

## Sediment Removal in the Lower Vasse River (LVR) Frequently Asked Questions

### 1. Why is this project taking place?

The LVR receives excessive nutrient loads from rural and urban catchments, groundwater, and potentially from river sediments. These sediments can contribute to poor water quality and annual cyanobacterial blooms.

Targeting all sources of nutrients is important to make improvements to water quality in the river. The Department of Water and Environmental Regulation (DWER), GeoCatch, the Department of Primary Industries and Regional Development (DPIRD), and other partners have been actively implementing nutrient reduction initiatives throughout the catchment, working with both farmers and urban residents to reduce nutrient runoff. The landscape across the Geographe Bay catchment however is saturated in nutrients and will likely continue to release nutrients to waterways for some time, even if significant reductions are achieved across the catchment. To complement this work, the City, in partnership with other stakeholders, is completing localised remediation, where the current focus is sediment removal from the river.

### 2. Where are the sediments going to be removed from?

This project is divided into six stages with the project area extending from the Butter Factory Museum to the Busselton Bypass.

This approach targets a priority stretch of the river at each stage. Where each stage takes a minimum of 12 months to complete. Stages 1 and 2 occurred in a section of the river between the Causeway Road Bridge and the Butter Museum Factory. Stage 3 will occur in a stretch of river upstream from Strelly St.

Future stages will depend on external funding and the evaluation of the first three stages.

### 3. Will the sediments just drink back in from upstream?

Busselton exhibits a very flat landscape, where water velocity in streams is low, with consequential negligible scouring of sediments. The technical advice, consistently received from the Department of Water and Environmental Regulation (DWER), indicates that water flow along the bottom of the River very rarely reaches speeds that would move large amounts of sediment downriver in the lower reach of the river. Modelling undertaken by DWER, as part of the [Reconnecting Rivers Study](#) (2019), confirmed that the percentage of time that sediment are likely to be mobilised was less than 2%.

#### 4. What are the environmental risks of sediment removal the river?

Sediment removal in natural waterways needs to be managed carefully. Approvals were granted under the, *Environmental Protection and Biodiversity Conservation (EPBC) Act 1999*, *Biodiversity Conservation Act 2016*, and *Aboriginal Heritage Act 1972*, with conditions associated with water quality monitoring, management of Carter's freshwater mussels and treatment of Acid Sulfate Soils (ASS). A number of supporting documentation and plans were prepared as conditions of the approval process. These included:

- Carter's Freshwater Mussel survey and Management Plan;
- Acid Sulphate Soil and Dewatering Management Plan;
- Dredging and Disposal Management Plan; and
- Works Procedures.

#### 5. When will the project take place?

- Stage 1: April – June 2022
- Stage 2: May – June 2023
- Stage 3: Summer/Autumn 2025

The timing of future stages is subject to funding and the evaluation of the first three stages.

#### 6. What work will take place?

The first two stages of the project used a micro-dredge to remove sediments. The micro-dredge was fitted with a submersible, shrouded cutter-head and pump that was able to plane through the sediment with relatively minimal disturbance. The sediment slurry was then pumped into porous geotextile bags, which retained the fine sediments while expelling water back to the river.

For Stage 1 and 2, Rotary Park (Causeway Road, Busselton) was used as a laydown area for the dewatering geotextile bags. A sand pad with bunds was constructed to house the five (5) 30m x 8.6m bags. The geotextile bags were left to dewater for approximately six months, after which sediment was transported to the Rendezvous Road Waste Transfer Station (Busselton) and treated for Acid Sulfate Soils (ASS) by incorporating lime and sand. Once the ASS neutralisation was verified, sediments were transported to the Vidler Road Waste Facility (Dunsborough) for reuse as daily cover at active landfill cells.

For Stage 3, the City is trialling an alternative method of sediment removal. While Stage 1 and 2 removed a considerable amount of sediment, high concentrations of nutrients were unfortunately returned back to the river via the dewatering. A new method of direct excavation and in situ watering will be used for Stage 3. Sediment will be excavated and transported off site daily for treatment. For future stages, learnings and findings from previous stages will be taken into consideration before committed to.

**7. How will the work be funded?**

The City of Busselton was awarded \$350,000 in grant funding for Stage 1 of the project through the Health Estuaries WA program, and \$407,964 for Stage 3 under the State Natural Resource Management Community Stewardship Program. Remaining project costs have been the responsibility of the City of Busselton. Future works will be subject to sourcing additional external funding.

**8. What will you do with the sediment removed from the river?**

Once dewatered and treated for Acid Sulfate Soils, the sediments will be transported to the Vidler Road Waste Facility in Dunsborough for further treatment and reuse. The treated sediments will be used as daily cover at active landfill cells.

**9. Is this project going to stop algal blooms in the river?**

Sediment removal is an important first step for helping to improve water quality in the river. However as a stand-alone method removing sediments is not expected to prevent algal blooms because nutrient concentrations in surface water and groundwater inputs are sufficient for excessive algal growth. Sediment removal is the first intervention in a range of actions for improving water quality and reducing algal blooms in the river.

**10. Which government approvals are required?**

The City has received approvals under the *Environmental Protection and Biodiversity Conservation (EPBC) Act 1999*, *Biodiversity Conservation Act 2016*, and *Aboriginal Heritage Act 1972*, with conditions associated with water quality monitoring, management of Carter's freshwater mussels and treatment of Acid Sulfate Soils.

**11. Has the local community been involved and informed in this project?**

Many in the community have been calling for sediment removal for numerous years. It is a key recommendation from the Lower Vasse River Waterway Management Plan (2019). The pre-existing Lower Vasse River Management Advisory Group, Indigenous delegates and representatives from the City and government agencies selected sediment removal as the key priority for the City for managing the river. In 2024 the City commissioned a Community survey and Community Scorecard, where *Local rivers, inlets and waterways* were identified as one of the top 5 community priorities and was recognised as an area of concern requiring focussed action. Two of the four community driven actions for *Local rivers, inlets and waterways* focussed the need for improvements to the Lower Vasse River.