MONASH
ENGINEERING

MONASH University

Faculty of Engineering

Summer Research Program 2021-2022

Project Title: Using low-cost sensor army to detect the illegal discharge in the stormwater network for water quality enhancement of Dandenong Creek

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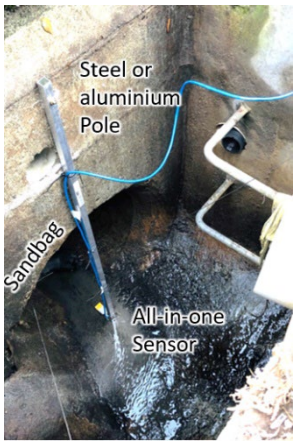
Objective

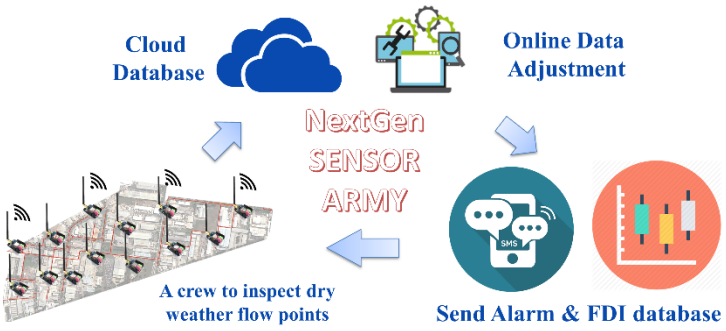
Illicit discharges from the urban drainage network are now considered as another major pollution contributor to the downstream receiving water. Common illicit discharges, including cross-connections, industrial discharges, and surface dumping, are all hard to be located by using traditional methods such as visual inspection. As such, this study aims to employ an army of hundreds of low-cost sensors to help us monitor the flow conditions across one urban catchment, thereby eliminating the illegal discharges.



Project Details

The project is planned to be conducted at Old Joes Creek (Bayswater, Victoria), as part of Enhancing our Dandenong Creek (EoDC) project. This region was previously identified as one major hotspot of urban illicit discharge issues. For the correct detection and source identification, students will help with installing multiple sensor units including BoSL prob (an all-in-one water level, conductivity, and temperature sensor), BoSL turbidity sensor, and an out of water radar sensor which can measure both water level and velocity from the surface. Hundreds of these sensor units will generate a large real-time dataset. the selected student will also have the chance to support the on-going field source tracking and source identification based on the monitoring results.

Overall, this project provides the opportunity for students who are interested in cutting edge technologies for urban water monitoring, and also for students who are keen to work on multi-disciplinary projects to solve real world challenges that cannot be resolved with conventional techniques.



Prerequisites

None.