

Draft 2022-23 SRA Enhanced Programme

Workstream 1 – Dredging and River Management

Bridgwater Tidal Barrier

Bridgwater Tidal Barrier is a major £100million project led by the Environment Agency and Sedgemoor District Council. Designed to help protect more than 11,300 homes and 1,500 businesses, it has three main elements: a tidal barrier on the River Parrett at Chilton Trinity, 2.67 miles (4.3km) of new flood defence banks and 1.74 miles (2.8km) of raised banks downstream at Chilton Trinity, Combwich and Pawlett, and fish and eel passage improvements at 12 sites upstream of the barrier, reaching into the districts of South Somerset and Somerset West and Taunton.

Most funding for this major project will come from central government major project funding. However, some local match funding is required to secure the national funding. Somerset Rivers Authority is making a local contribution in recognition of the important role that Bridgwater Tidal Barrier will fulfil in protecting Somerset residents, homes and businesses.

SRA reference: EA17-23. Location: Sedgemoor, with improvements also in South Somerset and Somerset West and Taunton.

Dunball Sluice refurbishment

A £3.575million project led by the Environment Agency to refurbish Dunball Sluice, an important structure used to control flows of water from the River Sowey-King's Sedgemoor Drain system into the River Parrett north of Bridgwater. The sluice is in a poor state of repair, with numerous defects. Part-funding from Somerset Rivers Authority will help the Environment Agency to extend the working life of Dunball Sluice by 35 years.

This project will complement the SRA's ongoing River Sowey-King's Sedgemoor Drain Enhancements Scheme (Phase One). It will benefit homes, businesses, roads, infrastructure, farmland and internationally important sites for wildlife across a large area of the Somerset Levels and Moors.

SRA reference: EA18. Location: Sedgemoor.

Workstream 2 – Land Management including Natural Flood Management

Hills to Levels: Somerset Land Management and Natural Flood Management

Somerset Rivers Authority continues to fund the biggest range of natural flood management (NFM) activities in the UK, as part of Hills to Levels. Plans for 2022-23 include more schemes in the Mendip District Council area, following on from earlier SRA-funded sub-catchment analyses across Mendip.

There are seven main elements, all to be delivered for the SRA by the Farming and Wildlife Advisory Group SouthWest (FWAG SW), except for the NFM schemes in Mendip (see below) for which Mendip District Council will take responsibility, while working in partnership with FWAG SW.

1 NFM schemes countywide: Design and implementation of 20 small-scale and natural flood management capital works to hold back water in upper catchments and reduce peak flows. Some parishes are being trained to identify possibilities for NFM measures and helped to implement them, for example in Cheddon Fitzpaine, West Monkton and parts of West Somerset.

2 NFM schemes in Mendip: Four nature-based schemes in sub-catchments with flooding problems analysed for the SRA in two earlier Mendip-wide investigations. In partnership with Mendip District Council, these projects will deliver a range of NFM measures including (where appropriate) 'Stage Zero' techniques of river restoration. Elements of existing infrastructure will be inspected to see if they need repairs or improvements in capacity, or if they could be re-naturalised (for example, could a stream be de-culverted?).

3 Highways referrals: Funding for responding to 30 referrals of cases where better land management could help to fix problems such as roads flooding because of run-off from fields. In such cases it makes sense to address causes as well as symptoms. Extra SRA funding enables this to happen with partners working together to tackle issues beyond their usual limited remits.

4 Soil husbandry: Funding for increased uptake of better soil management techniques and cropping changes to improve the infiltration of water and reduce run-off on 25 farms. Initiatives include split field trials, soil husbandry reports and workshops.

5 Online NFM auction: An online auction, excepting only land in lower-lying Internal Drainage Board areas, as the main purpose of natural flood management (NFM) activities in Somerset is to slow the flow of water down through higher parts of river catchments. Farmers will be able select for themselves different NFM activities, pick out parts of their land where they believe those activities will produce the best flood prevention results for themselves and for local communities and then bid for funding for those activities. Previous auctions have led to hundreds of successful bids for various extensive improvements.

6 Modelling and monitoring: Modelling and/or monitoring at sub-catchment scale to demonstrate the effectiveness of natural flood management measures that have already been installed. Special attention will be paid to the Merriott Stream de-culverting project to assess its value in reducing flood risks.

7 Match funding: As with the Merriott Stream de-culverting project, which was mainly funded through an Environment Agency Water Environment Grant, in several cases SRA

funding is used as match funding for ongoing projects that hold back water and reduce peak flows, such as:

- the Environment Agency's Hills to Levels Multi-Benefits project in the sub-catchments of the Upper Washford, Merriott Stream, North Petherton Stream, Back Stream and Halse Water
- the Environment Agency's Somerset Frome Water Environment Improvement Fund
- the Environment Agency's River Brue Water Environment Improvement Fund

At the time of writing, decisions are awaited on potential partnership schemes involving the River Sheppey and the Wallbridge area of Frome.

SRA reference: FWLM01-23. Location: Across Somerset.

Somerset Levels & Moors peat trial

Somerset Rivers Authority (SRA) is to part-fund the running of a trial scheme of payments for the preservation and restoration of peat in 2-4 small areas of the Somerset Levels & Moors. The proposed system of payments will be based on a sliding scale of incentives for progressively higher water tables and compatible types of land management. Areas of wet low-lying land are important to the SRA because they can act as a buffer against flooding.

Lessons learned from the trial will help SRA partners (chiefly the Environment Agency, Natural England and the Internal Drainage Boards) to review, update and refresh Water Level Management Plans (WLMPs). Revised WLMPs are required as part of the SRA's ongoing development of a Strategic Approach to Mitigation for flood risk reduction activities on the Somerset Levels & Moors, such as dredging and River Sowby-King's Sedgemoor Drain enhancements.

Lessons learned will also help the Department for Environment, Food & Rural Affairs (Defra) to develop Environmental Land Management schemes (ELMs) that promote Landscape Recovery. Defra is keen to invest in schemes "that reward farmers and land managers for producing public goods", such as preventing carbon dioxide (CO₂) loss from lowland peat and moving towards carbon sequestration.

The SRA's ambition is that future payment systems designed by Defra will be right for Somerset, because lessons from Somerset fed into their design.

SRA reference: FWML08. Location: Sedgemoor, South Somerset, Mendip.

Somerset Trees for Water Action Fund

A third year of SRA funding for the popular Trees for Water initiative, following successes in 2020-21 and 2021-22. This tree and hedge planting action fund helps local communities reduce flood risks arising from surface water run-off. The project is led by Reimagining the Levels, working in collaboration with the Farming & Wildlife Advisory Group SouthWest (FWAG SW).

Trees for Water is particularly designed to suit strategically important sites not large enough for Countryside Stewardship grants and not special enough in conservation terms to concern Natural England. This Action Fund is meant to be flexible, bespoke and un-bureaucratic.

On top of the funding awarded by the SRA, free trees worth £20,000 are provided by the Woodland Trust. Planting is usually carried out by landowners themselves and many local volunteers.

SRA reference: FWLM03-23. Location: Across Somerset.

Wellhams Brook water storage study

A study to assess the feasibility of creating a 4-acre storage pond on land near Wellhams Mill in the Wellhams Brook catchment between Yeovil and Martock. Wellhams Brook flows down into the River Parrett. A new pond could be combined with a series of upstream scrapes and small wetland areas, plus the partial re-instatement of the old Mill leat as an enhanced swale with an outlet for the controlled release of water. Benefits could include reduced flood risks for many people and properties around Martock and roads including the A303, as well as the creation of better habitats for wildlife and improved water quality through measures to remove excess phosphates. At certain times of year water stored in the pond could also be used for agricultural irrigation.

Constructing all these new features would not be cheap or easy. For example, existing infrastructure such as electricity poles could have to be relocated.

The idea was put forward to the SRA by Martock's flood wardens and the Farming & Wildlife Advisory Group SouthWest, with the support of the landowner. One impetus is the large amount of new housing and commercial development upstream at Houndstone and Lufton, prompting fears downstream of increased run-off. SRA funding for a feasibility study will allow for a detailed assessment to be made of the pros and cons of the scheme proposed, its value for money and issues such as maintenance and operation.

SRA reference: FWLM07. Location: South Somerset.

Workstream 3 – Urban Water Management

Wells catchment management study

Catchment analysis funded by Somerset Rivers Authority (SRA) shows 85 properties at risk of flooding in Wells, and 42 previous incidents of road flooding.

The aim of this new city-wide study is to identify joined-up ways of reducing flood risks, increasing resilience and improving the management of water and land. This project will be led for the SRA by Mendip District Council's Flood Risk Consultant, working with a large number of organisations, landowners and residents. Every resident of Wells potentially has a part to play. Previous studies will be incorporated, such as one recently funded by the SRA that covered Knapp Hill, St Andrew's Stream and Keward Brook.

Possible improvements include: re-connecting floodplains, re-naturalising valleys, creating small wetlands and attenuation ponds, planting trees, de-culverting watercourses, reducing soil erosion, lessening pollution, and removing blockages that impede fish.

Particular attention will be paid to areas upstream of the Bishop's Palace moat, but it is also intended that communities downstream should benefit, in the lower catchments of the River Sheppey and the River Brue.

SRA reference: LAMDC08. Location: Mendip.

Wedmore Village Hall SuDS investigation

SRA funding will enable the completion of the ground investigations, detailed designs and community involvements needed for the proposed installation of Sustainable Drainage Systems (SuDS) features in Wedmore Village Hall's large tarmacked car park. The purpose of SuDS features would be to help reduce run-off from the area around the hall, which contributes to flooding on the B3151 Cheddar Road and affects nearby businesses. A pond to help slow the flow of water down from Lascott Hill may also be created on land owned by the Diocese of Bath & Wells.

This scheme is being led by Somerset Wildlife Trust, working closely with the SRA's community engagement team, the Farming & Wildlife Advisory Group SouthWest and Wedmore Parish Council. It is tied in with Adapting the Levels, a major partnership project funded by the EU's Interreg 2Seas programme and the SRA, which has been particularly busy around Wedmore (and Langport). Earlier stages of this scheme were funded by another EU initiative called Sponge2020.

Partners' aim now is to enable the creation of a SuDS showcase, which combines lower flood risks with better habitats for wildlife, and fuses greener ideas for urban space with a still-very-useful car park. It is hoped to inspire other communities to follow suit.

SRA reference: SLACCP-01. Location: Sedgemoor.

Burnham-on-Sea desilting

A scheme to restore the capacity of a stream extending out of New Rhyne near The Drive in Burnham-on-Sea. Funding from Somerset Rivers Authority will enable the Axe Brue Internal Drainage Board (IDB) to desilt around 110m of the stream, which is currently struggling to cope with heavy culverted flows from roads, and properties built in the 1960s. The aim is to reduce flood risks for around 30 properties and local businesses including a petrol station, caravan repairer and caravan dealer.

SRA reference: IDB31. Location: Sedgemoor.

East Brent asset improvement

A scheme to help protect homes, businesses and farmland in and around East Brent. Funding from Somerset Rivers Authority will enable the Axe Brue Internal Drainage Board (IDB) to replace and upgrade unstable stone-filled cage defences along Brocks Pill rhyne, East Brent's main watercourse for drainage. Beneficiaries will include 12 homes and a holiday cottage business, Brent Area Medical Centre, the B3140, and around 20 hectares of agricultural land.

SRA reference: IDB32. Location: Sedgemoor.

Workstream 4 – Resilient Infrastructure

Five programmes of Enhanced Maintenance

Five programmes of enhanced maintenance are being planned by Somerset County Council's Highways Department. The aim is to help keep roads open in places highly susceptible to flooding, make them safer, preserve access for communities, and safeguard properties from flooding, all in line with the objectives of Somerset's 20 Year Flood Action Plan. These works benefit residents, businesses and visitors. Where possible, they are dovetailed with the Hills to Levels system of highway referrals to reduce run-off from land onto roads.

Somerset Enhanced Maintenance: Gully Emptying

Gullies in places most at risk of flooding across Somerset are cleansed once a year by Somerset County Council. Extra SRA funding means that around 20,000 gullies can be emptied twice a year.

SRA reference: LHA03-23. Location: Across Somerset.

Somerset Enhanced Maintenance: Drain Jetting

Extra SRA-funded drain jetting targets places across Somerset at high risk of flooding. Drains are usually only jetted by Somerset County Council on a reactive basis: that is, once they have become blocked. Pro-active jetting is designed to stop drains from getting blocked in the first place, by removing silt and debris. Around 200 places are expected to benefit, depending on various unpredictable factors such as the weather.

SRA reference: LHA04-23. Location: Across Somerset.

Somerset Enhanced Maintenance: Desilting Structures

Desilting bridges and culverts, and re-aligning channels close to highways structures, improves the flow of watercourses, and increases the volumes of water they can carry. This reduces the risks of flooding for roads, nearby homes and land. Whole systems can work more efficiently when watercourse “bottle necks” are removed.

Sites that would benefit from de-silting are identified by Somerset County Council’s highways department through the use of records kept by local highways officers, or concerns raised by other authorities or members of the public. Somerset Rivers Authority funding is provided as de-silting structures is not done as a routine operation by Somerset County Council.

SRA reference: LHA01-23. Location: Across Somerset.

Somerset Enhanced Maintenance: Silt-trap Emptying

Silt-traps are designed to reduce flood risks by collecting silt washed out from land near roads, so highway drainage systems are not jammed with sludge. Somerset has 105 silt-traps at places known to be susceptible to flooding. Extra SRA funding enables Somerset County Council’s Highways Department to carry out a programme of pro-active cleansing, so that traps themselves do not get blocked up, but work as they should.

SRA reference: LHA122-23. Location: Across Somerset.

Somerset Enhanced Maintenance: Trash Screen Clearing

Extra SRA-funded trash screen clearing targets just under 40 places. Trash screens are usually only cleared by Somerset County Council on a reactive basis: that is, once they have become blocked and already caused people problems. Pro-active clearing is designed to stop screens from getting clogged up in the first place.

SRA reference: LHA131. Location: Across Somerset.

Workstream 5 – Building Local Resilience

Ham and Ruishton flood signs

A new flood warning system for Lane End in Ham and Lipe Lane in Ruishton. Both roads are quite busy with local traffic and motorists seeking to avoid delays on the A358 east of Taunton. Both roads are also regularly troubled with seasonal flooding during which cars quite often get abandoned and driven into ditches. The situation is expected to get worse when works begin within the next three years to dual the carriageway of the A358, prompting more vehicles to seek diversions. Dualling works are expected to last for several years.

To try to deter drivers from risking lives and vehicles, Somerset Rivers Authority is to fund the installation of seven new flood warning signs. Five variable messaging digital signs will be activated by sensors in rising flood waters. Two will be manually operated by local flood wardens. This scheme has been designed for the SRA by Somerset Council's Highways department working very closely with local residents, Ruishton Parish Council, Ham Village Flood Defence Committee, and the SRA's Community Engagement team. Local volunteers will continue to be involved as the scheme progresses. More collaborative arrangements are being formed with highways officers, to help replace a scheme called Operation Gannex that was ended by Avon & Somerset Police in early 2021.

SRA reference: LHA135. Location: Somerset West and Taunton.