

Environment Agency

Severn Valley Water Management Scheme

Sustainability Appraisal - Scoping Report

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Ove Arup & Partners Limited

63 St Thomas Street

Bristol

BS1 6JZ

United Kingdom

arup.com

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1. Introduction

1.1 Background

The River Severn forms an integral part of life for those who live and work around it. It offers a haven for wildlife, an essential transport route, myriad opportunities for recreation, and a vital source of water for communities within its catchment. It provides an essential resource for agriculture and draws people to the communities along its reach allowing the local economy to grow and prosper.

Despite its many benefits, the River Severn also comes with many challenges. There is a long history of flooding along the river and communities along its length continue to suffer the impacts of prolonged inundation. Extended durations of dry weather have also led to exceptionally low river flows, low groundwater levels and a decline in reservoir levels; this has increased pressure on wildlife and the environment. Previous extremes in weather, and the resulting impacts, have identified the need for investment in water management, ensuring we can conserve water in periods of prolonged dry weather, but equally allowing water to be managed effectively and passed down the catchment safely during wet periods.

Cyfoeth Naturiol Cymru/ Natural Resource Wales, the Environment Agency, Powys County Council and Shropshire Council are exploring opportunities to make the Severn a more vibrant and resilient river catchment, where local economies prosper, and communities and natural assets thrive for current and future generations.

The Severn Valley Water Management Scheme (SVWMS) is one of a number of projects looking at how this can be achieved, working with communities to make the most of any future investment. It is exploring opportunities within the Severn Uplands Catchment to manage land and water in a way that allows it to better cope with extremes. It will restore natural processes that can effectively and adaptively manage flood and drought pressures, whilst also providing human well-being and biodiversity benefits. The scheme aims to maximise the benefits to the people, place and planet by combining the best of traditional engineering and Nature-based Solutions (NbS).

The output of the initial study that is being undertaken to identify solutions to better manage water in the catchment will be the production of an overarching SVWMS Strategy document that will outline the case for change and a proposed way forward for the catchment. The development of the SVWMS Strategy will be underpinned by a Sustainability Appraisal (SA) to ensure that sustainability is at the core of decision making. The SA process will be used to help capture the wider environmental, social and economic context of the catchment and key issues to be addressed as part of the Strategy.

This report outlines the context and proposed scope of the SA, including the appraisal process that will be followed and the assessment framework that will be used to assess the potential effects that could result from the Strategy.

1.2 What is sustainable development?

Sustainable development is defined by the United Nations [1] as development that *“meets the needs of the present, without compromising the ability of future generations to meet their own needs.”* Underpinning sustainable development is the need to balance economic growth, social inclusion, and environmental protection. The balancing of these three elements is required to support the long-term wellbeing of individuals and society. The UK

Government's sustainable development strategy [2] outlines five key principles to guide sustainable development, these are:

- Living within environmental limits
- Ensuring a strong, healthy and just society
- Achieving a sustainable economy
- Promoting good governance
- Using sound science responsibly

Sustainable development also promotes the building of an inclusive, sustainable, and resilient future for both people and the planet. This includes creating inclusive and equitable economic growth, creating opportunities for all, reducing inequalities, and promoting integrated and sustainable management of natural resource and ecosystems [3].

1.3 What is the purpose of this sustainability appraisal?

A SA is a process that can be carried out to identify and promote options that either fulfil the requirements of sustainable development, or facilitate it. This is done by assessing the extent to which the proposed strategy, when judged against reasonable alternatives, will help to achieve environmental, economic and social objectives that are relevant to the project and study area. This process will be used to identify and mitigate potential adverse effects that could result from measures proposed as part of the SVWMS Strategy, and also identify opportunities for the scheme to provide wider betterment to the environment and society.

1.4 Report structure

The remainder of this SA Scoping Report is set out as follows:

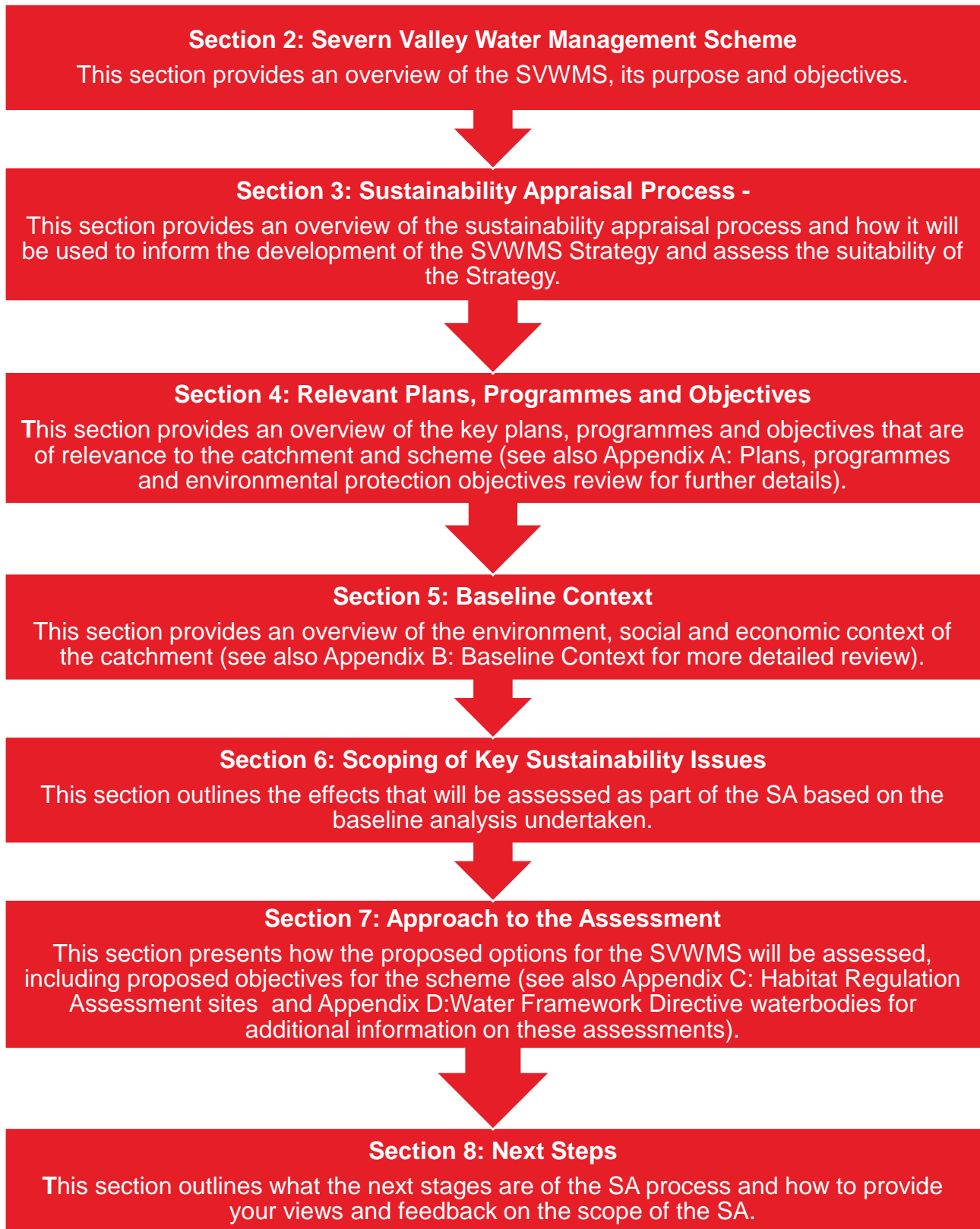


Figure 1-1 Structure of the report

2. Severn Valley Water Management Scheme

2.1 What is the Severn Valley Water Management Scheme?

This SVWMS is intended to be a catchment wide programme of water management interventions that will be implemented across the Severn Uplands ('the Upper Severn Catchment'). The Upper Severn Catchment spans England and Wales, with approximately two thirds of the catchment being located in Wales (see Figure 2.1 below). The catchment is predominantly located within the jurisdiction of Powys County Council and Shropshire Council. It also extends partially northwards into the boundaries of Wrexham County Borough Council, Denbighshire County Council, and Gwynedd Council.

Cyfoeth Naturiol Cymru/ Natural Resource Wales, the Environment Agency, Shropshire Council and Powys County Council are currently in the process of investigating the development and composition of the catchment wide programme. To date, work has been undertaken to start to investigate and analyse a series of datasets to build a clearer picture of current conditions across the Upper Severn Catchment and enable future solutions to be explored. This has included engagement with community and professional partners and linked in with national and international initiatives to understand ways in which others are managing water at a catchment scale like this. The output of this work is a clearer understanding of the opportunities and of the scale of intervention that would be required to support communities at flood risk across the study area.

We are now in the process of exploring and developing the opportunities and interventions that will form part of the Strategy for the SVWMS. We will explore a spectrum of potential interventions and consider ways in which NbS and innovative engineering could come together to provide increased resilience. These measures could include engineered solutions such as the construction of flood walls and embankments; natural flood risk management measures that slow the flow of water upstream such as tree planting or the creation of leaky dams; alternative farming and land management practices; looking at how existing water infrastructure is used; and other storage options across the catchment.

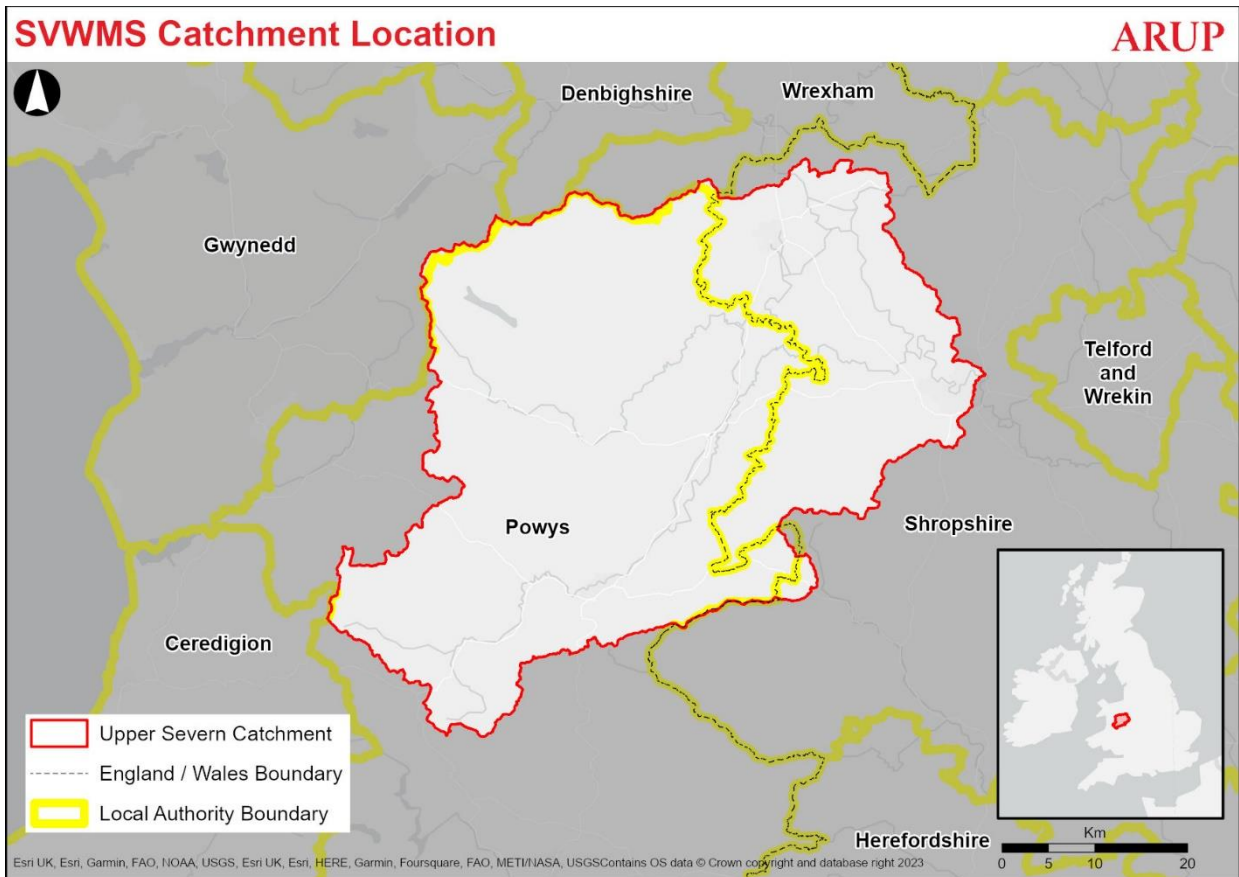


Figure 2-1 Upper Severn Catchment location

2.2 Why is this needed and what will it achieve?

The Cyfoeth Naturiol Cymru/ Natural Resource Wales, the Environment Agency, Shropshire Council and Powys County Council (with support from a number of other partners) are seeking viable solutions that reduce flood risk and deliver multiple outcomes in the Severn Valley. This is necessary because communities along the River Severn have a long history of flooding. Significant floods in recent decades have caused damage to homes and businesses and have impacted local infrastructure and disrupted travel. Flooding in the winter of 2019 and 2020 resulted in over 1,500 homes being flooded across the Severn catchment. Whilst existing flood risk management assets and schemes prevented over 14,500 homes from being flooded, there are still communities and urban centres that remain at risk. Flooding events are also becoming more frequent with widespread flooding occurring again in 2021, 2022 and during this past winter 2023/2024. So far across this autumn and winter we have seen 10 named storms, with storms Babet, Gerrit and Henk causing particularly high level of flooding and damage through the Severn Uplands.

There have also been periods of prolonged dry weather in recent years, such as the summer of 2022, and measures have been put in place to manage the damaging effects this has on our communities. Because of this, water availability has been closely monitored and managed to ensure a continued water supply. This is vital to everyday life, the environment, farming, and businesses in the region.

The increase of extreme weather conditions is due to a changing climate. The Severn Valley’s communities and environment need long term resilience to deal with this situation. We are therefore considering a scheme which is composed of multiple components, which aims to improve how water is managed across the Severn Uplands.

The SVWMS will take a collaborative, partnership approach aimed at reducing flood risk, supporting future sustainable growth and job creation, and driving efficiencies to the public purse by working with multiple organisations. Any proposed scheme will also consider opportunities to incorporate sustainable water management, deliver environmental improvements and promote health and wellbeing. The overarching vision for the SVWMS centres around the following:

- Nature – Support the natural environment and climate resilience
- People – reconnecting people with the landscape
- Economics – supporting local communities

This work will complement other projects being undertaken by the Environment Agency and Cyfoeth Naturiol Cymru/ Natural Resource Wales. These include development of a longer-term climate resilience strategy for the whole of the River Severn catchment and an Adaptive Pathway pilot looking at how to better invest the funding available in the future to ensure that communities and wildlife are resilient to the variety of impacts associated with climate change.

The development of the SVWMS Strategy will take place between 2023 and 2027, with an aim to publish the Strategy in 2025/26.

3. Sustainability appraisal process

The Environmental Assessment of Plans and Programme Regulations 2004 [4] (the “Strategic Environmental Assessment Regulations”) outline requirements that need to be met during the development of certain plans or spatial strategies to ensure that environmental effects have been appropriately considered. The SA process incorporates the requirements of the Strategic Environmental Assessment (SEA) Regulations, but also considers broader social and economic effects in addition to environmental effects.

It is a legal requirement for responsible authorities to undertake an SEA of plans and programmes that are subject to preparation and/or adoption by an authority at a local, regional or national level and which are required by legislative, regulatory or administrative provisions. The purpose of this is to ensure that potential significant environmental effects are identified and mitigated. The SVWMS Strategy is not a strategy that is required by legislative, regulatory or administrative provisions and therefore there is no legal requirement for an SEA or SA to be undertaken. The SA is being undertaken voluntarily to integrate the relevant environmental, social, and economic factors into the development of the Strategy so that it supports sustainable development. The SA process has been used as it is a systematic and standardised process that can be used to aid the selection of options that are the most sustainable. The steps involved in the process are outlined in Figure 3-1 below.

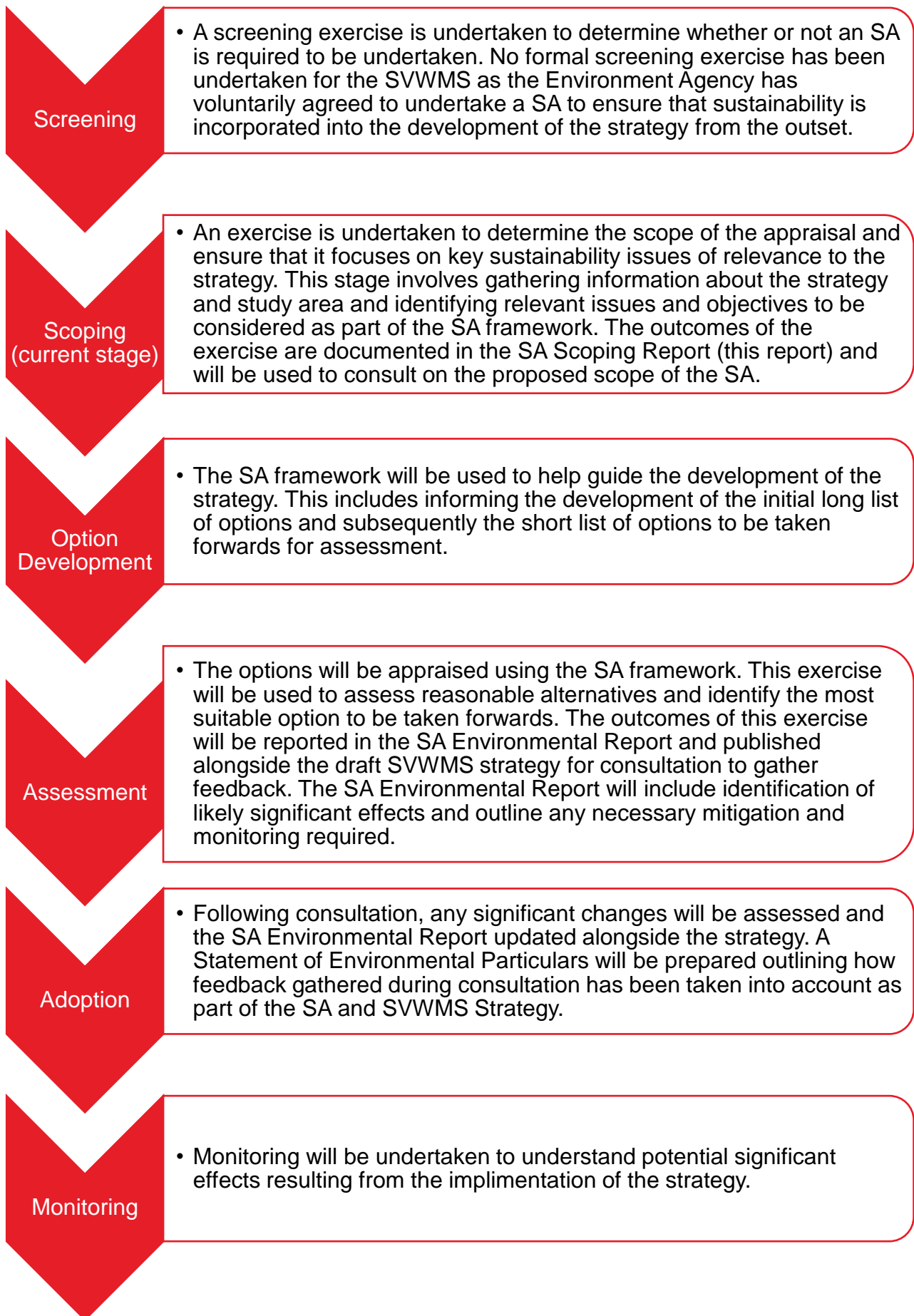


Figure 3-1 Overview of sustainability appraisal process

The purpose of the SA scoping report is to fulfil the requirements of the SA process in terms of setting the context, objectives, establishing the baseline and deciding on the scope. Table 3-1 below sets out what information is required to be included at the scoping stage and where this can be found within this report.

Table 3-1 Sustainability appraisal scoping requirements

Scoping requirement	Where the information is provided
Identify other relevant plans, programmes and objectives	Section 4 and Appendix A
Collect baseline information	Section 5 and Appendix B
Identify sustainability issues and problems	Section 6
Develop the SA framework	Section 7
Consult the consultation bodies on the scope of the SA report	Section 8

4. Relevant plans, programmes and objectives

4.1 Overview

The SA scoping report must clearly describe the relevant plans, programmes and objectives that may influence and are relevant to the development of the scheme. Those of relevance to the SVWMS are outlined in this report. The review that has been undertaken includes a high-level review of key international strategies, plans and legislation as it is assumed that where this is relevant this has been translated into a national equivalent. For example, retained European Union Directives have been transposed into UK legislation.

The full review of plans, programmes and objectives relevant to the SVWMS is provided in Appendix A. This includes an overview of what the document is, if it is applicable to England and/or Wales and its relevance to the SVWMS. This is not an exhaustive list and will continue to be reviewed as the SVWMS and SA are developed. A summary of key issues identified through the review is provided Table 4-1 below.

Table 4-1 Overview of key issues identified from plans, programmes and objectives

SA topic	Issue
Population and human health (communities)	<ul style="list-style-type: none"> Promote healthy and safe communities and maximise physical and mental well-being (national and local) Strengthen the love of nature and encourage a reconnection of people with the natural environment, particularly school children and young people (local, regional and national) Promote and protect Welsh language (national)
Biodiversity	<ul style="list-style-type: none"> Protect and enhance the natural environment and the resilience and adaptability of ecosystems (local and national) Improve biodiversity (regional) Conserve and enhance flora and fauna (national)

SA topic	Issue
	<ul style="list-style-type: none"> • Plant woodlands and manage forest resources sustainably (regional and national) • Deliver nature-based solutions and green infrastructure (national) • Prevent, eradicate and manage invasive alien species (national) • Clean and plentiful water (national) • Thriving plants and wildlife (national)
Land use and landscape	<ul style="list-style-type: none"> • Make effective use of land (national) • Ensure provision, protecting and improving open space (local and national)
Cultural heritage	<ul style="list-style-type: none"> • Protect, preserve and enhance the historic assets and the wider historic environment (local, national and international) • Promote heritage and culture, including Welsh language (national)
Ground conditions (soils and geology)	<ul style="list-style-type: none"> • Restore degraded land (International) • Plant trees and woodlands to contribute to soil management (national) • Encourage practical measures to reduce soil erosion and improve soil management planning within the agricultural sector (regional)
Water environment	<ul style="list-style-type: none"> • Reduce flood risk, including for downstream areas of flood risk identified in the Severn River Basin District Flood Risk Management Plan and Nature Resource Wales Flood Risk Management Plan. • Mitigate the effects of floods and droughts (national) and increase resilience to future flooding (national) • Prioritise flood risk management activities that work with natural processes and deliver multiple benefits • Assist with the delivery of WFD targets (local and national) • Address threats of water scarcity (national) • Manage and protect groundwater and drinking water supplies (national and local) • Seek opportunities to promote hydromorphological improvements to watercourses (local) • Reduce nutrient pollution to freshwater habitats (national)
Climatic factors	<ul style="list-style-type: none"> • Reduce greenhouse gas emissions (national)

SA topic	Issue
	<ul style="list-style-type: none"> • Take opportunities to increase carbon storage and sequestration through tree planting and peatland restoration (local) • Take steps to adapt to the impacts of climate change (national) • Support local action on climate change (local)
Air quality	<ul style="list-style-type: none"> • Reduce emissions of air pollutants (national) • Minimise exposure to airborne pollutions to protect human health and the environment (local and national)
Infrastructure and transport	<ul style="list-style-type: none"> • Support development for housing (including affordable homes), employment, retail and other uses (national and local) • Contribute towards sustainable development (local and national) • Promote sustainable transport and active travel (local and national)
Resources and waste	<ul style="list-style-type: none"> • Minimise waste and send no waste to landfill (national) • Use sustainable / recyclable materials in construction (national) • Sustainable and efficient use of natural resources (national)
Economy	<ul style="list-style-type: none"> • Support sustainable economic growth and the transition to a strong and competitive zero-carbon economy (national local) • Facilitate growth and support of sustainable industries (national) • Support local businesses and strong market towns (local) and ensure the viability of town centres (national) • Support a sustainable and competitive agricultural (national), forestry and tourism sector (regional)

Provide your views

Relevant policies, plans and objectives

- Do you feel that we have we included all relevant plans, programmes and objectives and adequately taken account of those listed?
 - [Strongly agree/ Agree/ Neutral/ Disagree/ Strongly Disagree]
- Are there other documents specifically relevant to the SVWMS that have not been listed and should be taken into account?

5. Baseline context

5.1 Introduction

Baseline information has been collected and analysed to understand the key environmental, economic and social issues and considerations relevant to the Upper Severn Catchment area. The baseline information has been used to help define the themes and scope of the SA framework. Topics to be considered as part of the assessment are identified in Figure 5-1 below alongside the inter relationship between these issues.



Figure 5-1 Baseline topics

The baseline review has focused primarily on the extent of the Upper Severn Catchment. Baseline conditions for areas located outside of the catchment boundaries are noted where they are of particular relevance. For example, areas located downstream and outside the Upper Severn Catchment that may be impacted by changes to flood risk resulting from the scheme. Full baseline information is included in Appendix B, with a summary for each topic included in the baseline section below.

5.2 Environmental

The Upper Severn Catchment includes many diverse landscapes, which are predominately rural and rich in natural beauty, with a strong human influence. Eight

National Landscape Character Areas, which are defined as distinct, recognisable, and having a consistent pattern of elements [5], are present in the Upper Severn Catchment. The topography of the Upper Severn Catchment rises from east to west and reaches its highest points towards Snowdonia National Park at the northwest border. The areas around the main towns of Oswestry, Welshpool and Shrewsbury define the extents of the large floodplain of the River Severn, which is fed by a series of west-east running vales. The south-eastern boundary of the Upper Severn Catchment intersects with Shropshire Hills Area of Outstanding Natural Beauty (AONB) (as shown on Figure 5-2 below), renowned for its rolling hills, picturesque valleys and rich biodiversity.

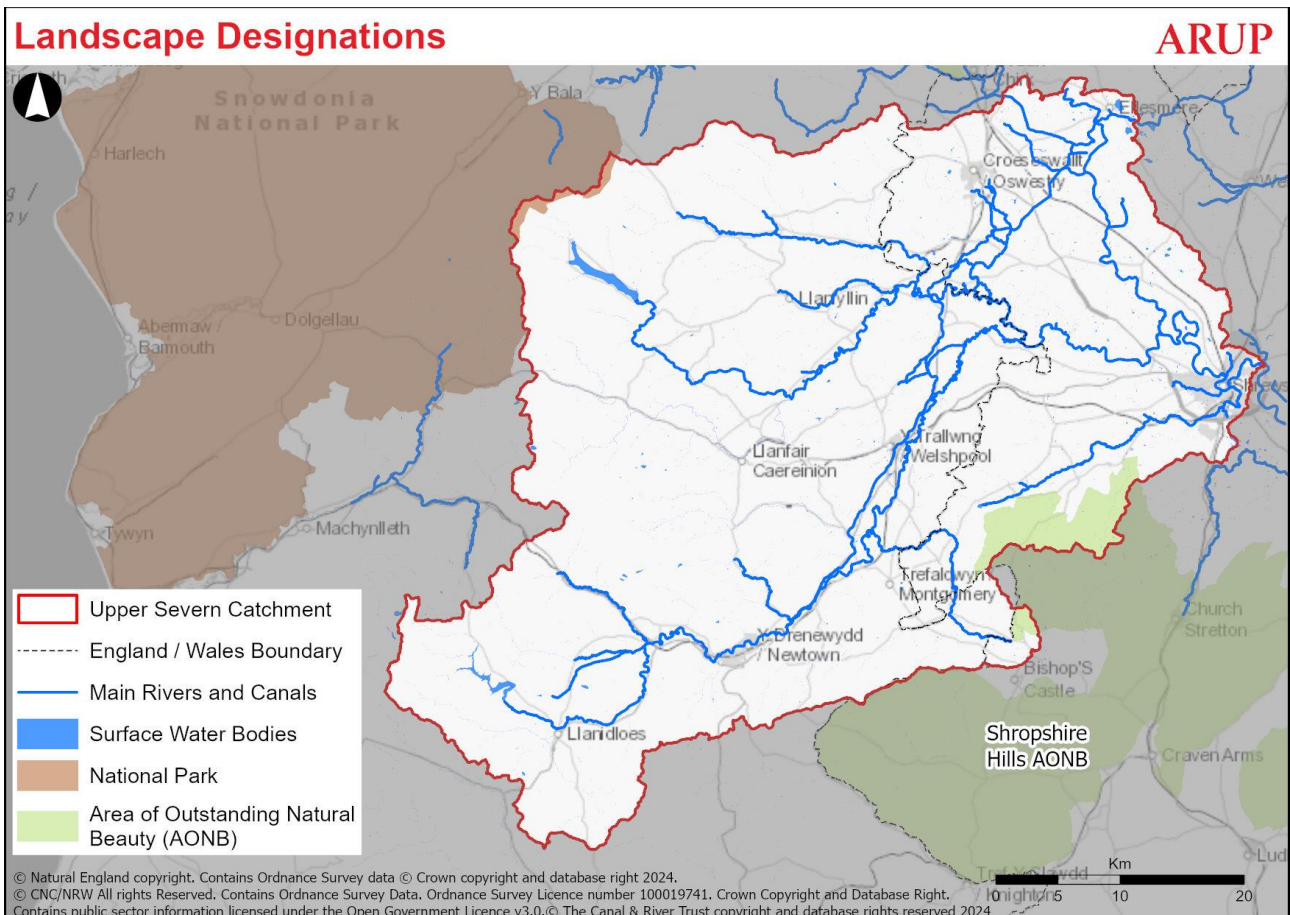


Figure 5-2 Designated sites

Land use is dominated by agriculture (as shown on Figure 5-3 below), however areas of high-quality agricultural land are limited to the river valleys and near the main towns where topography is flatter. Generally, the catchment consists of moderate to very poor-quality agricultural land, with pasture and sheep farming covering approximately a third of the catchment. Agriculture and associated business form a key part of the local economy.

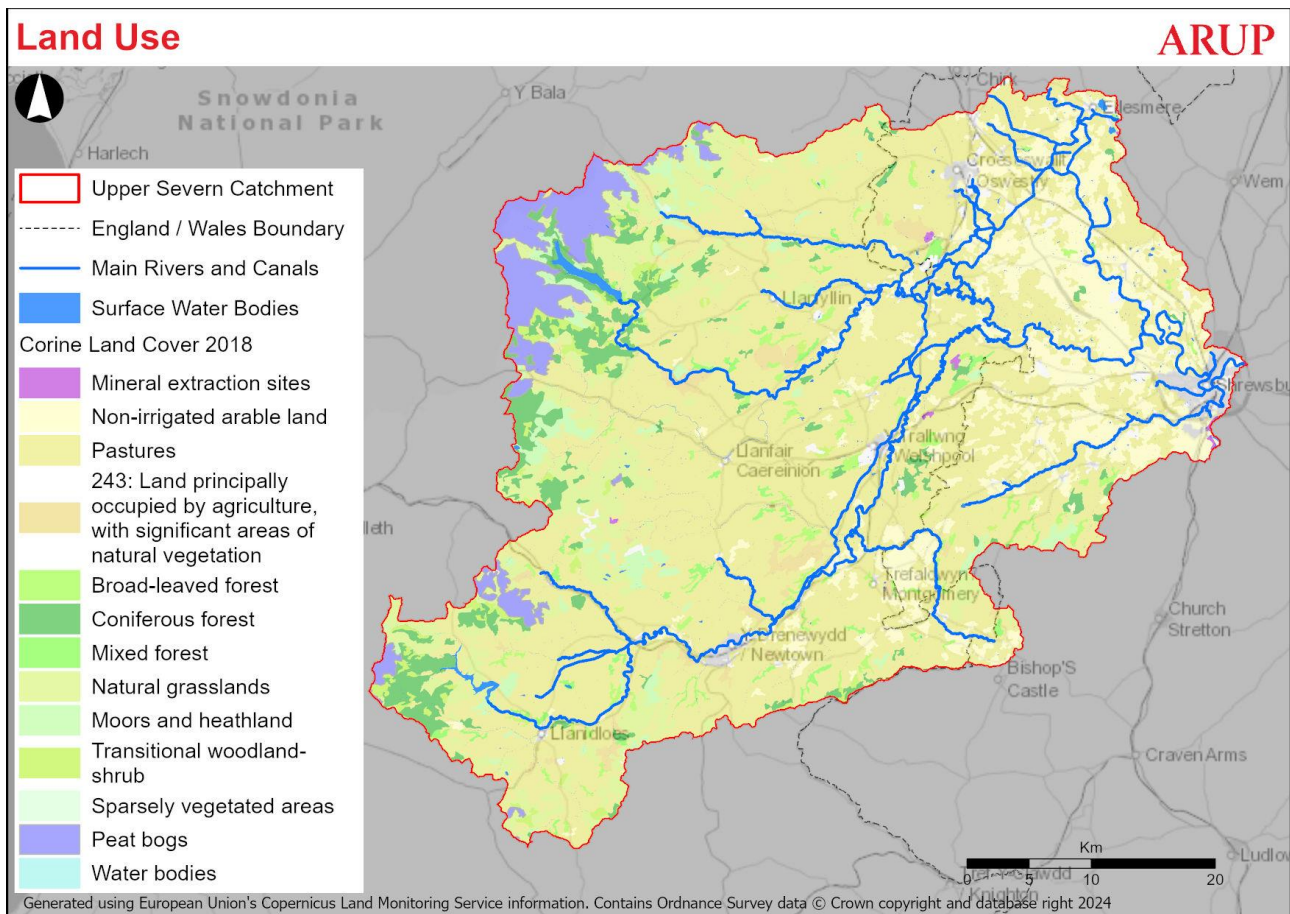


Figure 5-3 Land use

The Snowdonia National Park and Shropshire Hills AONB are main tourist destinations. There are also several Registered Historic Landscapes, Registered Parks and Gardens, several important Cadw, National Trust and English Heritage sites. A number of play areas, parks, gardens and sports fields are scattered throughout the Upper Severn Catchment, with higher concentrations in Shrewsbury, Oswestry, Welshpool and Newtown.

There are a large number of nationally significant heritage assets, including 4,366 listed buildings, 419 scheduled monuments, 25 historic parks and gardens (20 of these historic parks and gardens are statutorily designated in Wales, five non-designated in England), 62 conservation areas and four registered landscapes of outstanding and special historic interest. Furthermore, there are thousands of non-designated assets including archaeological sites, historic battlefields, buildings and landscape character areas and the potential for previously unrecorded archaeological remains across the Upper Severn Catchment.

The Upper Severn Catchment contains areas of significant natural heritage with internationally important habitats that support unique biodiversity. Over 170km² of the catchment is classified as 'priority habitats' which are considered to be the most threatened and requiring conservation action [6]. Extensive bog, largely in the north-western and south-western section of the Upper Severn Catchment, accounts for the largest area of priority habitat. Upland heathland, broadleaved and coniferous woodland, fens and ancient woodland, which house complex communities of plants and animals, also constitute significant areas of priority habitat within the Upper Severn Catchment.

Ten internationally important designated sites are located within the Upper Severn Catchment as shown on Figure 5-4. These include the Berwyn and South Clwyd Mountains Special Area of Conservation (SAC), a large area of heather moorland located in the north-west of the Upper Severn Catchment. Nearby, the Berwyn Special Protection Area is designated for internationally significant numbers of birds and the Tanat and Vyrnwy Bat Sites SAC is designated for lesser horseshoe bat populations. In the east of the Upper Severn Catchment, the Stiperstones & the Hollies SAC is designated for dry heath and upland oak woodland. The two Ramsar sites, Midland Meres & Mosses (Phase 1 and Phase 2), support a number of rare plants and invertebrate species. The Montgomery Canal SAC supports a vast range of aquatic plant life and the Granllyn SAC is designated for its internationally important great crested newt population. Two further internationally important sites; Coedydd Llawr-y-glyn SAC and Elenydd Mallaen SPA are situated within the catchment. Additionally, there are 109 nationally designated sites in the Upper Severn Catchment.

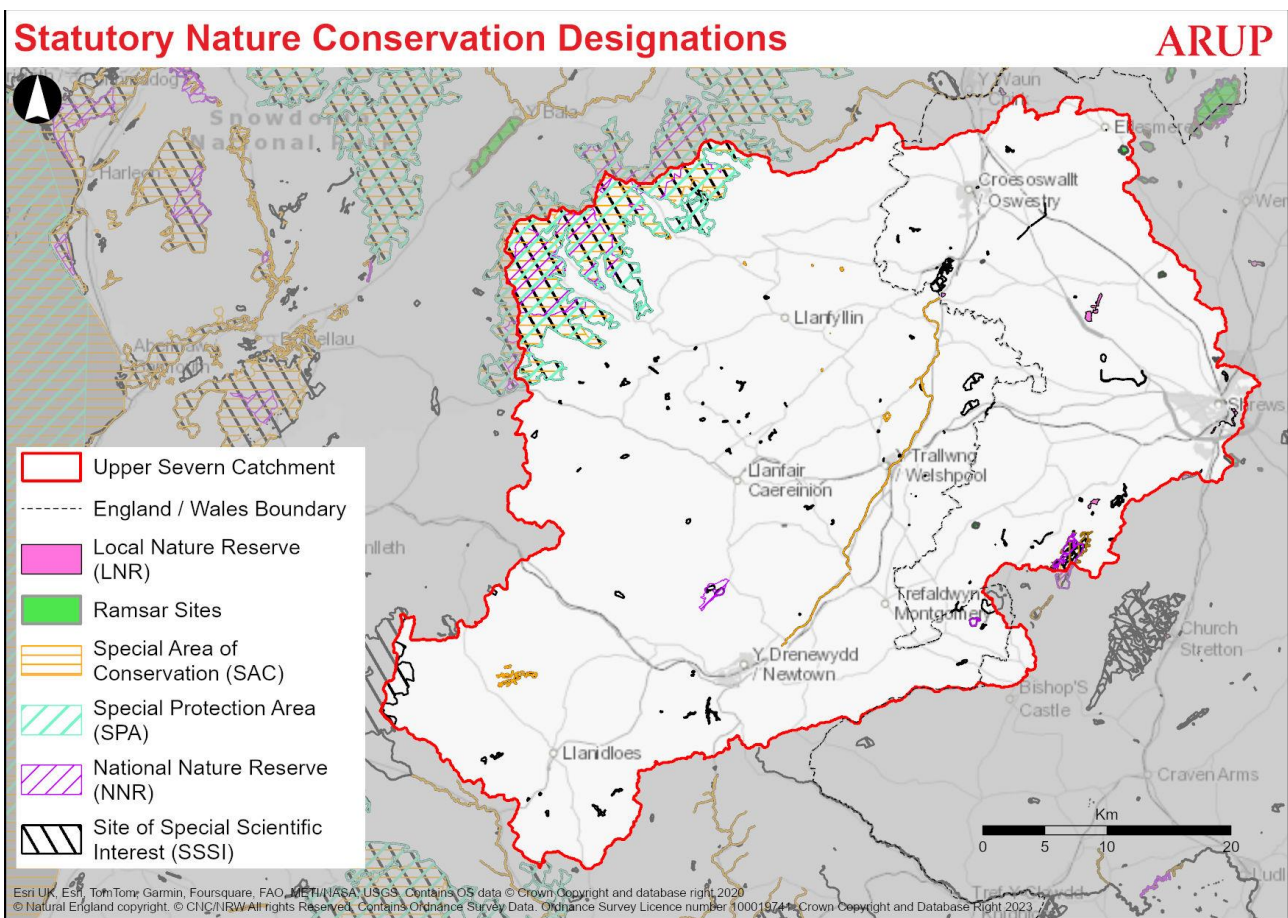


Figure 5-4 Special Protection Areas, Special Areas of Conservation, Ramsar sites, Site of Special Scientific Interest, National Nature Reserves and Local Nature Reserves

In terms of land use, the Upper Severn Catchment includes large areas of enclosed farmland, woodlands and semi-natural grassland. These land uses contribute heavily in terms of provision of ecosystem services in the catchment, particularly those relating to agriculture, recreation, climate regulation, water quality and air quality.

The water environment plays a significant role in the landscapes and habitats of the Upper Severn Catchment which includes 102 Water Framework Directive (WFD) surface water bodies (as shown on Figure 5-5) and seven groundwater bodies. There are also eight

Source Protection Zones, two Drinking Water Safeguard Zones, and six Nitrate Vulnerable Zones of relevance to the catchment. Under the WFD, each water body has a default objective to reach good Overall Status. Currently only 30% of rivers, 14% of lakes, 50% of canals and 29% of groundwater bodies have achieved good Overall Status. Reasons for not achieving good status are largely due to agriculture and rural land management, but also due to mining and quarrying, and the water industry.

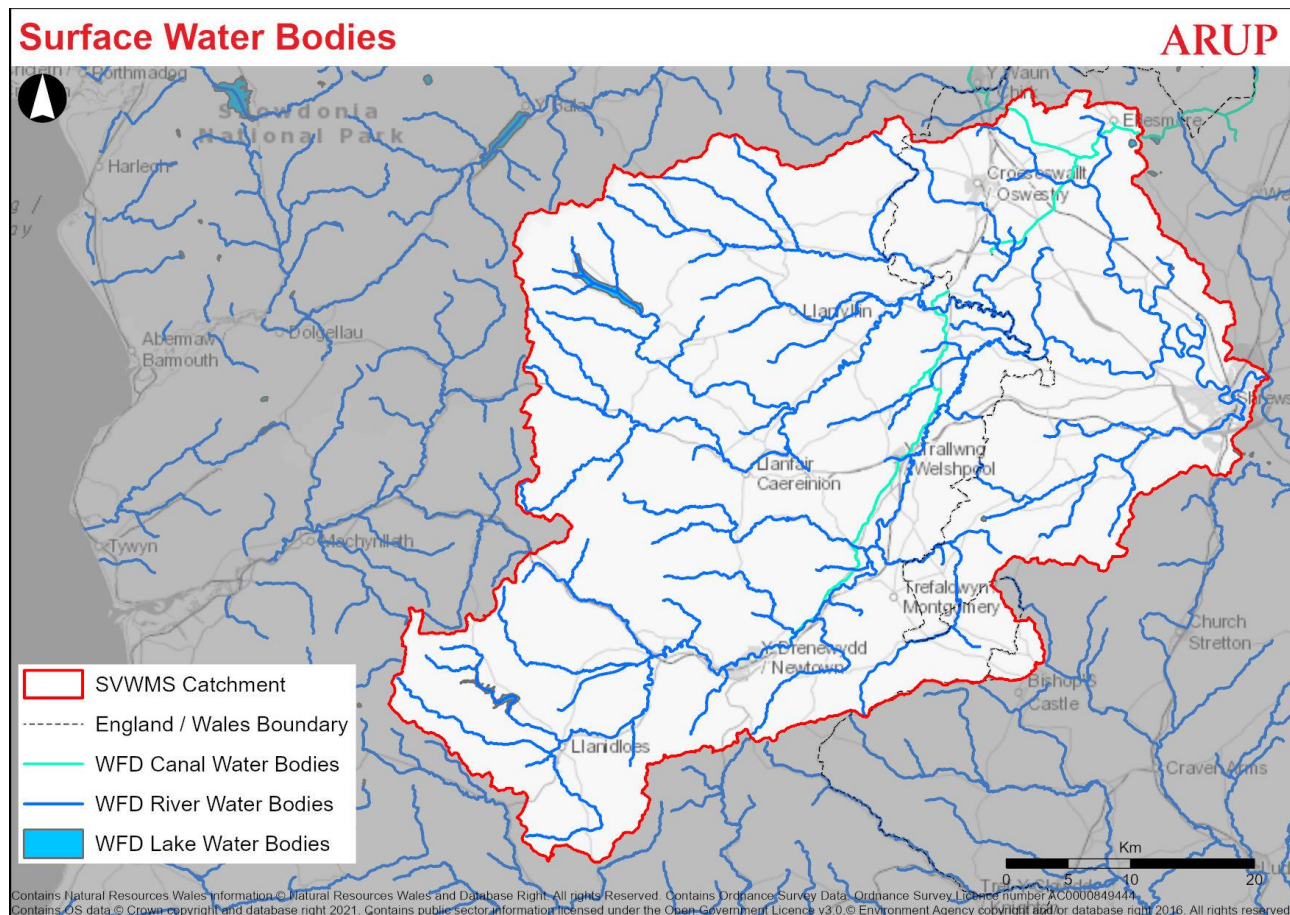


Figure 5-5 Surface water bodies

A number of areas in the Upper Severn Catchment, particularly on the River Severn and River Vyrnwy, fall within the highest flood risk category (see Figure 5-6 below). In total, over 2,600 homes are at risk of flooding along these rivers. Many homes, businesses and critical infrastructure have been hit severely by storms in recent years, particularly in Shrewsbury, Welshpool and Newtown. The Upper Severn Catchment is also at moderate risk of groundwater flooding [7]. In recent years, dry weather and water shortages have impacted the Upper Severn Catchment, particularly the River Severn and its tributaries which supply water to nearly 8 million people [8].

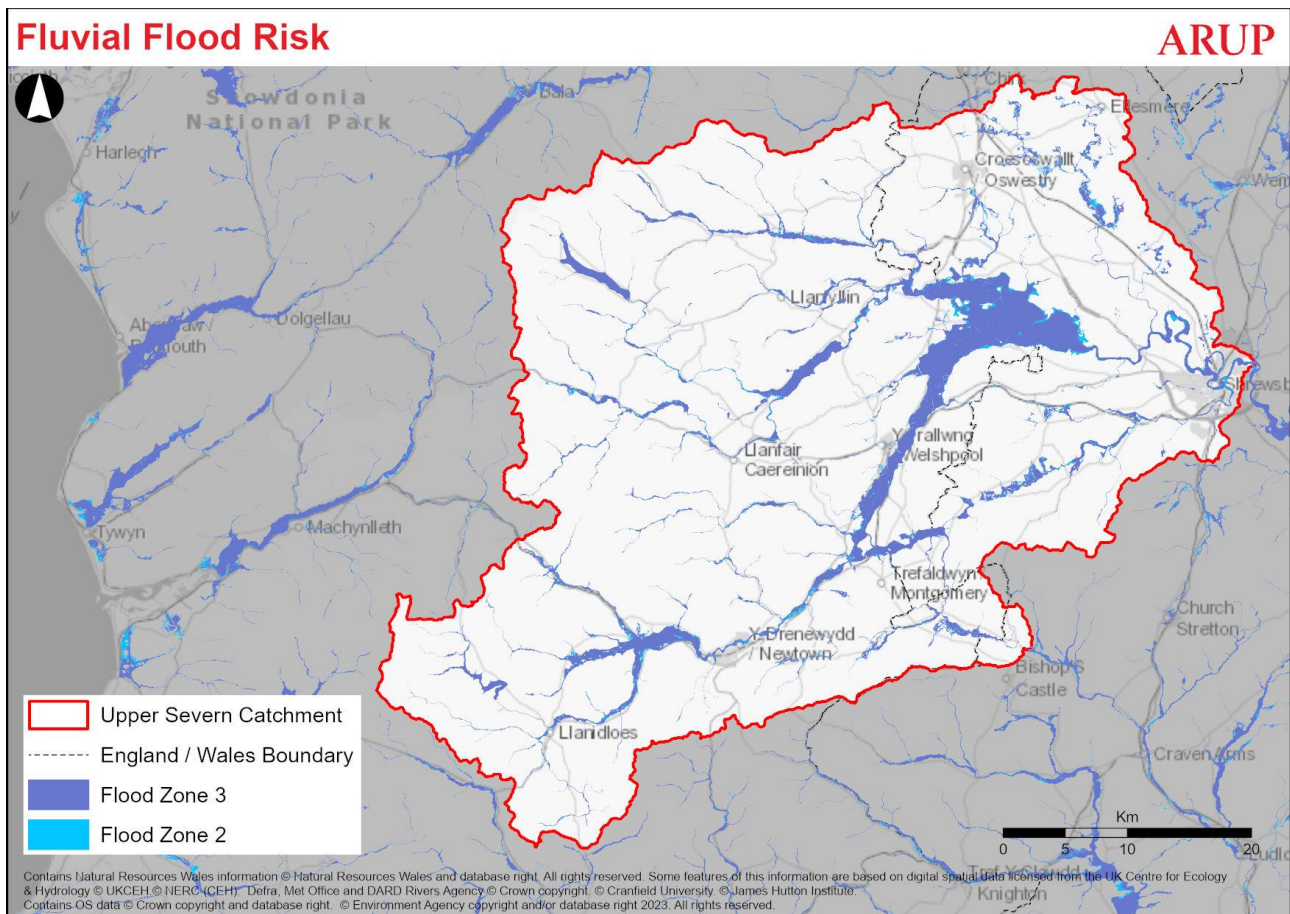


Figure 5-6 Areas within Flood Zone 2 (medium probability of flooding) and Flood Zone 3 (high probability of flooding)

The UK Government and devolved Welsh Government have both committed to a legally binding target of 80% reduction in carbon emissions relative to the levels in 1990, to be achieved by 2050. Wales has subsequently increased the ambition to be Net Zero emissions by 2050 and to collectively achieve net zero across the public sector by 2030. The Environment Agency has also committed to reaching net zero, by 2030.

UK greenhouse gas emissions have fallen during the past three decades and in 2022 were 46% below 1990 levels. The UK met its first two carbon budgets and is likely to have met its third. The first Welsh Government’s Carbon Budget was also met.

Climate predictions for the UK show trends of increased chances of warmer and wetter winters, and hotter and drier summers. An increase in the frequency and intensity of storms is also predicted. Climate change is also expected to result in increased frequency of heavy rainfall which will likely lead to an increase in the number and severity of flood events.

There is one Air Quality Management Area (AQMA) in the Upper Severn Catchment [9]. The AQMA, located in Shrewsbury town centre, was declared due to exceedances of the annual mean nitrogen dioxide objective, which is of particular concern for human health [10]. However, generally there is good air quality within the Upper Severn Catchment [11] [12].

Vehicle emissions from main roads is the largest contributor to emissions in the Upper Severn Catchment. There are ongoing initiatives to improve air quality within the Upper Severn Catchment, largely focused on reducing local road traffic emissions.

5.3 Social

The SVWMS covers an area that spans England and Wales and is primarily located within the local authority areas of Powys County Council and Shropshire Council. The scheme catchment also extends north across the border of these local authorities into Wrexham County Borough Council and Gwynedd Council.

The catchment is predominantly rural in character with one major urban centre at Shrewsbury, and a number of towns including Oswestry, Newtown and Welshpool. There are approximately 245,000 [13] people living within the Upper Severn Catchment, and over 5 million people living and working in the wider Severn River Basin District [14]. The population density is low compared to the majority of reporting areas countrywide. Population forecast for the Shropshire and Powys local authority areas estimate that by 2043 the population will increase by 11.4% [15], [16].

The current age structure of the Upper Severn Catchment is shown in Figure 5-7 below. The Upper Severn Catchment area has an older population than the national average, with almost half of the population aged 50 or over [14]. Future population projections, as shown on Figure 5-8, indicate an increase of 21% in the proportion of the population of Shropshire and Powys being aged 50 or older by 2043 [15], [16]. This is similar to the trend anticipated across the UK, within an aging population [17].

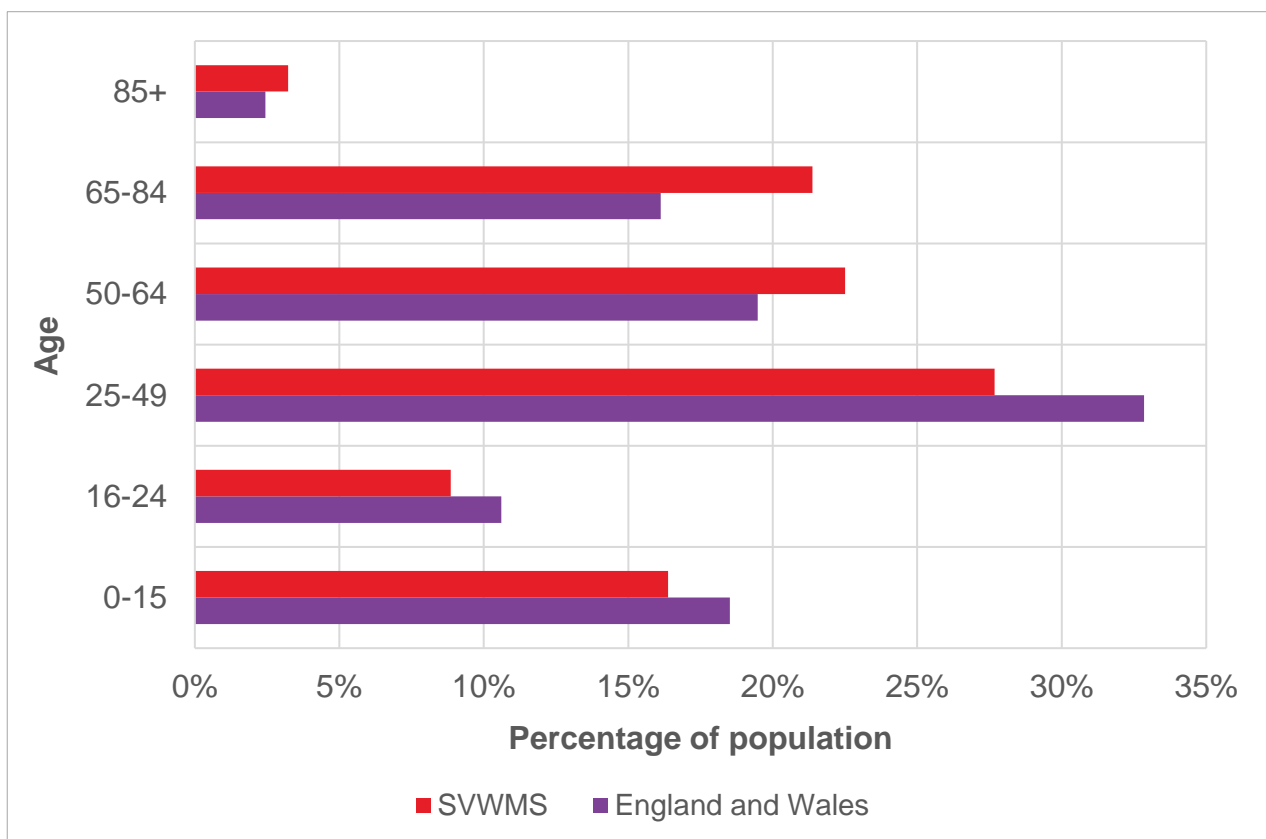


Figure 5-7 Age profile of the Upper Severn Catchment area and England and Wales

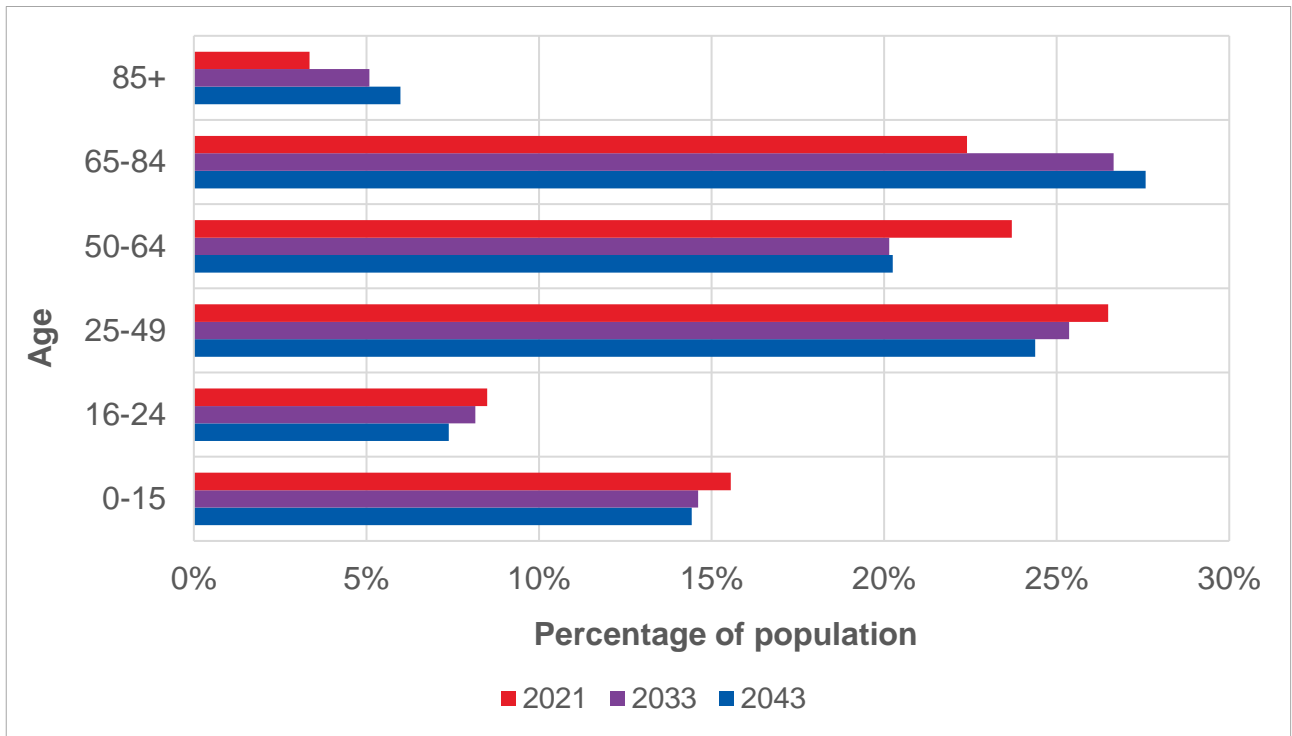


Figure 5-8 Projected future age profile of Shropshire and Powys

The population of the Upper Severn Catchment is less ethnically diverse than the averages for England and Wales [13]. As shown in Figure 5-9, over 96% of the Upper Severn Catchment area is white, in comparison to an 81.7% average across England and Wales.

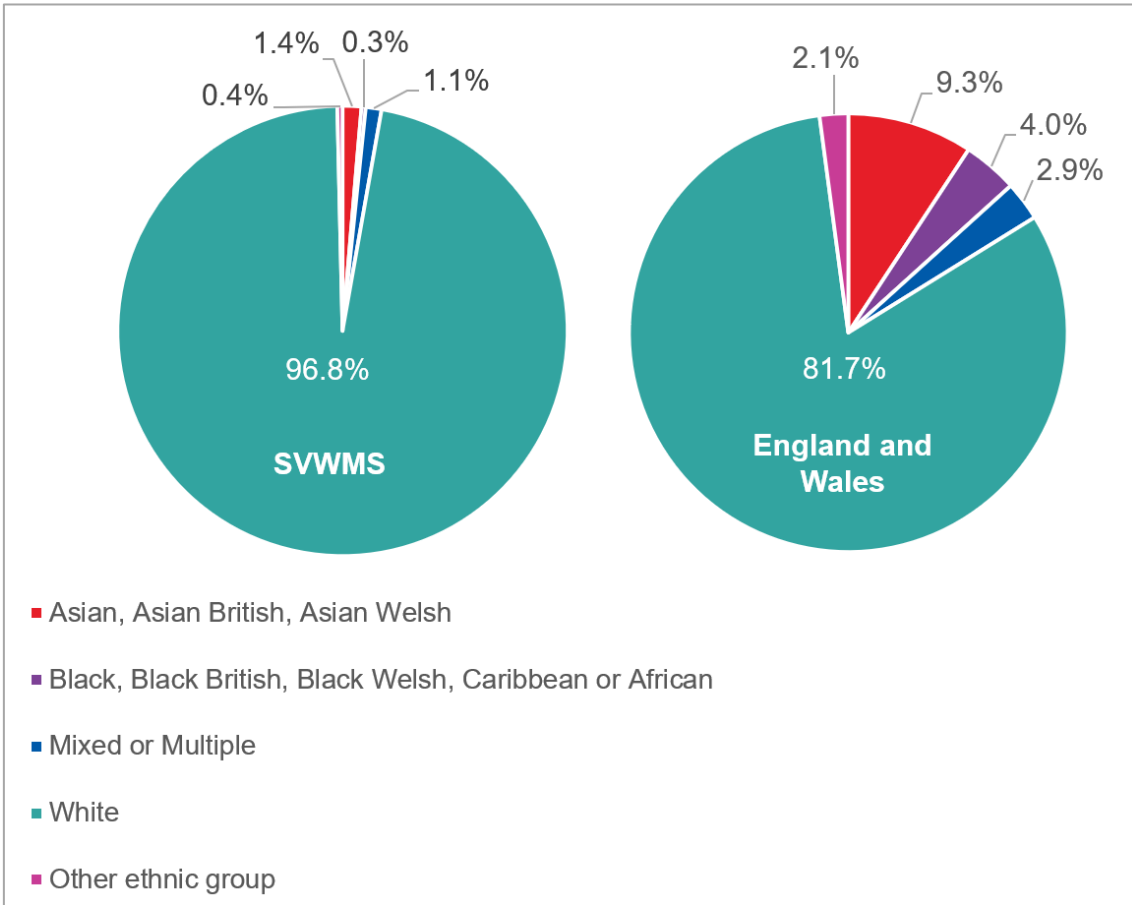


Figure 5-9 Ethnicity of the Upper Severn Catchment area (left) and England and Wales (right)

The Upper Severn Catchment has mixed levels of deprivation as shown on Figure 5-10. The Indices of Multiple Deprivation score [18], [19] incorporates factors such as income, employment, education, health, crime, barriers to housing & services and living environment. There is one community within Shrewsbury that is located within the 10% most deprived in England and a further four communities in Oswestry and Shrewsbury that are within the 20% most deprived in England. Newtown and Welshpool contain three communities designated as within the 20% most deprived in Wales. Some of the least deprived communities in England and Wales are also located within the Upper Severn Catchment. This includes communities within and around Shrewsbury, Llanidloes and Welshpool.

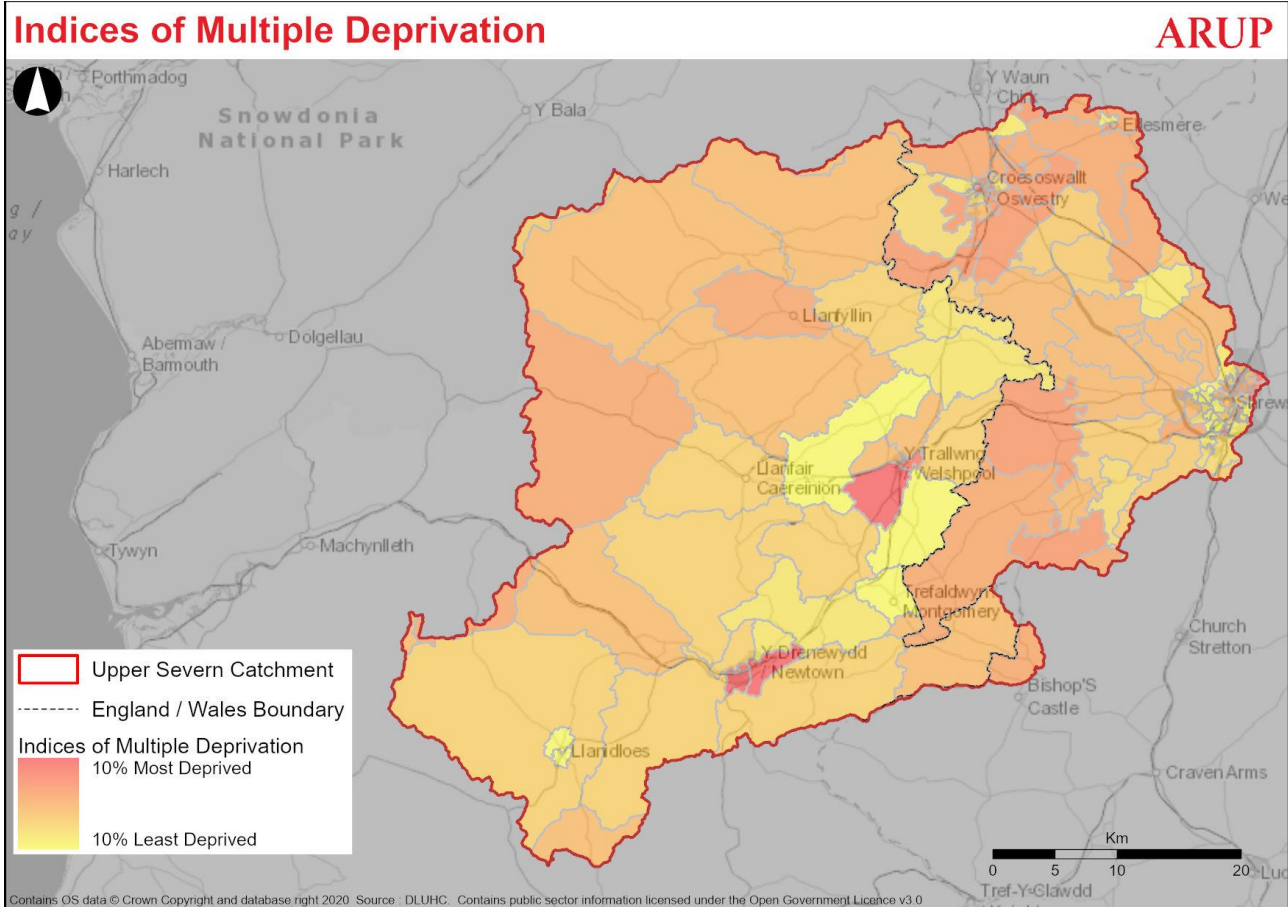


Figure 5-10 Indices of Multiple Deprivation scores across the Upper Severn Catchment

The average life expectancy for males and females in Shropshire is 79.3 years and 83.5 years, respectively [20]. This is similar to the England averages for men and women [21]. However, this varies across Shropshire, with life expectancy being 5.4 years lower for men and 2.1 years lower for women in the most deprived areas of Shropshire than in the least deprived areas. This represents health inequality across the catchment. Residents of Powys have a similar life expectancy to those in Shropshire, 80.0 years and 83.7 years for men and women, respectively [22]. This is 1.5 years more than the Welsh average for men, and more than one year more than the Welsh average for women. Life expectancy improvements for men and women across Powys and Shropshire have been seen to stall and even deteriorate in some areas over the past 10 years. The health of the population within the catchment is generally better than the national averages. The proportion of people describing their health as ‘very good’ or ‘good’ in the catchment is greater than the England and Wales average by 6.6% [13].

Both Shropshire and Powys have a high proportion of adults that are overweight or obese, 68% and 60%, respectively [23]. Rates of overweight or obese adults is expected to continue to rise within Powys. Both local authority areas however have a higher than average proportion of adults who are physically active [23]. Other key health issues within Shropshire include diabetes and dementia diagnosis [23]. In general Powys compares favourably with Wales overall in terms of key population health indicators such as life expectancy and healthy life expectancy, however addressing inequality in health across the authority area is a key concern.

Median house prices in Powys and Shropshire are less than the England and Wales average, but higher than the regional averages [24]. Housing affordability in Powys is

worse than the Welsh average and has seen little change in the past 10 years. In Shropshire, the housing affordability is better than the England average, and is showing signs of improvement over the past year [25]. However, in both counties, high prices and low wages makes housing unaffordable for many [26], [27]. Ambitious house building targets are proposed to improve housing affordability.

The Upper Severn Catchment residents hold a similar level of educational qualifications to the England and Wales average. The catchment area also has a higher proportion of apprentices (6.2%) than average (9.6%) which may be reflective of the higher proportion of people in the catchment employed in skilled trade occupations [13].

Shropshire Council and Powys Council have substantial housing targets to address the lack of affordable housing in the counties. In Shropshire, this equates to 30,800 houses [28] to be delivered before 2038, largely in housing sites around Shrewsbury and Oswestry. In Powys, 7,700 dwellings are proposed through the central growth corridor [29].

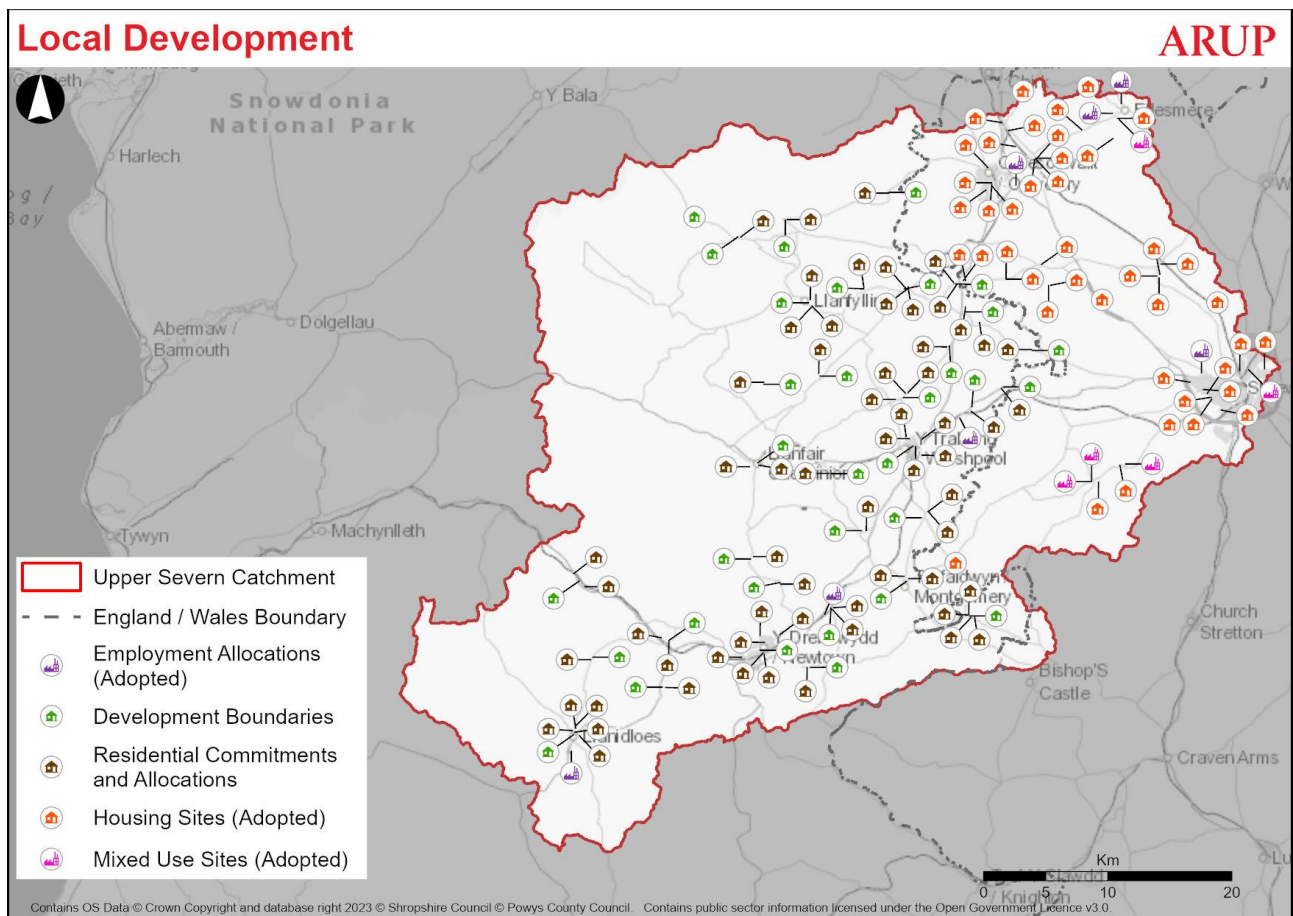


Figure 5-11 Local development

In terms of energy utility infrastructure, a number of large-scale power supply infrastructure projects and renewable energy are proposed in Shropshire and twelve sites in Powys are currently being assessed for their suitability as solar PV sites [29]. Two water companies supply the majority of water in the SVWMS area; Severn Trent Water and Dŵr Cymru Welsh Water. Severn Trent Water has forecasted a significant deficit in water supply in the long term, whereas Dŵr Cymru Welsh Water does not identify a deficit for the water resource zones in or around the Upper Severn Catchment. An extensive network of flood

defences, predominantly along the River Severn and its tributaries, are located in the Upper Severn Catchment.

The towns of Shropshire and Powys are generally well connected by road (see Figure 5-12 below). A vast network of country lanes connects the sparsely populated rural communities. A lack of public transport in the rural areas of the SVWMS can make travel difficult for those without access to a car. Car ownership in the Upper Severn Catchment is approximately 15% higher than the England and Wales average [30]. Congestion is not generally a significant problem, except in and around Shrewsbury [31].

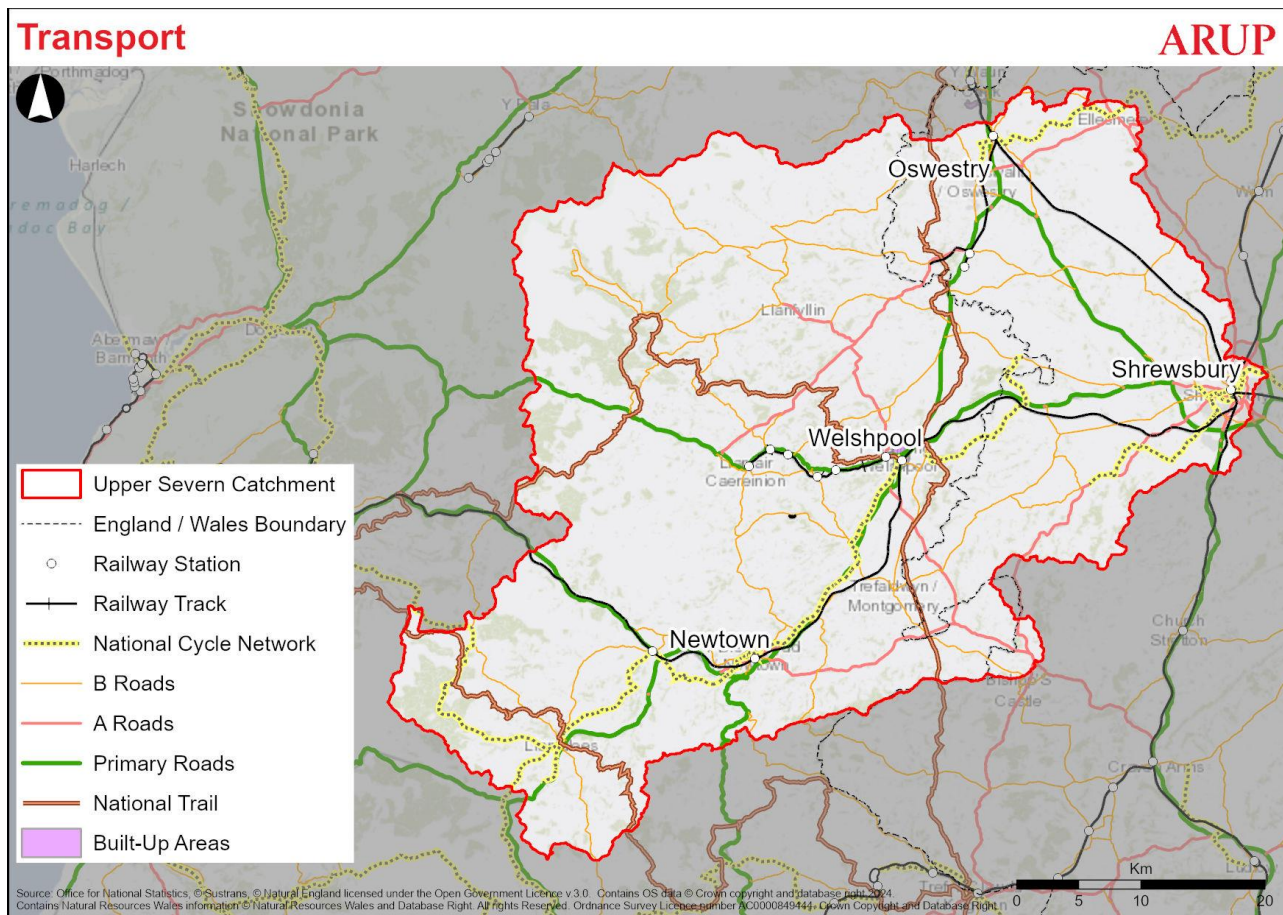


Figure 5-12 Key transport links

Time spent commuting to work in the Upper Severn Catchment is comparable to the UK average [32]. However, the distances required to travel and the time taken to get to essential services in Shropshire and Powys are significantly higher than the national average. For example, it is on average approximately 14% further to a post office and 88% further to a GP surgery in the Shropshire portion of the SVWMS than the England average [33]. In the Powys portion of the Upper Severn Catchment, it takes on average approximately 33% longer to travel to a post office and 64% longer to travel to a GP than the Wales average when using private transport, and significantly longer when travelling by public transport.

Shrewsbury, and to a lesser extent the rest of the Upper Severn Catchment, are well connected by rail with frequent links to the rest of the Midlands, the North, Cardiff and London [34]. Buses largely run between the more major towns in the Upper Severn Catchment, with the rural areas lacking in public transport options. However, overall, in

Shropshire the number of trips taken on trains and buses is comparable with the England average [35]. In Mid-Wales, the convenience and ease of using a car is the most frequently cited reason for not travelling by train or bus [36].

The Upper Severn Catchment is well served by Public Rights of Way, with multiple National Trails and National Cycle Network Routes and an extensive network of footpaths and bridleways. However, walking and cycling in the region is generally lower than the national average [35].

A number of highway upgrades, safety schemes, electronic signing and public transport improvements such as increased bus services between targeted growth areas and strategic employment sites in the Upper Severn Catchment, are shortlisted in the Mid Wales Transportation Cross Border Study [37]. Furthermore, the Shropshire Local Cycling and Walking Infrastructure Plan which aims to increase active transport and reduce congestion [38] and the Welshpool Active Travel Development is seeking to improve walking and cycling provision [39].

There are 37 mineral sites located in the Upper Severn Catchment, largely located around Rhyd, Porth Y Waen and Shrewsbury. Crushed rock is the largest primary aggregate sold in Shropshire and Powys, with sales having recently increased. Sixty-four licenced waste sites treat, keep or dispose of waste in the Upper Severn Catchment. These are all located in Wales [40] whilst the majority of the historic waste sites in the area are situated in England [41], [42]. There are nine closed or abandoned mine waste facilities located across the Upper Severn Catchment area, split across Shropshire and Powys. All of these are metalliferous facilities that have been closed due to water pollution [43]. Annually, Shropshire Council and Powys Council collect tens of thousands of tonnes of waste. Recycling rates in Powys and Shropshire are higher than the national averages for England and Wales [44], [45]. Non-recyclable waste is sent to an energy recovery facility located outside of the Upper Severn Catchment.

5.4 Economic

Within the Upper Severn Catchment, the proportion of economically active adults is comparable to the national average, however proportionally there are more retired residents and fewer students than the England and Wales average. Unemployment is relatively low, with the lowest rates of unemployment found in the larger urban areas. Employment is largely concentrated in Shrewsbury (for Shropshire) and Newtown (for Powys). As illustrated on Figure 5-13, the main employment industries in the Upper Severn Catchment are focused on the health and social work, wholesale and retail, education, construction and manufacturing industries. A greater proportion of people living in the Upper Severn Catchment work in the agriculture, forestry and fishing industry and in skilled trade occupations than the England and Wales average, however the reverse is true for the private sector services and in professional and technical occupations [46]. Workplace wages in Shropshire and Powys are lower than average; approximately 15% lower in Powys than the GB average, for example [47].

The catchment area has a higher-than-average proportion of the population that are self-employed. Of the enterprises located in Shropshire and Powys, the majority are micro enterprises (<10 employees) and the area has fewer small to large scale enterprises than the national and regional averages [48], [47].

Level of productivity, measured as Gross Value Added (GVA) per person, has increased in Shropshire and Powys in recent years. However, the UK average is significantly higher than in Shropshire and Powys, approximately 47% and 76% higher, respectively [49]. Shropshire Council have ambitions to reduce the GVA and wage gap, as well as

increasing the number of jobs in the county. For the mid-Wales region however, a decline in the number of jobs in the coming two decades is forecasted [50].

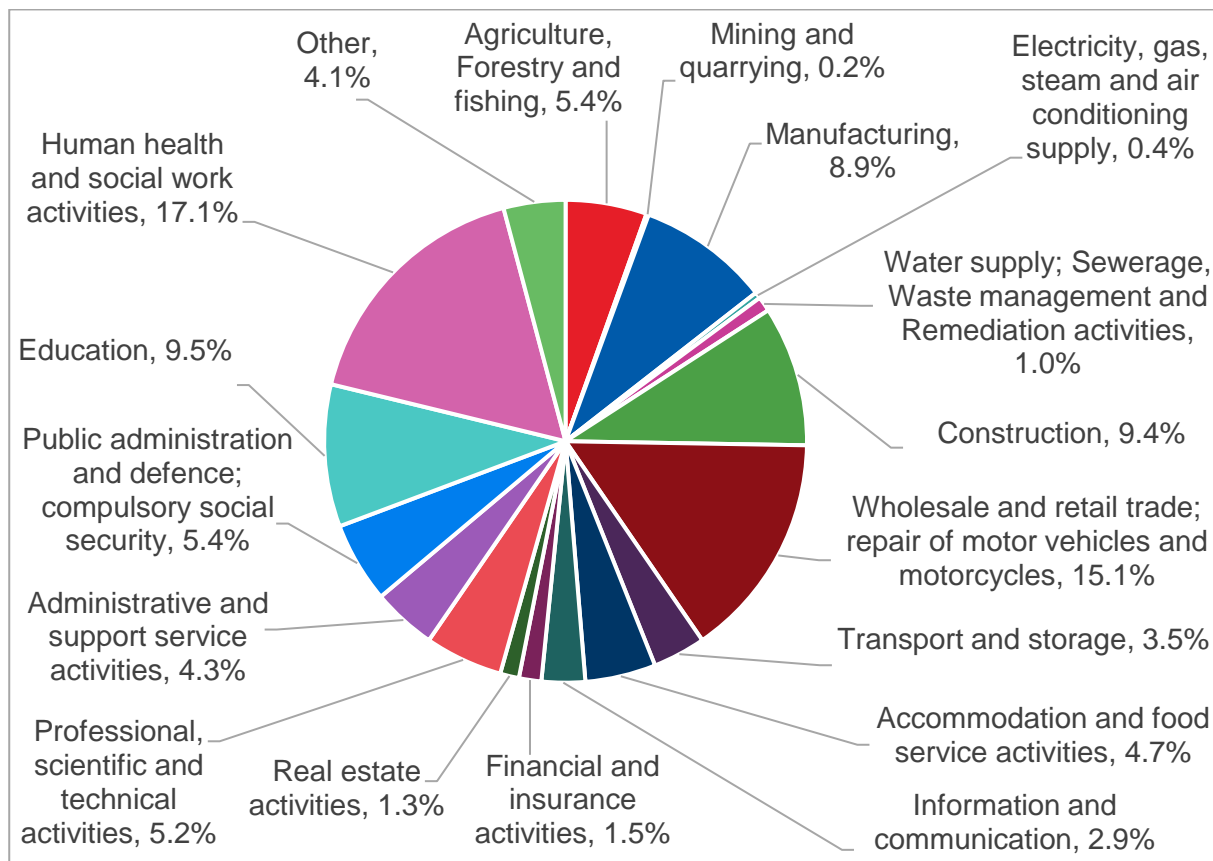


Figure 5-13 Upper Severn Catchment area employment by industry

Tourism is a key part of the Powys economy with 12.1 million visitors annually in 2019 spending £1.012 billion [51]. This figure does however include some major tourist attractions located outside of the Upper Severn Catchment boundary. Shropshire also sees total visitor trip numbers 12.7 million, of which 850,000 are staying trips and 11.8 million are day visits and approximately £400 million a year is spent on goods and services in market towns and rural areas across Shropshire [52]. Further tourism development has the potential to support local communities and rural businesses [26].

The Shropshire Economic Growth Strategy prioritises investment in strategic locations and growth zones along the strategic corridors of the A5, Oswestry and Shrewsbury. Approximately 68ha of proposed employment land is located within the Upper Severn Catchment, including the Oswestry Innovation park and the Oswestry Sustainable Urban Extension [53]. In the Powys portion of the Upper Severn Catchment, over 20ha of employment land has been allocated [29]. Development sites within the Upper Severn Catchment are shown on Figure 5-11 above.

Provide your views

Baseline information

- Are there any baseline information sources that are relevant to the SVWMS that have not been listed and should be taken into account?

6. Scoping of key sustainability issues

6.1 Overview

This section outlines the main environmental, social and economic issues that are of relevance to the Upper Severn Catchment and Strategy. These have been identified using information gathered from the baseline review that has been undertaken (outlined in Section 5 above and Appendix B), the review of relevant plans, programmes and objectives (outlined in Section 4 above and Appendix A) and current understanding of the overarching scope of the SVWMS.

Historic and likely future trends have been identified for each sustainability appraisal topic in Appendix B. The expected environmental, economic and social trends (in the absence of the SVWMS being introduced), have been identified from existing plans, programmes and objectives, as well as from a review of existing baseline data and past trends. These will serve as a 'future baseline' against which the SVWMS will be assessed.

The review has included identification of potential issues that the SVWMS will need to consider based on the context and characteristics of the catchment. Opportunities for the SVWMS to positively contribute to the environment, economy and society have also been identified. These issues and opportunities will be used to help guide and inform the development of the SVWMS to see that negative effects are minimised and opportunities to maximise benefits are incorporated into the Strategy. Given the strategic nature of the SVWMS, the opportunities and issues identified are high level at this stage. These will be developed and refined as the scheme is progressed and more detail becomes available, but they reflect the wider benefits that are considered possible through collaboration across sectors and jurisdictions.

Where the issues and opportunities identified through the review are not anticipated to result in significant effects, it is proposed to scope them out of the SA so that the appraisal focuses on the most relevant and significant aspects of the environment, society and economy. Where it is proposed to scope a topic out of the SA, this has been noted alongside the justification as to why it has been scoped out.

6.2 Proposed scope of the assessment

The SVWMS will involve a catchment wide programme of interventions to better support communities at risk of flooding. The SVWMS will be implemented across a large area covering the Severn Uplands and will also have the potential to impact the environment and communities downstream, outside the catchment area. It therefore has the potential to have far-reaching impacts in relation to reducing flood risk, in addition to providing wider benefits to the environment and communities. Wider issues that need to be considered during Strategy development along with potential opportunities proposed to be scoped into the SA are outlined in Table 6-1 below. These issues and opportunities identified are based on the outcomes of the review of plans, programmes and objectives, along with the topic baseline data.

Table 6-1 Proposed scope of SA

SA Topic	Scoped in?	Issues relevant to the Strategy	Strategy Opportunities
Population and human health (communities)	Yes	<ul style="list-style-type: none"> Increased need for development and services to support future population growth. An increasing proportion of elderly residents. Some of the top 20% most deprived communities are present within Shrewsbury, Oswestry, Newtown and Welshpool. Health inequalities experienced between the most and least deprived communities. Risk of physical danger and mental health impacts associated with flooding. There is demand from local residents for more accessible natural greenspace. 	<ul style="list-style-type: none"> Increase land available to provide new housing, community facilities and infrastructure to support the growing and aging population. Support mental and physical wellbeing through reducing stress, anxiety and physical danger associated with flood events. Providing access to safe and inclusive green and blue spaces, enhancing the surrounding natural environment and access to nature. Helping reduce inequality by locating measures to help those who are most at risk and vulnerable. Helping increase food security through improving water management.
Biodiversity	Yes	<ul style="list-style-type: none"> Designated sites present through the catchment that could be impacted by the placement of interventions, including through habitat loss and degradation. Protected and priority habitats and species could be impacted by the placement of interventions, including through changes to habitat, disturbance. 	<ul style="list-style-type: none"> Restore, recover, reconnect and enhance existing habitats to help minimise further biodiversity loss and habitat fragmentation. Use of nature-based solutions, such as habitat creation and restoration, to help achieve biodiversity net gain/net benefit for biodiversity, help deliver nature

SA Topic	Scoped in?	Issues relevant to the Strategy	Strategy Opportunities
		<ul style="list-style-type: none"> Protected and notable fish species could be impacted by the placement of interventions disrupting fish passage (habitat fragmentation) and direct habitat loss. 	<p>networks/nature recovery networks and create Resilient Ecological Networks.</p> <ul style="list-style-type: none"> Improve water quality to support better functioning aquatic ecosystems. Improve water management to reduce the impact of low flows on habitat and species. Utilise a natural capital approach to help strengthen the natural capital value of the catchment. Improve habitat connectivity for migratory fish species through removal or modification of barriers.
Land use and landscape	Yes	<ul style="list-style-type: none"> Presence of protected landscapes within and in proximity to the Upper Severn Catchment including an Area of Outstanding Natural Beauty and National Park. Land use in the Upper Severn Catchment is dominated by agriculture. This includes concerns of Contaminated land or highly productive agricultural land. Approximately 10% of agricultural land within the catchment is at risk of flooding. Future development areas identified in the Local Development Plan which may 	<ul style="list-style-type: none"> Reduce the amount of agricultural land at risk of flooding, particularly higher quality agricultural land. Enhance designated landscapes and the natural and historic environment. Enhance the natural beauty of the area to help support tourism. Restore/maintain good soil and peat condition, including restoration of areas of deep peat. Encourage change in land management/farming practices/forestry management to achieve GHG/carbon

SA Topic	Scoped in?	Issues relevant to the Strategy	Strategy Opportunities
		<p>affect feasibility of options developed for SVWMS.</p>	<p>emissions/sequestrations improvements and reduce nutrient and sediment runoff and pollution to waterbodies.</p> <ul style="list-style-type: none"> • Enhance pre-existing habitats and create new habitats on the wider ecological network at a landscape scale. • Restore/maintain wetland habitats. • Encourage urban greening by increasing permeability of the rural or urban landscape. Planting of species which are more resilient to climate change and help create more biodiversity in settlements. • Enhance access to active travel networks; cycle/PROW network.
<p>Cultural heritage</p>	<p>Yes</p>	<ul style="list-style-type: none"> • Designated and non-designated heritage assets that are at risk from both flooding itself and measures to alleviate flooding. • Potential harm to heritage assets from climate change, including from extreme weather events. 	<ul style="list-style-type: none"> • Encourage the preservation and enhancement of the historic environment, including the setting of heritage assets. • Restore lost areas of historic woodland. • Avoid works which would alter the character or physical survival of heritage assets. • Opportunities to protect buried archaeological remains through peatland restoration and changing soil management schemes.

SA Topic	Scoped in?	Issues relevant to the Strategy	Strategy Opportunities
Ground conditions (soils and geology)	Yes	<ul style="list-style-type: none"> • There are historic and disused mining, quarrying and landfill sites located across the Upper Severn Catchment which may place restriction on some options. • Moderate risk to groundwater flooding, with some areas at significant risk. • Placement of certain interventions near groundwater abstraction areas could negatively impact storage or recharge of these resources. 	<ul style="list-style-type: none"> • Improve soil health to increase water infiltration. • Select and locate interventions to promote groundwater recharge, positively impacting WFD groundwater quantitative status and provide sustainable solutions to water resource pressures. • Reduce engineering requirements through placement of water storage type interventions on unproductive strata.
Water environment	Yes	<ul style="list-style-type: none"> • Climate change is likely to increase the severity and frequency of flood events. • Impact of drought, population and economic growth on water availability. • Poor health of water bodies, including poor water quality. 	<ul style="list-style-type: none"> • Reduce the number of properties and areas of land at increased risk of flooding. • Implement measures to help reduce the impacts of drought on the environment and local communities. • Improve and integrate water resource management across the catchment. • Contribute to improved status of WFD water bodies and/or not contribute to the prevention of achievement of status objectives in the future. • No prevention of WFD water body measures and support implementation of measures to enhance and restore water bodies.

SA Topic	Scoped in?	Issues relevant to the Strategy	Strategy Opportunities
			<ul style="list-style-type: none"> Help address reasons for water bodies not achieving good status, including where this is due to agricultural and rural land management.
Climatic factors	Yes	<ul style="list-style-type: none"> Traditional flood resilience solutions are carbon intensive which is not conducive to current climate change legislation and policy which are focused on achieving net zero. Future climate change is likely to increase the severity and frequency of extreme weather events including flooding and droughts. Summers are likely to become hotter and drier and winters are likely to become wetter. 	<ul style="list-style-type: none"> Implement measures that are less carbon intensive and can help sequester carbon, such as habitat creation and/or restoration. Ensure that the SVWMS is designed to respond to and help increase the resilience of communities to the impacts of future climate change.
Air quality	No	<ul style="list-style-type: none"> There is an Air Quality Management Area located in Shrewsbury town centre that has been designated due to NO₂ exceedances. Given the nature of the SVWMS and predominantly rural nature of the area, it is not anticipated that it would have significant impacts on air quality. Potential temporary adverse effects would likely only be experienced during the construction of the interventions. The operation of the SVWMS could lead to minor beneficial impacts on air quality, such as from supporting improvement of walking and cycle routes. 	
Infrastructure and transport	Yes	<ul style="list-style-type: none"> Inadequate infrastructure and services limit participation in active travel. 	<ul style="list-style-type: none"> Encourage use of active travel. Potential for NbS to alleviate pressure on Wastewater Treatment Works (WwTW)

SA Topic	Scoped in?	Issues relevant to the Strategy	Strategy Opportunities
		<ul style="list-style-type: none"> • Long distances to key services, resulting in high rates of car ownership and low levels of walking and cycling. • Lack of housing and affordability issues. 	<p>expected to operate beyond capacity due to planned housing.</p>
Resources and waste	Yes	<ul style="list-style-type: none"> • Potential sterilisation of minerals through locating interventions on or in proximity to safeguarding areas. • Availability of construction material. • Active mineral working and waste sites present. • Management and disposal of waste, such as earthworks, during construction. 	<ul style="list-style-type: none"> • There is potential to locate interventions that can filter pollutants where historic and active landfill and mineral sites are located to help reduce contaminants from runoff entering water bodies. • Reduce fluvial and surface water flood risk at mineral and waste sites. • Restore historic mineral workings located in areas at risk of flooding to help increase flood water storage and enhance the natural environment. • Use local material and resources where appropriate. • Implement a circular economy approach, including reducing waste and emissions through reusing assets.
Economy	Yes	<ul style="list-style-type: none"> • Shropshire and Powys have relatively low GVA and wages in comparison to regional and national averages. • Housing is relatively unaffordable, particularly in Powys. 	<ul style="list-style-type: none"> • Support development in Powys and Shropshire by reducing the area of land that is at increased risk of flooding. • Support the economy of the Upper Severn Catchment and communities

SA Topic	Scoped in?	Issues relevant to the Strategy	Strategy Opportunities
		<ul style="list-style-type: none"> • There is ambitious development planned for the region, including housing and employment. • Flooding has a negative impact on the local economy, including through damage caused to properties, infrastructure and agricultural land. 	<ul style="list-style-type: none"> • downstream through reducing damages and losses associated with flooding. • Support the tourist economy through providing environmental enhancements and enhancing access to green space and local attractions. • Increase the resilience of industry to the impacts of drought, such as agriculture, through improving water management.

Provide your views

Key sustainability issues and opportunities

- Do you feel the sustainability issues and opportunities identified accurately reflect those in the catchment that are relevant to the SVWMS?
 - [Strongly agree/ Agree/ Neutral/ Disagree/ Strongly Disagree]
- Are there any other sustainability issues or opportunities that should be considered within the SA?

7. Approach to the assessment

7.1 Assessment overview

This section outlines the SA Framework that will be used to identify, describe, analyse and compare the impacts and effects of the SVWMS. Given the scale of landscape change that is likely to be required as part of the SVWMS it has the potential to significantly impact the Severn Uplands area and communities and environments located downstream within the wider River Severn catchment. This section of the Scoping Report provides an overview of the key sustainability objectives that will be used to guide the development of the scheme and how these will be used to assess the performance of the scheme in terms of sustainability.

The SA will be undertaken alongside the development of the options for the SVWMS to see that negative effects are avoided and minimised and that opportunities to maximise positive effects are incorporated into the scheme from the outset. Although the SVWMS is primarily focused on water management, it has the potential to support wider targets and have far reaching benefits including in relation to carbon sequestration, habitat creation and enhancement, water quality and access to green space. One of the primary functions of the SA is therefore to help ensure that these wider benefits are firstly identified and then realised as the Strategy is developed. The SA Environmental Report will be used to document the outcomes of this process and communicate how the SVWMS supports sustainable development.

7.2 SA objectives

The SA Framework includes a series of objectives that are relevant to the sustainability of the SVWMS. These have been identified based on the baseline context of the Upper Severn Catchment (as outlined in Section 5), review of plans, programmes and objectives (as outlined in Section 4) and subsequently defined key issues and opportunities (as outlined in Table 4-1). The SA objectives for the SVWMS are outlined in Table 7-1 and will be used to test the sustainability of the SVWMS. Alongside the objectives are questions that will be used to help understand if the SVWMS is supporting the SA objectives.

Table 7-1 SA objectives

Topic	Sustainability objective	How will we test the if the objective has been met?
Population and human health	1. Support the delivery of housing to meet the needs of the growing population	Would the Strategy help release land available for development? Would the Strategy help reduce damage to existing properties?
	2. Target measures to support those who are vulnerable and most at risk to flooding	Would the Strategy reduce the impact of flooding on those communities that are most vulnerable? Would there be improvements in mental health (reduced anxiety) related to flooding?

Topic	Sustainability objective	How will we test the if the objective has been met?
	3. Contribute to reduced inequalities	<p>Would the Strategy help improve environmental conditions and quality of life for the most deprived communities?</p> <p>Would the Strategy help reduce discrimination, harassment and victimisation whilst also supporting the needs of members of society who have protected characteristics?</p> <p>Would the Strategy engage with stakeholders, partners and local communities?</p>
	4. Improve access to, and enhance natural green and blue space	<p>Would the Strategy improve the proportion and quality of green and blue space that is accessible to residents?</p> <p>Would the Strategy create safe and inclusive nature-based recreation?</p> <p>Would the Strategy promote safe and inclusive active travel options?</p>
	5. Contribute to increased community participation	<p>Would the Strategy create opportunities for community participation and/or ownership of community projects?</p>
Biodiversity	6. Protect and enhance designated sites	<p>Would the Strategy cause harm or any deterioration in the condition of any designated sites?</p> <p>Would the Strategy contribute to the enhancement in condition or expansion of any designated sites i.e. through reducing flooding and drought frequency?</p>
	7. Protect and enhance priority habitats and the species they support	<p>Would the Strategy deliver opportunities to reconnect isolated semi-natural habitats?</p> <p>Would the Strategy deliver opportunities to restore or create semi-natural habitats?</p> <p>Would the Strategy help reduce the impact of flooding and drought priority habitats?</p>

Topic	Sustainability objective	How will we test the if the objective has been met?
	<p>8. Help the restoration and recovery of biodiversity through delivering biodiversity net gain (BNG)/ Net Benefit for Biodiversity (NBB)*.</p> <p>*(BNG/ NBB contribute to the recovery of nature. They are English and Welsh approaches respectively to development that leave biodiversity in a better state than before.)</p> <p>9. Increase the natural capital of the Upper Severn Catchment</p>	<p>Would the Strategy increase the risk of spreading invasive species?</p> <p>Would the Strategy result in the loss of valuable habitats?</p> <p>Would the Strategy result in an increase in ecosystem resilience through provision of larger, more diverse, better managed and better connected habitats?</p> <p>Would the Strategy deliver biodiversity net gain/ net benefit for biodiversity and contribute to ecosystem resilience?</p> <p>Would the Strategy increase the natural capital value of the Upper Severn Catchment?</p>
Land use and landscape	<p>10. Preserve and enhance protected and designated landscapes</p> <p>11. Reduce the amount of agricultural land at risk of flooding</p> <p>12. Improve soil health, peatland ecosystem functioning and support sustainable agricultural practices</p>	<p>Would the Strategy cause harm to any designated or protected landscapes?</p> <p>Would the Strategy result in the enhancement to the condition and character of any protected or designated landscapes?</p> <p>Would the Strategy reduce the overall area of agricultural land at high risk of flooding?</p> <p>Would the Strategy reduce the amount of Best and Most Versatile (BMV) land at high risk of flooding?</p> <p>Would the Strategy encourage agricultural practices that support flood resilience and introduce regenerative agriculture land management?</p> <p>Would the Strategy lead to improvements in soil health?</p> <p>Would the Strategy restore areas of peatland?</p> <p>Would the Strategy contribute to food security?</p>

Topic	Sustainability objective	How will we test the if the objective has been met?
	13. Reconnect people with the landscape	<p>Would the Strategy improve public access to green spaces?</p> <p>Would the Strategy allow people to experience nature whilst retaining undisturbed areas for wildlife?</p> <p>Would the Strategy foster a sense of ownership and guardianship of the landscape through community participation?</p>
Cultural heritage	14. Protect and enhance the historic environment	<p>Would the Strategy cause direct or indirect harm to designated heritage assets?</p> <p>Would the Strategy enhance the condition or setting of designated heritage assets?</p> <p>Does the Strategy provide measures to avoid and/or mitigate harm to non-designated heritage assets?</p> <p>Would the Strategy reduce the impact of flooding and drought on heritage assets?</p> <p>Would the Strategy reduce the potential for peatland wildfires?</p>
Ground conditions	15. Protect and enhance groundwater resources	<p>Would the Strategy have a negative impact on groundwater resources used for water abstraction?</p> <p>Would the Strategy have a negative impact on the quality of groundwater resources?</p> <p>Would the Strategy help improve storage and recharge of groundwater resources?</p>
	16. Reduce quantity of excavated material and need for engineered fill	<p>Would the Strategy target favourable, higher permeability deposits for interventions relying on infiltration to ground to reduce the amount of excavation required and material that therefore needs to be disposed of?</p>

Topic	Sustainability objective	How will we test the if the objective has been met?
		<p>Would the Strategy target favourable, low permeability deposits, for siting water impoundment structures, thereby removing or reducing need for imported liners/fill materials.</p>
Water environment	17. Reduce risk of flooding from rivers and surface water	<p>Would the Strategy help reduce the area of land at high risk of flooding from rivers?</p> <p>Would the Strategy help reduce the area of land at high risk of flooding from surface water?</p>
	18. Improve water resource management	<p>Would the Strategy help to reduce the impact of low flows on the environment, people and industry?</p>
	19. Improve the health of water bodies	<p>Would the Strategy lead to improvements in the ecological and chemical quality element statuses of water bodies?</p> <p>Would the Strategy increase the proportion of water bodies meeting 'good' ecological status?</p> <p>Would the Strategy help to achieve the WFD water body measures?</p>
Climatic factors	20. Support national greenhouse gas emission reduction targets	<p>Would the Strategy help meet England and Wales targets to be 'net zero' by 2050?</p> <p>Would the Strategy consider opportunities for renewable energy production?</p>
	21. Accommodate for future climate change predictions	<p>Would the Strategy include measures to reduce the impacts on communities from hotter / drier summers and wetter winters increasing resilience to climate change?</p> <p>Would the Strategy reduce the impacts of extreme flood and drought events on communities and businesses?</p>
Infrastructure and transport	22. Improve active travel links	<p>Would the Strategy help improve walking and cycling infrastructure?</p>

Topic	Sustainability objective	How will we test the if the objective has been met?
	23. Protect and reduce pressure on water related infrastructure	Would the Strategy help reduce pressure on water treatment works? Would the Strategy help protect and increase resilience of flood defence infrastructure?
	24. Protect infrastructure from damage from flooding	Would the Strategy reduce damage to infrastructure caused by flooding?
Resources and waste	25. Help safeguard mineral resources	Would the Strategy result in sterilisation or adverse impacts to mineral safeguarding areas?
	26. Use resources and materials sustainably	Would the Strategy use sustainably sourced materials and ensure materials and resources are used efficiently?
Economy	27. Reduce the economic impact of flooding	Would the Strategy reduce the damage caused to businesses, and agriculture?
	28. Support businesses and employment	Would the Strategy increase the land available for employment development? Would the Strategy protect and enhance the natural beauty of the area?

7.2.1 Alignment of SA Objectives with the Well-being of Future Generations Act

The Well-being of Future Generations (Wales) Act 2015 requires public bodies in Wales, such as NRW and Powys County Council, to think about the long-term impact of their decisions, to work better with people, communities and each other, and to prevent persistent problems such as poverty, health inequalities and climate change. The Act includes seven wellbeing goals that public bodies must work towards to help achieve this purpose. These include:

- A prosperous Wales
- A resilient Wales
- A more equal Wales
- A healthier Wales
- A Wales of cohesive communities
- A Wales with a vibrant culture and language
- A globally responsible Wales.

NRW have developed their own well-being objectives which contribute to the organisation meeting the well-being goals. The objectives focus on the climate and nature emergencies and minimising pollution, and reflect where NRW can make the greatest individual, organisational and collective contribution. Table 7-2 below outlines how the SA objectives align with NRW's wellbeing objectives (and therefore by default the WFGA wellbeing goals).

Table 7-2 Alignment of SA Objectives with NRW's Wellbeing objectives

SA Objective	NRW's Wellbeing objectives		
	Nature is recovering	Communities are resilient to climate change	Pollution is minimised
1. Support the delivery of housing to meet the needs of the growing population		X	
2. Target measures to support those who are vulnerable and most at risk to flooding		X	
3. Contribute to reduced inequalities		X	
4. Improve access to, and enhance natural green and blue space		X	
5. Contribute to increased community participation		X	
6. Protect and enhance designated sites	X		X
7. Protect and enhance priority habitats and the species they support	X		X
8. Help the restoration and recovery of biodiversity through delivering BNG/ NBB	X		X
9. Increase the natural capital of the Upper Severn Catchment	X		X
10. Preserve and enhance protected and designated landscapes	X		X
11. Reduce the amount of agricultural land at risk of flooding	X	X	

12. Improve soil health, peatland ecosystem functioning and support sustainable agricultural practices	X	X	
13. Reconnect people with the landscape		X	
14. Protect and enhance the historic environment		X	X
15. Protect and enhance groundwater resources	X	X	X
16. Reduce quantity of excavated material and need for engineered fill			X
17. Reduce risk of flooding from rivers and surface water	X	X	X
18. Improve water resource management	X	X	X
19. Improve the health of water bodies	X	X	X
20. Support national greenhouse gas emission reduction targets		X	X
21. Accommodate for future climate change predictions		X	
22. Improve active travel links		X	
23. Protect and reduce pressure on water related infrastructure		X	
24. Protect infrastructure from damage from flooding		X	
25. Help safeguard mineral resources	X	X	
26. Use resources and materials sustainably	X		X
27. Reduce the economic impact of flooding		X	

28. Support businesses and employment		X	
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7.2.2 Testing compatibility of SA objectives

It is important to identify where there are any potential conflicts between the SA objectives so that these can be captured and addressed during the options development and appraisal. Table 7-3 below provides a high-level review of the objectives against each other, and where a potential tension may arise, this is identified by marking the box red. No detailed analysis is given at this stage; however it is evident that tension may arise between objectives aiming to bring people more in contact with the natural environment, and the potential that this may cause impacts to the natural environment. This will be explored more fully during the assessment.

Table 7-3 Potential conflicts between SA objectives

		SA Objectives																											
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
SA objectives	1. Support the delivery of housing to meet the needs of the growing population						X	X			X				X									X					
	2. Target measures to support those who are vulnerable and most at risk to flooding						X	X																					
	3. Contribute to reduced inequalities						X	X																					
	4. Improve access to, and enhance natural green and blue space						X	X			X				X														
	5. Contribute to increased community participation																												
	6. Protect and enhance designated sites	X	X	X	X																			X					X
	7. Protect and enhance priority habitats and the species they support	X	X	X	X																			X					X
	8. Help the restoration and recovery of biodiversity through delivering BNG/ NBB																												
	9. Increase the natural capital of the Upper Severn Catchment																												
	10. Preserve and enhance protected and designated landscapes	X																											
	11. Reduce the amount of agricultural land at risk of flooding																												

		SA Objectives																											
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
	12.Improve soil health, peatland ecosystem functioning and support sustainable agricultural practices																												
	13.Reconnect people with the landscape																												
	14.Protect and enhance the historic environment	X			X																								X
	15.Protect and enhance groundwater resources																												
	16.Reduce quantity of excavated material and need for engineered fill																												
	17.Reduce risk of flooding from rivers and surface water																												
	18.Improve water resource management																												
	19.Improve the health of water bodies																												
	20.Support national greenhouse gas emission reduction targets																												
	21.Accommodate for future climate change predictions																												
	22.Improve active travel links						X	X																					
	23.Protect and reduce pressure on water related infrastructure	X																											
	24.Protect infrastructure from damage from flooding																												
	25.Help safeguard mineral resources																												

		SA Objectives																												
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
	26. Use resources and materials sustainably																													
	27. Reduce the economic impact of flooding																													
	28. Support businesses and employment						X	X							X															

Provide your views

Sustainability objectives and questions

- Do you agree with the sustainability objectives and questions that we have identified?
 - [Strongly agree/ Agree/ Neutral/ Disagree/ Strongly Disagree]
- Are there any other objectives or questions that you think should be included in the SA of the SVWMS?

7.3 Assessing significance

The SA objectives will be used to help guide the development of the SVWMS Strategy and will also be used to understand the sustainability of the SVWMS. The SVWMS options will be assessed against the SA objectives using the corresponding questions identified in Table 7-1. A score will be assigned to each objective using the criteria outlined in Table 7-4 depending on the type and level of effect that the SVWMS is likely to have on the objective. The scoring will be presented in a matrix in the SA Environmental Report alongside a commentary that will provide a justification and supporting evidence for the scoring. Where appropriate this will include quantitative information, such as percentage carbon sequestered, or area of habitat created.

Table 7-4 SA scoring criteria

SA Score	Definition
++	Likely significant positive effect
+	Likely minor positive effect
0	Likely negligible effect
-	Likely minor negative effect
--	Likely significant negative effect
?	Likely effect uncertain
+/-	Likely to be a mix of positive and negative effects

7.4 Approach to alternatives

The identification, assessment and comparison of 'reasonable alternatives' is a key stage in the SA process. The SA will be used to help guide and influence the development of the SVWMS. This will help avoid potential adverse effects and facilitate integration of measures into the Strategy that provide wider benefits to the environment, society and economy. A range of different options will be developed for consideration in the SVWMS and these will form the alternatives. Some options on the initial 'long list' will be 'screened out' early in the process for reasons such as viability or having unacceptable impacts, leaving a 'shortlist' of options that will be appraised as part of the SA. The outcomes of the SA will be used to help identify the 'preferred option' that will form the basis of the SVWMS. The assessment of the alternatives will be reported in the Environmental Report.

7.5 Cumulative effects

There are two different types of cumulative effects:

1. Cumulative effects that arise because of the impacts from more than one project or strategy, combining to have an effect on a receptor that may be larger than if the effect were considered separately.
2. Cumulative effects where several individual effects of a project or strategy (e.g. flooding, land use and the economy) have a combined effect on a receptor (e.g. health of a population) that is greater than each individual effect.

Cumulative effects can be positive or negative. The SA will consider the potential cumulative effects of the SVWMS with other relevant existing or committed plans, programmes and objectives. This includes Shropshire Council and Powys County Council's local development plans and any relevant policies and allocated development sites, and relevant Flood and Coastal Erosion Risk (FCERM) schemes and strategies being implemented by the Environment Agency and Natural Resource Wales. The scoring criteria outlined in Table 7-4 will also be applied when assessing likely cumulative effects of the scheme.

7.6 Incorporating other related assessments

A series of other assessments will be undertaken to support the development of the SVWMS and comply with relevant legislative requirements. In some instances, these will be standalone assessments and the results will be used to help inform the SA. In other instances, the assessment will be incorporated into the objectives and assessed as part of the SA. The approach proposed for each of the other related assessments is outlined below.

7.6.1 Habitats Regulation Assessment

The Conservation of Habitats and Species Regulations 2017 [54] as amended (known as the Habitats Regulations 2017) sets out the stages of assessment which must be undertaken to determine if a development project could significantly harm the designated features of a European site.

As part of the Habitats Regulations 2019 amendment [55], a National Site Network (NSN) has been created (as UK sites no longer form part of the EU's Natura 2000 ecological network) on land and sea and including inshore and offshore marine areas in the UK. The NSN includes existing Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and new SACs and SPAs designated following the creation of the NSN.

UK Government policy states that proposed SACs, potential SPAs, areas secured as sites compensating for damage to a European site and Wetlands of International Importance designated under the Ramsar Convention (known as Ramsar sites) are afforded the same protection as NSN in terms of the Habitat Regulation Assessment (HRA) required of any proposals that may affect them [56]. For the purposes of this document, NSN sites and Ramsar sites are herein referred to as internationally important sites.

The Habitats Regulations 2017 states that any plan or project not directly connected with, or necessary to, the management of a European site, but which would be likely to have a significant effect on such a site, either individually or in combination with other plans or projects, must be subject to appropriate assessment of its implications for the European site in view of its conservation objectives.

A list of SACs, SPAs and Ramsar sites that have the potential to be impacted by the SVWMS is provided in Appendix C. An HRA pre-screening exercise will be undertaken for the SVWMS and will be used to help guide the development of the strategy so that negative impacts to internationally important sites are avoided, this may include incorporation of recommendations / principles within the strategy, to ensure options developed for the strategy would avoid impacts to internationally important sites where possible in the first instance. This approach would help to reduce the requirement for appropriate assessments at later stages of the project. The HRA pre-screening will identify where there is the risk of a proposed intervention resulting in negative impacts to internationally important sites. The outcomes from the HRA pre-screening will then also be used to inform HRA screening summaries of each of the shortlisted options being considered as part of the strategy within the SA. These screening summaries would be used to assess the shortlisted options, and performance of the strategy, against the objectives set out in Table 7-1 in relation to biodiversity and protection and enhancement of designated sites (objectives 5, 6 and 7.) The HRA pre-screening and options screening summaries will be published alongside the SA Environmental Report.

Once the preferred option/s has/have been identified the screening conclusions that identify European sites for which the scheme poses a credible risk of impacts will form the foundation of a Strategic Level HRA, with the preferred options to be taken forward for appropriate assessment as required. The scope and methodology for the Strategic Level HRA would be developed in close consultation with NRW and NE. As part of this process it is anticipated that evidence plans would be developed and include details on the methodology for the Strategic Level HRA. The evidence plan would evolve as the project design develops and it would provide the mechanism through which Statutory Nature Conservation Bodies (SNCBs) would iteratively review and agree the approach to the Strategic Level HRA. If the need for appropriate assessment was identified, the evidence plan would be updated to specify the scope and methodology for evidence to be collected to inform this HRA stage.

7.6.2 Water Environment (Water Framework Directive) Regulations Assessment

The EU Water Framework Directive (WFD) [57] has been in force since 2000 and is currently the largest and most influential piece of EU legislation relating to the water environment. The Directive was transposed into UK law by The Water Environment (Water Framework Directive) (England and Wales) Regulations (WER) 2017 [58] as amended and the requirements of the WFD currently remain in place following Britain's exit from the EU in January 2021.

The WER aims to protect and enhance the quality of the water environment. It takes a holistic approach to the sustainable management of water by considering the interactions between surface water, groundwater and water-dependent ecosystems.

Developments or activities that have the potential to affect the water environment need to be guided by the requirements of the WER. To ensure compliance with the WER, decision makers must consider whether proposals for new developments/activities have the potential to:

- Cause a deterioration of a water body from its current status or potential;
- Prevent future attainment of good status or potential where not already achieved;
- Impact on protected or priority species and habitats; and/or
- Provide opportunities to improve the water environment.

An iterative WER Compliance Assessment will be undertaken for the SVWMS to help guide the development of the SVWMS and demonstrate that these requirements have been met. An initial review has been undertaken to identify the WFD water bodies present within the study area that have the potential to be impacted upon by the Strategy. A summary of the relevant water bodies is provided in Appendix D. A WER pre-screening assessment will be undertaken alongside the continued development of the SVWMS to identify the potential for any adverse and/or beneficial effects on water body status and objectives. The outcomes from the WER pre-screening assessment will be used to inform the SA and assess performance of the strategy against the objectives set out in Table 7-1 in relation to the water environment and health of water bodies (objective 20).

7.6.3 Equality Impact Assessment

An Equality Impact Assessment (EqIA) will be integrated into the SA to demonstrate how the SVWMS meets the Public Sector Equality Duty (PSED) as set out in the Equality Act 2010 [59] and given due regard to the need to:

- Eliminate unlawful discrimination, harassment and victimisation and other conduct that is prohibited by the Act.
- Advance equality of opportunity between people who share a relevant protected characteristic and those who do not.
- Foster good relations between people who share a protected characteristic and those who do not.

In Wales there is also a socioeconomic duty enacted under The Wales Act 2017 and whilst NRW are not included in the list of public bodies subject to the Socio-economic duty, it is recognised as best practice in Wales for EqIA to include consideration of socio-economic disadvantage. This will therefore also be considered within the EqIA.

The EqIA will identify and consider the potential impact on equality (including socio-economic disadvantage) resulting from the implementation of the SVWMS. This assessment will be used within the SA appraisal framework, feeding into SA objectives [2] Target measures to support those who are vulnerable and most at risk to flooding, and [3] 'Contribute to reduced inequalities'. The assessment will outline any actions required to address potential negative impacts of the Strategy and to identify how the SVWMS can help advance equality. This includes how the scheme can help:

- Remove or minimise disadvantages suffered by people due to their protected characteristics.
- Take steps to meet the needs of people from protected groups where these are different from the needs of other people.
- Encourage people from protected groups to participate in public life or in other activities where their participation is disproportionately low.

7.6.4 Health Impact Assessment

A Health Impact Assessment (HIA) can be used to identify the health impacts of a plan or project and to develop recommendations to maximise the positive impacts and minimise the negative impacts, while maintaining a focus on addressing health inequalities. In England, the National Planning Policy Framework (NPPF) [60] outlines that “planning policies and decisions should aim to achieve healthy, inclusive and safe spaces” and “enable and support healthy lifestyles, especially where this would address identified local health and wellbeing needs”. However, there is no legal requirement to prepare HIA. In

Wales, the Public Health (Wales) Act 2017 [61] places a duty on the Welsh Ministers to make regulations which require public bodies to carry out HIA in specified circumstances. At the time of writing, no further regulations have been implemented by Welsh Government in relation to HIA, however it is understood that assessments would be limited to policies, plans and programmes which have outcomes of national or major significance, or which have a significant effect at the local level on public health [62].

Whilst not directly applicable, the revised Local Development Plan (LDP) Manual (Welsh Government, 2020a) states that '*the Strategic Environmental Assessment (SEA) Directive (Annex I (f)) requires human health to be considered as part of the assessment of environmental effects. The health component of an SEA can be broadened to include both physical and mental health objectives of an HIA*' and using the HIA process within an Integrated Sustainability Appraisal (ISA) and / or as a standalone process is promoted by Welsh Government.

The HIA will be integrated into the SA of the SVWMS and will be based on consideration of how various health determinants (factors which influence health) could be affected by scheme outcomes. The main aim of the HIA is therefore to achieve the following:

1. Outline opportunities for maximising public health benefit of the SVWMS.
2. Highlight specific areas during SVWMS development which could be modified to achieve maximum public health benefits.
3. Provide an assessment of how the SVWMS may influence health outcomes (both positively and negatively), identifying where vulnerable groups of people may be more impacted than others within the community.

Overarching health determinants have been captured within the SA objectives that are set out in Section 7.2 and include those listed in Table 7-5

Table 7-5 SA objectives and health determinants

Health determinant	Sustainability objective
Physical activity	[4] Improve access to, and enhance natural green and blue spaces [13] Reconnect people with the landscape [25] Improve active travel links
Social and community influences	[2] Target measures to support those who are vulnerable and most at risk to flooding [3] Contribute to reduced inequalities [5] Contribute to increased community participation [13] Reconnect people with the landscape [32] Increase the attractiveness of the area to businesses and tourists
Living/environmental conditions	[1] Support the delivery of housing to meet the needs of the growing population [10] Preserve and enhance protected and designated landscapes

Health determinant	Sustainability objective
	[14] Protect and enhance the historic environment [19] Reduce risk of flooding from rivers and surface water [21] Improve the health of water bodies [23] Accommodate for future climate change predictions
Economic environment	[30] Reduce the economic impact of flooding [31] Support businesses and employment
Access and quality of services	[2] Target measures to support those who are vulnerable and most at risk to flooding [4] Improve access to, and enhance natural green and blue spaces [24] Protect infrastructure from damage from flooding [27] Reduce the economic impact of flooding

Provide your views

Sustainability appraisal framework

- Do you agree with the proposed appraisal framework and approach to undertaking the SA?
 - [Strongly agree/ Agree/ Neutral/ Disagree/ Strongly Disagree]
- Do you have any other comments that you wish to make regarding the approach and scope proposed for the sustainability appraisal?

8. Next steps

8.1 Overview

The SA Scoping report will undergo consultation and feedback gathered will be taken forward to the assessment.

The SA Framework will then be used to help shape the development of the SVWMS and inform the options development and appraisal process. During this time further consultation and engagement will be undertaken with partners and stakeholders to help inform the development of the scheme. The results of the SA will be communicated in an SA Environmental Report alongside the draft SVWMS.

The SA Environmental Report will include the following information:

- Updated environmental, social and economic baseline information of relevance to the SVWMS.
- An updated list of plans, programmes and objectives and description of how these have been considered within the appraisal.
- The methodology that has been following for the SA and how it has been used to inform the development of the SVWMS.
- Information on the proposed SVWMS Strategy, why the option or options have been selected and the alternative options that were been considered.
- The likely environmental, social and economic effects of the SVWMS Strategy.
- Proposed mitigation that will be undertaken to reduce any significant negative effects of the SVWMS and increase the benefits it provides.
- Proposed monitoring that will be undertaken to help manage and evaluate the impact of the SVWMS.

There will be opportunity to provide feedback on the SA Environmental Report and the draft SVWMS prior to the SVWMS being updated and finalised. When the final SVWMS is published, this will be accompanied by the Statement of Environmental Particulars which will outline how the consultation responses have been taken into account. An overview of

the next stages of the development of the scheme and SA are outlined in

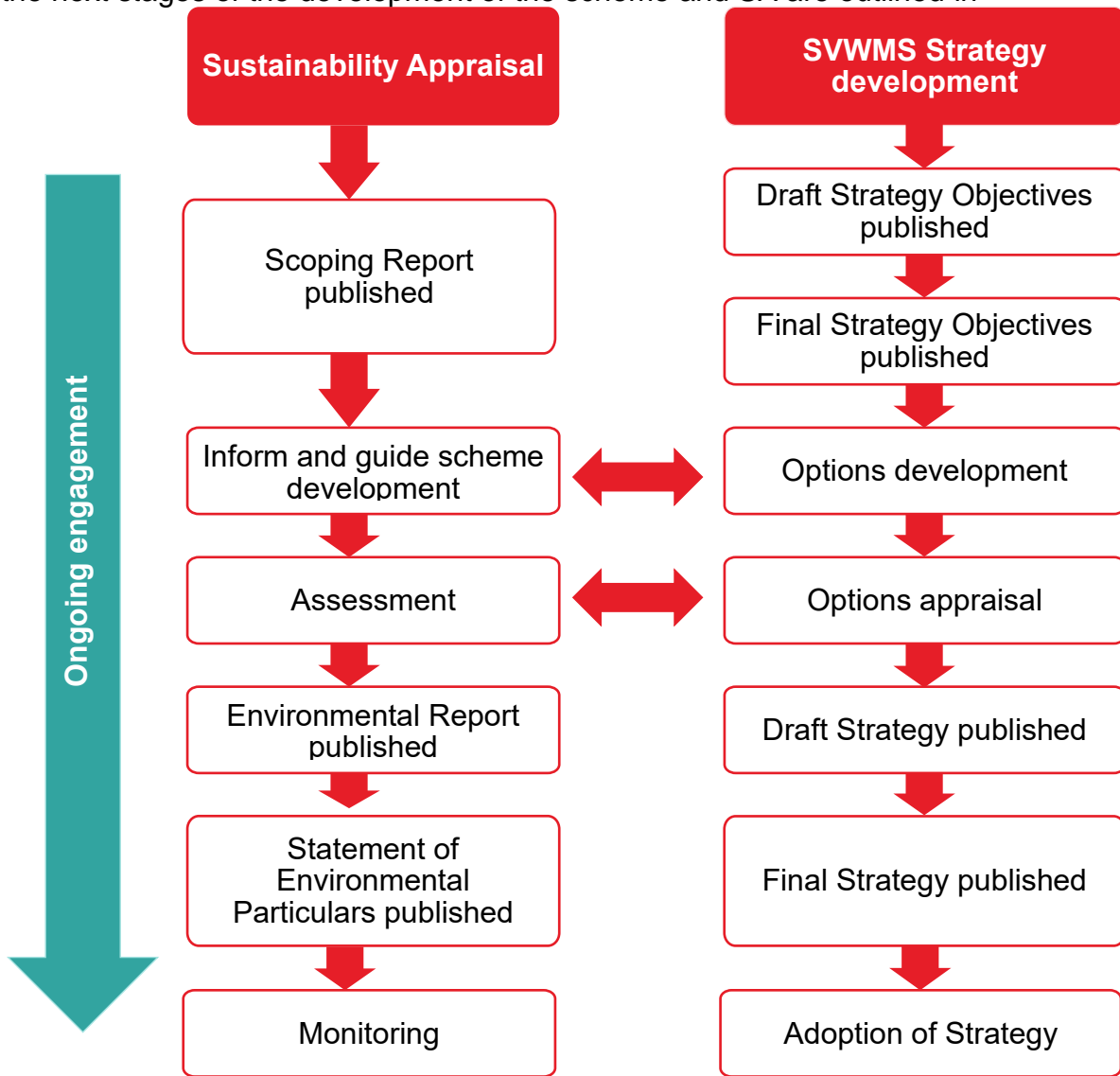


Figure 8-1 below.

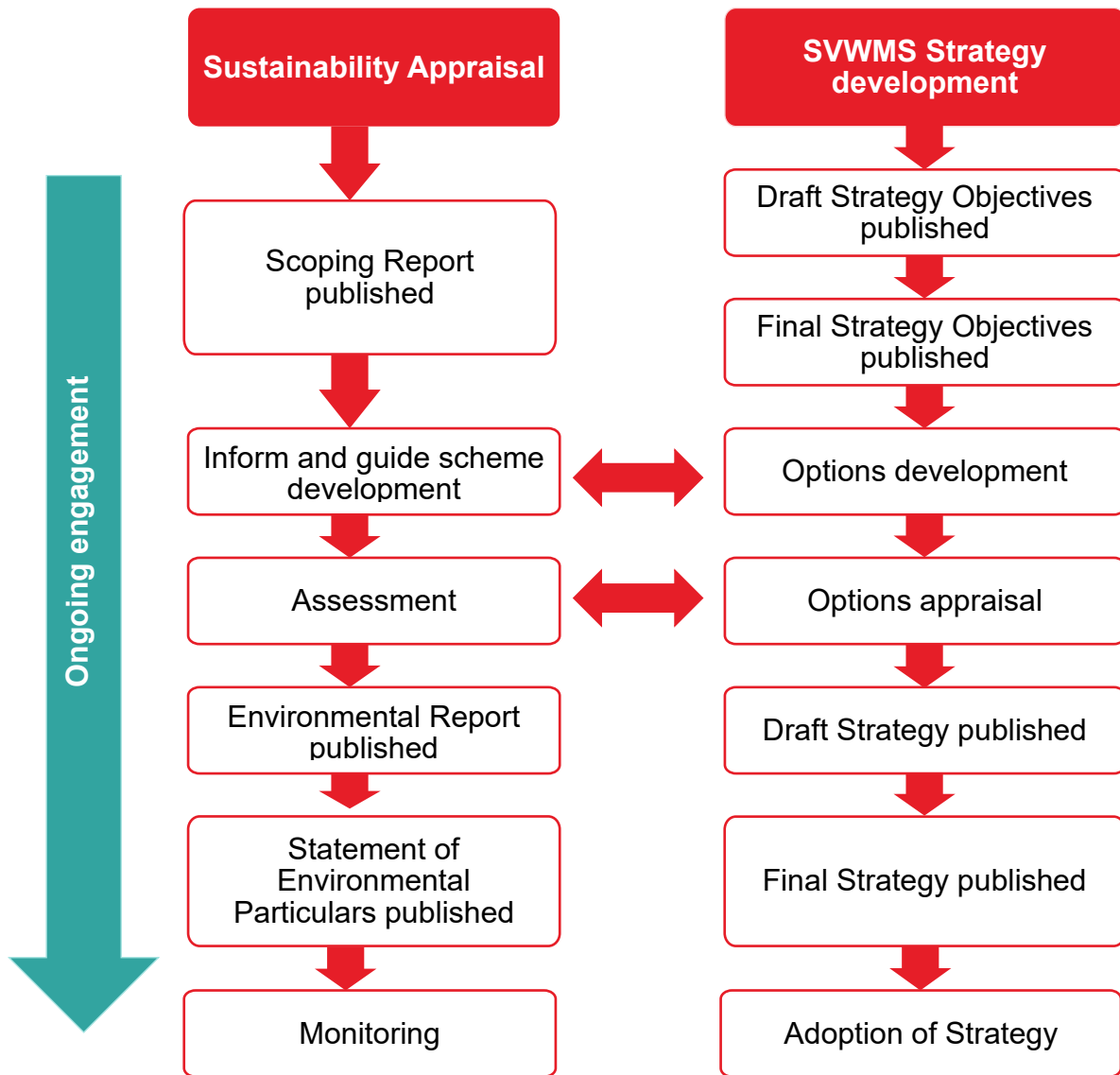


Figure 8-1 Next steps

8.2 Providing your views

We would like to hear your views on the SVWMS and SA so that we can create a scheme that truly encompasses and supports sustainable development and addresses local issues and opportunities. We have provided a series of questions below to help guide feedback on the scope and approach of the SA. Additional comments and feedback can also be provided alongside responses to these questions.

Questions:

Relevant policies, plans and objectives

- Do you feel that we have we included all relevant plans, programmes and objectives and adequately taken account of those listed?
 - [Strongly agree/ Agree/ Neutral/ Disagree/ Strongly Disagree]
- Are there other documents specifically relevant to the SVWMS that have not been listed and should be taken into account?

Baseline information and key sustainability issues and opportunities

- Are there any baseline information sources that are relevant to the SVWMS that have not been listed and should be taken into account?
- Do you feel the sustainability issues and opportunities identified accurately reflect those in the catchment that are relevant to the SVWMS?
 - [Strongly agree/ Agree/ Neutral/ Disagree/ Strongly Disagree]
- Are there any other sustainability issues or opportunities that should be considered within the SA?

Sustainability objectives and questions

- Do you agree with the sustainability objectives and questions that we have identified?
 - [Strongly agree/ Agree/ Neutral/ Disagree/ Strongly Disagree]
- Are there any other objectives or questions that you think should be included in the SA of the SVWMS?

Sustainability appraisal framework

- Do you agree with the proposed appraisal framework and approach to undertaking the SA?
 - [Strongly agree/ Agree/ Neutral/ Disagree/ Strongly Disagree]
- Do you have any other comments that you wish to make regarding the approach and scope proposed for the sustainability appraisal?

Consultation will be undertaken on the documents for a period of 6 weeks, starting on the 9 April 2024 and ending on the 21 May 2024.

We are keen to engage with communities, landowners and partners across the whole catchment and encourage those who wish to be part of this process and have any feedback on the scope of the SA Scoping Report to complete the online questionnaire on the Environment Agency and Cyfoeth Naturiol Cymru / Natural Resource Wales websites here:

[Severn Valley Water Management Scheme - Environment Agency - Citizen Space \(environment-agency.gov.uk\)](https://environment-agency.gov.uk)

Feedback can also be provided by contacting the team via email at SVWMS@environment-agency.gov.uk or CynllunRheoliDwrDyffrynHafren@cyfoethnaturiolcymru.gov.uk or SevernValleyWaterManagementScheme@naturalresourceswales.gov.uk.

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Appendix A Plans, programmes and environmental protection objectives review

Appendix B Baseline context

Appendix C Habitat Regulation Assessment sites

Appendix D Water Framework Directive waterbodies