SRA Enhanced Programme 2017-2018

ITEM 6L

Ref	Title	Outline of Scheme/Activity/Action	Location of action	Beneficiary of action	Additional £s or new work	Objectives, Outcome & Benefits
IDB19 (EMP011)	**Maintaining dredged profiles and carrying out silt monitoring**	Conducting necessary maintenance, as indicated by silt monitoring, of the stretches of river (8km of the Parrett and Tone and 750m of the Parrett from Northmoor Pumping Station towards the M5) previously dredged in 2014 and 2016, which cost £8m. Conducting further silt monitoring to assess the impact of other SRA works.	TDBC, SDC	TDBC, SDC, SSDC	New work	Regular maintenance of dredged profiles will maintain the improved standard of flood risk to 129 houses, businesses and up to 11,000 hectares of land achieved by the pioneer dredge and avoid the need for future expensive capital dredging. Silt monitoring is required to ensure maintenance work is targeted at stretches where it is most needed. Further silt monitoring will provide a better understanding of the impact of other flood risk solutions e.g. Implementation of the Sowy/King's Sedgemoor Drain project and the Bridgwater Tidal Barrier.
FWRS03	**Land Management - SLOW THE FLOW - to include highways referrals**	Design and implementation of small-scale and natural flood management capital works to detain water in the upper catchment and reduce peak flows. Farm visits and advice to increase the uptake of soil management techniques and cropping changes which improve the infiltration of water and reduce run-off. Investigating the Land Management potential for solving local flooding of highways and other public spaces. This includes site visits, research into land ownership and responsibility, initial design and reporting.	Predominantly TDBC, SSDC, WSC but also MDC and SDC	Predominantly TDBC, SSDC, WSC but also MDC and SDC	New work	Objectives • To reduce the depth and duration of flood events in Somerset • To reduce local flash flooding in the upper and mid catchment areas • To reduce the flood risk in the lower catchment • To reduce sediment loading in dredged profiles Outcomes Reduced soil loss and water flow from the upper catchment Delay to flood peaks in sub-catchments Fewer local flooding incidents Benefits • Reduced soil loss in the upper catchment should reduce the need for de-silting in the lower catchment • Beneficial land management works will decrease rates of overland flow that result in local flooding • Increasing infiltration and reduce water run-off will reduce flow levels, thereby reducing the need for pumping to remove water on the levels
IDB21 (EMP03)	**Additional de-silting / dredging**	De-silting programme focused on watercourses additional to those currently desilted by the Environment Agency and Internal Drainage Boards to improve the ability of channels to carry increased flows and floodwater. In 2017/18 this will be focused on drainage channels and tributaries of the Axe and Brue catchments.	MDC, SDC	MDC, SDC	Extra £s	To carry floodwater away from flooded and flood-prone areas and deliver it to pumping stations and outfalls more quickly. This will reduce the frequency, duration and overall severity of flooding.
IDB22 (EMP01)	**Maintaining resilience to flooding of wet grassland in Parrett & Tone floodplains for farming enterprises and nature**	Almost 240 water-level control structures could be improved, replaced or removed to manage flood water, reduce flood risk elsewhere and bring extra benefits to farming and wildlife for the next 20-30 years. New infrastructure and land management will be investigated, designed and implemented in key parts of the floodplains to manage flood water and seasonal water levels and: • Build and maintain the resilience of wet grasslands on the floodplains • Create or enhance wetland habitats • Enable farmers to operate their business to access the higher tiers of agri-environment schemes • Retain the skills of farming resilient wet grasslands in the floodplains • Explore the potential of natural flood management within the Somerset Levels	SDC, SSDC	SDC, TDBC, SSDC	New work	This concept of using water-level control structures to deliver multiple benefits in the floodplain will be tested first on the 145 hectares of West Moor Raised Water Level Area (RWLA) and on Wet Moor RWLA (311 hectares). These RWLA structures are beginning to fail after 20 years of service and need upgrading. SRA funding will result in more resilient floodplains through: • more sustainable water-level management • enhanced wet grassland condition • farm business stability by ensuring access to long-term financial support from agri-environment funding • improved condition of designated sites • demonstrating multi-functional use of floodplains
EA06	**Pumping station repairs and improvements**	Key aspects in 2017-18 are likely to include electrical upgrades to double pump capacity at Westonzoyland and a new trash screen that can be cleared automatically at West Sedgemoor. Works at Westonzoyland will enable a rapid, effective and efficient increase in permanent pumping capacity once the Environment Agency's Trigger Point criteria are met. West Sedgemoor's current trash screen, which is in poor condition, will be replaced and automatic screen clearing machinery installed around it, linked to an alarm system monitored 24/7 by Environment Agency staff.	SDC, SSDC, TDBC	SDC, SSDC, TDBC	New work	Linking to the Environment Agency's Trigger Points, these works will enable rapid, effective and efficient deployment of pumps once criteria are met (i.e. when a road or property is at risk of flooding, moor levels are rising in excess of 50mm an hour or 100mm of rain is forecast for the next 5 days) as well as increasing pumping station resilience. At Westonzoyland, extra pumping will reduce the duration of flooding on farmland and minor roads. It will also allow additional floodwater from an adjacent area to be removed directly via the pumping station. This water is currently reliant on gravity for discharge. At West Sedgemoor, linking automatic machinery to an alarm system means the job of clearing can be done immediately, and more often. The screen can serve its purpose of protecting pump equipment, by stopping material being sucked into the pumping mechanism. Preventing blockages also reduces flood risk locally by stopping water backing up. Similar operating systems are in place at Northmoor and Gold Corner Pumping Stations.

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LHA01	**Countywide de-silting of structures**	Focused on problem areas countywide, a scheme to de-silt waterways beneath road bridges and through culverts.The priorities for 2017-18 are near Wellington, Taunton, Cannington, Horton Cross (near Ilminster), Stoke St Gregory, Castle Cary, Shepton Mallett, Chewton Mendip, Frome/Bruton, Dunster, and Timberscombe (south of Minehead). Part of a four-pronged programme of enhanced maintenance with extra gully emptying, drain jetting and road sweeping, delivered for the SRA by SCC's highways department.	All	All	Extra £s	Silting-up is a problem because it can cause flooding and damage to bridges and culverts. De-silting increases the flow of water and reduces the risk of structural damage caused by pressure, or by floating debris colliding and getting stuck. It also cuts the risk of flooding on roads and in nearby properties. De-silting will also reduce the risk of motorists becoming stuck and requiring resource to rescue them, making inappropriate manoeuvres on the highway, wasted journeys, increased traffic on other roads and highways emergency callouts. SRA funding is required because a lack of Somerset County Council revenue funding means that de-silting is not done as a routine operation.
LATDBC01	**Taunton Strategic Flood Alleviation Improvements Scheme (TSFAIS)**	The latest phase of this scheme focuses on a proposed Bradford on Tone flood detention reservoir, improvements to Taunton town centre flood defences, possible works at French and Firepool weirs, and further options for Taunton town centre and Bathpool. The detention reservoir will work by 'storing' water in the upper catchment of the River Tone, above Taunton, in times of flood, releasing this in a controlled and gradual fashion and reducing peak water levels downstream. The reservoir could store approximately 1.8 million cubic metres of water. It would only be used during flood events – most of the time it would be dry and could be maintained for agriculture. The SRA funded earlier work on this scheme in 2015-16 and 2016-17.	TDBC	TDBC	New work	Taunton urgently needs strategic flood alleviation improvements. The latest phase of this scheme involves a detailed appraisal of options for the detention reservoir, leading to an outline design and full planning permission. The whole scheme is a crucial component of the pioneering Taunton Garden Town initiative. It will allow planned development – approximately 4,350 new homes and nearly 10,000 new jobs – to be safely brought forward. It will mitigate the effects of climate change. Without such a scheme, existing properties and business premises will face unacceptable levels of flood risk and associated human and economic consequences. Funding from the SRA is essential as part of a wider package supported by an Environment Agency/Taunton Deane Borough Council partnership. It will help to deliver an oven-ready scheme, for which major capital funding is still required, bids for which will continue to be submitted.
LHA105	**A38 Chelston, West Buckland**	Identify and deliver a suitable scheme on the busy A38 near M5 Junction 26. This will alleviate frequent disruptive flooding by improving the existing drainage system, which is more than 90 years old and inadequate for the demands made of it. Tied in with nearby scheme for A38 Rumwell.	TDBC	TDBC	New work	The A38 is one of Somerset's busiest roads, providing access to and from Taunton, and carrying more than 17,000 vehicles a day. It is the emergency diversion route if the M5 is closed. Flooding affects half of the carriageway; gridlock can very quickly result. The current drainage system is more than 90 years old and cannot cope. This scheme will produce an improved system, reduce inconvenience to residents and drivers, improve resilience and slow the rate of highway deterioration. The Somerset County Council drainage budget for 2017/18 is fully committed, therefore Somerset County Council is seeking funding from the SRA.
LHA104	**A38 Rumwell**	Identify and deliver a suitable scheme on the busy A38. This will alleviate frequent disruptive flooding by improving the existing drainage system, which is more than 90 years old and inadequate for the demands made of it. Tied in with nearby scheme for A38 Chelston.	TDBC	TDBC	New work	The A38 is one of Somerset's busiest roads, providing access to and from Taunton, and carrying more than 17,000 vehicles a day. It is the emergency diversion route if the M5 is closed. Flooding here affects half of the carriageway, but sometimes the whole road is submerged; gridlock can very quickly result. The current drainage system is more than 90 years old and cannot cope. This scheme will produce an improved system, reduce inconvenience to residents and drivers, improve resilience and slow the rate of highway deterioration. The SCC drainage budget for 2017/18 is fully committed, therefore SCC is seeking funding from the SRA.
LHA04	**Countywide Enhanced maintenance - Drain Jetting**	This is an enhanced maintenance regime focused on problem areas, in addition to that currently delivered by SCC to alleviate localised highway flooding. Part of a four-pronged programme with extra gully emptying, road sweeping and desilting underneath structures, delivered for the SRA by SCC's highways department.	All	All	Extra £s	In conjunction with the enhanced programme of gully emptying, the cleaning of highway drains from road gullies to outfall alleviates the annoying and inconvenient problems of flooding on local roads. It keeps roads open, makes them safer, preserves access for communities,and safeguards properties from flooding. Extra SRA-funded drain jetting began in 2016-17 and will enable the highest risk drains to be jetted proactively as opposed to only when a problem occurs.
LHA03	**Countywide Enhanced maintenance - Gully emptying**	Focused on problem areas, an enhanced maintenance regime in addition to that currently delivered by Somerset County Council to alleviate localised highway flooding. This programme calls on a wide variety of data, such as Environment Agency surface water flooding maps, historical records of highway service requests and highway maintenance history. It's proposed to cleanse gullies every six months at locations across the county which are most susceptible to flooding. Part of a four-pronged programme with extra drain jetting, road sweeping and de-silting underneath structures, delivered for the SRA by Somerset County Council's highways department.	All	All	Extra £s	This enhanced programme of gully emptying targets locations most susceptible to flooding. It is designed to mitigate high-risk areas (the top 17%, meaning 17,800 gullies) and to alleviate the annoying and inconvenient problems of flooding on local roads. It keeps roads open, makes them safer, preserves access for communities, and safeguards properties from flooding. Extra SRA-funded gully emptying began in 2016-17 and enables highest risk gullies to be emptied twice a year as opposed to once.
LHA05	**Countywide Enhanced Maintenance - Road Sweeping**	A programme of road sweeping, focused on rural problem areas, to alleviate localised highway flooding. Part of a four-pronged programme with extra gully emptying, drain jetting and de-silting underneath structures, delivered for the SRA by Somerset County Council's highways department. Sweeping helps to prevent the future clogging of drains by debris and detritus such as leaves, sticks, mud and litter.	All	All	New work	The effectiveness of highway drainage systems is severely impeded by the accumulation of debris and detritus, with resulting localised flooding. Road sweeping offers safety benefits to highway-users as well as preventing future clogging of highway drains. Road sweeping in rural areas begain in 2016-17, funded by the SRA.

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EA10	**West Somerset Streams - annual maintenance (versus EA funded biannual)**	Reduction in funding meant that routine Environment Agency maintenance work on various main rivers in West Somerset could only be delivered every other year, not annually. SRA funding (also given in 2016-17) re-instates a regular cycle of annual maintenance on various watercourses, and allows for a one-off pioneer work programme to be undertaken on watercourses which are classified as non-main river and have not received any maintenance. On some, annual hand-paring will be re-instated. On others, stretches of river identified as being of particular importance have been added.	WSC	WSC	Extra £s	As a high proportion of watercourses in West Somerset are classified as 'Rapid Response Catchments' and High Risk rivers (with a high risk to life), it is important to ensure that channel conveyance is maintained leading to maximum flood water discharge capacity. Maintenance will slow the flow upstream of villages in a controlled way, ensuring water is conveyed effectively past dwellings that would otherwise be at flood risk from uncontrolled debris causing blockages at pinch points such as bridges.
LHA115	**A372 Pibsbury Corner, Huish Episcopi**	The existing highway drainage system will be re-designed with the installation of 100m of new carrier drain, new gullies, headwalls and the re-instatement of local ditches. The carriageway and footway will be reprofiledg in order to remove the existing low point on the inside of the blind corner.	SSDC	SSDC	New work	The A372 forms part of Somerset's principal network and has strategic importance with approximately 8,000 vehicles using it each day. Flooding regularly occurs to half the carriageway presenting a signficant safety problem as vehicles negotiate their way round. Flooding also affects four adjacent properties. SRA funding is needed as Somerset County Council's drainage works programme for 2017/18 is fully committed. Completion of this scheme will result in reduced invonvenience to local residents and travelling public, improve resilience and reduce the rate of deterioration of the highway.
IDB17 (EW116)	**West Sedgemoor and Aller Moor Viewed Rhynes Enhanced Maintenance**	In these two areas, the Parrett Internal Drainage Board only has funding to maintain the viewed rhynes (drainage ditches) in alternate years. SRA funding (which has been provided in the previous two years) allows this work to be done every year.	TDBC and SSDC	TDBC, SSDC and SDC	Extra £s	This work ensures that floodwater is carried away more effectively from flooded and flood-prone areas to outfalls and pumping stations and so reduces the frequency and severity of flooding. In West Sedgemoor and Aller Moor, roads, houses and farm businesses benefit from this reduced flood risk. In addition, West Sedgemoor is a SSSI/SPA and its character depends on the ability to manage water levels in accordance with an agreed Water Level Management Plan.
FAPW501	**WS5: Building Local Resilience (9 objectives/work programmes)**	A programme of projects and initiatives working with communities, households, businesses, and landowners to assist them to prepare and adapt in order to reduce their vulnerability to future flooding events: 1. Support and promote local community resilience 2. Support and promote business resilience 3. Beyond resilience – towards adaptation	All	All	New work	Objective: to increase resilience to flooding for families, agriculture, business, communities & wildlife. Outcomes & benefits: - Residents, communities and businesses better informed and equipped to take action to protect themselves against the impacts of flooding and to recover more quickly after flooding events - All the Somerset stakeholders: residents, businesses, representatives for the agriculture and wildlife interests, public and voluntary sector organisations able to have informed discussions leading to a shared vision for Somerset in terms of flooding and water management issues, taking into account short, medium and longer term adaptation and sustainability considerations
LLFA11	**Sponge EU Project**	The Hills to Levels project is seeking to reduce flooding by holding back the flow from rural areas but runoff from urban areas, especially those areas constructed before the advent of SuDS, also contribute to flooding. This activity seeks to address this by undertaking a demonstration project to retrofit SuDS into retail parking/industrial estate in the Tone and/or Parrett catchments to show what can be achieved in the urban area. The project is 60% funded by the EU 2 Seas Programme and this is unaffected by Brexit.	TDBC, SDC, SSDC	All plus outside county	New work	The objective is to raise awareness of the steps owners of large impermeable areas can take to reduce runoff and hence flooding. A SuDS retrofit will be undertaken to demonstrate the environmental and flood risk benefits that can be achieved. The project aims to have wide influence through the county and beyond.
EA05	**Main river asset improvements**	The Environment Agency has a large number of assets in Somerset and funding bids to the national pot for maintenance of these assets falls short of what is required. This year's work on improving assets is focused on the Mendip area.	MDC, SDC, SSDC	MDC, SDC, SSDC	Extra £s	Maintaining and improving assets is crucial, enabling a strong operational response to flooding and potential flooding. An example of this year's work includes repairs to part of Frome's Flood Defence Scheme, which protects 300 properties. Repairs will be made to the River Frome's revetment - the fortified layer which protects earthen river banks from high-flow erosion, especially on the bends where this shield is hit the hardest. Without this revetment, banks will erode, instability ensue, and slips and slumps may have damaging consequences for nearby properties and roads.
LLFA01	**CCTV Surveys of privately owned drains**	Surveys of culverts on private property will be carried out. This continues the important SRA-funded work done in 2016-17.	All	All	Extra £s	Accurate information about places where there are blockages enables problems to be put right, by requesting riparian owners to remedy problems or by carrying out enforcement. Somerset County Council budget constraints limit the amount of funding available, but SRA funding in 2016-17 enabled 28 extra CCTV surveys across Somerset in places including Barrington, Brushford (near Dulverton), Chard, Combe St Nicholas, Doverhay (Porlock), Dulverton, East Quantoxhead, Frome, Galhampton, Knowle St Giles, Martock, Misterton, Monksilver, North Curry, North Newton, Somerton, Sparkford, Stoke sub Hamdon, Trull, Williton, Wookey, Wrantage and Wraxall. As a result, blockages have been cleared, trash screens funded, flood alleviation schemes advanced, riparian owners made aware of problems they need to address and previously unknown issues revealed. It is expected that several neighbourhood disputes will also be resolved.

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LASDC02	**Enhanced Maintenance of Sedgemoor District Council flood relief and drainage assets**	Historic land drainage and flood relief infrastructure across Sedgemoor will benefit from enhanced maintenance and improvements, particularly from early interventions to stop problems from building up in the future. This year's work follows on from similar SRA-funded enhancements in 2016/17, in North Petherton (new retaining and head walls in the stream next to the primary school), Cheddar and Bridgwater (telemetry to give real-time data for flow regulation and barrier deployment), and near Greinton (targeted culvert repairs to prevent more costly and disruptive works later).	SDC	SDC	New work	Additional SRA funding gives Sedgemoor District Council greater capacity to undertake works that deal with issues before they become problems and to put in enhancements, such as telemetry, that make flood defence schemes and infrastructure more efficient. Several major, expensive schemes are progressing in Sedgemoor, but the district council and the SRA believe as a matter of policy that benefits also accrue from smaller schemes that deal with local issues. Sedgemoor's intention is to undertake extra surveys and assessments and carry out extra preventative maintenance for the benefit of communities in places such as Wedmore, Blackford, North Petherton, Cheddar, North Newton, Greinton and Goathurst.
LLFA16	**East Stoke, Stoke Sub Hamdon flood alleviation scheme**	Upgrade of existing culverted watercourse through private property to facilitate better capture, storage and removal of surface water runoff and prevent flooding of residential dwellings on East Stoke and the road between Stoke sub Hamdon and Montacute.	SSDC	SSDC	New work	Aim to prevent the flooding of the road and up to 10 properties. Surface water systems around the area currently flow into an existing culverted watercourse, but the system is unable to accommodate additional runoff and results in a significant flood issue. The aim is to improve capacity within the culverted section to remove the restriction that results in flooding to property and the highway. In an effort to address the problem within the scope of its powers and funding, Somerset County Council has recently improved the highway drainage system on the uphill side of the site and created a separate outfall for this to ease the burden on the culverted watercourse. This has helped to mitigate the problem but recent repeat occurrences of the flooding after more severe rainfall has demonstrated the continued vulnerability of these properties.
LHA110	**Lower Bilbrook Lane, Old Cleeve**	In times of heavy rainfall, the West Somerset hamlet of Bilbrook can be cut off. This scheme aims to fix that problem. It will target Lower Bilbrook Lane, which, for most of its length, is a narrow sunken lane with fields sloping down steeply on one side (plus, a nearby watercourse). In downpours, the lane becomes a channel and the highway a torrent. Bilbrook can be cut off because the only other route is through Bilbrook Ford, which is 66 metres long and can get dangerously deep. This scheme, supported by the parish council, is designed to get water off the highway by shifting it into a piped system under the highway. Surface water and run-off will be collected, in a way that will also reduce the rate of highway deterioration.	WSC	WSC	New work	Improving drainage along Lower Bilbrook Lane will stop around 10 residents in Bilbrook from being cut off and preserve access for other road users. This SRA-funded scheme is additional to an earlier Somerset County Council project that helped to collect water from the small watercourse that joins into the highway system.
IDB09	**Inspections and remedial works to culverts under roads in IDB areas**	Carry out inspections of around 700 culverts which cross public highways and, focused on problems within Somerset Drainage Board areas, repair / remove blockages / increase capacity where appropriate, or replace life-expired structures.	All	All	New work	To improve the conveyance of water and flood risk management by gaining a better understanding of structures and making necessary improvements, irrespective of ownership (responsibilities are sometimes unclear). Culverts are all vulnerable to potential blockages from debris and vegetation and many were not designed to accommodate the structural loading of modern traffic. There is significant potential for water flow capability to be lost, either by blockage or collapse, and this results in local flooding and traffic disruption. This programme will prioritise the most vulnerable and strategically important culverts for preventative maintenance and repair/replacement and so help prevent disruption to residents and travellers.