

Somerset Rivers Authority Annual Report 2023-24

Foreword by Councillor Mike Stanton, Chair of Somerset Rivers Authority (SRA)

I'm pleased to introduce the ninth annual report of Somerset Rivers Authority (SRA). Here you will find details of dozens of SRA-funded activities across Somerset between 1 April 2023 and 31 March 2024, all done to reduce the risks and impacts of flooding. The SRA was launched in January 2015 following the devastating flooding that hit Somerset over the winter of 2013-14 and the production of a 20 Year Flood Action Plan. The five workstreams you will see featured in this report reflect that Plan's objectives, and the need to approach varying problems across Somerset in different ways.

A decade on, a lot has been achieved, but there is still much more to be done. 2023-24 showed climate change intensifying flooding problems across our county, lashing with more force and unpredictability. Total up all the places hit countywide – like the Cam valley in May, West Somerset and the Tone catchment in September, Shepton Mallet and Croscombe in October, Brue settlements for months in the winter – and many more properties flooded than in 2014. This time round, we saw no big national or regional commotion about this flooding, because it was often so scattergunned, but we know from talking to people affected that their experiences were still shattering.

Partners in the SRA are Somerset Council, the Axe Brue and Parrett Internal Drainage Boards (IDBs), the Environment Agency, Natural England, Wessex Regional Flood & Coastal Committee, and Wessex Water. To help strengthen our partnership, and keep going above and beyond what partners can achieve individually for Somerset, we have drawn up a new strategy for 2024-34, evolved from the 2014 Flood Action Plan. Our core purpose (to “reduce the risks and impacts of flooding”), our core principles (“acting on local priorities, working together, doing extra”), our five objectives and our catchment approach are all covered on page 34 of this report.

For 2023-24, the SRA got just over £3million through council tax, and the IDBs contributed £20,000. The sums we get are still tied to the level at which they were set in 2016-17. They still enable much good work to be done, but in real terms their value has decreased, while demands upon the SRA's funding and our partners' funding have increased. The Environment Agency locally, for example, gets less than half what it bids for from central government for maintenance.

As we approach the SRA's 10th anniversary, we face some hard constraints and challenges, but as a partnership we are determined to push on with a range of initiatives within Somerset catchments. Plans include following up on fresh modelling we commissioned for the River Brue lowlands, and encouraging more organisations to apply to us for grants big and small.

I trust that this report will show you how much Somerset Rivers Authority has been doing for you across Somerset and suggest what we might achieve together over the next few years. As ever, please get in touch with us if you have any comments or questions.

Key SRA points from 2023-24, at a glance

£3.8 million extra was spent in Somerset by Somerset Rivers Authority on flood risk reduction, resilience and adaptation, and a new SRA Strategy was produced.

Hundreds of Somerset places benefitted, major projects part or wholly-funded included Bridgwater Tidal Barrier and River Brue modelling.

An enhanced dredging trial on the River Parrett combined water injection dredging and traditional ways to remove bank silt build-ups.

Two outfall structures were upgraded as part of the River Sowey – King's Sedgemoor Drain Enhancements Scheme, Dunball Sluice refurbishment continued.

Natural Flood Management schemes and activities were carried out at more than 50 places countywide, the SRA funded Somerset Beaver Strategy work and peat trials.

Fifty-four inspections took place of Sustainable Drainage Systems (SuDS) at new developments, studies finished in Minehead, Shepton Mallet and Croscombe, and advanced in the Taunton area.

Around 23,000 highways structures got extra maintenance to reduce flood risks; drainage improvements were designed for Wellsprings in Taunton; a road flood warning system was put in for Ham and Ruishton.

A climate adaptation plan was developed in Glastonbury, four Moor Associations started, seven communities got grants for equipment, more got local flood warning systems.

123 events involved SRA community engagement officers, who worked with 24 communities on flood resilience and emergency preparedness, and started a schools project.

A note about the contents of this version of the SRA Annual Report 2023-24

This document is a simple text version of the Somerset Rivers Authority (SRA) Annual Report 2023-24. It is designed to be straightforwardly accessible and easily printed, with no graphics or pictures.

A more colourful 48-page version with graphics and pictures is available for downloading from the SRA website. That version may not be suitable for users of assistive technology.

The entire text of this report can also be read as separate pages by going via the Flood Risk Work section of the SRA website. This version has a few more links and illustrations: [Somerset Rivers Authority Annual Report 2023-24](#)

In this document, Workstream 1 is covered between pages 4 and 13. Workstream 2 between pages 14 and 15. Workstream 3 between 16 and 19. Workstream 4 between pages 20 and 24. Workstream 5 between pages 25 and 27. Then follows a short section about the new SRA Strategy 2024-34 on page 34 and a financial summary for 2023-24 on page 35.

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Workstream 1: Dredging and River Management

In 2023-24, Somerset Rivers Authority (SRA) spent more on Dredging and River Management than on all its other workstreams put together. Most of the projects in this section are complex, so generally take more than a year to deliver. Some are wholly funded by the SRA, some part-funded.

Dredging and silt-monitoring

In January 2024 a new combination of dredging methods was successfully tried out along parts of the River Parrett between Burrowbridge and the M5 bridge. This activity was organised for Somerset Rivers Authority by the Parrett Internal Drainage Board (IDB). In selected spots where build-ups of silt were judged to be the biggest nuisance, excavators scooped sediments from the upper bank of the river (called its shoulder) and put them down into the path of a Water Injection Dredging (WID) vessel working in the river. The WID vessel used powerful jets of water to agitate and disperse the sediments placed in its way, so they were washed out on the tide.

This dredging was done because the Parrett, as a tidal river, gets enormous amounts of sediments coming in from the sea. Vast quantities also enter from the Parrett's catchment (which is 770 square kilometres, or 478 square miles).

The build-up of sediments in the Parrett reduces the river's cross-sectional area and hence its effectiveness as a flood channel. The removal of consolidated sediments reduces flood risks for people, properties, roads and land, particularly in the area around Moorland which was so badly hit in 2014.

More than eight years of SRA-funded experimentation and knowledge-building went into the combined dredging trial of January 2024. It sought to blend the most useful elements of several important strands of work.

Firstly, silt monitoring twice a year since 2015. SRA partners have amassed a detailed panoramic picture of how sediments come, go and get to stick around in the tidal section of the Parrett between Burrowbridge and the M5 bridge. Thus trends can be observed and target areas selected.

Secondly, the SRA has funded various techniques of dredging with long-reach excavators (on the Parrett and elsewhere), both for major re-profiling of river banks through so-called pioneer dredging and for less drastic works of maintenance dredging designed to preserve channels' capacity to convey water.

Thirdly, the SRA has also funded various different techniques of Water Injection Dredging, working through the Parrett IDB with contractors Van Oord. Water Injection Dredging is much cheaper, much quicker and much less disruptive than traditional dredging using excavators. Water Injection Dredging targets what is known as the thalweg of the river, the central part of its lower channel, six metres wide in the case of the Parrett. Scientific studies in 2016 and 2017 found this method to be effective in removing sediments, also that it could lead to unwanted build-ups

on river banks being washed away through a process of steepening, slumping and natural scouring. However, it had become increasingly noticeable over the years that silt and vegetation (including trees) were encroaching on some upper banks, on the shoulder of the river.

Reviews of data by the Parrett IDB in 2023 found that cross-sectional areas of the river were reducing over time, even with annual Water Injection Dredging. Working with partners and contractors (Van Oord, WM Longreach), the IDB therefore devised and implemented the targeted fusion of methods described above.

It was seen to produce improved results: partners invited onto the dredging vessel during the works were unanimously impressed.

However, the full extent of the works' success could not immediately be established. This was because post-dredging survey works had to be delayed due to high water levels from March through to May.

Lessons learned from the January 2024 trial will be used to inform the approach taken to combined Water Injection Dredging and Shoulder dredging works over the impending winter of 2024-25.

River Sowy - King's Sedgemoor Drain (KSD) Enhancements Scheme (Phase 1)

The River Sowy is also known as the Parrett Flood Relief Channel. It was created between 1969 and 1972, to take excess water away from the River Parrett near Aller, downstream of Langport. Water flows into the Sowy through a sluice called Monk's Leaze Clyse near Combe north-west of Langport. It goes down via Beer Wall beneath the A372 near Othery to King's Sedgemoor Drain (KSD) near Greylake, then it re-joins the Parrett through Dunball Sluice, 22km (13.5 miles) after it went through Monk's Leaze Clyse.

The SRA has funded improvements to the Sowy-KSD system since 2016. The main aim of Phase 1 Enhancements has been to increase the amount of water that can flow, in a controlled way, through the Sowy-KSD system, and thereby help to reduce flood risks for homes, businesses and roads across 150 square miles of the Somerset Levels and Moors. SRA partners have also needed to ensure that legally-protected wetlands of international importance are not made less wet, as a result of more water being kept in river channels. For example, around 100 water level management control structures have been upgraded. These help to maintain and improve habitats.

Sowy-KSD activities in 2023-24

The Environment Agency, as an SRA partner, finished refurbishing Parchey Tilting Weir in May 2023 and Level Rhyne outfall in August 2023. The aim was to enable these structures to cope with more water flowing through the KSD and to keep that water in channel, not let it leak out onto land nearby through (for example) poor-quality headwalls or unsuitable valves.

Parchey Tilting Weir was in poor condition. Works included:

1. the installation of a new tilting weir, new sheet-pile wingwalls with reinforced concrete capping beams, and a new winch mechanism for the flap valve already there.
2. To comply with Eels Regulations (designed to help these endangered creatures survive and increase in numbers), a new eel pass was fitted.
3. To meet current operator and public health and safety standards, the fencing and railings were replaced, and new open mesh flooring was installed with safe access and egress, to lessen the risks of falling from height and working in confined spaces.

The Environment Agency also completed Level Rhyne outfall works in August 2023. These involved replacing a through-embankment culvert pipe, which was old and in poor condition, with a new pipe; installing new watertight headwalls at both ends of the pipe (the old inlet and outlet were leaky); and fitting an eel-friendly, soft-closing flap valve at the outlet to stop KSD water getting into the pipe. The ground above the pipe was upgraded to help support the weight of farm machinery and construction vehicles needing to move along there.

The Environment Agency's project team also completed designs for a range of similar improvements at Chedzoy Tilting Weir and KSD Back Ditch outfall, and they bought various necessary components. Works were meant to be done in the autumn but a problem with national Environment Agency framework contracting rules meant that a new contractor had to be found. Works were re-scheduled to January 2024, but could not be done then because the two sites were under water. Faced then with various financial impediments to rescheduling works again to the spring or summer, the Environment Agency decided that it could not continue with these schemes, instead it would hand over its designs and purchases to another SRA partner.

The Parrett Internal Drainage Board (IDB) agreed that it would investigate ways forward for the SRA. The Parrett IDB had previously agreed (in November 2023) that it would also work on plans for the completion of up to 1.8kms of KSD left bank-raising. A range of activities followed, such as reviews of existing plans and designs, site inspections and detailed engagements with consultants and contractors. The SRA Board's declared intent remains that Sowy-KSD Phase 1 works should be finished.

Dunball Sluice

Part-funded by the SRA, the Environment Agency has been carrying out a major £4.2million programme of improvements at Dunball Sluice. The Sluice sits at the bottom end of the Sowy-King's Sedgemoor Drain (KSD) system, north of Bridgwater. It is used to control flows between the KSD and the River Parrett. A crucial piece of infrastructure, first used in 1971, it is now being refurbished to help it keep going for another 25 years.

Dunball Sluice is 23.95m wide. It has four main openings known as eyes (4 metres wide). Each eye is fitted with two vertical lifting gates (4.26m wide x 3.04m high) and a tidal flap.

In 2023-24, the gates for Eyes 3 and 4 were shotblasted, inspected, refurbished (or renewed), repainted and put back on site.

The tidal flap valve for Eye 4 was refurbished and refitted.

New seals were fitted, and a leakage test successfully carried out.

Northern bypass channel equipment (tide flap, penstock and tilting weir) was also refurbished. This part of the Sluice had been out of operation for several years; it is now back in service.

Works paused over the winter so the Sluice could be fully used for water level management. Upgrades resumed in 2024 with the refurbishment of the southern bypass channel and complete re-cabling and renewal of control systems. The whole scheme is currently scheduled to be finished in autumn 2024.

[Bridgwater Tidal Barrier](#)

Bridgwater Tidal Barrier is a major £249million project led by the Environment Agency and Somerset Council, with contributions from Somerset Rivers Authority (SRA) and - until 2019 - from the Heart of the South West Local Enterprise Partnership. A barrier will reduce flood risks to more than 11,300 homes and 1,500 businesses, and benefit the local area by £2billion.

The project has three main elements:

- a Tidal Barrier across the River Parrett between Express Park and Chilton Trinity
- 4.3 kilometres (2.67 miles) of new flood defence banks and 2.8 kilometres (1.74 miles) of raised banks downstream at Chilton Trinity, Combwich and Pawlett
- and fish and eel passage improvements at 12 sites upstream of the barrier

[Bridgwater Tidal Barrier activities in 2023-24](#)

Good progress was made during the year. Activities included:

- submission of a Full Business Case to HM Treasury
- completion of an access track to the barrier site and site compound, and the start of works to extend haul road access to downstream defences
- test pile driving to assess the local impacts of noise and vibration, and work out how best to mitigate those

- near-completion of detailed designs for the barrier and downstream defences, drawing upon analysis of test pile driving data
- archaeological works, community drop-ins, school visits

The Full Business Case for the Barrier was approved in September 2024 and the Barrier is expected to be operational by early 2027.

River Brue modelling

The SRA commissioned a fresh look at flood risks associated with the River Brue, because existing modelling done in 2014 was inadequate and out of date. Substantially improved modelling was completed in November 2023.

AW Water Engineering Ltd and consultants at WSP studied how much water the Brue conveys, and how water moves – and is moved – around the river’s lowland catchment.

SRA partners helped. The Environment Agency, in particular, provided data and reviewed the work done.

Maps indicating likely flooding have been produced for various scenarios. Data can also be examined in other formats, such as detailed tables and cross-section graphs.

The new modelling is expected to be most useful for studying the impact of possible flood risk reduction works on high flows and flood flows, main rivers and moor areas. Possible initiatives could include seeking to optimise pumping procedures, increasing the capacity and connections of main river and larger rhyme channels, and testing proposed environmental schemes and upland catchment improvements.

Because the SRA’s primary focus is on flooding, the model was not designed to be as useful for studying low flows (droughts) or for assessing works just on smaller rhynes.

Those reservations aside, the model is a valuable tool for organisations proposing projects along the River Brue, especially in the wake of the flooding that badly affected the Brue valley over the autumn and winter of 2023-24. Using the model will provide evidence for how and where a variety of improvements should work best and how any competing interests might be reconciled.

Somerset Council, as an SRA partner, agreed at a meeting in April 2024 that its Flood and Coastal Water Management team would lead a project to understand different scenarios in the Brue catchment, test the pros and cons of possible interventions, and develop recommendations for action.

Strategic Approach to Mitigation

Natural England – as a partner in the SRA – completed a Strategic Approach to Mitigation for flood risk reduction projects on the Somerset Levels and Moors. The aim of developing this Approach was:

- to reduce costs and risks
- enable projects to go ahead
- secure environmental benefits
- support local community, farming, business and tourism interests
- satisfy local and national policies

The Somerset Levels and Moors are internationally important for wetland wildlife: for breeding birds, wintering birds, invertebrates, grasslands, aquatic plants and ditch dwellers. The area's status is honoured and protected through numerous designations with legal force, including a Special Protection Area (SPA), Ramsar classification and 12 Sites of Special Scientific Interest (SSSIs). The area is also important for food production, tourism, carbon storage - and for holding water during times of flood. The Strategic Approach to Mitigation is intended to ensure that future flood risk schemes firstly do not harm this special area and secondly - where possible – that they contribute to its protection.

Four reports were produced, split into two categories: Condition (Functionally Linked Land, Monitoring Protocol) and Conservation (reviews of Raised Water Level Areas and Water Level Management Plans).

Functionally Linked Land: This means areas of land or sea which are outside the boundaries of designated sites but still critical to the success of those sites. In 2023-24, Natural England finished a report about areas of wet grasslands on floodplains used by wintering birds, to better understand how those birds use the landscape and how better to protect them.

Monitoring Protocol: In 2022-23, Natural England used SRA funding to commission the British Trust for Ornithology to carry out a full assessment of bird of population trends in the Special Protection Area. Subsequently, going into 2023-24, they liaised with partners about setting up a monitoring working group that could design and enact a monitoring protocol. This would use the better knowledge gained through the Approach process to more accurately assess schemes more quickly, better measure impacts and better target any necessary mitigation activities.

Raised Water Level Areas (RWLAs): In 2023-24, Natural England finished a report on possible future alternatives to RWLAs, which are areas of land engineered so that water levels can be held higher than they are in surrounding areas. The point of doing this is to provide better breeding and wintering conditions for waders and wildfowl.

Moorlinch was used as a case study. All of the organisations consulted for this RWLA report (the Environment Agency, Natural England, the Royal Society for the

Protection of Birds, Somerset Drainage Boards Consortium, Somerset Rivers Authority, Somerset Wildlife Trust) agreed that RWLAs could and should be improved.

Water Level Management Plans (WLMPs): WLMPs affect how water is managed across the Somerset Levels and Moors. They were produced quite a few years ago and many changes have occurred since they were written (for example, the King's Sedgemoor and Aller Moor WLMP dates from July 2010).

Natural England used SRA funding to commission consultants at JBA to work on a possible framework for the updating of WLMPs. In 2023, JBA produced a report exploring why WLMPs need to be updated and offering some suggestions for how. Topics featured include water quality and quantity, nature recovery, peat restoration, and climate change.

As a result of all this work for the SRA, Natural England says it will be able to assess the impacts of flood defence schemes more easily, give stronger advice about necessary mitigation activities and understand better where conservation efforts should be made now to bring benefits in future.

Wellington Waterways

Close together and interlinked on the north-west side of Wellington sit Tone Works and Tonedale Mill. Large textile mills, mostly built in the 19th and early 20th centuries, now derelict. They used to be fed and powered with water by an intricate system of waterways and structures, natural and diverted tributaries of the River Tone, interlaced with leats, mill-races, culverts, holding ponds, weirs, sluices and gates. Some waterways sit within 63 acres of redundant farmland bought by Somerset West and Taunton Council, passed over to Somerset Council in 2023.

Working closely with Historic England and a range of other organisations, the council wants to protect and find new uses for this manufacturing complex. It's judged by Historic England to be the most important complex of its kind in the South West, and one of the most important in England. It includes 15 Listed Buildings, three of them classified as rare Grade II*, 12 as Grade II.

In March 2023, the SRA agreed to fund a study of how the complex, land nearby and its wider catchments, could be used to reduce flood risks upstream, around Wellington, and downstream towards Taunton. Somerset Council commissioned consultants at Arup, and as part of a much wider investigation into possibilities for the whole site, they completed their flood-related research in March 2024. An important part of this research was involvement with local people, groups and organisations such as the Wellington Town Council Green Corridor Advisory Board. As the council's project manager wrote to the SRA: "Our engagement throughout the project with the community was a key part of the process and their input was invaluable... We were really pleased with the amount of input and passion from the community and hope to foster this going forward in future works and projects."

Several different approaches were taken in the flooding study. Two examples. Firstly, Arup looked at the potential impacts of introducing numerous Natural Flood Management measures across a large part of the River Tone catchment (62.7km², upstream of Tone Works and downstream of Clatworthy Reservoir) and the Back Stream catchment (upstream of Tonedale Mill). They calculated that up to 109,000m³ and 33,500m³ of water could be held back and stored in the Tone and Back Stream catchments respectively, if landowners were successfully engaged and enough land was made available. Peak flood flows could be reduced by up to 11.5% and 14.9% respectively.

Secondly, different possibilities were considered for the actual complex of historic mills. A strategic decision was taken by Somerset Council and consultees to opt for resilience to flooding rather than resistance. This means not seeking to prevent flooding entirely but aiming instead to make places safe during flooding and able to recover quickly from any flooding. So, in practice no flood walls up to two metres high are envisaged, as these would compromise the mills' heritage value and also simply be quite dangerously hard to build within the sites' many physical constraints. This stance is acknowledged by the project team to be bold. Resilience measures are rarely opted for when flood depths (as at Tone Works) are expected to reach up to 1.6 metres in the kind of flooding that has a 1% chance of happening every year. And experiences from elsewhere in the country (places such as York, Stockport and Caernarfon) suggest that to have a secure future, sites need to be able to achieve some kind of commercial viability. The project team's hope for Wellington is that it will become "a national exemplar" for flood resilience in buildings of heritage value. Interest has been expressed by Historic England "in enhancing and embracing the existing connection to water creatively".

In the next two to three years, the Environment Agency intends to carry out more modelling for the main watercourses in the Wellington area, which can then be used to help firm up plans for flood reduction and resilience works.

Taunton Strategic Flood Alleviation Improvements Scheme (TSFAIS)

The main purpose of Taunton Strategic Flood Alleviation Improvements Scheme (TSFAIS) is to reduce flood risks to 1,031 properties arising from the River Tone and its complex network of tributaries. TSFAIS has been part-funded by the SRA since 2016. In 2016-17, the SRA contributed Growth Deal funding from the Heart of the South West Local Enterprise Partnership.

During 2023-24, three initial TSFAIS projects were led by Somerset Council and the Environment Agency. Brief updates:

1. River Tone Left Bank Flood Defences – raising low spots from Frieze Hill to Town Bridge. Consultants Binnies produced outline designs for improved flood defences. A well-attended public drop-in session was held in March 2024. Progress has been complicated by the need to comply with regulations introduced in February 2024, requiring this project to produce a 10% increase in biodiversity. The project team have been looking at ways to achieve this.

2. Raise Firepool Lock gates and build up to 750 metres of River Tone flood defence, from Firepool Lock to the A358 Obridge Viaduct. Consultants WSP created a 'Truncated Flood Model' to reduce modelling run times, to help with the consideration of the combined benefits of different short-term measures.

3. Longrun Meadow flood attenuation improvements – increasing the storage of excess water from the river, controlling when it floods and when that water is released back into the Tone through new embankments, inlet and outlet structures. After delays caused by local government reorganisation, consultants WSP were commissioned to work on a draft delivery programme. It is currently expected that it will take two years to get planning permission for improvements, and two years to construct them.

Resetting the River Aller on Exmoor

A three-year floodplain reconnection project on the National Trust's Holnicote Estate in the west of Somerset was successfully completed in July 2023.

Using the innovative 'Stage 0' river restoration technique, first pioneered in the US state of Oregon, the Trust created a new waterscape. Main moves included:

- filling in a 1.2km section of the River Aller (that was managed, straightened, deepened) with over 4,000 tonnes of earth
- pinning or part-burying 700 tonnes of fallen Holnicote timber within the floodplain, to significantly slow flows of water downstream and help develop a variegated wetland (with more channels, pools and marsh) that is good for wildlife
- sowing 250kg of floodplain wildflower seeds
- planting 25,000 native trees such as willow, bird cherry and black poplar

The project was the first in the UK to attempt to reset a main river on such an ambitious scale. Part of the National Trust's multi-million pound Riverlands initiative, funding also came from the EU's Interreg 2Seas Co-Adapt programme, the Environment Agency, Somerset Rivers Authority (SRA), the Green Recovery Challenge Fund and Frugi.

It followed on from a series of smaller natural flood management schemes locally, all part-funded by the SRA, and it has been further complemented by a recent 125-hectare extension of the River Aller project upstream at Tivington Farm, again part-funded by the SRA.

The combined impact of all these works has been monitored since 2019 by researchers from Exeter University. At sites across the River Aller catchment, they used level sensors and flow meters to capture data every 15 minutes, so by the end of March 2024 they had 52,099 datapoints from a period which endured 87 rainstorms. They also gathered rainfall data from gauges and radar, and conducted regular drone surveys.

Preliminary analysis carried out in April 2024, using a variety of techniques, showed a 38% reduction in peak flood flows after the completion of the Stage 0 works. That benefits nearly 100 properties downstream in places such as Allerford and Bossington, which have historically been vulnerable to flooding, and roads such as the A39 between Porlock and Minehead.

Results also show that the increased floodplain connectivity and water storage offered by the Stage 0 works are slowing the flow of water downstream. There is more of a lag between rain and surge. The researchers note that as the Stage 0 works were completed quite recently, more changes can be expected as the site develops, for example as many thousands of trees grow.

Langport flow station

A new flow station was completed at Langport, jointly funded by the SRA and the Environment Agency. It entered service in summer 2023, then when heavy rains fell and higher flows arose at the end of summer, several visits were made by the Environment Agency's Hydrometry and Telemetry team to calibrate its equipment for accurate readings.

The flow station now measures how much water is going down the Parrett from a catchment of approximately 770 square kilometres (478 square miles) towards the Somerset Levels and Moors. Such information is especially valuable in times of flood. Used in combination with data from existing gauges at Chiselborough, Yeovil, Donyatt and Stathe, figures from Langport flow station help people to make important decisions about how best to respond in difficult situations.

Desilting structures

Somerset Council budgets allow for structures to be desilted when there is a threat to structures themselves, for example of them being damaged because of the amount and weight of material accumulated. Extra SRA funding allows for works in and around structures that also improve watercourses – and benefit nearby roads, land and properties.

Three structures were desilted in 2023-24 by Somerset Council. They were:

Hendford Hill culvert in Yeovil, where Dodham Brook goes under the A30 on its way down to Ninesprings, just below the former Railway Inn and Bradfords, near the busy A30-A3088 roundabout which is vulnerable to flooding.

North Petherton and Bypass culvert, beneath the A38 Fore Street, in an area vulnerable to flooding, close to the entrance to the community hall where the stream comes down from Watery Lane on its way towards the school.

Sawyers Hill between J26 of the M5 and West Buckland, where a large amount of debris was cleared

Workstream 2: Land Management including Natural Flood Management (NFM)

Somerset Rivers Authority funds many land management and Natural Flood Management (NFM) activities across Somerset. Various techniques are used, singly or in combinations designed to suit to local needs and conditions. All share the aim of reducing local flood risks, by slowing the flow of water down through catchments in ways that work with nature.

This workstream is led for the SRA by the Farming & Wildlife Advisory Group SouthWest (FWAG SW).

Activities generally go under the popular local branding of Hills to Levels.

Natural flood management schemes

Ten schemes were completed across Somerset during 2023-24. More were planned between October 2023 and March 2024, but wet weather swept many activities to April 2024 and beyond. Schemes were:

Pudleigh Mill, Wadeford near Chard, River Parrett catchment, two linked schemes developed with community involvement. The first created a backwater next to a tributary of the River Isle and the old mill leat. Doing this involved clearing vegetation, dredging the mill leat to remove stones and gravel deposited during flooding in June 2021, and reconnecting the tributary to its floodplain. The second scheme involved live-laying alder and sycamore trees across this watercourse to act as natural flow spreaders and thereby increase the amount of water stored in the new backwater and suitable land nearby. The aim is to help reduce local flood risks, especially to homes in Court Mill Lane and properties downstream.

Hill Farm, Barrington, River Parrett catchment, 650 trees and 10 shrubs planted in hillside fields above the village to help slow the flow of water down to properties and roads (especially Silver Street) and reduce the run-off of sediment. The latest in a series of schemes locally, including the installation of an SRA-funded silt-trap in Bonnings Lane, Barrington, and earlier rounds of tree and hedge-planting around Hill Farm, funded jointly by the SRA and the landowner.

Hills Farm, Fitzhead, River Tone catchment, two scrapes (72 square metres and 300 sqm) and a bund were created to hold surface water which previously ran down a steep slope straight into a stream above the main road through the village.

Raleigh Manor, Wheddon Cross, River Avill catchment, 780 hedge plants were planted to make a new 130metre hedge along the side of an access track between pastures used for grazing livestock. To guard against farm animals eating the new hedge plants, 130 metres of protective fencing was also erected. The scheme's aim is to help slow the flow of water down the Avill catchment by cutting across flow pathways.

Chargot estate, Luxborough, Upper Washford, West Somerset Streams catchment, two schemes. The first installed a cascade of three stone-faced wooden leaky dams, well-anchored by tree stumps. The dams help to slow the flow of water and sediments downstream, and thereby reduce flood risks. The second scheme desilted a pond (257 square metres) to increase its capacity to hold water during periods of peak flow, thereby again helping to reduce flood risks for properties in Luxborough and land downstream. The pond's outfall was re-designed and reinforced with stone, with a leaky letterbox-style outlet installed to help the landowner control flows of water.

Carslake Farm, near Stogumber, Doniford Stream, West Somerset Streams catchment, a pond (450 square metres) was created with a sluice to allow for water levels to be controlled. Levels can be lowered before periods of heavy rain to make space for more water, thereby slowing its flow down catchment, but also in drier times some water can be retained as a habitat and resource for wildlife. The pond complements another SRA-funded pond created in 2022-23 and 400 trees and shrubs planted with a Trees for Water Action Fund grant in 2023-24.

Witham Park Farm, Witham Friary near Frome, River Frome catchment (source to confluence with Maiden Bradley Brook), 1700 hedge plants were planted to make a 425metre hedge across the contour of some sloping land and along a bank adjacent to a ditch, to intercept surface flow pathways and so reduce flood risks down catchment. To protect the new hedge plants from grazing livestock, 425 metres of fencing was also erected.

Orchard Close, Orchard Road, Carhampton, West Somerset Streams catchment, works started in 2022-23 and were completed in April 2023. Following several site visits, and discussions with residents and landowners, a series of moves was made to reduce the troublesome run-off of water from land above Orchard Close. Works included creating a ditch around two edges of a field where run-off water used to gather from several sources, culverting this ditch beneath the field gateway, and using spoil that came from making the ditch to create a bund around a new pond designed to take water from a new feeder swale. A change in land management was also agreed. All these works were designed to complement a series of other SRA-funded initiatives to reduce flooding in and around Carhampton, particularly around the A39 Carhampton Cross.

Highways referrals

The point of 'highways referrals' is to assess whether road flooding problems could be reduced through better management of land nearby.

Places visited by FWAG SouthWest advisers included Burton, Podimore, Roadwater, Spaxton and the south side of the A39 Quantock Road west of Wembdon. Ideas discussed (along the A39, for example) included ditch clearing and improvement, reducing run-off, and digging out a pond.

Soil visits

Better soil husbandry helps to reduce the run-off of surface water. Keeping soil in good health also brings obvious benefits to farmers.

So SRA funding allows for some specific visits focused on soil condition to be made by FWAG SW advisers, aside from the usual calculations about ground conditions that feature in other schemes, for examples ones to do with tree or hedge planting.

Places visited in 2023-24 included Horsehill Farm, Batcombe; Lipgate Farm, Brewham; The Newt near Bruton; Lower Farm, Shepton Montague; Withiel Farm, Withiel Florey; and Chorleys Farm north of Langley Marsh near Wiveliscombe.

Community sub-catchment support

A pilot project to help Somerset groups and communities turn ideas into action. Funding was agreed by the SRA Board after hearing from FWAG SW that in an increasing number of places, highly motivated people wanted to reduce flood risks in their own areas but they lacked technical expertise, experience and confidence. A project officer could thus help by giving technical input and support for activities judged to be effective. A key principle of this project was that work should be initiated by communities.

In 2023, work began in Chaffcombe, Bathpool, Ilminster, Podimore, and Milverton. In Chaffcombe, for example, members of the village's flood prevention group had already drawn up a flood resilience plan. This plan was reviewed, a village walkover was done with a hydromorphologist, and six ideas were assessed, for wetland planting, an attenuation pond, stream re-profiling, making better use of a water wheel, changing farming practices north of the village, and using natural flood management techniques to the south.

In the first part of 2024, a meeting of West Somerset Flood Group was attended and places lined up for further work included Buckland Dinham, Croscombe, Drayton, Kingston St Mary, Knole near Langport, North Wootton, Shepton Mallet, Shepton Montague and Pitcombe, and Spaxton. In Spaxton parish, for example, near Gothelney Hall, a site visit in February helped to produce a scheme for reducing flooding on Charlinch Road submitted to the SRA in early April.

Trees for Water Action Fund

Trees for Water is an SRA-backed Fund for tree and hedge planting that helps people across Somerset to reduce local flood risks arising from surface water run-off. The project is led by Reimagining the Levels, working with the Farming & Wildlife Advisory Group SouthWest (FWAG SW). It's designed to suit small sites where local knowledge and expert analysis suggest that planting will make a difference.

Planting is usually carried out by landowners and teams of enthusiastic volunteers, many now very experienced. Momentum built up over the last four years has

encouraged all sorts of landowners to come forward, and 31 schemes went ahead in 2023-24. In total, they planted 3,112 trees, 3,022 shrubs, and 1,136 metres of hedgerow. To guard where need be against chomping by livestock and wildlife, 1,516 metres of fencing was also provided.

One new and interesting trend is the introduction of agro-forestry methods. For example, at Glebe Farm near Pitney, an alley-cropping system is being created, with five fenced rows of trees and shrubs, each four metres wide, spaced out across a sloping 8.9acre field with a four-year rotational ley. In Years 1 and 2 the field is a herbal ley, in Year 3 it is grazed by sheep, in Year 4 by pigs. The trees and shrubs help to absorb water and reduce local flooding, they provide shade for the sheep and pigs, they offer crops of fruits and nuts, and they provide extra habitats for wildlife.

A similar but smaller scheme was planted at Woodland Farm near Sparkford, 150 metres north of the River Cam, an area which flooded badly in May 2023. The aim here is to reduce run-off while also supporting the growing of produce for a South Indian food stall business.

On land owned by the Manor House on the edge of Upton Noble, changes have been rooted in detailed analysis of old maps, aerial photography, ditches, ponds and the headwaters of the Brue. In a statement in his application to the SRA, the landowner said: “My own family took over the house and fields – all of which have always been for grazing - from my parents who moved here in 1982. Historically, as with so many fields round here, the fields were smaller once upon a time. I wanted to see whether we could recreate something of that, not least because of a belief that smaller fields would hold water better, and also because we could then re-wild particular fields in a systematic way, since we no longer require so much grazing.” The landowner re-cut a ditch, created a pond, bund and banks, and used funding from Trees for Water to plant three lengths of hedgerow, “all of which will help to hold back water”, and all of which have helped to recreate four separate small fields.

[A full list of Trees for Water places in 2023-24](#)

Ashcott, Potato Cottage, Station Road; **Axbridge**, Sleepy Hollow, Stone Allerton; **Bradford-on-Tone**, Bradford Court; **Bruton**, Coombe Farm, Coombe Hill; **Burcott**, Burcott Farm, Burcott, about a mile west of Wells; Wookey Farm, a five-acre field near the B3139 at Wookey Road; **Butleigh**, Sourdoun Farm, Sub Road; **Charlton Adam**, The Barton; **Hatch Beauchamp**, Old Rectory, Village Road; **Helland**, Dragonfly Orchard, Old Sedgemoor Road; **Hembury Hill**, field off Castle Lane, two miles south-west of Wells near Wookey; **Limington**, Chasers, Higher Farm; **Lottisham**, Rookery Farm, about halfway between Glastonbury and Castle Cary; **Knapp**, Knappwoods Farm, Knapp Lane, between Knapp and North Curry; also One Tree Farm, land at Knapp Hill, Knapp Road near North Curry; **Knole near Langport**, Owls Barn, Bineham Court, two phases of planting; **North Curry**, Sedgemoor House, Sedgemoor Road; **Pilton**, Cedarwoods, Top Street; **Pitney**, Glebe Farm; **Shipham**, Gruffy Ground; **South Petherton**, Whitfield Lane, land owned by South Petherton Parish Council; **Sparkford**, Cider Apple Trees, Off Grid Organics, Woodland Farm, three schemes all at Wyvern Fields, Sparkford Hill Lane;

Stogumber, Carslake Farm; **Strutter's Hill**, Godminster Farm, in field next to Strutter's Hill, halfway between Pitcombe and Shepton Montague; **Templecombe**, Old Farmhouse, Empire Farm, Throop Road; **Upton Noble**, Bellerica Farm; **Upton Noble**, Manor House, Lower Street; **Wedmore**, Wedmore Village Farm, Plud Street.

Wellhams Brook water storage study

In March 2022, the SRA Board agreed to fund a study assessing the feasibility of creating a 4-acre storage pond on land near Wellhams Mill in the Wellhams Brook catchment between the Houndstone and Lufton side of Yeovil and Martock. Water from Wellhams Brook (8.88km long, catchment size 26.61km²) flows down to the River Parrett.

In autumn 2022, for the SRA, FWAG SW appointed consultants JBA to model catchment flows and examine the practicalities, and potential flood risk reduction benefits, of a large new water storage area.

JBA completed their report in November 2023. Instead of recommending one single new facility, capable of holding so much water it would qualify as a reservoir (a classification which imposes strict legal obligations), a series of ponds was proposed. Namely, five storage areas up to two metres deep with a total surface area of 1.94 hectares and a total capacity of around 38,000m³. Estimated cost, including a 60% risk allowance: £734,400. Estimated flood risk reduction benefits: £619,000, rising to £976,642 when benefits to nature were included.

Modelling suggested the five ponds would result in various slight delays to peak flood flows of up to one hour and various small reductions to flood extents in some areas. They would reduce average modelled flood depths in a range of scenarios (from every two-year type floods up to every 100-year type floods) by up to 0.9 centimetres (from 19.2cms to 18.3cms in an every 100-year type flood). In the case of an every five year type-flood they would increase it from 16.2cms to 16.5cms. Figures varied a little if a tilting weir was added to the final pond.

SRA technical group members, in a discussion about this study in March 2024, felt the benefits of creating these five ponds would be marginal. It was agreed that Somerset Council's Flood and Coastal Management team should look more closely at the modelling and cost-benefit analysis, to assess what should be done next.

Somerset Beaver Strategy

After being driven to extinction in Britain 300 to 400 years ago, beavers were re-introduced in 2002, at an enclosed site in Kent. This initiative spurred more moves countrywide. In 2019, beavers of unknown origin were found to be living in the catchment of the River Frome in Somerset. In January 2020, a pair of beavers were released into a strongly-fenced enclosure on the National Trust's Holnicote estate in West Somerset (one of many Holnicote schemes part-funded by the SRA in the run-up to the major River Aller resetting - see pages 12-13). In 2021, the SRA Board agreed to fund the production of a Somerset Beaver Strategy by FWAG SW and

Somerset Wildlife Trust, recognising widespread public interest in beavers, and acknowledging that more beavers were likely to end up inhabiting parts of Somerset, so it would make sense to agree solid plans for managing them. Somerset Wildlife Trust and FWAG SW began working in partnership with the National Trust, the Beaver Trust, and Exeter University. There was a pause for a government consultation about beavers in England, which resulted in October 2022 in them becoming a protected species.

Somerset Beaver Strategy activities in 2023-24

Following an initial public consultation in 2022, Somerset Wildlife Trust and project partners (as listed above) liaised with the Environment Agency, Natural England, Somerset Council, Wessex Water and other relevant statutory bodies and authorities. They consulted with numerous stakeholders and organisations such as the National Farmers Union (NFU) and Country Land and Business Association (CLA), the fisheries sector and local flood groups. In 2023, Somerset Wildlife Trust recruited a Human-Wildlife Co-existence officer (not funded by the SRA).

A first draft of a Somerset Beaver Strategy was produced towards the end of 2023, with nearly 150 pages of technical details in hundreds of maps, charts and tables. Reviewing this draft, SRA Technical Group members suggested some re-balancing. A Technical Background Report was therefore created, along with a forward-looking, less data-intensive, and more goal-orientated Strategy and Implementation Plan. Further stakeholder events were held in May 2024, and a further-revised Strategy went out for public consultation in August 2024. The Strategy's overall aim is to build as much understanding and consensus around matters involving beavers as possible, so that decisions can be taken which are well-informed, evidence-based and science-led. In short, to form agreements about what is best for people, beavers and different parts of Somerset.

Somerset Levels and Moors peat trials

In March 2022, the SRA agreed to part-fund the running of a trial scheme of payments for the preservation and restoration of peat in two to four small areas of the Somerset Levels & Moors. Areas of wet low-lying peaty land are important to the SRA because they can act as a buffer against flooding. The Department for Environment, Food & Rural Affairs (Defra) is keen for lessons to be learned from a trial so that Environmental Land Management schemes (ELMs) can “reward farmers and land managers for producing public goods”, such as preventing carbon dioxide (CO₂) loss from lowland peat.

Two landowners are taking part. Many more expressed an interest but involvement in other schemes meant they were not eligible. Trials began at the start of 2024 on a few fields on Queen's Sedgemoor near Glastonbury and a much larger area of nearly 100 acres on Lang Moor near Westonzoyland. Trials will finish at the end of 2024.

Workstream 3: Urban Water Management

The main aims of Somerset Rivers Authority's Urban Water Management workstream (W3) are to reduce local flood risks and make places better to live and work.

When it rains, Sustainable Drainage Systems (SuDS) help to control the run-off of water from hard surfaces like roads, roofs and pavements. SuDS use techniques inspired by nature – such as permeable paving and plants and ponds – to absorb water and hold it back. SuDS can make places greener and more attractive, healthier for people and better for wildlife, with less pollution.

SuDS Inspections

In 2023-24, as in previous years, a lot of close attention was devoted in this workstream to examining Sustainable Drainage Systems (SuDS) at new developments.

Very few formal SuDS inspection processes are in place across England. This situation is expected to change when Schedule 3 of the Flood and Water Management Act (2010) is implemented. In the meantime, Somerset is ahead in checking new developments.

The SRA and its partners want to ensure that SuDS are built in accordance with the exact designs that were approved by local planning authorities, and that they work as they are meant to work. Inspectors check schemes for compliance against 16 different criteria.

At most places, it is generally found that SuDS features are installed in accordance with approved drawings and specifications.

Where problems are found, Somerset Council has the power to enforce changes. So recently, for example, at Sandy Moor, Wiveliscombe, it was found that a crucial flow control device had not been installed by the developer. Somerset Council considered taking enforcement action for potential breaches of drainage conditions, but close liaison between the SRA-funded SuDS Inspector and the developer led eventually to the necessary equipment being ordered and installed. The site was then re-inspected.

Special attention is paid to handover arrangements for future maintenance, which is vital for effective SuDS operation. A re-occurring theme found in SRA-funded inspections is delays in the handover of SuDS infrastructure to bodies responsible for its maintenance. Delays raise concerns about how systems' long-term performance may be affected, delays also increase short-term risks of flooding downstream.

All sites inspected are added to a SuDS register for Somerset, using mapping software. One purpose of this mapping is to enable future monitoring, especially of

whether maintenance is being carried out exactly as developers pledged during the process of getting planning permission. The monitoring process also allows for residents to raise concerns about SuDS features.

A useful source of information about SuDS in Somerset is a website funded by the SRA, which includes Somerset-specific SuDS design standards:

<https://dev.somerset-suds.jbahosting.com>

This website was updated during 2023 to reflect changes such as the launch of the new Somerset Council. The SRA and Somerset Council's Flood and Coastal team are keen for the Somerset-specific SuDS design standards to be incorporated into the new Somerset Council's planning policy.

The SRA funded inspections of SuDS at 54 places in 2023-24, here listed by former district council area:

Sedgemoor

Bridgwater, Kings Copse Phase 1; **Cheddar** (x2), Land at Holwell Lane, Phase 2, and Sharpham Road; **North Petherton**, Chaucers Meadow, land east of Taunton Road; **Wedmore**, Cross Farm.

Somerset West and Taunton

Churchinford (x2), Ford House Farm; Newberry Farm; **Minehead**, Bircham Road; **Norton Fitzwarren**, Langford Mead Area H6, Dragon Rise; **Stogursey**, Lonlay Mews, off Burgage Road; **Taunton**, Woodbine Cottage, Shoreditch Road; **Wellington** (x2), Bagley Green; Tonedale Mill; **Watchet** (x2), Churchill Way; Doniford Road; **Williton**, Gliddons Garage, High Street; **Wiveliscombe**, Sandy Moor.

South Somerset

Aller, Orchard Place; **Chard** (x3), land at Avishayes Road, Oaklands Avenue; land North of Dolling Close, Chard; former Rosebanks Works; **Crewkerne** (x2), Maiden Beech; Middle Hill, Ashlands Road; **Curry Rivel** (x2), Maple Road, North of Stanchester Way, Phase 1 & 2; Heale Lane; **Ilminster**, Winterhay Lane; **Ilton**, Copse Lane; **Langport** (x2), Bartletts Elm; Old Kelways; **Martock**, Hurst Brook; **Merriott**, Moorlands Farm; **Somerton** (x7), Bancombe Road; Cartway Lane; Home Farm; Meadow Lea; Northfield Farm; Ricksey Park; Sutton Road; **South Petherton** (x4), Lightgate Lane; Prigg Lane; West End Close; West End View; **Sparkford** (x2), Old Coal Yard; Wolverlands; **Wincanton** (x3), Longclose, Lawrence Hill, and New Barns Farm, and Verrington Lane; **Yeovil** (x7), North of Thorne Lane, Brimsmore, Phase 1; Bucklers Mead; Lufton Phases 1-4; Northbrook, Site N; St Georges Ave; St Johns Road, Site P; Stourton Way.

Chard Urban Run-off Butts

One reason why Chard has flooded badly in recent years is that too much surface water runs over land and overwhelms Chard's combined sewers. Combined sewers take rainwater that runs off from gutters, drains and roads, as well as wastewater from homes and businesses.

In autumn 2023, to try to reduce the amount of water that runs off from domestic gutters into Chard's drainage networks, 460 local households were offered free water butts. The offer was made by Wessex Water, working together with Somerset Council, Somerset Rivers Authority (SRA), Chard Town Council and Chard Area Resilience Group (CARG).

Letters were targeted at parts of Chard (Furnham, Crimchard, Combe Street and Fore Street), where the installation and effective use of water butts would help most to reduce flooding. As a result, 74 water butts were ordered from and delivered by Wessex Water.

In door-to-door visits made by the SRA's community engagement officers and Wessex Water representatives, people who did not order a butt said they already had one or more, or did not have the necessary space. A second phase of the scheme, learning lessons from the first and targeting other suitable areas of Chard, began in August 2024.

River Sheppey Catchment Action Plan

In March 2021, Somerset Rivers Authority gave Mendip District Council (as then existed) funding for a study into the causes of repeated flooding in the sub-catchments of Croscombe and Shepton Mallet.

These sub-catchments include Charlton, Bowlish and Darshill along the River Sheppey, and other places such as Ham, Downside and Bodden. Investigations were led by Mendip's flood risk consultants Calm Engineering, working with Somerset County Council (as then existed), the Environment Agency and Wessex Water, the Farming and Wildlife Advisory Group SouthWest, the Wild Trout Trust and specialist sub-contractors.

Work was almost entirely finished by March 2023, its substance and findings as outlined in the SRA Annual Report for 2022-23. The reorganisation of local government in Somerset, that came into effect on 1 April 2023, caused some delays, but a final report was given by Calm Engineering to the new Somerset Council in autumn 2023.

The report found that various interlinked factors prompted local flooding:

- too much rain leading to saturated ground leading to increased surface water runoff and high river levels
- steep-sided catchments with hard surfaces leading to rapid runoff of water

- historic modifications of the River Sheppey channel causing pinch points and back-ups and overflows of water
- silting up of channels and culverts
- blocked drains and culverts
- drains and culverts lacking capacity for too much water

In the Shepton Mallet sub-catchment, the project team looked particularly for measures that could improve matters for people and properties in Charlton, Frog Lane, Charlton Road, Cannard's Grave Road, Kent/West Shepton, Leg Square and Bowlsh, in the Croscombe sub-catchment, for Long Street.

Across the two sub-catchments, numerous problems and possibilities were identified, ranging from culvert rebuilding and weir removing to getting people to stop chucking garden waste into the river. While Somerset Council is conducting Section 19 investigations into the exact causes of the most recent floods, the report funded by the SRA is being used as a resource in regular working group meetings with local people. Questions under consideration include which ideas should be progressed, how, in what sequence and by whom.

Minehead 25 Year Flood Action Plan

After nearly two years of work, a report into Minehead's many flooding problems was finalised in summer 2023. Eighty-six pages long with three substantial appendices, it was researched and written by consultants at WSP, and part-funded by SRA and Wessex Water, in a project led initially by Somerset County Council (since April 2023, Somerset Council).

Minehead's flooding problems are made worse by the ways in which they combine risks and impacts from watercourses, farmland, woodland, built up areas, the sea and its tides, rainfall and drainage systems that are not fully mapped or understood. Minehead's catchment has to be looked at as a complicated whole, which is why WSP were asked to produce a 2D integrated Catchment Model, as the basis for getting a better understanding, and developing ideas for tackling flood risks from all sources in and around Minehead.

The report used WSP's model and historic records to identify five flooding hotspots: Woodcombe Lane and Bratton Lane, Bratton Stream – Open Channel, Bratton Stream – Town Culvert, Vulcan Road and Brunel Way, Alcombe Brook.

The project team then picked out nine initial options which might be a cost-effective way of reducing flood risks in and around Minehead.

1. Use natural flood management techniques to slow flows of water running off from farmland and woodland above Minehead.
2. Create green spaces in Minehead, such as small ponds, which can hold back water that might otherwise run along streets and into buildings, and then release that water slowly when the worst is over.

3. Open up a clogged rainwater pipe which was found to be buried on the beach so that rain can flow freely into the sea.
4. Make sure that houses built south of Hopcott Road get built in ways that do not increase flooding, by talking to developers and using the planning system.
5. Protect individual houses so they are less likely to flood inside when water is high outside, for example by putting in flood-proof doors.
6. Change local planning policies to help reduce flooding.
7. Get better information about old pipes under Minehead, so people know where they are and how big they are, so they can be better managed.
8. There are few historic records of flooding for some areas of Minehead which the new catchment model suggests are likely to flood, so it would be useful to talk to residents in those areas about their experiences, partly to help assess the model as a model.
9. Look at ways to reduce blockages in the Bratton Stream area, which can lead to water spilling into nearby gardens.

Wessex Water, Somerset Council and the Environment Agency are planning to hold meetings with local residents and businesses to discuss what has been found out and what should be done next.

The SRA is keen for actions to be taken, and has offered the support of its community engagement team, especially after Minehead flooded again in September 2023.

Taunton Flood Action Plan

The aims of this project are to better co-ordinate the management of flood risks from all sources around Taunton and to boost investment in measures to reduce those risks.

The project is part-funded by Somerset Rivers Authority (SRA) and by Wessex Water, as a partner in the SRA. It's led by Wessex Water and Somerset Council. Other partners involved include the Environment Agency and Network Rail.

In 2023, WSP were appointed as consultants to review the large number of existing plans, strategies, models, assessments, schemes and projects that currently relate to Taunton and water, to help identify and analyse gaps and problems, and to help produce costed recommendations for action.

Flooding hotspots that partners began to study in detail during 2023-24 for this project included parts of:

- Norton Fitzwarren West
- Norton Fitzwarren East
- Kingston St Mary
- Trull and Staplehay
- Taunton railway station
- North Town and Firepool
- Sherford Stream and Vivary Park
- Cheddon Fitzpaine
- Bathpool South
- Creech St Michael North
- Creech St Michael South
- Ruishton

Other areas on a watchlist for initial investigations were:

- Bishops Hull
- Blackbrook West
- Blackbrook East
- Henlade
- Stoke St Mary

The SRA agreed to part-fund this project because it wanted, in line with its remit, to open up new ways for people to work together, get more funding and spend it efficiently on local priorities. The project team are aiming to complete their work by March 2025.

Workstream 4: Resilient Infrastructure

In the Somerset 20 Year Flood Action Plan, drawn up in 2014, two of the six main objectives were about making the county's infrastructure more resilient. They urged that access should be maintained for people and businesses travelling within Somerset or through the county.

This imperative was picked up in the new Somerset Rivers Authority (SRA) Strategy for 2024-34, the second of whose five objectives is to "Maintain access and connections during times of flood for communities and businesses across Somerset". The SRA therefore deals with flooding along highways as well as waterways.

Enhanced maintenance of road drainage structures

Two programmes of enhanced maintenance were organised for the SRA by the Somerset Council Highways Department during 2023-24. These programmes helped to keep roads open, make them safer, preserve access for communities, and safeguard properties from flooding.

Gully emptying

Along 984 stretches of road, from Oare and Dulverton across to Frome, and from Misterton up to Cheddar and Tellisford, SRA funding enabled Somerset Council's Highways Department to give around 23,000 of the highest-risk gullies countywide a second round of emptying, six months after their first council-funded clearout. More information about these gullies is in the [SRA website version of this annual report](#).

Drain jetting

139 drains were jetted for the SRA in 2023-24, by former Somerset district council area as follows: 39 in Mendip; 12 in Sedgemoor; 67 in Somerset West and Taunton; 21 in South Somerset.

Under existing budgets, the Highways Department can only afford to jet drains when a bad blockage has occurred. SRA funding allows for earlier preventative maintenance at locations known to suffer problems with flooding. Selections of drains for jetting are made using local knowledge and professional judgement.

Mendip

Ashwick, High Street; **Baltonsborough**, Muchelney Road; **Batcombe**, Hincombe Hill, and Westcombe Stables to Westcombe Road; **Beckington**, Rudge Lane; **Berkley**, Bath Road / Oldford Hill; **Chilcompton**, Wells Road; **Coleford**, Charity Lane; **Ditchheat**, Ditchheat Hill; **Doultling**, Merryfield Lane; **East Pennard**, Easton Lane, and Parbrook Lane; **Frome**, Christchurch St West / Badcox / Broadway, and Rodden Road, and Vallis Road; **Glastonbury**, Avalon Estate, and (twice) Chilkwell Street / Coursing Batch, and Cinnamon Lane, and Northload Bridge; **Hemington**,

Southfield Hill; **Mells**, Vobster Hill; **North Wootton**, Stocks Lane; **Pilton**, Compton Lane; **Rode**, Rode Hill; **Rodney Stoke**, Stoke Road / Wells Road, and The Street; **St Cuthbert Out**, Easton Hill, and Old Bristol Road; **Selwood**, Cole Hill; **Shepton Mallet**, Martins Lane; Street, Brooks Road, and Fielding Road; **Tellisford**, Old School To Bath Road; **Upton Noble**, Lower Street; **Wells**, New Street, and St Thomas Street; **Whatley**, Murder Combe; **Wookey**, Yarley Hill.

Sedgemoor

Bridgwater Town, Mount Street; **Burnham-On-Sea & Highbridge**, Bristol Road; **Burnham Without**, Mark Road; **Catcott**, Manor Road, and Old School Lane; **Cheddar**, Parsons Pen to B3151 Lower New Road; **East Huntspill**, Church Road; **Mark**, Kingsway; **Weare**, Turnpike Road; **Wedmore**, Wells Road; **West Huntspill**, Main Road; **Woolavington**, Cossington Lane.

Somerset West and Taunton

Ash Priors, Combe Florey Road; **Bishop's Lydeard**, Greenway, and Mill Lane; **Bradford-On-Tone**, Hele Road, and (twice) Oake Road; **Brompton Ralph**, Forches Cross to Cordings Ball, and Winters Lane to Elworthy Cross; **Brompton Regis**, Haddon View; **Burrowbridge**, Stathe Road; **Carhampton**, Park Lane; **Chipstable**, Waterrow Road; **Comeytrove**, Comeytrove Lane; **Cotford St Luke**, Tithill Lane; **Crowcombe**, Broad Oak Hill; **Cutcombe**, Exford to Wheddon Cross Road; **Dulverton**, Andrews Hill; **Exford**, Exford to Simonsbath Road; **Exmoor**, Simonsbath to Blue Gate; **Huish Champflower**, Chitcombe Rocks Lane; **Kingston St Mary**, Kingston Road, Pickney Lane, and (twice) Yarford Road; **Langford Budville**, Milverton Road; **Milverton**, Screedy Lane; **Minehead**, Brunel Way, and The Parade, and Spring Gardens; **Oake**, Frog Street, and Wiveliscombe Road; **Old Cleeve**, Comberow Lane, and Mount Lane; **Pitminster**, Blagdon Hill Road; **Porlock**, Sparkhayes Lane; **Ruishton**, Ilminster Road; **Selworthy**, Headon Cross to Tivington Cross; **Skilgate**, Frogwell Cross to Skilgate; **Stawley**, Cockland Hill; **Stogumber**, Nevys Lane; **Taunton**, Albemarle Road, and Corkscrew Lane, and Lambrook Road, and Hammet Street, and Luxhay Close, and St Peters Close, and Wilton Grove; **Trull**, Amberd Lane and Gatchell Green; **Wellington**, Bovet Street, and Hilly Head, and Oaken Ground, and Oldway Road, and Shuteleigh, and South Street, and Wellington Relief Road; **West Buckland**, Dyers Close; **West Monkton**, Hyde Lane, and (twice) Monkton Heathfield Road; **Williton**, Williton to Bridgwater Road (twice); **Wiveliscombe**, Ford Road, and Langford Budville Road, and Maundown Road, and South Molton Road; **Wootton Courtenay**, Ranscombe Road.

South Somerset

Barrington, Ruskway Lane; **Castle Cary**, The Park; **Charlton Mackrell**, Withy Hays Road; **East Coker**, Main Street; **Hinton St George**, Merriott Road, and South Street; **Langport**, Bow Street / Cheapside; **Lopen**, Mill Lane; **Montacute**, Bishopston (twice), and Middle Street; **Mudford**, Hinton Road; **North Cadbury**, Cary Road, and Corkscrew Lane, and Woolston Road; **Pen Selwood**, Coombe Street; **Rimpton**,

Back Lane; **Shepton Montague**, Higher Shepton Road; **Wincanton**, West Hill; **Yarlington**, Sticklepark Lane; **Yeovilton**, Podimore Road.

Other Resilient Infrastructure activities in 2023-24

Somerset Council's Highways Department completed the installation of a **new flood warning system for Lane End in Ham and Lipe Lane in Ruishton**, funded by Somerset Rivers Authority (SRA). Both roads get busy with local traffic and motorists seeking to avoid delays on the A358 east of Taunton, and as both roads flood seasonally, cars quite often get abandoned and driven into ditches. To try to deter drivers from risking lives and vehicles, five variable-messaging digital signs can now be activated by sensors in rising flood waters. Local residents, Ruishton Parish Council, Ham Village Flood Defence Committee, and the SRA's Community Engagement team all helped to develop this scheme.

In **North Petherton**, the SRA originally gave Sedgemoor District Council funding for an investigation into the causes of flooding affecting properties and the road in Baymead Lane. This study was expected to focus on a part of the Mill Stream culvert system known to be undersized. However, following flash flooding around North Petherton in summer 2021, it was decided to look at six other pinch-points as well. When Sedgemoor District Council ceased to exist in March 2023, this project passed over to the new Somerset Council. A final report was produced in 2023.

In March 2022, Somerset Rivers Authority agreed to part-fund a Somerset County Council Highways Department scheme for **drainage improvements in the Wellsprings area of north Taunton**. The main focus was to be on reducing the risks of flash flooding to homes, roads and Wessex Water infrastructure in Corkscrew Lane, Kingston Road, Wellsprings Road, and Longacre Close. This scheme has now passed over to the new Somerset Council. Designs and plans were drawn up in 2023-24, and works are expected by the end of March 2025.

A site appraisal was completed in November 2023 for a **scheme to reduce flooding along Robins Lane in Burtle**, which has a long history of problems caused by two undersized culverts and a dilapidated roadside ditch. This scheme emerged from a previous SRA-funded Somerset Drainage Boards Consortium programme of inspections of around 700 of the most vulnerable and strategically important culverts in the Somerset Levels and Moors. Following on from those inspections, work was also done to advance plans for improvements to culverts in Buttlake Road near Brent Knoll and Puriton Road in Mark.

Consultants WSP worked on an SRA-funded study commissioned by Somerset County Council (since April 2023 Somerset Council) to examine what effects a weir just downstream of the **A38 at Blackbird Bends between Taunton and Wellington** could be having on flooding problems along that stretch of very busy road.

Workstream 5: Building Local Resilience

This Somerset Rivers Authority (SRA) workstream was set up to pursue one of the six main objectives of Somerset's 20 Year Flood Action Plan: "Increase resilience to flooding for families, agriculture, business, communities and wildlife". In 2023-24, as in previous years, the SRA sought to fulfill that objective in several ways. These included the encouragement of various practical moves - such as drawing up plans and getting training and equipment - to help people across Somerset get better prepared for any flooding. The SRA also sought to foster greater understanding of local flood risks, of the implications of climate change and possible adaptations to that, and of the riparian responsibilities that come with owning watercourses and structures such as drains and culverts. (That legal term 'riparian' is a Victorian coinage derived from 'ripa', which is Latin for river bank.)

Two new SRA community engagement officers were recruited in 2023. Bel Deering started in early August, Paul Elliston early October. In the period covered by this report - to the end of March 2024 - they took part in 123 community events, visits and external meetings and interacted with approximately 1,400 local people. They offered advice and support at post-flood recovery drop-in sessions in Minehead, Wellington, Carhampton, Shepton Mallet and Croscombe. They attended two Winter Preparedness events organised by the Environment Agency in Burrowbridge and Moorland and produced a newsletter for communities in the Cam Valley who were badly flooded in May 2023.

They went to 19 Local Community Network (LCN) meetings, ran workshops about resilience and flooding for South East Somerset and Hestercombe LCNs, and gave presentations to Yeovil, Crewkerne and Ilminster, and Taunton LCNs.

They worked with 24 communities on flood resilience and emergency preparedness measures: Blackford, Bruton, Buckland Dinham, Chard, Chilton Cantelo and Ashington, Cotford St Luke, Drayton, Greinton, Hadspen, Ilchester (The Mead), Isle Brewers, Lower Keyford, Lydford-on-Fosse, Marston Magna, Misterton, North Wootton, Norton Fitzwarren, Nynehead, Podimore, Queen Camel, Sampford Brett, Shepton Montague, Wellington, Williton, Yarlinton.

Sessions were tailored to address specific local flood risks and concerns and explore options for reducing the risks and impacts of flooding. So, for example, Bel and Paul stressed the benefits of writing emergency plans with as much community involvement as possible, and promoted SRA-funded Somerset Prepared small grants for training and equipment.

Bel and Paul worked with people from SRA partner organisations on 41 occasions. For example, with other SRA colleagues, they took part in the Somerset Prepared Community Resilience Conference on 5 October 2023. This attracted over 100 people from across Somerset. The keynote opening speech was given by the SRA Chair Councillor Mike Stanton. Sessions included the Environment Agency on riparian responsibilities, Ilton and Kingston St Mary community case studies, and workshops with Devon and Somerset Fire and Rescue Service and Avon and

Somerset Police. The Lord Lieutenant of Somerset (Mohammed Saddiq) officiated at the prize-giving ceremony for the annual Somerset Community Champions award, which honours individuals and groups in Somerset who have made their communities more resilient.

In March 2024, the SRA sponsored a Somerset Rural Life Museum exhibition called *Under the Surface*. This marked the 10th anniversary of the Somerset floods of 2013-14 by showing photographs from Matilda Temperley's sold-out publication *Under the Surface: Somerset Floods*, alongside previously unpublished colour photographs taken by her during the winter of 2013-14. Also on display were photographs newly commissioned from Matilda Temperley, reflecting on changes to the Somerset landscape over the past decade, particularly as regards flood management. To accompany this exhibition, the SRA organised several events and talks. The first get-together in March - a Flood Café held at the museum in Glastonbury - was well attended. People who have been flooded, or who have been affected by flooding, value opportunities for connection, networking and peer support.

Also in the early months of 2024, the SRA teamed up with Somerset Council's Curriculum & Topic Lead officer to create resources for Somerset schools about flooding. The aim was to produce a series of high-quality lesson plans about the geography and history of the Somerset Levels and Moors, with videos, presentations and ideas for activities. These resources were tried out in school assemblies and classrooms in summer 2024.

Grants for training and equipment

The SRA funds a small number of grants for equipment and training given to Somerset communities by the Somerset Prepared partnership. The SRA is a member of that partnership. Grants were given in 2023-24 to:

Combe St Nicholas Parish Council, for equipment for flood wardens including boots, hi-viz jackets, torches, and flood warning signs. (This application was prepared by the winner of the individual section of the 2023 Somerset Community Champions award).

Henstridge Parish Council, for torches, a wind-up radio, walkie talkies, foil blankets.

Kilve Parish Council, for lanterns, a white board, radios.

Martock's flood warden group (who work with Martock Parish Council), for flood packs and hydrosnakes.

Oake Parish Council, for radios, torches, first aid kits and Personal Protective Equipment (PPE).

Tatworth and Forton Parish Council, for a water depth board, lights, first aid kits, hi-viz jackets and trousers, and kits for testing water quality.

Winsford Parish Council, for a storage shed, torches, hi-viz clothing, shovels and brooms, first aid training.

Community flood warning systems

The aim of this project is to create very localised early flood warning systems, working together with communities and Environment Agency specialists. In some places known as ‘rapid response’ catchments, where water levels can rise very quickly when there is heavy rain, flooding can put people’s lives at risk.

Therefore, in a few test areas, known to be vulnerable to rapid flooding, local people have picked out some telltale sites for gathering information during times that are very wet. At such sites, painful experience has shown that if x is happening with water now, then it is very likely that problems downstream can be expected very soon. Telltale sites like this have been kitted out with flood gauges and other equipment linked to online dashboards so that local people can monitor what is going on, get alerts and get prepared. The mechanisms being used to transmit data from some very rural sites are pushing at the edges of what is technologically possible.

In 2023-24, this project progressed through scoping exercises, local surveys and installations of equipment. Places now involved include Comberow and Roadwater, Monksilver, Sampford Brett and Croscombe. After 16 villages and hamlets in the River Cam valley in the east of Somerset were badly affected by a Major Incident of flooding in May 2023, with around 180 properties flooding inside, sites at North Cadbury, Pitcombe, Shepton Montague and Blackford were added.

The project team has been working with local people to establish ways of using information from online dashboards to improve communities’ flood preparedness and resilience. Around Porlock, Wadeford, and Forton and Tatworth, suitable sites are still being investigated.

Adaptations and Associations

The SRA is keen to encourage more working together on the Somerset Levels & Moors, to strengthen flood resilience, and enable different kinds of adaptation to various water-related threats and opportunities. Between 2019 and 2023, the SRA and the EU’s Interreg 2 Seas programme jointly funded an initiative called Adapting the Levels. One positive and popular part of this was the development of Moor Associations for local farmers and landowners. In March 2023, the SRA Board agreed to fund a follow-up to that initiative called Adaptations & Associations on the Somerset Levels & Moors. In 2023-24, various activities therefore ensued. For example, climate adaptation toolkits produced as part of Adapting the Levels were sent to all town and parish councils in Somerset between April 2023 and June 2023. One especially enthusiastic recipient was Glastonbury Town Council.

In October 2023, funded by the SRA as part of the Adaptations & Associations project, Somerset Wildlife Trust and Glastonbury Town Council began working together on the question: “How can we help Glastonbury adapt to climate change?” As a first step, a Climate Adaptation Training event was held in Glastonbury Town Hall. This brought together the Trust’s climate adaptation team with around 25 residents, community group members and councillors. In the months that followed, themes and priority areas for action were chosen by Glastonbury people. They focused upon local needs and desires for:

- adapting to flooding
- planting more trees and plants
- installing green roofs and walls
- engaging with local planning

A bespoke climate adaptation plan for Glastonbury was published in August 2024.

Towards the end of March 2024, Somerset Wildlife Trust’s climate adaptation team also held a training event with members of the Polden Environment Network. Discussions there centred upon:

- Reducing flooding risks
- Improving and increasing green spaces
- Sharing knowledge and raising awareness
- Local empowerment and community planning

As at Glastonbury, moves to create a bespoke local climate adaptation plan then stretched beyond March 2024 and the official purview of this Annual Report.

[Moor Associations](#)

Land use on the Somerset Levels and Moors is very fragmented. For example, on Aller Moor (140 fields, 285 hectares) there are 37 landowners. For several years now, the SRA has therefore backed the development of Moor Associations - formal groupings of local farmers and landowners - for two main reasons.

Firstly, to help members find new ways of working together for their mutual benefit, in line with the 20 Year Somerset Flood Action Plan’s original goal of supporting “better management of the most vulnerable and challenging parts of the Somerset Levels, with the consent of owners and occupiers, with the intent of helping them to remain profitable and build greater resilience to climate and economic change”. Advantages of working together include greater collective buying power, more machinery sharing, better grazing arrangements and improved farmland infrastructure. For example, members have access to two communal Bos rotary cutter machines purchased as part of the Adapting the Levels initiative. Used in ditches and along verges, these machines help to improve drainage.

The second purpose, simply put, is that it is easier for other organisations to engage with broadly united associations instead of dozens of individuals. More of what people want can get done quicker. So, for example, Moor Associations have been able to get funding from the Department for Environment, Food & Rural Affairs (Defra) for a Lidar drone for digitally mapping moors to accuracy levels of two centimetres, to help predict impacts on land; a representative sits on Defra's national Paludiculture Steering Committee, which is looking at ways of producing food on peat with high water tables; and they are involved with two trials for growing and harvesting climate change resilient, wet-tolerant crops.

Five Moor Associations started before April 2023: the forerunner in 2018 was the West Moor Futures Group, followed by Tealham and Tadham Moor, Moorlinch, Curry Moor and Aller Moor (Beer Wall to Aller Drove).

In 2023-24, funded by the SRA, the Farming & Wildlife Advisory Group SouthWest (FWAG SW) led efforts to establish five more. In early 2024, four associations got going on Northmoor, Penzoy, Queen's Sedgemoor, and Pawlett Hams to West Huntspill: West Sedgemoor had to be delayed for reasons to do with illnesses until summer 2024.

More generally, FWAG SW began to help with organising Moor Association Chairs into a single convening body and building a website. A full mailing list of more than 160 members was compiled, and a first Moor Associations newsletter was sent out in January 2024.

SRA Strategy 2023-24

During 2023-24, Somerset Rivers Authority (SRA) partners worked on the development of an SRA Strategy for 2024-34, ten years having passed since the floods of 2013-14 that prompted the SRA's creation. The new Strategy includes lessons learned from three main sources: from the SRA's own history since January 2015, from Somerset flooding over many years, and more recently from the intensifying impacts of climate change. With some support from consultants at WSP, members of the SRA's Board, Management Group and Technical Group studied SRA partners' own plans and strategies, held extensive talks with SRA partners, and listened to the desires and frustrations expressed by residents, businesses and stakeholders across Somerset. A temporary SRA strategy website was created for people to comment upon a draft version of the Strategy and to share their flood concerns on an interactive map. Online sessions were also held to give people chance to express their views frankly and ask questions directly.

What was agreed: the SRA's core purpose is to "reduce the risks and impacts of flooding", its core principles are "acting on local priorities, working together, doing extra". What gives SRA works their own distinctive fingerprint is the combination of the following five themes:

- Working with communities
- Strengthening operations, boosting maintenance
- Building resilience, encouraging adaptation
- Protecting the economy from flooding
- Conserving and enhancing the special environments of Somerset

The Strategy combines purpose, principles and themes in the following objectives:

1. Reduce the risks and impacts of flooding across Somerset.
2. Maintain access and connections during times of flood for communities and businesses across Somerset.
3. Increase the resilience of people, places and the environment to flooding, while adapting to climate change.
4. Protect Somerset's economy from the impacts of flooding, promote business confidence and encourage new opportunities.
5. Conserve and enhance Somerset's special environments (natural, built, social, cultural) for all who live and work in Somerset and visit.

It was agreed the SRA would take a catchment-based approach towards fulfilling these objectives, not looking at flooding problems in isolation, but aiming to connect all relevant factors, places, people and potential sources of funding. Between 2024 and 2034, the SRA will fund proposals which reduce the risks and impacts of flooding, and benefit Somerset people and places in as many ways as possible.

SRA Financial Summary 2023-24

Somerset Rivers Authority (SRA) gets annual funding from two sources. Firstly, council tax. In the 2023-24 financial year, £3,010,000 came via Somerset Council (equating to £14.65 for a Band D household). Secondly, the Parrett and Axe Brue IDBs each gave £10,000. Local Partner Funds thus totalled £3,030,000.

In March 2023, the SRA Board moved extra funds out of contingency and set an overall budget of £4,005,000. This included £2,999,000 for the SRA's 2023-24 Enhanced Programme of works, £280,000 for four full-time staff, a part-time Technical Adviser post, administration, overheads and the development of the SRA Strategy 2024-34; and £726,000 for contingency. The 2023-24 Enhanced Programme contained 12 new schemes and activities, and four previously deferred, some with numerous individual elements. All Enhanced Programme works are designed to advance Somerset's 20 Year Flood Action Plan.

Spending of Local Partner Funds in 2023-24

Many actions and initiatives are completed within one financial year. Some require longer-term research, design, planning and implementation. The lines below set out all of the Local Partner Funds held by the SRA at the beginning of the 2023-24 financial year and the SRA's total spending during that year.

The SRA's spending in 2023-24 totalled £3,804,000. By workstream, it was as follows:

Workstream 1, Dredging and River Management, £2,140,000, that is 56.25% of the total.

Workstream 2, Land Management including Natural Flood Management, £467,000, that is 12.28% of the total.

Workstream 3, Urban Water Management, £64,000, that is 1.69% of the total.

Workstream 4, Resilient Infrastructure, £474,000, that is 12.46% of the total.

Workstream 5, Building Local Resilience, £390,000, that is 10.25% of the total.

Spending in these five workstreams made a sub-total of £3,535,000.

To them was added SRA core work and development, £38,000, that is 1% of the total, and SRA administration and staffing, £231,000, that is 6.07% of the total.

At the start of the 2023-24 financial year, the SRA possessed total allocated funds of £7,657,000. Spending £3,804,000 in 2023-24 meant the amount carried forwards to the 2024-25 financial year was £3,853,000.