

ITEM 11

Somerset Rivers Authority Board Paper

River Sowy - King's Sedgemoor Drain Enhancements Scheme

RECOMMENDATIONS

The Somerset Rivers Authority (SRA) Board is asked to:

1. Note the progress made and that the outstanding channel works are currently underway and currently on track for completion by November 2022.
2. Approve £603k increase in funding to cover the forecast shortfall or request the EA investigate full implications of descoping work to match the available budget and report back on descoping options.
3. Approve the alternative proposal to procure and deliver the 3 outfalls using a 'Design & Build' approach.

Purpose of the item

To update the Somerset Rivers Authority (SRA) Board on the progress of the River Sowy and King's Sedgemoor Drain (KSD) Enhancements Scheme.

Background and context

The SRA Board has previously approved Phase 1 of the Sowy-KSD scheme which comprises: raising low spots in banks, forming new banks where they don't exist at present, some excavation to the riverbanks (ecological enhancements) and upgrade-works to outfall structures on the side streams. Phase 1 will allow the Sowy to take greater flows when it is under managed conditions during a flood. An overview map is provided at the end of this paper.

Recap of 2021 / 2022 Channel works

Works commenced in September 2021 having secured consents and following signing of the main contract with the Environment Agency's (EA) contractor Kier. Low spots in the upper Sowy banks have now been filled. 1.3km of Bank raising along the right bank of the Sowy was completed in 2021, along with the excavation of five of the seven proposed ecological enhancements. These enhancements consist of localised channel adjustments to increase the diversity of habitats and improve the condition of the watercourse. Suitable weather and ground conditions in March 2022 permitted the

excavation of the remaining two ecological enhancements. Landscaping of the ecological enhancements and some tree planting was also undertaken in March, with the remainder of the landscaping to be carried out as the bank raising works are completed later this year.

9.5km of temporary fencing for livestock has now been installed on the Sowey and KSD left bank. Regular vegetation clearance on the banks has been undertaken to discourage nesting birds and water voles. They could otherwise delay the re-commencement of bank raising works, this action reduces programme risk.

Programme for remainder of the works

The contractor has re-mobilised in preparation for bank raising works on both the Sowey and KSD commencing in July, subject to results of pre-construction bird nesting checks.

Bank raising works will be undertaken on both banks concurrently and will consist of placing site won fill material on the KSD and imported fill material on the Sowey. Works will require archaeological monitoring throughout. The upgrade works to the outfalls at Parchey, Cossington and Chilton are planned before winter 2022 in accordance with environmental constraints (over wintering birds).

Risks

The biggest risk to delivery remains the industry-wide issue of shortage of resources and inflationary pressures. This risk persists despite working with the contractor to secure earthworks plant, drivers and placing orders for outstanding materials early.

The risk of archaeology to the project has been reduced, following completion of the deepest excavations of the works but the risk persists while we have earthworks to complete.

The most significant risk mitigation measures include:

- reserving construction plant early
- consented longer working windows
- accelerating the earthworks programme to carry out the earthworks during the most favourable time of the year and extend the construction window.

Additional outfalls to Phase 1 downstream of Parchey Bridge identified for modification

Three outfall modifications (Chedzoy Tilting Weir, KSD Back Ditch and Level Rhyne) were added to the Phase 1 scope to reduce backflow of water into the moors because of the channel enhancements.

In March 2022 the SRA Board approved £200k for the design of these modifications. The EA has identified an alternative framework contract that could deliver this work more cost effectively than originally planned. This change in procurement strategy provides access to different suppliers, better suited to both designing and building smaller scale works, such as these, as one package. They also have capacity to deliver the works sooner than the contractor already appointed for work on the River Sowey-KSD.

The SRA Board approved up to £200k of funding to procure and undertake the design only, for all 3 structures. Once these designs are complete and cost estimates available, the SRA Board would then be asked to make a decision on whether to commit additional funding for the construction of these outfalls using 2023/24 precept funding.

The project team is now recommending an alternative proposal to procure these works via a 'Design & Build' approach, thus enabling delivery of all 3 structures potentially this financial year. The current forecast estimate for the 'Design & Build' off all 3 structures is £350k (yet to be tendered).

The project team are currently looking to secure £160k of funding from the EA's Flood and Coastal Erosion and Risk Management (FCERM) Asset Reconditioning fund to assist with the delivery of the required works for Level Rhyne and KSD back ditch outfall structures. When confirmed this would increase the available funding for delivering the 3 outfalls to £360k. The SRA Board would need to authorise any exceedance of monies required over the £360k once the tendered contract prices have been confirmed and before the works could commence. We are working in a volatile market with high inflationary pressures. The EA will deliver the 3 outfalls as separate, sequential packages to mitigate delays and risk of inflation for this year. If the Board agree with this recommendation the EA would deliver the Chedzoy Tilting Weir as the last in the sequence of the 3 outfalls, as the EA funding can only be spent on the other 2 structures as these meet the FCERM funding requirements.

Dunball Smoothing

Initial design workshops have taken place with the EA's Designers and Contractor. Initial design and survey activity is expected to run until August 2022, when the design should be sufficiently developed to generate a high-level estimated construction price.

This price will be shared with the SRA Board. Once the price is available a decision on whether to proceed with construction can be taken.

Financial considerations

In addition to the £160k EA funding contribution identified for the additional outfalls; the EA are currently preparing a business case seeking an additional £70k of funding

towards the delivery of the Parchey Tilting Wier improvements from its FCERM Asset Reconditioning fund.

The addition of the EA's £230K funding contribution, once confirmed, along with the £200k SRA funds committed in March 22 for the outfalls gives a total budget allocation of £7.746m for River Sowy-KSD Phase 1 enhancements. The current forecasted total out-turn for the Phase 1 scheme is £8,349m, resulting in a projected £603k shortfall of funding to complete the scheme. This shortfall equates to less than 7.2% of the total budget allocation. This shortfall is a result of the risks identified to the Board over the last 24 months materialising and inflationary pressures on construction plant, labour, and materials. Further detail on risks that have materialised is provided at the end of this paper.

Should additional funding not be available, the scope of works will need to be adjusted to meet the available budget. Given the complexity of the scope/works carried out to-date/flood risk minimisation, the most effective way to reduce the scope would be:

- to shorten the lengths of raised flood banks along the lower reach of KSD to match the available budget.

Further elements which could be considered for descoping would be

- Terminating the detailed design and preparation of Dunball Smoothing design, reducing the cost by approx. £120k.

and/or

- Removing the replacement of the Chedzoy Tilting Weir, reducing the cost by approx. £100k.

Should the board decide to descope the project the EA will investigate the full implications and recommendations for reducing the scope within the available budget and report back to the Board to agree next steps. If the Board wishes to descope the project a decision is required by 29th July 2022.

RECOMMENDATIONS

The Somerset Rivers Authority (SRA) Board is asked to:

1. Note the progress made and that the outstanding channel works are currently underway and currently on track for completion by November 2022.
2. Approve a £603k increase in funding to cover the forecast shortfall or request the EA investigate full implications of descoping work to match the available budget and report back on descoping options.

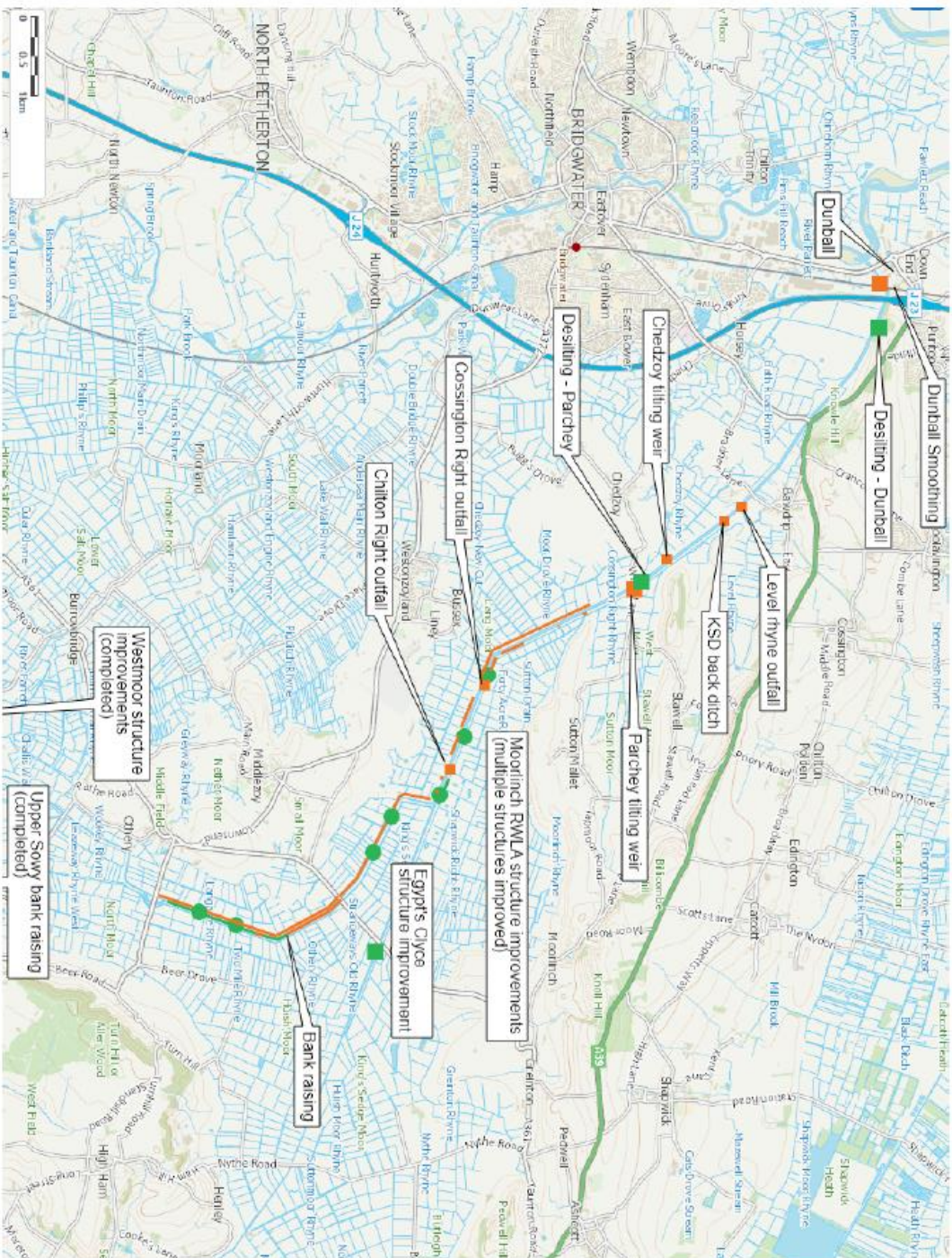
3. Approve the alternative proposal to procure and deliver the 3 outfalls using a 'Design & Build' approach.

Date: 24 June 2022

Author: Gary Cutts, Project Executive, Environment Agency.

Sowey and King's Sedgemoor Drain Enhancement works

KEY	Structure
Square	Improvements / desilting
Circle	Ecological enhancements
Line	Bank raising
Green	Completed works
Orange	Future works



Examples of Risks that have materialised

Risks contributing to the increased scheme cost include:

- Slower productivity due to the need for extensive archaeological monitoring of the works.
- Delays from multiple flood events on site in September and October of 2021.
- Changes in law regarding Fuel Duty and increase of National Insurance Contributions.
- Resource shortages: low availability of earthworks plant and operators i.e., bulldozers and excavators.
- Resource shortages: impacts of Covid 19 causing delays to the project and drop in productivity across multiple activities.
- Delays and out of sequence working due to shortages of available materials including timber, metals/piling materials, coir rolls, plants/trees for landscaping.
- High inflation leading to price increases.
- Greater volumes of imported fill being required because some site won material was unsuitable for use in constructing flood banks (materials excessively wet in 2021 and excessively dry in 2022).
- Leaking culverts and drains creating unsuitable ground conditions on site.
- Dealing with peat fires on site.
- Design modifications and construction impacts adding to costs to resolve unforeseen technical issues on site e.g. modification of scheme footprint to prevent the collapse of the river bank.
- Greater proportion of tracked plant required to work in areas of soft and compressible ground conditions.
- Additional costs from the need to de-mobilise over winter period because of weather impacts and ecological constraints of working in this location.
- Additional ecological mitigation measures required because of extension of construction period.
- Delays and additional temporary works being required to overcome site access issues on third party land.
- Delays and additional costs to resolve and prevent occurrences of unauthorised access from landowners/tenants grazing cattle within the works site boundary.
- Difficulties in maintaining security of site and plant.
- Delays and additional cost impacts from Avian Influenza encountered on site