

Executive Summary

The 13 Local Councils of the Cooks River catchment, working together with State Authorities and the community, have prepared a Stormwater Management Plan for the Cooks River. The Plan aims to improve water quality and the health of the Cooks River by identifying practical and long term solutions to stormwater problems.

The preparation of the Plan is a response to a Direction issued by the Environment Protection Authority under Section 12 of the *Protection of the Environment Administration Act, 1991*. Through the Stormwater Trust, the State Government has provided funding for the preparation of Stormwater Management Plans for all catchments within NSW. PPK Environment and Infrastructure Pty Ltd, in association with Webb McKeown and Associates Pty Ltd were appointed by the Cooks River Association of Councils to prepare the Stormwater Management Plan.

Stormwater Pollution Problems

The Cooks River is one of the most polluted river systems in Sydney. Present levels of pollutants, including nutrients, sediments, toxicants and faecal coliforms, make the Cooks River unsafe for swimming, unsuitable for many aquatic species, and a health risk for commercial fishing. Stormwater pollution, together with sewage overflows, is considered to be the biggest contributor to poor water quality in the Cooks River.

The visual and recreational amenity of the river is also compromised as a result of concrete lining of the river banks, floating litter, and impediments to public access. The Cooks River Catchment has a history of intensive landuse, and extensive channel modifications which have dramatically changed the natural appearance and processes of the river system.

The Approach

The approach to developing a Stormwater Management Plan closely follows the methodology and principles set out in the Environment Protection Authority's *Draft Council Handbook for Managing Urban Stormwater* (1997). The Plan has the following key components:

- clear definition of catchment values and objectives for stormwater management;
- identification of issues which prevent the objectives from being satisfied;
- evaluation of options to address identified stormwater management issues;
- a detailed Action Plan which identifies and prioritises cost-effective actions specific to the management of stormwater within the Cooks River;
- an Implementation Strategy which defines the management framework, details costs and outlines a timeframe for implementation; and
- an Evaluation, Monitoring and Reporting Program which provides performance indicators for the actions and identifies appropriate monitoring to measure and report on the success of the Stormwater Management Plan.

The restoration of the Cooks River requires a combination of strategies to address the range of factors contributing to poor water quality and consequent poor river health. The Stormwater Management Plan aims to address issues specifically relating to stormwater, whilst working within the existing Catchment Management Framework.

Catchment Values and Objectives

The catchment values of the Cooks River, identified through the consultation process, include ecological, recreational, amenity, health and economic values. Catchment values lead to objectives for stormwater management as detailed in the following table. Stormwater management objectives include both long term objectives aimed at achieving the community's vision for the Cooks River and short term quantifiable objectives which can bring about immediate improvements.

Catchment Values	Long-Term Stormwater Management Objectives	Short-Term Stormwater Management Objective
Ecological Values:		
<ul style="list-style-type: none"> ■ Remnants of the original vegetation and creek lines of the River ■ The presence of native water birds, fish and aquatic flora and fauna ■ Visually attractive riparian vegetation along the river banks (weed free) ■ The existing wetland areas and intertidal zone which attract large numbers of waterbirds ■ Remnant vegetation and native animals of special conservation value such as the endangered Cooks River Clay Plain Scrub Forest, and birds protected by international treaties ■ Natural creek banks as opposed to concrete walls and sheet piling 	1. Protect and enhance remnant foreshore vegetation and natural waterways.	Protect all remnant vegetation of ecological significance and natural waterways from the impacts of stormwater from future developments.
	2. Protect and enhance existing wetlands and intertidal zones from the impacts of stormwater.	Protect all remnant wetlands of ecological significance, remaining floodplain and intertidal areas from the impacts of stormwater from future developments.
	3. Recreate aquatic habitats suitable for native waterbirds and fish .	Replace sections of concrete channel with more natural waterway in five areas.
	4. Recreate natural riparian and bushland habitats to act as a buffer zone for stormwater.	Restore the natural riparian zone in three sections along existing natural channels.
	5. Achieve water quality which meets the requirements for protection of aquatic ecosystems in all tidal areas and natural channels.	Achieve water quality which meets the guidelines for protection of aquatic ecosystems in tidal areas and natural channels at least fifty percent of the time.

Catchment Values	Long-Term Stormwater Management Objectives	Short-Term Stormwater Management Objective
Social Values:		
<ul style="list-style-type: none"> ■ Boating and secondary contact recreation throughout the catchment ■ Swimming in the tidal mouth of the River 	6. Achieve water quality which meets the requirements for primary contact recreation in tidal sections of the river and the requirements for secondary contact recreation in all waterways.	Achieve water quality which meets the requirements for secondary contact recreation in all waterways more than 75% of the time.*
<ul style="list-style-type: none"> ■ Fishing and the safe consumption of fish caught in the River 	7. Maximise the visual amenity of waterways by achieving clear rather than murky water.	Achieve reduction in suspended solid levels in all waterways and control of bank erosion in a sustainable manner.
<ul style="list-style-type: none"> ■ Recreational areas with water features which are visually pleasing and safe ■ Walking and bike tracks following the River with no visual pollution (that is, no murky water or floating litter) 	8. Maximise the visual amenity of waterways by achieving no floating litter	Ensure that no significant litter is visible in waterways during dry weather and the total volume of litter collected in the five key SWC trash racks/GPTs is reduced by 20%.
<ul style="list-style-type: none"> ■ Facilities and use of waterways with environmental education and awareness themes. 	9. Achieve water quality which meets requirements for consumption of fish	Achieve water quality which meets requirements for consumption of fish in the lower Cooks River more than 50% of the time.
	10. Ensure that the stormwater system is of minimal risk to public health and maximise opportunities for environmental education.	Ensure that public safety and education is considered in the design of all structural stormwater management works.
Economic Values:		
<ul style="list-style-type: none"> ■ Improved property values due to improved waterway values. ■ Stormwater suitable for reuse 	11. Promote reuse of stormwater for irrigation.	Maximise opportunities for stormwater reuse on Golf Courses and a new developments considered.

* In making this commitment for stormwater management, Councils note that the presence of faecal coliforms in the waterways is largely due to sewerage system overflows rather than to stormwater pollution.

Stormwater Management Issues

Stormwater management issues comprise the factors that currently prevent the above stormwater management objectives from being realised. Major stormwater management issues identified for the Cooks River include:

- large volumes of litter reducing visual amenity;
- elevated levels of nutrients and bacteria;

- high concentrations of toxicants;
- lack of co-ordination of management efforts;
- elevated suspended solid levels; and
- loss of natural habitats and poor river health.

Stormwater Management Options

A large number of options to address the stormwater management issues within the Cooks River system have been investigated and assessed on a cost-benefit basis. Generally, these options follow a hierarchy:

1. Retain and restore natural processes – options which are aimed at maintaining the natural drainage and treatment processes such as wetlands, riparian zones, intertidal zones and natural creek lines.
2. Source control – options which involve managing pollution of stormwater at the source and/or minimise the generation of excess stormwater run-off. Source controls include education programs and management procedures to change polluting behaviour, as well as the installation of infiltration devices to intercept pollutants before they enter the stormwater system.
3. “End of Pipe” Solutions – options that trap or treat pollutants which have made their way into the drainage system. The end of pipe solutions are often structural and include gross pollutant traps, sediment detention basins, and litter booms.

The development of stormwater management options for the Cooks River closely follows this hierarchy, by focusing on actions which will restore the natural functions of the waterways, and control pollutants before they enter the river system. However, in a catchment as modified and polluted as the Cooks River, a range of options from each level of the hierarchy will be required in order to achieve both the short and long term stormwater management objectives.

Action Plan

Based on the evaluation of options, an Action Plan has been developed which identifies priority stormwater management actions, and assigns responsibilities for implementation.

Practical strategies have been identified to address the causes of each issue and group stormwater management actions. Each management strategy has specified performance indicators against which the success of the stormwater management actions can be assessed. A Monitoring and Evaluation Program has been developed to enable assessment of overall progress towards meeting the objectives of the Stormwater Management Plan.

The Action Plan (*Table 8.1* in this report) is not intended to be static and will be subject to continual improvement as options are investigated further and monitoring and evaluation of the actions is undertaken.

Implementation Strategy

The costs and responsibilities for the implementation of stormwater management actions have been identified in the Plan. The thirteen local Councils of the Cooks River are committed to implementing the identified priority actions. Actions have also been identified for key Government Agencies such as Sydney Water and the Roads and Traffic Authority.

Many of the actions identified in the Stormwater Management Plan will be most effective when implemented on a catchment-wide basis. The allocation of responsibilities to address catchment wide stormwater issues has been problematic in the past. It is therefore recommended that a “co-ordinating body” be established with appropriate powers and resources to co-ordinate catchment actions. In the short term the Association of Councils, who have developed this Plan, will continue to implement the catchment wide actions within the Plan. In the long term, the formation of a Catchment Management Trust under the *Water Supply Authorities Act, 1987*, is recommended as the most appropriate co-ordinating body.

The Councils of the Cooks River are committed to implementing the priority actions identified within this Plan. However, significant funds will be required to meet the objectives of the Plan and reverse over 200 years of River alteration and degradation. As Councils have limited available funds and many other responsibilities the timeframes identified for implementation are considered tentative, and will be reviewed on an annual basis. The actions identified in the Stormwater Management Plan will be incorporated into each Council’s management planning process.

Funding Mechanisms

Additional funding sources have been identified and include the Commonwealth, State and local Governments, the business sector and individual beneficiaries. Generally costs have been allocated between public and private stakeholders to create a cost-sharing framework. Opportunities for local government to generate funds for catchment management actions include:

- seeking funds from government natural resource management programs such as the National Heritage Trust, the Estuary Management Program, and the Stormwater Trust;
- applying Section 94 contributions and special levies obtained from the beneficiaries;
- raising a catchment levy by use of levy powers under the Water Supplies Authority Act, 1987; and
- collecting contributions from point source polluters to ensure that they pay the full cost of remediating their actions.

Funding has recently been awarded to the Cooks River Association of Councils through the Stormwater Trust to implement \$1.3 million worth of priority actions identified in this Stormwater Management Plan. Sydney Water Corporation has also committed \$4 million towards the improvement of water quality within Alexandra Canal, one of the most polluted tributaries of the Cooks River.