

Sediment Removal in the Lower Vasse River

Frequently Asked Questions

1. Why is this project taking place?

A thick layer of nutrient-rich sediments has built up, over several decades, on the bed of the Lower Vasse River due to low flow, and deposition of algal blooms. These sediments provide an ongoing internal source of nutrients, contributing to poor water quality and toxic blue-green algal blooms every summer in the river.

Removing built-up sediments is an important first step to improving water quality in the river.

2. Where are the sediments going to be removed?

The first stage of sediment removal will occur in the section of the river between the Causeway Road Bridge and the Butter Factory Museum. A funding application submitted to the State NRM Office to extend the dredging upstream from the Causeway Road bridge was unfortunately unsuccessful.

Future stages will depend on additional external funding being secured.

3. Why has the City of Busselton chosen to remove sediment downstream rather than upstream first?

There are various important reasons for this location in the River being chosen for Stage One of the sediment removal program. This section of the River is highly visible and there is a relatively high level of activity around the vicinity. Whilst there are variations from year to year, algal blooms tend to start the earliest and become most concentrated in this section. At the time funding applications needed to be lodged, the City did not have sufficient background information to cost or seek environmental approvals for sediment removal in other sections of the River.

Additionally, due to the volume of sediment that needs to be removed, a large area is required to accommodate the geo-textile bags for the removed sediment, and they need to remain in place for several months before the sediment can be transported. The only suitable location for placement of the bags to dredge the lower section is Rotary Park, which may be revamped in the near future, making the space unavailable.

4. Will the sediments just drink back in from upstream?

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%.

5. What are the environmental risks of dredging the river?

The technique proposed to be used to remove sediments has minimal environmental impacts. The dredge targets a specific area of sediment and hence minimises any river bed disturbance and resultant localised turbidity. Silt curtains will be installed upstream and downstream of the work area to contain any movement of sediments during the works. A survey was completed earlier in the year to confirm there was no Carter's Freshwater Mussel in the area proposed to be dredged as part of Stage 1. Water quality in the river and in the water coming out of the geotextile bags will be regularly monitored to ensure it complies with environmental requirements.

Dewatered sediments will be treated for Acid Sulfate Soils before being transported off-site for further treatment and reuse.

6. When will the project take place? For how long?

Setting up of Rotary Park as a laydown area and dredging of sediments will commence in March or April 2022. The final start date will depend on dredging contractors' availability. The dredging works will take 7 weeks. The sediments will be left to dewater in the geotextile bags for up to 3 months, after which they will be transported off-site for further treatment and reuse. It is anticipated the project will be completed by August 2022.

7. What work will take place?

The project operation will be staged over approximately 6 months where the following works will be undertaken:

- A temporary bunded lined and limed storage area to contain the geotextile bags will be constructed at Rotary Park..
- Area of works will be contained and securely fenced for the duration of the project.
- A micro dredge will be used to pump sediments into the geotextile bags (see video <https://www.youtube.com/watch?v=GupQXehiiR8>).
- Silt curtains will be installed in the water within the dredge area to contain sediments.



- Once the sediments are retained in the geotextile bags, the water will filter out of the bags before being returned to the river. During the dewatering period, returned water will be sampled to ensure water quality meets requirements.



- Once dewatering is completed (up to 3 months), sediments from geotextile bags will be treated for Acid Sulfate Soils and transported to the Vidler Road Waste Facility in Dunsborough for reuse.

8. Why can't sediment be excavated and/or pumped straight into trucks?

Sediments in the Lower Vasse River are very fine and contain a high moisture content, so require pumping from the river rather than excavation. By dewatering the sediments using geotextile bags, it significantly reduces transport costs. Alternative methods of dewatering like drying ponds would only allow a small volume of sediment to be removed.

Dredging to bags has the added advantage of mitigating odours released from sediments on site and has lower environmental risks of acidification.

9. How much is this going to cost? How will it be funded?

The City received \$350,000 from Healthy Estuaries WA towards removing sediments in the section of the Lower Vasse River between the Causeway Road Bridge and the Butter Factory Museum. Council also supported the allocation of \$290,000 of municipal funds towards the work.

Tender prices will determine the exact cost of the dredging work. There will also be additional cost to set up the laydown area for the geotextile bags, monitor water quality, install silt curtains to contain any sedimentation during the works, treat the dewatered material for Acid Sulfate Soils and transport it off-site.

10. 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 may be used as soil amendment for revegetation projects and/or to cover the active face of the waste facility.

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

Sediment removal is an important first step for improving 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 blue-green algal blooms in the river. Further community consultation will be undertaken later in the year on complimentary interventions.

12. Which government approvals are required?

The City has applied for environmental approvals from the WA Environmental Protection Authority (EPA) under Part IV of Environmental Protection (EP) Act, from the WA Department of Biodiversity, Conservation and Attractions under Section 40 of the Biodiversity Conservation Act and from the Australian Department of Water, Agriculture and the Environment (DAWE) under the Environmental Protection and Biodiversity Conservation (EPBC) Act.

The City has also applied for cultural heritage approvals from the WA Department of Planning, Lands and Heritage (DPLH) under the WA Aboriginal Heritage Act.

Approvals are anticipated to be received by December 2021.

13. 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 Lower Vasse River Management Advisory Group, comprised of community members, Indigenous delegates and representatives from the City and government agencies selected sediment removal as the key priority for managing the river. Regular updates will be provided as the project progresses.