



## Cooks River Catchment Stormwater Improvement Study

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### Overview

The Cooks River catchment is one of the most highly urbanised catchments in Australia and is home to more than 500,000 people. Historically, the river has been subject to the detrimental impacts of industrial discharge, channelisation and stormwater pollution. As a result, the river is currently in a poor state of ecological health and has been described as one of the most polluted water ways in Australia.

Approximately 9% of the 906-ha Cooks River catchment is within the Georges River Council local government area. In partnership with Council, the study authors have investigated opportunities to protect the health of waterways within and downstream of this area within the Cooks River catchment, through a combination of the following opportunities:

- Improving the condition (and associated performance) of existing Council-owned stormwater management measures within the study area
- Implementing new stormwater management measures within the study area.

This investigation has included the following key actions:

- Inspection and audit of existing stormwater management measures within the study area
- Review of maintenance data for existing stormwater management measures
- Catchment modelling
- Life cycle cost analyses
- Stakeholder liaison
- Identification, assessment and prioritisation of potential works.

Key findings from our investigation included the following:

- Existing stormwater management measures are providing a significant stormwater management function (and removing significant quantities of pollutants), but only provide treatment to a very small (3%) portion of the study area
- Increased maintenance activities will significantly improve the treatment function of existing stormwater management measures
- Data on the quantities of pollutants removed by existing stormwater management (supported by maintenance cost data and catchment modelling) is extremely useful in providing justification for increased resources for maintenance activities
- Despite the highly constrained urban environment of the study area, there are significant opportunities to reduce stormwater pollutant loads through a variety of potential new stormwater management measures, including gully baskets, gross pollutant traps and stormwater harvesting (and reuse).

## Objectives

The objective of this study was to investigate opportunities to protect the health of waterways within and downstream of the study area, through a combination of the following opportunities:

- Improving the condition (and associated performance) of existing Council-owned stormwater management measures within the study area
- Implementing new stormwater management measures within the study area.

## Method

This investigation has included the following key actions:

- Inspection and audit of existing stormwater management measures within the study area
- Review of maintenance data for existing stormwater management measures
- Catchment modelling (using MUSIC)
- Life cycle cost analyses
- Stakeholder liaison
- Identification, assessment and prioritisation of potential works.

## Results

Key findings from our investigation included the following:

- Existing stormwater management measures are providing a significant stormwater management function (and removing significant quantities of pollutants), but only provide treatment to a very small (3%) portion of the study area
- Increased maintenance activities will significantly improve the treatment function of existing stormwater management measures
- Data on the quantities of pollutants removed by existing stormwater management (supported by maintenance cost data and catchment modelling) is extremely useful in providing justification for increased resources for maintenance activities
- Despite the highly constrained urban environment of the study area, there are significant opportunities to reduce stormwater pollutant loads through a variety of potential new stormwater management measures, including gully baskets, gross pollutant traps and stormwater harvesting (and reuse).

## Conclusions

This study has shown that, despite the highly urbanised nature of the study area, many cost-effective opportunities are available to reduce stormwater pollutant loads through a combination of:

- Improved function and operation of existing stormwater management measures
- New stormwater management measures, including gully baskets, gross pollutant traps and stormwater harvesting (and reuse).

Of particular relevance to other similarly urbanised areas, the project has shown that a detailed understanding of the function of existing stormwater management measures is extremely useful for both (i) improving their function and operation and (ii) providing justification for additional/ new stormwater management measures.