



R. Parrett Water Injection Maintenance Dredging - Environmentally Acceptable Protocol

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Foreword

Natural England are working with the Somerset Rivers Authority (SRA) to deliver a 'Strategic Mitigation Plan' that will enable a multi-year programme of further maintenance and capital dredging undertaken by the Somerset Drainage Boards Consortium (SDBC) to take place in the Parrett/Tone systems.

The Environment Agency has been supporting Natural England (NE) in this project.

A jointly agreed early deliverable was intended to provide the SDBC with a 5-year virtual authorisation that would ensure that maintenance dredging on the existing dredged reaches of the Parrett and Tone (i.e. the 2014 capital dredge and 2016 750m extension) could be undertaken annually and be legally compliant.

The intended purpose was to reduce regulatory burden on the SDBC by avoiding the need for an annual assessment of the proposed work by the regulators and reduce the burden on NE and Agency staff time from having to assess each year's maintenance dredge requirements.

In addition, if such a programme can be considered to be legally compliant then this will allow the SDBC to provide more certainty to prospective dredging contractors over the contract term.

1 Permitting and Legislation

Following recent changes to the Environmental Permitting Regulations (2016), the SDBC can undertake dredging on Main River without the need to secure a Flood Risk Activity Permit (FRAP).

However, this does not remove the need for the SDBC to remain legally compliant with all relevant environmental legislation such as:

- EU Water Framework Directive
- EU Habitats Regulations
- Salmon and Freshwater Fisheries Act
- Wildlife and Countryside Act
- Natural Environment and Rural Communities Act (NERC)

As well as all relevant waste management legislation and the need to satisfy the potential licensing requirements of the Marine Maritime Organisation.

2 Responsibilities - Legal Compliance

The IDB intends to act under the Agency's powers relating to flood risk related works on Main River. As a legally defined Competent Risk Management Authority (RMA) it is the IDB's primary responsibility to ensure it remains legally compliant with environmental legislation.

Nevertheless, the Environment Agency remains the Competent Authority for WFD and has responsibility for taking action to prevent or secure mitigation in cases of 'Hydromorphological Harm' as defined by Section 161A of the Water Resources Act 1991.

In the absence of a Flood Risk Activity Permit (FRAP), and as a member of the SRA the Environment Agency can provide advice and guidance to the SDBC on how a 5 year WID programme of annual maintenance dredging can be undertaken without 'Harm' being committed or indeed other breaches of environmental legislation. The following is intended to meet that need.

3 Environmentally Acceptable Protocol - Maintenance WID

The following conditions are considered by the Environment Agency to provide sufficient safeguard for a rolling 5-year programme of maintenance dredging within the existing 8.75km dredged reach of the rivers Parrett and Tone.

As a Competent Risk Management Authority the SDBC can choose to deviate from the following advice where it has the appropriate evidence to support such a decision/s. It should be understood however that if challenged, responsibility for justifying the works and the manner under which they were completed rests with the SDBC.

3.1 Environmental Constraints

3.1.1 Assumed equipment

- Water Injection Dredging (WID) using the same or essentially similar equipment as used by the SDBC in the 2016 and 2017 WID trial dredges.

If the method used involves bankside excavation rather than WID then the constraints would be as previously adopted for the 2015 maintenance dredge and 2016 750m dredge extension. In summary these additional constraints would include:

- Not excavating from both banks
- 'Strip and recover' of vegetation including reeds
- Reseeding of upper banks where turf has been removed
- Leaving a rough and un-compacted bank face following excavation

3.1.2 Acceptable extent

- A maximum annual extent using WID of no more than 50% of the total existing capital dredged channel length in any one year (accepting that some sub-reaches particularly downstream of Burrowbridge will be subject to more frequent (annual) maintenance)

3.1.3 Acceptable method

- Use of WID within the 'Thalweg' of the channel (i.e. a 6m wide or similar swathe) without direct impact on the channel banks.

3.1.4 Acceptable timing

- Within the existing dredge reach no dredging should take place between February to November inclusive. This constraint reflects the Agency's National position regarding potential impacts on migratory salmonids and European eels.

3.1.5 Protected Species

- Where works could impact on species protected under the Wildlife and Countryside Act and NERC then all appropriate pre-works survey, impact avoidance and mitigation measures must be undertaken.

3.1.6 Ecological Monitoring

- Ecological monitoring should be undertaken each year that WID is undertaken. This programme should be sufficient to support an evidence based position on the recovery rates of the impacted species (fish, invertebrates and vegetation) following WID and should include a photographic record of the pre-and post-dredged channel banks.

4 Ecological Monitoring

The 2016 WID trial undertook a sediment transport (Ambios Consulting) study which provided strong evidence of a near bed 'fluid mud layer' with zero dissolved oxygen during WID operation.

As a consequence, and also following anecdotal observations of dead fish in the WID reach and downstream, it was agreed in 2017 between the then Chair of the SRA, representatives of the SDBC and the Agency that ecological monitoring was required to provide evidence that supported a long-term programme of maintenance WID.

Specifically, a greater understanding of the baseline status (fish and invertebrates), post dredge impacts and recovery of fish and benthic invertebrate communities following WID.

In addition, it must be acknowledged that relative to the pre-2014 baseline, a significant area of inter-tidal reed habitat has been lost from the dredged reach with partial recovery now taking place. Monitoring is required to assess the future recovery of this habitat and to identify the quantity of habitat which has been permanently lost.

In advance of the December 2017 The SDBC therefore put in place a monitoring programme agreed with the Agency. This study has yet to report formally although partial draft results have recently been provided by the SDBC to the Agency.

Initial interpretation of the draft and partial data are inconclusive with regards to determining the short-term impact of WID in the Parrett or the recovery status of impacted benthic communities.

Accordingly, as the WID maintenance programme continues it may be justified to alter the maximum acceptable annual WID extent on the basis of the monitoring evidence.

5 Exclusions to Protocol

As stated initially, the proposed protocol relates to maintenance works within the existing 2014/2016 dredged reach of the Parrett and Tone as defined by the following NGR's:

Upstream limit: ST34370 28628 (R. Tone)

Downstream limit: ST32502 33804 (R. Parrett)

Any proposal for a new capital dredge using WID or any other means (i.e. extension to the existing dredge) will require a separate environmental impact assessment including a WFD assessment.

Additionally a stronghold population of the hairy click beetle (HCB), a section 41 species listed under the NERC Act, is present within a 100m section of this maintenance area. Due to the extremely limited range of the HCB, this site is considered to be essential to the conservation objectives of this species. An exclusion zone will therefore be in place at this location and future maintenance will be reviewed as required. The exclusion area extends from the left hand bank on the river Tone to just below the confluence with the river Parrett.

Upstream limit: ST3580530168

Downstream limit: ST3573730421.

5.1 Implications of Further Capital Dredging

The 2014 capital dredge was assessed as legally compliant on the basis of no future maintenance with full recovery of habitat assumed.

In 2015 when the first application for a maintenance dredge was made by the SDBC, it was agreed with the Agency that a legally compliant frequency could be an annual average of 25% of the full

reach for bankside maintenance dredging, thereby allowing for a 'patchwork' of recovering habitat within the capital dredge reach.

Any extension to the existing capital dredge extent will lead to the loss of further significant areas of reed habitat in the water body and therefore trigger a reassessment and probable reduction of the acceptable 50% maintenance extent threshold within the current capital dredge extent.

This is because within the existing capital dredge reach there is relatively limited recovery to date of the significant base-line area of reed habitat lost in the 2014 and 2016 capital dredges. In part this reflects the method of dredging at the time but also the fact that several km of the capital dredge reach downstream of Burrowbridge have been subject to maintenance dredging (WID and bankside excavation) every year since 2014.

In addition, should further capital dredges be undertaken on the Parrett/Tone in the future, the 'in-combination' and cumulative impacts of these additional works, together with impacts from the existing capital dredge and maintenance dredging and other related works will need to be assessed through an appropriate EIA and WFD assessment. The results of this process will inform what is considered to be an acceptable maintenance dredging regime in the future.

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