

# 1. Introduction

In urban catchments, stormwater is a major contributor to pollution of our waterways, ultimately affecting the biological, physio-chemical, social and economic values of our river systems. As a State Governmental initiative to solving the stormwater problem, the Environment Protection Authority has issued a Direction under Section 12 of the *Protection of the Environment Administration Act (1991)* requiring all local Councils to prepare catchment-based stormwater management plans to mitigate against this form of pollution. Legal directions also require Sydney Water Corporation, and the Roads and Traffic Authority to participate in the preparation of this stormwater management plan.

PPK Environment & Infrastructure Pty Ltd in conjunction with Webb, McKeown & Associates Pty Ltd were engaged by the Cooks River Catchment Association of Councils to investigate stormwater issues and to prepare a Stormwater Management Plan for the Cooks River catchment.

The Stormwater Management Plan aims to improve water quality and health of the Cooks River by identifying practical and long term solutions to stormwater pollution problems. Stormwater quality is affected by all activities and management practices that occur within the catchment and therefore is the responsibility of all Authorities, businesses, industries, residents and land users within the catchment. The Councils within the Cooks River Catchment have formed an association and are working together with the community and stakeholders in the preparation and implementation of this Stormwater Management Plan. The Association of Councils is made up of representatives from the thirteen Councils responsible for management of the Cooks River catchment, as listed in *Table 1.1*.

**Table 1.1: Council Areas within the Cooks River Catchment**

Council	Percentage of Cooks River Catchment / Local Government Area
Canterbury	23.7
Rockdale	19.9
Marrickville	11.9
South Sydney	10.0
Hurstville	9.1
Bankstown	8.9
Strathfield	6.7
Botany Bay	5.3
Burwood	1.9
Auburn	0.8
Randwick	0.7
Kogarah	0.6
Ashfield	0.5

## 1.1 Approach

The overall objective of the Stormwater Management Plan is the development of a framework which will provide for the ecologically sustainable & cost effective management of stormwater. The approach used to develop this Stormwater Management Plan follows closely the methodology and principles set out in the Environment Protection Authority's *Draft Council Handbook for Managing Urban Stormwater* (1997). As required by the Section 12 Direction, the Plan incorporates the following key components:

- a description of the Cooks River catchment;
- the definition of stormwater management objectives for the catchment;
- identification of stormwater management problems and issues;
- the evaluation and ranking of potential stormwater management options;
- an implementation strategy which defines the management framework, detailed costs of implementing the actions, and identifies a timeframe for implementation;
- a monitoring program to assess the effectiveness of the plan; and
- an evaluation and reporting program.

The Stormwater Management Plan is based on the findings of numerous existing studies of the Cooks River, and on the outcomes of consultation with stormwater managers, businesses, and residents within the Cooks River catchment. While the primary focus of this plan is to address the stormwater pollution problems of the Cooks River, additional issues such as water quantity and ecosystem restoration are also considered to ensure an integrated approach to the management of the Cooks River.

## 1.2 Guiding Principles and Best Practice

Management of stormwater within the Cooks River catchment is based on the principles of total catchment management and ecologically sustainable development.

Ecologically sustainable development requires the effective integration of economic and environmental considerations in decision making processes. Ecologically sustainable development can be achieved through implementation of the precautionary principle, inter-generational equity, the conservation of biological diversity and ecological integrity, and improved valuation and pricing of environmental resources. In giving effect to ecologically sustainable development the following issues must be considered:

- decision making processes should effectively integrate both long and short term economic, environmental, social and equity considerations;

- where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation;
- cost effective policy instruments should be adopted such as improved valuation, pricing and incentive mechanisms; and
- decisions and actions should provide for broad community involvement on issues which affect them.

Total catchment management is the co-ordination of local and state government, business and community efforts on a catchment basis so as to maintain clean water and a diversity of vegetation and wildlife. The objectives of total catchment management are to ensure that natural resources are managed by:

- co-ordinating policies, programs and activities at a catchment level;
- achieving active community participation in natural resources management;
- identifying and rectifying natural resource degradation;
- promoting the sustainable use of natural resources; and
- providing high quality water and natural vegetation cover.

In developing the Stormwater Management Plan for the Cooks River, the principles of total catchment management and ecologically sustainable development have been adopted, and best practice management encouraged. Best practice in regard to stormwater management is the subject of many existing guideline documents including:

- Managing Urban Stormwater - Soils and Construction (NSW Department of Housing, 1998);
- Managing Urban Stormwater: Treatment Techniques (EPA, 1998);
- Managing Urban Stormwater: Source Control, Draft (EPA, 1998);
- Construction Techniques for Sediment Pollution Control (Environment Protection Authority, 1991);
- Environmental Guidelines for Major Construction Sites. Best Practice Environmental Management Series (Environment Protection Authority, 1996);
- Estuary Management Policy (NSW Department of Land and Water Conservation, );
- Aquatic Habitat Management and Fish Conservation (NSW Fisheries, 1998); and
- Better Drainage (Department of Urban Affairs and Planning, 1993).

It should be noted that best practice is site specific and must balance environmental, social, and economic considerations. The actions and strategies identified in this Stormwater Management Plan reflect the need for such a balance.

### 1.3 Catchment Management Framework

The Cooks River, labelled the most polluted river system in Sydney, has been significantly altered and degraded over the last 200 years (CSIRO, 1992). Stormwater pollution, which is addressed by this Plan, is only one of a complex combination of past and present pollution sources contributing to the degraded water quality and poor health of the River. Other sources of water pollution in the Cooks River, which are addressed by other plans and strategies, include:

- seeps and overflow from the sewer;
- licensed and unlicensed discharges from industry;
- leachate inputs from contaminated land;
- release of chemicals from contaminated sediments; and
- inputs from contaminated groundwater.

In addition, a number of plans and strategies exist which aim to re-establish the natural processes and ecosystems of the Cooks River. The Cooks River Catchment Management Committee, local Councils, community and State Government agencies have defined the vision for the future of the Cooks River, as a healthy natural waterway within a sustainable urban landscape that can be enjoyed for its recreational, visual and ecological values.

This stormwater management plan, along with plans developed to address other problems of the Cooks River, form part of a catchment management framework established to guide the rehabilitation of the Cooks River. Figure 1 illustrates this catchment management framework which incorporates:

- an overall strategy and objectives to achieve the vision for the Cooks River;
- remediation programs to address the legacy of **past** impacts on the Cooks River;
- management plans to address **current** impacts on the Cooks River;
- planning policies to ensure **future** developments and redevelopments within the catchment are ecologically sustainable; and
- monitoring, evaluation and reporting program to assess performance and ensure continual improvement in catchment management.

Details of the existing components of this catchment management framework are provided below.

Cooks River  
Catchment  
Management  
Strategy:

The Cooks River Catchment Management Strategy was prepared by the Cooks River Catchment Management Committee (1993) to define the problems of the River and identify strategies for the rehabilitation and improved management of the catchment. This Catchment Management Strategy is being updated for release in 1999.

Water Quality Objectives:	Water quality objectives for the Cooks River have been developed in consultation with stakeholders as part of the NSW Government's Water Reforms Process. The interim environmental objectives (water quality) published by the Environment Protection Authority, 1997, are detailed in <i>Section 5.2</i> of this report.
Remediation Plans:	A number of remediation projects are currently being undertaken throughout the catchment to control leachate from past Council landfills and sites contaminated through past industrial landuse. Plans to address contaminated sediments within Alexandra Canal are being prepared following a feasibility study undertaken by Sydney Water.
Sewage Overflow Licensing Project:	Sydney Water has recently undertaken an Environmental Impact Assessment of sewage discharges from the sewerage reticulation system, including sewer overflows, exfiltration, infiltration, odours and sewage treatment plant bypasses. Based on the results of this assessment Priority Programs are being prepared to upgrade the sewerage system and prevent major sewage discharges into the Cooks River in the future.
Alexandra Canal Water Environment Plan:	As part of the City South Project, a plan was prepared to address water quality in one of the major hotspots in the Cooks River. The Plan identifies actions for rehabilitation of the Alexandra Canal in a framework similar to that of the Stormwater Management Plan.
Council Management Plans:	Each of the thirteen Councils within the Cooks River Catchment have a Management Plan which guides works and management activities for the future years. Many of these Plans include catchment management actions which aim to improve the Cooks River.
Groundwater Management Plan:	The Department of Land and Water Conservation is preparing a Groundwater Management Plan for the Botany Sands Aquifer.
Council Planning Controls:	Each Council area is also subject to a number of planning controls including Local Environment Plans, development control plans, and catchment related planning policies. These controls place requirements on future developments and are the tools by which future adverse impacts on the Cooks River can be avoided.

Cooks River  
Foreshore Strategic  
Plan:

A Strategic Plan for the foreshores of the Cooks River was developed in 1997 (Cloustan, 1997). The Plan focuses on strategies to ensure a co-ordinated approach to future development and management of the river foreshore areas. Recreational opportunities along the foreshores of the Cooks River are also identified.

State of the  
Environment Reports:

State of the Environment Reports and State of the Catchment Reports are prepared by Local Councils on an annual basis and report on performance against strategies based on the results of monitoring programs. These monitoring and reporting programs allow for measurement of the success of management plans in achieving catchment strategies and objectives.

The restoration of the Cooks River requires these existing management plans, the development of additional plans such as the Stormwater Management Plan, and significant funds and resources to implement the actions within the plans.

The Stormwater Management Plan will address issues specifically relating to stormwater within this existing Catchment Management Framework.

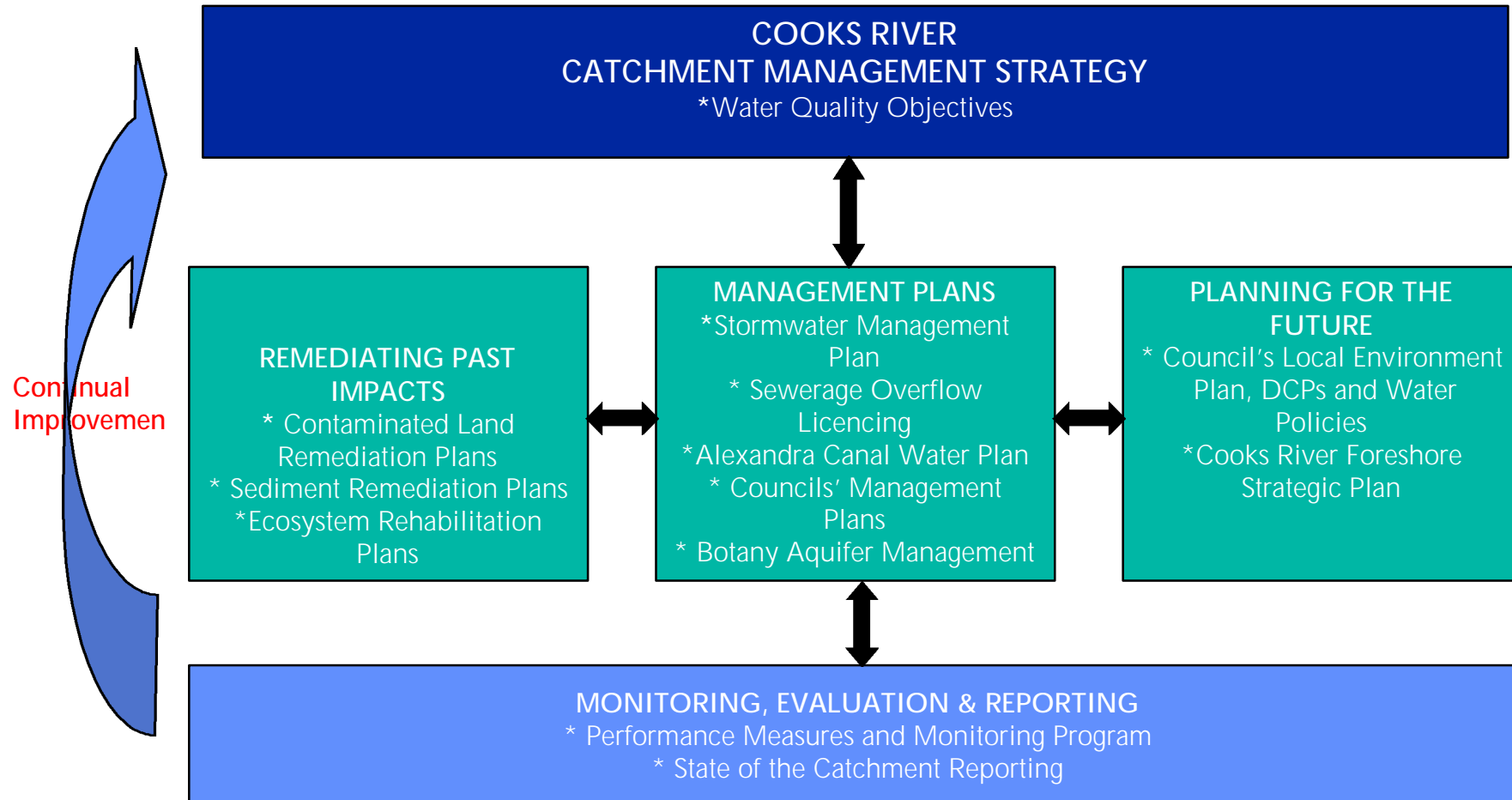


Figure 1: Cooks River Catchment Management Framework