- (v) To enhance aquatic and riparian habitats for priority water dependent species within the catchment;
- (vi) To safeguard and reconnect the Sankey Canal;
- (vii) To engage communities in catchment improvements.

## SECTION 3: IMPLEMENTATION

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### 3.1 Strategic Catchment Approach

The approach taken in this plan is incremental, relying on many, often-small interventions, which individually may only make a minor difference, but collectively make a significant improvement. Also, the plan seeks to move away from taking actions, particularly on flood management based on Local Authority boundaries, to collective working focusing on solving problems at a catchment scale. For example, this could mean taking action in the upper catchment to relieve flood risk to areas in the middle and lower catchment and LLFAs funding works outside their district boundary to address issues within it.

#### (i) Slow the Flow

In the rural areas surrounding the headwaters of the catchment, the plan seeks to slow and filter the flow as a broad principle, in order to make the catchment less reactive or “flashy” in flood conditions, less prone to channel siltation and nutrient enrichment from soil run-off. Working with landowners through a collaborative approach, floodwater management will be integrated with improved land management designed to increase crop yields, improve soil structure and permeability, reduce soil erosion, lower input costs, create and enhance wildlife habitat and improve water quality.

In addition to helping to reduce downstream flooding, slowing the flow will also help to reduce damage to riverine and riparian habitats and particularly benefit water vole populations.

The types of interventions likely to be utilised are:

- Leaky dams to intercept overland flow or to slow in-channel flow;
- Woodland planting to increase water infiltration and slow overland flow;
- Permanent grass buffer strips along river channel bank tops to filter overland flow;
- Swales to provide temporary water storage;
- Rough grassland areas designed to slow overland flow.

Slowing the flow in the headwaters will also make any flood management interventions in the urban areas of the middle and lower catchment more effective.

#### (ii) Urban Interventions

Interventions in the urban areas will focus on water quality and water management issues but where possible will seek to utilise solutions, which can also provide biodiversity benefits. The types of interventions likely to be utilised are:

- Addressing misconnections;
- Urban Catchment Forestry;
- Reedbed Filtration;
- Sustainable Urban Drainage Systems (SuDs);
- Removing culverts;

- Flood Plain reconnection; and
- Desilting / de-weeding of channels.

Interception and slowing of surface water runoff from roads and urban developments through grass swales and urban tree planting could help to reduce the amount of hydrocarbons entering rivers via the drainage network and help to moderate the volume of water entering the system in storm conditions.

Misconnection of domestic foul drainage is a major problem on the Sankey Catchment. Misconnections can range from the misconnection of a dishwasher or washing machine through to complete misconnection of the foul sewer from a property.



Surveys of the Sankey Catchment found that some of United Utilities (UU) surface water outfalls were contaminated with foul water. As of May 2017, survey work to locate properties causing pollution is underway at eleven contaminated outfalls discharging into Dean Brook, Longford Brook, Hardshaw Brook, Black Brook, Millingford Brook, Whittle Brook, Rainford Brook, Sutton Brook and the Sankey Canal. Surveys to find and rectify misconnections can stop the pollution but the problems often reoccur. Work is underway nationally to find better ways to address misconnections and how they can be prevented in the future.

For more information see [www.connectright.org.uk](http://www.connectright.org.uk) .

The present financial climate makes the likelihood of contaminated land mitigation schemes less likely. To combat mine water discharges and leaching from former industrial land the most cost effective option may be to utilise reed bed filtration to intercept and filter out contaminants from the watercourses.

Lack of channel capacity due to siltation and excessive plant growth such as in the Rainford Brook / Sankey Canal section at Gerrard's Bridge can cause flooding of roads and properties. Safeguarding water courses by using 6m wide permanent grass margins could reduce the rate of siltation from soils washing off cultivated land; also helping to reduce phosphate and nitrate pollution in the river system.

Constrainment of rivers within channels and disconnection of rivers to their floodplain can create a lack of effective storage capacity creating downstream flooding. Where there are opportunities to allow rivers to spill onto floodplains and create flood storage capacity, such as along the Sankey Brook at Winwick Quay and at Newton, the areas should be identified and safeguarded in Local Authority Local Development Plans.

### (iii) Biodiversity

All projects and routine maintenance should embrace the following principles:

- Protecting and enhancing species and habitats in undertaking any intervention / project;
- Increasing habitat quality and habitat connectivity in order to reduce species population fragmentation through creation of new habitats; and
- Reducing invasive species.

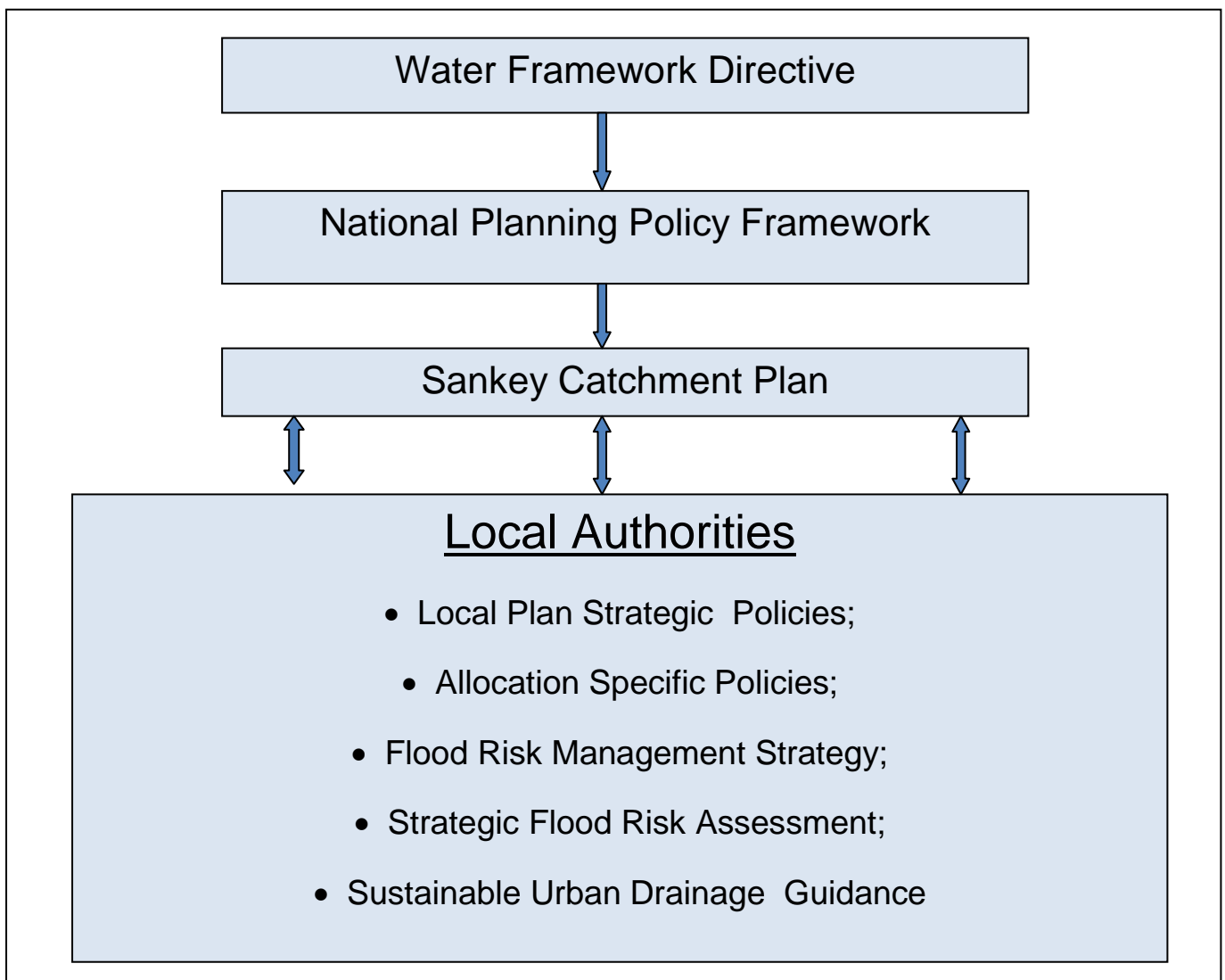
## 3.2 Local Development Planning

Local Planning Authorities should ensure that new development helps to improve water quality, contributes to flood management and biodiversity improvement by:

- Providing consistent Strategic Flood and Water Management policy guidance across the catchment for developers;
- Designating a “Slow the Flow” zone in Local Development Plans within which developments are required to slow overland flow and filter diffuse pollution. (St Helens Council);
- Safeguarding in Local Development Plans, major floodwater attenuation opportunity sites.

NPPF paragraph 100 states that Local Plans should take account of climate change by safeguarding land from development that is required for current and future flood management and by using opportunities offered by new development to reduce causes and impacts of flooding. The Sankey Catchment Action Plan provides a framework into which Local Authority planning policies can be harmonised, in order to maximise the benefits and minimise the negative effects on the water environment across the catchment. Appendix 5 provides an example policy framework and example development management policies.

**Figure 4: Policy Flow Diagram**





### 3.3 Engaging with the Community

Currently, there is only one Community Flood Action Group active in the Sankey Catchment. This group comprises of residents affected by flooding at West End Road, Blackbrook.

The formation of Community Flood Action Groups provides an effective mechanism for the interface between LLFAs and residents. The benefits of this include greater “flood readiness” leading to increased community safety and minimisation of flood damage, and more accurate information on the characteristics of flood incidents, helping to ground-truth flood modelling. Community Flood Action Groups can affiliate to the National Flood Forum <https://nationalfloodforum.org.uk/> which provides advice on issues such as property protection, property insurance and what to do in a flood situation.

The Mersey Rivers Trust has launched a River Guardians Citizen Science Project to monitor water quality. The River Guardians are drawn from the local community and are trained in to take regular samples of river water and to test them for a range of parameters including nitrates, phosphates and acidity.



River Guardians comparing samples  
©Mersey Rivers Trust

Sankey Canal Restoration Society (SCARS) [www.sankeycanal.co.uk](http://www.sankeycanal.co.uk) runs regular work parties along the Sankey Canal corridor, providing opportunities for the community to contribute to the improvement of the catchment.

Whilst the Local Authorities, along with the Canal and Rivers Trust, have substantial landholdings in the catchment, particularly in the Sankey Canal corridor, private landowners such as farmers and golf courses, have major effect on the catchment through land management practices and willingness to participate in programmes such as Slow the Flow. Positive engagement of landowners, which results in benefits to landowners, as well as the health of the catchment is fundamental to the success of the catchment plan.

The Mersey Forest is working to establish a Catchment Landowners’ Group to help landowners and farmers in the Sankey Catchment to work together for the benefit of their businesses and the natural environment. The group will come together to find solutions to the problems of land use change whilst delivering multiple public benefits including sustainable food, clean water, natural flood management and biodiversity improvements.

Funding will be sought from a range of sources including the Countryside Stewardship Facilitation Fund administered by Natural England.



Inaugural Landowners Group meeting at Fir Tree Farm © The Mersey Forest

### 3.4 Partnership Working

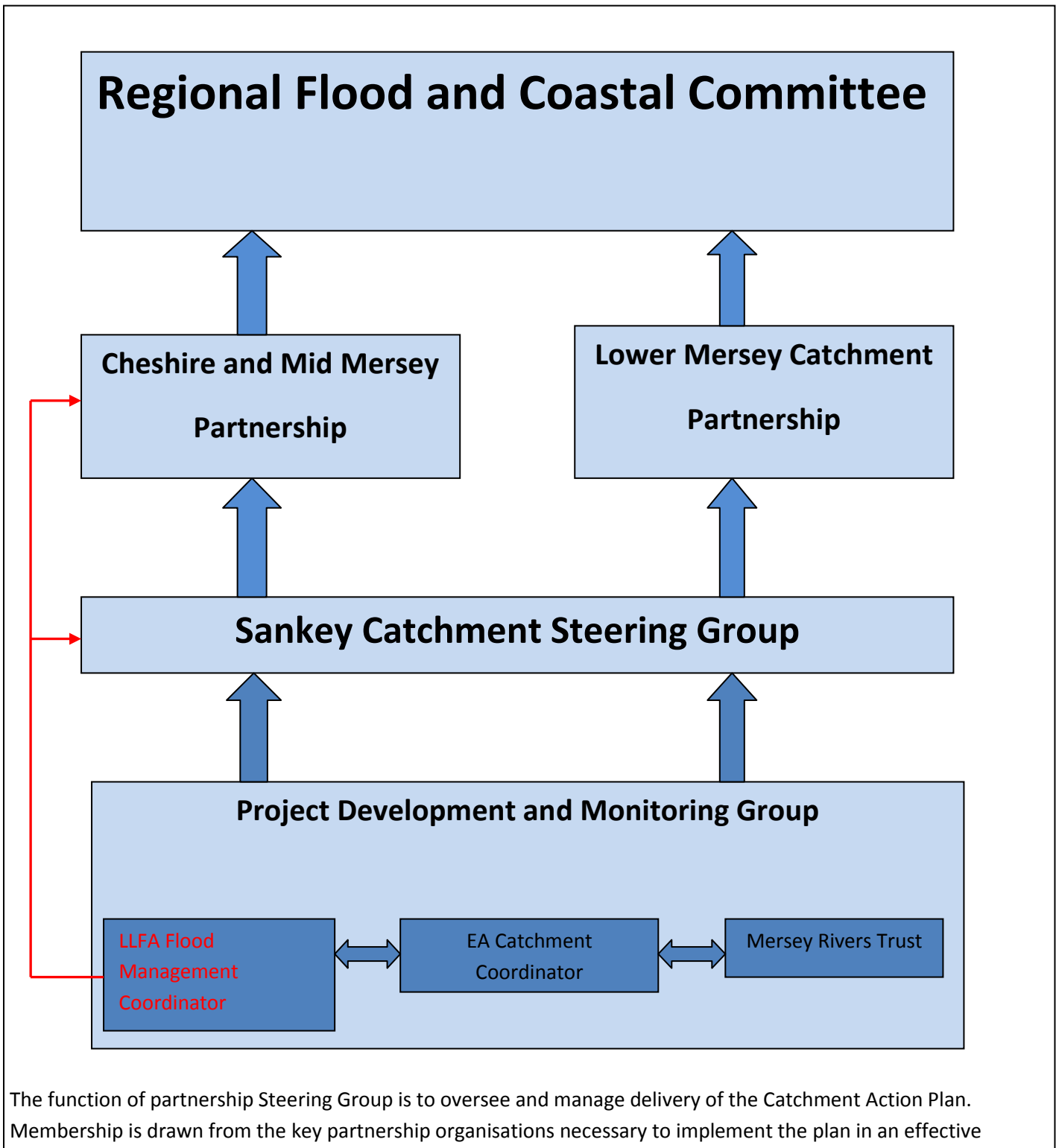
The Sankey Catchment Partnership consists of a range of organisations, which have different functions, which need to be fully integrated in order to achieve the aims of the Plan.

(i) Roles:

<b>Organisation</b>	<b>Role</b>
Flood Management Coordinator	Match-funded post by EA and St Helens, Halton, Warrington and Cheshire West LLFAs to coordinate flood management initiatives
Lead Local Flood Authorities (LLFAs)	Responsible for highway drainage and flooding from ordinary watercourses. LLFA's are responsible for producing Surface Water Management Plans and advising planning authorities on development issues.
Local Planning Authorities (LPAS)	Responsible for producing Local Development Plans and approving Planning Applications
Environment Agency (EA)	Statutory Agency responsible for industry and waste regulation; river abstraction, river, estuary and coastal water quality, flood defence, fisheries, contaminated land remediation regulation.
Catchment Coordinator	Funded by the Environment Agency, the Catchment Coordinator works with the partnership to identify and drive activities that offer multiple benefits, and ensure that environmental improvements are delivered through effective and innovative interventions in the catchment.
United Utilities (UU)	Water and Wastewater Service Provider
Mersey Rivers Trust	Lead organisation for developing a catchment-based approach for the integrated management of the water environment in the Lower Mersey Catchment of which the Sankey Catchment is part.
The Mersey Forest	Large-scale landscape regeneration partnership covering Merseyside and north Cheshire. Takes an integrated approach to green infrastructure including urban forestry to provide a range of benefits to the environment, community and the economy.
Canal and Rivers Trust (CRT)	Agency managing the national canal network. Owners of parts of the Sankey Canal in St Helens.
Biobank	Ecological Record Centre for Liverpool City Region. Hold ecological record resource for the LCR and coordinates volunteer action on biological recording.
Sankey Canal Restoration Society (SCARS)	Local charity promoting restoration of navigation on the Sankey Canal. Undertakes volunteer work along the canal corridor.

(ii) Governance

Figure 5: Project Management and Reporting Structure



The function of partnership Steering Group is to oversee and manage delivery of the Catchment Action Plan. Membership is drawn from the key partnership organisations necessary to implement the plan in an effective manner:

- St Helens Council - LLFA, Environmental Planning;
- Warrington Council - LLFA;
- Halton Council –LLFA, Landscape Section;
- Environment Agency –, Environmental Planning, Flood Risk Management, Ecology
- United Utilities;
- The Mersey Forest; and
- Mersey Rivers Trust.

Specifically, the Steering Group will:

- Coordinate partner activity and collaborative working;
- Monitor progress;
- Periodically, review and update the Catchment Plan.

The Steering Group is supported by the three project coordination posts, which jointly, will develop and manage the project portfolio, coordinate grant-funding bids and monitor progress against the plan's objectives. These posts form the core of the Project Development and Monitoring Group, which will be supplemented by co-opted members appropriate to topics and scheme under consideration at the time.

### (iii) Potential Funding Opportunities

There is a range of potential funding sources, which could be utilised to fund projects and which can be used to match fund against other funding pots including:

- The Heritage Lottery Fund Landscape Partnership Grant, which provides an opportunity to develop a catchment- scale capital programme;
- Environment Agency funding streams including the Fisheries Improvement Fund, the Water Environment Improvement Fund that aims to deliver Water Framework Directive objectives such as managing rural and urban pollution, improving modified physical habitats and controlling invasive species. The Water Resources pot can fund both revenue schemes such as investigation works and ecological monitoring and also capital works such as asset repair works.
- Funding for flood management schemes can be funded via the EA Grant in Aid and Local Levy. Schemes of less than £100,000 are approved by the EA at local level. Schemes above this threshold need approval at national level. A Quick Win Pot with a threshold of £50,000 requires a shorter business case and can be easier to access.
- The Countryside Stewardship Facilitation Fund supports people and organisations that bring farmers, foresters, and other land managers together to improve the local natural environment at a landscape scale.

- Section 106 of the Town and Country Planning Act 1990 enables Local Planning Authorities to enter into legal agreements with developers when it is considered that a development will have significant impacts on the local area that are unable to be moderated by means of conditions attached to a planning decision. Commuted sums can provide a source of funding.

The progress of the plan will be reported upwards to the Cheshire and Mid Mersey Tactical Group and the Lower Mersey Estuary Steering Group. These groups will in turn, report to the Regional Flood and Coastal Committee.



### 3.4 Action Plan

(H=high priority (Years 1-2), M= medium priority (Years 3-4) , L = low priority (Year 5) )

Objective	Delivery Theme	Project	Priority	Enabling Project	Lead
<b>To reduce the reactive nature of the Sankey Catchment in flood conditions;</b>	Slow the Flow; Positive Planning; Enhancing the Evidence Base	Countryside Stewardship Facilitation Fund Bid Application	H	Y	Mersey Forest
		NFM modelling to identify areas for effective intervention upstream of communities at risk	H	Y	Mersey Rivers Trust
		Increase greenfield runoff retention rate for new development upstream of communities at risk	H		LLFAs/ LPAs
	Slow the Flow	Ashton Golf Course “Slow the Flow “ and water storage project	H		LLFA/ Ashton Golf Club
<b>To increase / create flood water storage capacity in the catchment;</b>	Reconnecting rivers to their floodplain, Enhancing the Evidence Base	Identify area of potential flood plain re-connection	M	Y	Mersey Rivers Trust/ LLFA
	Reconnecting rivers to their floodplain, Positive Planning, Slow the Flow	Identify major flood water attenuation opportunity areas and where appropriate, allocate in Local Plans	H	Y	EA, Mersey Rivers Trust, LPAs, LLFAs

<b>To increase / create flood water storage capacity in the catchment</b>	Reconnecting rivers to their floodplain,	Identify minor opportunities for flood plain attenuation e.g. Open Space, School grounds by rivers	M		Mersey Rivers Trust / Mersey Forest/LLFAs
	Creating Capacity	Capture river flow to feed the lower reaches of the Sankey Canal	H		Halton BC/ Warrington BC/ EA
		Assess feasibility of de-silting areas of the canal to increase storage capacity	M		LLFA/EA
<b>To minimise sources of diffuse and point source pollution in the urban and rural areas of the catchment</b>	Enhancing the evidence base	Baseline water quality testing to identify diffuse inputs to water bodies	H	Y	Mersey Rivers Trust
	Buffering the water Environment	Wet woodland creation to intercept farm run-off	M		The Mersey Forest
	Buffering the water Environment, Slow the Flow	Implement mine water treatment schemes at Park Pit and Haydock Sough	L		EA/ Coal Authority
		Engage with landowners and schemes to improve land management to reduce nutrients and sediment entering water bodies.	H		The Mersey Forest
		Urban Forestry on housing estates eg Moss Bank	M		The Mersey Forest

<b>To minimise sources of diffuse and point source pollution in the urban and rural areas of the catchment</b>	Buffering the Water Environment, Slow the Flow	Permanent grass field margins along water courses	M		The Mersey Forest
	Buffering the Water Environment	Address motorway and main road run-off	M		Mersey Rivers Trust
<b>To ensure new development contributes positively to catchment management objectives</b>	Positive Planning; Enhancing the Evidence Base	Develop Development Planning Policy suite to ensure development fully contribute to flood management and water quality improvements utilising Green Infrastructure	M	y	LPAs, LLFAs
		Develop evidence base of overland flow patterns to establish attenuation rates to inform Local Development Plan Policies	H	y	LLFAs, LPAs
		Promote the catchment plan to LCR/ Devolved Authority Strategic networks e.g. Nature Connected	L		EA, Mersey Forest
	Enhancing the Evidence Base, Awareness and engagement	Develop case study to demonstrate positive benefits of interventions on strategic sites	L	y	Partnership
	Positive Planning, Awareness and engagement	Improve access to water courses to enable water quality monitoring	M	Y	LLPAs, EA

<b>To enhance aquatic and riparian habitats for priority water dependent species within the catchment</b>	Enhancing the Evidence Base	Update River Corridor Surveys across the catchment	H	Y	EA
		Undertake Catchment-wide Water vole Survey	H	Y	EA/ Biobank
	Naturalising Rivers	Remove Culverts in watercourses and naturalise to create new habitat	M		EA / LPAs
		Install eel passes	M		EA/ LLFAs/ Canal & Rivers Trust
		Work with Landowners to create a network of habitat margins along rivers up to 6m wide to improve habitat	M		Mersey Forest
		Remove bank protection to allow natural processes to improve river morphology	L		EA
		Creation of pools and riffles within or near water bodies	M		EA
<b>To enhance aquatic and riparian habitats for priority water dependent species within the catchment</b>	Enhancing Habitats	Plant wet woodland to provide “stepping stone” Willow Tit habitat to reduce population fragmentation with Sankey Valley Park being a high priority for action.	M		EA, Local Authorities
		Undertake Control of Himalayan Balsam on Riverine Wildlife Sites	M		EA, Local Authorities

<b>To safeguard and reconnect the Sankey canal</b>	Canal Reconnection	Establish the feasibility of reconnecting the sections of Sankey Canal still in water.	H	y	Halton Council, Warrington Council, EA, Canal and Rivers Trust
<b>To engage the community in catchment improvement</b>	Awareness and Engagement	Establish programme of Community projects e.g. Canal Conservation Days; Ecological Recording; Water Quality monitoring	M		Mersey Rivers Trust. BIOBANK , SCARS
	Awareness and Engagement	Engage with businesses through sponsorship and corporate conservation days	M		Mersey Rivers Trust
	Awareness and Engagement	Support the development of Community Flood Action Groups at key flood locations	L		LLFAs
	Awareness and Engagement	Establish a Landowners Working Group	H		The Mersey Forest

## Section 4: Monitoring and Review

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### 4.1 Monitoring

The effectiveness of the Sankey Catchment Plan will be monitored via the following indicators:

SC1	The reduction of the overall number of properties in the Sankey Catchment at risk of flooding
SC2	The number of properties benefitting from a reduced flood risk in the Sankey Catchment
SC3	Kilometres of river enhanced
SC4	The performance of United Utilities assets
SC5	The number of blockages to fish migration removed
SC6	Water vole population distribution (using the 1997 Catchment Survey as a baseline)
SC7	Reduction in the area of Himalayan Balsam
SC8	The number of Community Flood Action Groups in the Sankey Catchment
SC9	The number of River Guardians active in the Sankey Catchment
SC10	Kilometres of Sankey Canal hydrologically connected.

### 4.2 Plan Review

The Project Development and Monitoring Group will review and update the Catchment Plan every 6 years. This will enable the process to synchronise with the review cycle of the LLFA Flood Risk Management Strategies.

Derived from the Action Plan (3.4) a Project Portfolio will be developed on an ongoing basis, in order to be able to respond to grant funding opportunities as they arise.

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