# Monitoring stormwater drains and gross pollutant traps

We're using sensors to monitor storm water drains and gross pollutant traps (GPTs) across Australia. This new technology allows for real-time monitoring of GPTs to manage our city's waterways more safely, cost-effectively and efficiently.

## Real-time monitoring

Using low-cost IR sensors placed in GPTs, we are monitoring debris build-up within a drain and can send notifications when GPTs are full and require emptying.

Currently, the sensors are part of a local network where information is conveyed to a nearby gateway. From there, the information is aggregated for further analysis and can be accessed via the web. Notifications are set up based on debris depth and a risk rating specified by the user.

## Current development

The team are working on Phase II of sensor development with in-built processing capabilities, improved sensor housing and increasing battery life.

The long-term goal is to have self-sufficient sensors that require little human intervention once in place.
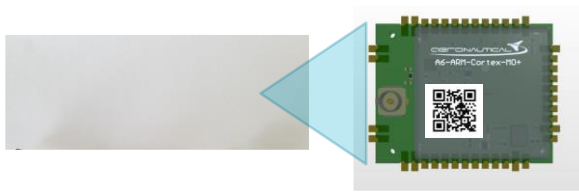


An example of the currently developed sensor with in-built processing capabilities.

Optimisation models are being developed for decision support tools to help councils better manage their assets, cost effectively and safely whilst ensuring waste is not lost from these assets.

## Infrastructure required

Data from the sensors is transmitted to a LoRa WAN gateway that covers a radius of 4-6 km and supports a number of sensors.

Installation of the sensors is quick, simply requiring positioning above the asset's collection area. The sensors require little maintenance. In future deployments, snap-lock frames will be attached to grates from which a sensor can simply be exchanged for maintenance or an external QR code can be read for automatic registration of the sensor at a new location.



Data is retrieved via a nearby LoRa router.

## Ongoing sensor development

The infrastructure is undergoing further development to expand capability to suit user needs (such as additional sensor types). Sensor coverage currently ranges from 0.8m - 4.0m.

**Contact us**

1300 363 400
+61 3 9545 2176
csiroenquiries@csiro.au
csiro.au

**For further information**

CSIRO Environment
Denise Hardesty
+61 3 6232 5276
Denise.hardesty@csiro.au
csiro.au/plastics