

## **B1.2B Understanding the ecological impacts of untreated sewage inputs in waterways**

### **Background**

Untreated sewage may enter waterways through multiple sources, including dry weather spills from septic tank or sewer leaks, and wet weather spills from engineered sewer Emergency Relief Structures (ERS). Untreated sewage is a potential risk to the ecological health of the receiving environments as well as to human health, due to the presence of pollutants (e.g. toxicants and ammonia) and pathogen indicators (e.g. *E. coli*).

### **Approach**

This project aims to:

- Undertake a literature review considering existing spill data, ecological studies and characterise the different types of spills and their ecological impacts
- Collect water quality data from streams across Melbourne to determine chemical signatures of particular land use types, as well as associated sewerage infrastructure, to identify suitable indicators of sewage contamination.
- Describe the characteristics of dry weather (sewer/septic leaks) and wet weather (ERS) untreated sewage spills to waterways and develop indicators for measuring ecological impacts.
- Propose a strategic process for prioritising the investigation and management of sewage inputs to waterways.



Untreated sewage can enter waterways from septic and sewer leaks, and through engineered Emergency Relief Structures during wet weather

### **Progress to date**

As of May 2020, the literature review is nearing completion. Multiple pesticides were detected in surface waters from 27 sites, across 7 land uses. Chemical signatures showed clear patterns with land-use. Suitable sewage indicators will be investigated more thoroughly in 2020 to understand the likely contribution of untreated sewage to waterway pollution across Melbourne's streams.

### **Expected Outcomes**

- Better understanding of the toxicants within untreated sewage (including emerging contaminants) that pose the greatest risk to waterway health across Melbourne
- Establish best practice monitoring regimes for chronic and intermittent inputs of untreated sewage into waterways to determine their relative impact on waterway health
- Inform strategic prioritisation of sewage management to reduce impacts on waterway values, including the design and maintenance of sewerage infrastructure and septic tank systems.

### **Project Team**

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### **Expected Completion 2023**

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A collaborative research partnership delivering practical management solutions to reduce pollution in our waterways.