

## Somerset Rivers Authority Board Paper

**Title: Progress with the preparation of a dredging strategy**

### **RECOMMENDATION**

The SRA Board is asked to:

Note the progress made and the encouraging results.

Note the action to establish long term sediment flux monitoring on the River Parrett and Tone.

Note the action to develop the Brue Hydraulic Model

### **Background and context:**

The IDB on behalf of the SRA commissioned 'Dredging Opportunities Report' by HR Wallingford to assist in the preparation of a dredging strategy. The report recommended the Board undertake:

1. further detailed modelling of the River Parrett upstream of Burrowbridge to Oath and the River Parrett downstream of Northmoor towards the M5. a review of proposed dredging locations on the River Brue
2. trials of potential agitation dredging techniques
3. monitoring of the channel and sediment

The Strategy Board also asked that:

4. further work on Environmental assessment and benefit assessment should be carried out before the strategy could be considered complete.

### **Latest status**

#### **1. River Parrett Modelling:**

The modelling is now complete and the report is drafted for circulation.

We have started to work up the case for further legally compliant and affordable pioneer dredging on the River Parrett as proposed by the Management Group Extra Ordinary Meeting held on 19<sup>th</sup> May 2017. The modelling work undertaken so far is being used.

The locations for this year's maintenance dredge have been identified and are once again focussed on the River Parrett. Survey data on the River Tone is showing much slower re deposition of sediment than on the Parrett and no work is proposed on the Tone within the main contract this year. The proposed channel cross sections have been determined and the effect of this work on the continued management of flood risk is being modelled before finalising the proposals and incorporating them into the contract.

## **2. River Brue:**

Unfortunately despite some modifications, the EAs River Brue Model could not be used to undertake the intended assessments. Instead a “cut down version” is being used to undertake a series of assessments to test the impact of desilting on the River Brue. This work is progressing and shows that there is a positive impact from the proposed desilting on peak flows and levels. The hydraulic assessment will be completed shortly. A suitable Environmental Assessment will be required.

A separate paper will be presented in future regarding desilting and other actions in the Brue catchment. This will recommend a more strategic approach to identifying work and will recommend development of the Brue Hydraulic model so that it is suitable for this purpose.

## **3. Dredging trials:**

Following last year’s dredging trials and monitoring the IDB have hosted a “sediment workshop” with professional partners, and the final Ambios Environmental Consultants report has been shared.

The results of the trials and monitoring have shown last year’s trials to have been successful and these are being used to shape this year’s maintenance proposals.

A key conclusion of the report is that long term monitoring of sediment “flux” in the Parrett and Tone should be developed to help understand the seasonal and inter annual movement of sediment within the tidal Parrett and Tone. In turn this will enable better understanding of the natural processes of erosion, transport and deposition, and future maintenance dredging can be targeted accordingly. It will also provide valuable data to inform future operational decisions for the proposed Bridgwater Tidal Barrier and Monks Lease Clyse. A technical proposal is being developed by the Drainage Board, working with EA practitioners. Initial costs to establish the necessary equipment and software are estimated at approximately £50k and it is anticipated this can be funded from within this year’s dredging budget.

It is also intended that Water Injection Dredging will be trialed this year for a short length of pioneer dredging to test its suitability for this purpose in future years work.

To build upon last years’ experience we are proposing to work with the same main contractor (Van Ord) again this year.

#### **4. Monitoring (channel shape and form):**

Cross sections of the channel taken in March this year have enabled us to identify where sediment has returned and to estimate how much more material will be deposited before the autumn. Further sections will be taken in October 2017 along with pre and post dredge measurements. Further testing of Bathymetric survey methods will also be undertaken this year.

#### **5. Environmental assessment:**

In a similar way to last year's maintenance dredging, environmental screening and monitoring will be undertaken this year to limit the impacts and monitor the effects of this year's maintenance dredge. At the request of the EA we will be paying additional attention to the impact of this work on fish.

It is recognized that better understanding of the Environmental Impacts of further pioneer dredging on the Parrett, Tone or Brue will be needed before it can go ahead, and a mitigation plan will need to be developed. As a first step the hydraulic impact of further dredging shown from the modelling work is being mapped to understand what the long term effect on water levels might be and to start to identify potential water level management actions to offset any environmental concerns which may be identified.

A proposal to develop a Strategic Mitigation Plan for all SRA actions is being brought to the SRA for consideration, and this will need to be built into the program for future pioneer dredging.

#### **6. Dredging Strategy Board**

The Strategy Board continues to meet periodically to steer this work and monitor progress against the approved actions.

##### **Recommendations:**

The SRA Board is asked to:

Note the progress made and the encouraging results.

To approve funding to establish long term sediment flux monitoring on the River Parrett and Tone.

**Date: 26/6/17**

**Iain Sturdy (IDB)**