

## A2.4 Impacts of sediments from urban and rural stormwater on stream health

### Background






Fine sediments mobilised by the channelisation of rivers have been identified as a significant threat to environmental values in Western Port, particularly important seagrass habitats (Melbourne Water, 2018). The largest sediment sources are thought to be from the stream bank and gully erosion. Recent evidence suggests that changes in agricultural practices and urban development are also impacting catchment sources. Associated with sediments are pollutants which can have significant ecological impacts on the flora and fauna of the waterways and bays.

### Approach

This case study project aims to:

- Understand the concentrations and effects of pollutants attached to sediments generated from urbanising areas relative to existing urban and agricultural areas in the Westernport catchment.
- Determine if current sediment controls are sufficient and if not, recommend options for increasing the protection of waterway health during urban development.

The project is a collaboration with Melbourne Waterway Research-Practice Partnership (MWRPP) Project B2.

Stage 1: Pre-development	Stage 2: Bulk earthworks	Stage 3: House construction	Stage 4: Landscaping	Stage 5: Complete
<ul style="list-style-type: none"> <li>• Herbicides</li> <li>• Fungicides</li> <li>• Nutrients</li> </ul>	0 - 9 months <ul style="list-style-type: none"> <li>• Low level of Pollutants</li> </ul>	9 - 12 months <ul style="list-style-type: none"> <li>• Insecticides</li> </ul>	1-4 years <ul style="list-style-type: none"> <li>• Increase in Insecticides</li> <li>• Heavy metals?</li> </ul>	4+ years <ul style="list-style-type: none"> <li>• Increase in Heavy Metals</li> <li>• Insecticides</li> </ul>
				

Predicted Pollutants Associated with Stages of Construction Adapted from Russell, K (2019) MWRPP: Major sources and fate of sediments in streams, wetlands, estuaries and bays to inform management opportunities. Combined Forum 16 Sept 2019.

### Progress to date

Sampling of sediments within the local creek and wetlands in an urbanising estate in Officer has begun. Monitoring of pollutants within this estate will continue to occur quarterly until 2022 as well as additional monitoring of two urbanising estates in the area

### Expected Outcomes

- Understanding of the effectiveness of current sediment control methods during urban development to reduce sediments and associated pollutants to streams, wetlands, estuaries and the bay across the Westernport catchment
- Determining the relative contribution of sediment loads generated during urban development compared to existing urban and agricultural areas to support achievement of Healthy Water Strategy and EPA State Environmental Protection Policy objectives for sediment load reductions to Western Port

### Project Team

- **RMIT A3P:** Claudette Kellar, Kathryn Hassell, Vin Pettigrove, Dan MacMahon, James Oliver, Michael Clark, Monica Tewman.
- **UoM MWRPP:** Kathy Russell, Geoff Vietz, Peter Poelsma, Matt Burns, Tim Fletcher, Rob James, Darren Bos.
- **MW:** Trish Grant, Alison Rickard, Penny Rogers, Leigh Smith, Marion Urrutiaguer, Rowan Hore, Michael Godfrey, Birgit Jordan, Rhys Coleman, Slobodanka Stojkovic.

### Expected Completion 2023

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