

Evaluation of the Stormwater Management Planning Process

August 2001

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This report presents an evaluation of the stormwater management planning component of the Urban Stormwater Program and recommendations for the future of the program. This evaluation was conducted by Rebekah Brown and Roberta Ryan of the University of New South Wales. The findings and interpretations contained in this report are based on extensive research that involved all key players in the urban stormwater management planning process.

Published by:

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ISBN 0 7313 2790 X
EPA 2001/68

Printed on recycled paper

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Executive Summary

This report presents the evaluation of the planning component of the Urban Stormwater Program, conducted on behalf of the EPA by Rebekah Brown and Roberta Ryan from the University of NSW and Ark Partners. This independent evaluation incorporates views expressed by officers of greater metropolitan and regional councils, State agency participants, consultants involved in the planning process and the community.

Targeted Outcomes

Three broad outcomes have been targeted through the implementation of the planning component of the Urban Stormwater Program.

1. Building the Capacity of Council Officers to Manage Stormwater Effectively

The primary concern of this expected outcome is to develop and improve council officers' knowledge of effective urban stormwater management and their skills and commitment in dealing stormwater issues. In particular, the program aims to improve these officers' understanding of and expertise in at-source and preventive management strategies. Improvement of the officers' abilities to communicate stormwater issues and management options to the wider community is seen as a key element in this process.

2. Building the Capacity of Council Organisations to Effectively Manage and Implement Urban Stormwater Strategies

The primary concern of this expected outcome is to improve the organisational capabilities of councils, including encouraging councils to review their 'in-house' activities and use at-source and preventive strategies for effective urban stormwater management. The program is also concerned with encouraging councils to use a 'whole-of-council' approach that will raise the profile of urban stormwater within councils and integrate the management process across council departments. Increased council commitment to the implementation process through increased expenditure on stormwater management and infrastructure is seen as a key element that will build the capacity of councils to manage stormwater.

3. Building Relationships Among all Stormwater Managers and Stakeholders Within the Catchment for Effective Coordination and Implementation of Urban Stormwater Management

The primary concern of this expected outcome is to improve relationships and develop effective partnerships among stormwater managers and other community stakeholders within the catchment. A key aim is to engender community ownership of the planning process. The encouragement of joint project development and spending between stormwater managers on a catchment basis is seen as a key element in achieving this outcome.

Strategies Presented

This evaluation has rigorously investigated the expected outcomes by a variety of methods, including interviews, focus groups, workshops, written surveys and organisational case studies.

Presented in this evaluation report are strategies:

- to improve the integration of the existing stormwater plans within councils and catchments
- to develop sustainable collaboration among all stormwater managers and catchment stakeholders.

Key Findings

Successes

This program has been particularly successful in building the skill and competence of individual council officers, in both greater metropolitan and regional councils, for more effective urban stormwater management. The program has resulted in the following successes:

In Greater Metropolitan Councils

- Most of the 40 catchment-based urban stormwater plans that were prepared collaboratively within the catchment by over 50 councils have been approved.
- Most of the urban stormwater management plans have been formally incorporated into council management plans. Also, over half of the councils surveyed have started to implement their stormwater plans.
- Approximately two-thirds of councils are either currently implementing or proposing to implement joint projects with other stormwater managers, including other councils, State agencies and community groups in the catchment. Of particular note, these projects are predominately source-reduction and community-education projects.

In Regional Councils

- Forty-six regional councils have prepared urban stormwater management plans. While a number of the councils are awaiting reviews of their draft plans, they are clearly demonstrating a strong interest in getting feedback on the quality of their plans.
- Approximately half of the urban stormwater management plans have been formally incorporated into council management plans. Also, half of the councils surveyed have reported that they have started to implement their stormwater plans.
- A small number of councils have reported that they are either currently implementing or are proposing to implement joint projects with other State agency stormwater managers and/or the community.

The next stage of the planning process needs to build on these gains by significantly improving the capacity of organisations and stakeholders to manage urban stormwater. The following issues have emerged from the program implementation:

Issues

Council Officer Issues

- In both the surveys and interviews, officers identified a clear need for information about the effectiveness of non-structural solutions to stormwater management. This can be addressed in any future program by conducting benchmarking and best-practice research of the broad range of non-structural solutions that have been implemented and funded by the Stormwater Trust grants.
- The officer expertise base for working with communities needs to be broadened, and officers with community-based skills need to take part in the planning process. This can be achieved by the participation of community services sections of councils in the planning process. It can also be achieved if council officers generally improve their understanding of the nature of the community and how to build the community's capacity to participate in future stormwater planning. This can be addressed in the future program by providing incentives for officers in all departments of councils to get involved, and by councils conducting social research on their communities.
- A key recommendation of this evaluation is that the program should focus on maintaining and harnessing the officer expertise that has been developed. The future program should focus on approaches that facilitate the integration of these skills and knowledge into the horizontal and vertical structures of council organisations.

Organisational Issues

- A majority of the plans have been formally incorporated into council management plans and have started to be implemented. However, this implementation is largely limited to projects funded by the Stormwater Trust Grants Scheme and activities that were already in place before the EPA's issuing of the Section 12 Direction requiring the plans. Lack of council resources for plan implementation was a strong and consistent theme throughout the evaluation.
- The planning process, and current activities related to stormwater, is currently dominated by the engineering and environmental science disciplines. To enhance at-source pollution control activities and coordination processes, a more trans-disciplinary and whole-of-council approach to stormwater management would be beneficial. A range of incentives could be developed to involve other disciplines and other council departments in the planning process.
- There are currently organisational obstacles to transferring council officer's stormwater management capacity into their organisations. The future program design can be specifically targeted to enable integration of urban stormwater management roles and responsibilities within both the vertical and horizontal structures of local government.

Catchment-based Issues

- At present the catchment-based capacity for stormwater management is directly built through the operation of catchment steering committees. Since a significant majority of councils' stormwater plans have been finalised (in the greater metropolitan area, where plans are catchment-based), there is a limited need for these committees to continue. Consequently, most are no longer operating.
- Attempts to engage the community in the planning process were mostly very unsuccessful across both greater metropolitan and regional councils. Therefore, the planning process did not reflect community values or demonstrate community ownership of the process. This has hampered the quality and potential effectiveness of the plans that have been produced.

Program Design Issues

- The focus of the program on urban stormwater quality was largely reported as too narrow. The general opinion was that it needed to be integrated with considerations of both stormwater quantity, stormwater runoff from non-urban areas and other environmental planning processes imposed on councils by the State Government. In particular, regional councils believed that the program design did not directly address the water quality needs of their catchments.
- Council officers highly valued the individual members of the EPA Stormwater Team that administered the program. However they believed their potential was not realised because of the lack of resources allocated to the team for effective program facilitation and administration.

Key Recommendations

Future Revision of the Plans

We recommend that:

- the greater metropolitan urban stormwater management plans be formally reviewed through a mechanism such as a Section 12 Direction in mid 2002. We also recommend that the EPA takes appropriate action to help councils incorporate this direction in council management planning processes early in 2002, to ensure adequate resources and time are made available in councils' budgetary processes for such work.
- consideration should first be given to the design and scope of the program for regional councils before any such direction is imposed. The future direction may include work beyond a revision of the plan. If the decision is made to impose a direction on regional councils, we recommend that it be delivered in mid 2004. We also recommend that the Stormwater Trust takes appropriate action to help councils incorporate this direction in their management planning processes early in 2004, to ensure adequate resources and time are made available in councils' budgetary processes for such work.

Auditing the Implementation of Plans

We do not recommend that an immediate audit of stormwater plan implementation should be conducted. We recommend that the following two interim auditing measures should be implemented first to inform this decision:

- The Stormwater Trust should conduct an audit of each council's existing stormwater expenditure and each council's ability to implement its urban stormwater management plan.
- The Stormwater Trust should conduct an audit of the internal activities of councils to ensure that low-cost pollution control strategies are implemented.

Community Involvement in Stormwater Management

We recommend that:

- the lack of community consultation expertise at both State and local government levels should be recognised

- the Stormwater Trust should help local government to develop effective community engagement and stormwater management capacity-building strategies for each catchment. This work should be linked to and integrated into councils' community consultation obligations, as identified in the *Local Government Act 1993*.
- the Stormwater Trust should implement and collaborate with program incentives to encourage both community services and planning sections of councils to manage urban stormwater effectively
- future program funds should be made available to local government to build the community's capacity on the issue of urban stormwater quality management.

Improved Program Guidance and Facilitation

We recommend the following steps for the future planning program:

- Benchmarking and best-practice research should be undertaken on the first round of stormwater planning undertaken by local government.
- A contact forum should be set up for all council officers involved in the planning process. Detailed guidance should be provided by the EPA on the catchment coordination processes necessary for preparing the plans.

Are Institutional Changes Required?

We recommend that:

- a dedicated external ongoing funding model be investigated for stormwater management in the future
- incentive structures be set up to restore or maintain the momentum of the catchment steering committees
- coordinator positions for each of the greater metropolitan catchments be established and the potential roles of the recently established Catchment Management Boards be investigated
- the role of external consultants in preparing future plans be restricted as much as practicably possible to maximise the benefits of the process to councils and stormwater management organisations.

The Future Role of the Stormwater Trust

We recommend that:

- in future planning processes the Stormwater Trust should be more appropriately resourced to provide extension workers during the planning process. The primary aim of having these extension officers would be to more effectively engage council organisations in the implementation and revision of the stormwater management plans.
- the Stormwater Trust collaborate further with the Department of Local Government, Local Government and Shires Associations, Regional Waste Boards, Regional Organisation of Councils and other forums to improve State Government coordination of stormwater management
- the Stormwater Trust devise strategies for improving support for the program among elected representatives in local government.

1. Introduction

1.1 Overview

In April 1998, as part of the NSW Government's Urban Stormwater Program (USP), the EPA issued legal Directions requiring local councils to prepare stormwater management plans for urban areas.

This report presents an evaluation of the stormwater management planning component of the USP and makes recommendations for the future of the program. The findings and interpretations contained in this report are based on extensive research that involved all key players in the urban stormwater management planning process.

All council officers who participated in the evaluation were assured confidentiality and anonymity with regard to their responses. Nowhere in this report can responses be attributed to a particular officer or council.

This project used a combination of four evaluation methodologies as the primary sources of information. These were:

- **Process evaluation.** This broadly addresses the process experiences of council in preparing the urban stormwater management plans and the policy and legislative framework for planning.
- **Outcome evaluation.** This directly addresses how well the program achieved its planned outcomes, using comparative measures.
- **Program design evaluation.** This specifically deals with the logic of the planning rationale and methodology, and the program delivery.
- **Needs-basis evaluation.** This addresses the issue of the stormwater planning needs of local government by focusing on the current context and the future needs of the USP. Therefore the future form and the 'if, where and how' questions of the program can be re-oriented to meet future needs of urban stormwater planning.

1.2 Urban Stormwater Management in NSW

By the late 1960s and early 1970s, significant water pollution problems were being experienced in urban rivers across NSW. To address these and other issues the government at the time set up the State Pollution Control Commission (the predecessor of the NSW EPA). The Clean Waters Act was gazetted in 1970 to directly address major point sources of pollution, particularly those coming from industry.

By the late 1980s industry had gradually improved its environmental performance, but other sources of pollution, such as diffuse stormwater run-off, had become much more significant in terms of their impact on the health of urban waterways. The traditional regulatory approach employed by the Clean Waters Act had worked very effectively for point sources of pollution. However, these simple regulatory techniques were less applicable to the management of diffuse sources of pollution because of the different levels of complexity in how this pollution is generated and potentially managed.

From the mid 1990s, local council organisations began to adopt end-of-pipe stormwater pollution control technologies, such as gross pollutant traps. However, it was quickly recognised that this approach was applied inconsistently among councils and was not particularly well understood.

In response to this lack of an appropriate management response, the Stormwater Trust proposed to develop innovative methodologies in collaboration with all stormwater managers, combining both education and planning for stormwater management. This was the origin of the planning component of the Urban Stormwater Program (USP).

1.3 The Urban Stormwater Program

The Stormwater Trust's objective is to encourage and support improved urban stormwater quality management practices to improve the condition of the State's urban waterways. The Urban Stormwater Program forms part of the charter of the NSW Stormwater Trust.

The USP integrates education, regulation and market policy models operating over three years, from 1998 to 2001. The USP includes:

- **Education.** A variety of tools, including mass media campaigns, schools education and public relations – working with councils, industry and businesses, non-English-speaking communities and the public (\$4 million allocated).
- **Planning.** A legal requirement for local councils to prepare catchment-based urban stormwater management plans that identify future works and processes needed for improving the quality of urban stormwater (\$4 million allocated).
- **Stormwater grants.** A State-Government-funded, merit-based scheme using economic incentives for local councils to propose innovative solutions to improve the health of urban waterways throughout NSW (\$51 million allocated).

1.4 The Planning Component

The EPA Stormwater Team administers the planning component of the USP on behalf of the Stormwater Trust. A staged approach to the preparation of the stormwater management plans has been adopted. The 53 councils in the Greater Metropolitan Region were required to prepare collaboratively 40 catchment-based plans over 12 months within their respective catchments. The 46 councils located in regional urban centres (with urban populations greater than 10,000) and the 60 smaller rural councils are required to prepare plans for urban areas within their local government areas over a two- or three-year planning time frame, respectively.

The EPA issued a Direction under Section 12 of the *Protection of the Environment Administration Act 1991* to require local councils to prepare plans. All State Government agencies and trading enterprises with stormwater or land management responsibilities were to cooperate with councils in the preparation of the plans. Notices were issued to the Sydney and Hunter Water Corporations and the Roads and Traffic Authority requiring them to participate in the preparation of the plans, in accordance with their stormwater management responsibilities.

2. Program Evaluation and Expected Outcomes

2.1 The Purpose of Stormwater Planning

The primary goal of the stormwater management plan is ‘to facilitate the coordinated management of stormwater within a catchment to maximise ecological sustainability and the social and economic benefits of sound stormwater management practices (*Managing Urban Stormwater: Council Handbook*, EPA 1997, p. 4).

A stormwater management plan is a document that provides the direction for stormwater management within a catchment or sub-catchment. The plan is to:

- identify the existing and future values of the catchment
- derive stormwater management objectives to protect these values
- identify problems and issues that may compromise these objectives
- give details of a suite of non-structural and structural management practices to address the problems and issues that have been agreed on by all stormwater managers within a catchment.

Dimensions important to the plan are listed in the council handbook as:

- encourage community involvement in stormwater management
- encourage the preservation of valuable existing elements of the water environment
- maximise the control of stormwater run-off at the source
- identify and prioritise an appropriate mix of cost-effective stormwater management practices to suit the particular requirements of a catchment
- link to the council management planning processes, as specified in the Local Government Act
- incorporate monitoring procedures to allow for feedback and improvement of the plan.

For more information about the specific process elements of preparing a stormwater plan, refer to *Managing Urban Stormwater: Council Handbook* (EPA 1997) and the EPA stormwater website (www.epa.nsw.gov.au/stormwater).

2.2 Identification of Expected Outcomes from the Planning Process

It is important to emphasise that the program objectives and performance measures for the planning component of the USP were not available in the guidance materials provided by the EPA.

A significant task of this evaluation has included the process of identifying and agreeing on the key expected outcomes of the planning component of the USP. As a consequence, this evaluation is constrained from making specific quantitative measures of outcomes, as there were

no performance measures in the program’s initial design. The evaluation relies on retrospective information from the key players in the program, without the advantage of comparing this with established baseline measures. However, this does not limit the rigor or quality of this evaluation. The evaluators have built in a range of techniques to assure the validity of the evaluation and to draw out and analyse any reported inconsistencies.

To establish the expected outcomes of the planning component, five individual interviews were conducted with key Stormwater Trust staff. These in-depth interviews were followed by continual informal questioning of these staff members to refine and confirm the expected outcomes throughout the evaluation. All council officers interviewed and surveyed were also questioned about what they thought the purpose and expected outcomes of the planning process were. There was a reasonably common understanding of the expected outcomes between the Stormwater Trust staff and the greater metropolitan council officers. This understanding was not as closely aligned with that of the regional council officers, for the possible reasons outlined in section 2.3.

Capacity-building Themes

As a result of this investigation, the evaluators categorised the expected outcomes into three capacity-building themes:

- building the capacity of council officers to manage stormwater effectively
- building the organisational capacity of councils for effective urban stormwater management expertise, ownership and implementation
- building catchment-based capacity and relationships among all stormwater stakeholders within the catchment for effective urban stormwater management coordination and ownership, and ultimately for the improved health of urban waterways.

Figure 1 Hierarchy of expected program outcomes

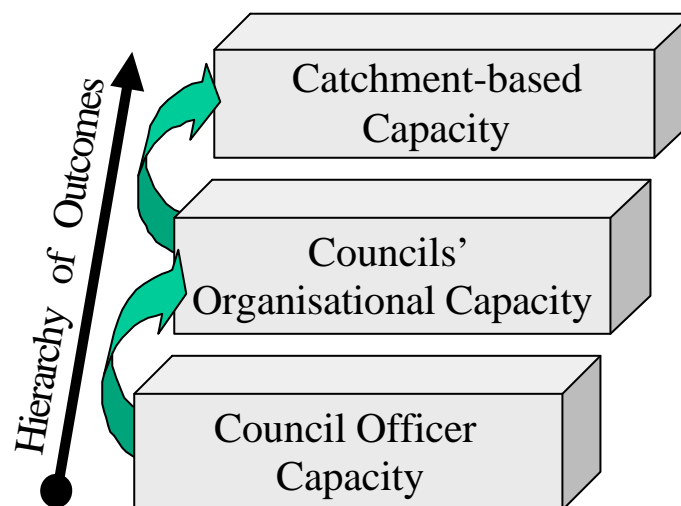


Figure 1 depicts the three expected outcome themes. The evaluators have conceived these expected outcome themes as a hierarchy. This hierarchy reflects the breadth of influence the planning process must achieve to accomplish the expected outcomes successfully. Council officer ‘capacity’ refers to the suite of skills and knowledge that officers require to both prepare

and implement the planning process. This capacity development requires the least breadth of program influence, so it is shown on the first level of the hierarchy.

Council organisational capacity is higher in the hierarchy, as this expected outcome relies on the council officer working as an agent for the program and directly integrating the effective management of urban stormwater across both the vertical and horizontal structures of the organisation. This capacity also includes applying the developed organisational skill and knowledge to 'on-the-ground' changes in management efforts and activities.

Catchment-based capacity is highest in the expected outcome hierarchy. It relies on both the officers' and the council's capacity to interdependently establish effective relationships and coordination between all stormwater managers and the community. The aim of this developed capacity is ultimately to produce management efforts that improve the quality of urban stormwater within the catchment.

Part of this evaluation has included the identification, where possible, of the conditions that have contributed to the achievement of these outcomes. Important questions addressed in the evaluation were:

- What are the conditions that translate building officer capacity into council organisational capacity?
- What conditions lead to the development of catchment-based capacity for the improved health of urban waterways?

Expected Outcomes

The expected outcomes of the USP planning component are summarised below.

Building Council Officers' Capacity

- improve officers' stormwater knowledge of the catchment
- develop officers' skills and commitment to integrated urban stormwater management planning
- improve officers' expertise with 'at-source' and preventive solutions
- improve officers' ability to communicate stormwater issues and options to the community and council
- improve officers' ability to work cooperatively with other stormwater managers in the catchment
- make officers able to identify the most appropriate management responses to stormwater issues.

Building Councils' Organisational Capacity

- improve the stormwater management capabilities of councils
- ensure that councils review and address their 'in-house' activities that potentially affect stormwater
- increase council use of source-control solutions for improving urban stormwater
- encourage councils to develop an appropriate mix of local actions to protect the health and amenity of urban waterways

- raise the awareness and profile of stormwater issues among the senior management of councils
- generate greater council ownership of stormwater issues
- integrate the management of stormwater across council departments and activities
- increase council expenditure on and financial commitments to stormwater management and infrastructure
- encourage councils to implement the cost-effective solutions identified in their plans.

Building Catchment-based Capacity

- improve coordination and relationships among stormwater managers within the catchment
- develop a partnership between State and local government for managing urban stormwater pollution
- involve the community in stormwater planning and management
- engender community ownership of the planning process
- encourage joint spending between stormwater managers on catchment-based projects.

2.3 Placing the Expected Outcomes in Context

The evaluation context differed between the greater metropolitan and regional councils. This clearly affected the capacity of these groups to participate in and inform this evaluation.

The greater metropolitan councils had the benefit of hindsight, as a significant majority of these councils prepared their final urban stormwater management plans in July 1999. These officers have experienced the stages that follow plan preparation and are knowledgeable about their plans' outcomes, including the organisational issues related to the implementation of the plans. Therefore, their reflections on the planning process and its impact on their councils' and their catchments' stormwater management capacities are more informed.

A number of the regional urban councils are still in the draft stages of preparing their final urban stormwater management plans. The majority of these officers reported submitting their plans for review to the Stormwater Trust in April 2000, and many are still waiting on feedback and approval. This situation has appeared to influence these officers, who generally gave more critical feedback about the planning process than did their greater metropolitan counterparts. The nature of this more critical feedback relates to the focus of the plans on urban areas only, a focus that forms only a small component of the water management strategies of regional councils. Many of the regional officers have expressed their belief that they are being required to implement a program that was designed for the needs of Sydney and the political priority of the Olympics, and not for rural NSW.

Therefore, regional council officers do not have the benefit of being able to reflect on the finalisation and initial implementation of these plans. This places limitations on the evaluation in terms of assessing the expected outcomes of council officer and council organisational capacity as a result of the planning process. The stormwater plan catchments in regional areas were not as complex as those in the Greater Metropolitan Region, because the stormwater planning unit was contained within each local government area. The individual council officer preparing the stormwater plan principally drove the regional catchment relationships. The

quality of the interaction between the officer and the State agency representatives, community organisations and the broader community is the primary measure of catchment capacity. Therefore, the expected outcome measures for catchment capacity are also not as detailed and specific as they are for the greater metropolitan councils.

3. Key Successes

The key successes of the USP planning component are categorised into the three key expected outcome themes, as described in Section 2.

3.1 Greater Metropolitan Councils

Council Officer Capacity

The development of capacity for urban stormwater management among greater metropolitan council officers who were responsible for preparing stormwater plans was the most successfully achieved expected outcome. The enthusiasm and motivation demonstrated by the officers throughout the evaluation is a strong indicator of the success of the program.

- Two-thirds of all the officers surveyed strongly agreed that their urban stormwater management skills had improved as a direct result of participating in the planning process.
- At least one-quarter of the officers that participated in the planning process have either been promoted or given more responsibility within their organisations or have left their councils and moved on to more demanding positions with either other councils, State agencies or private organisations.
- A majority of the officers strongly agreed that the Section 12 Directive was helpful to their work. (Thirty-two out of 38 officers reported this.)
- All officers interviewed demonstrated a concern and keenness for the planning process and plan implementation to proceed for their catchment and council. This is verified by the fact that officers reported that the most significant benefit of the planning process was the partnerships and personal relationships developed with officers from other councils within the catchment.
- Over 90% of the detailed written evaluation surveys sent to council officers who agreed to participate were returned. This indicates their commitment to informing the future of the USP. It is also a significant achievement, because the surveys were comprehensive and were reported to take between 2 and 3 hours to complete.
- All focus groups conducted with the officers proved highly successful. The focus groups were designed to run for up to 2 hours. However, because of the enthusiasm and knowledge of the officers, each group ran to a minimum of 3 hours.

Council Organisational Capacity

- A majority of the council officers surveyed strongly agreed that the profile of stormwater quality issues had improved within their councils because of the planning process. (Twenty-eight out of 38 officers reported this.) Also, the increased awareness of urban stormwater issues within councils was identified as the second most significant overall achievement of the Urban Stormwater Program.
- The majority of the urban stormwater management plans have been formally incorporated into council management plans. (Twenty-nine out of 36 council officers reported this.) Also, over half of the councils surveyed have started to implement their stormwater plans. (Twenty-two out of 38 council officers reported this.) Two-thirds of the councils surveyed

agreed that it is likely that there is sufficient commitment within their councils to implement all the activities and projects identified in their implementation strategies, subject to available funding. (Twenty-four out of 38 council officers reported this.)

- All of the council officers surveyed reported that source-reduction and education activities were prioritised as implementation activities in their urban stormwater management plans. Many of these officers said that the focus of the second- and third-round stormwater trust grants was influential in enhancing the status and/or funding of these types of implementation projects.
- Approximately one-third of the council officers reported that their councils had increased expenditure on urban stormwater management as a result of the planning process. This increase in expenditure has occurred as either changing council practices and/or an increase in officer time spent working with the stormwater plan. Approximately one-quarter of council officers surveyed believed that in the future it was likely that new positions would be created within their councils, with responsibilities for urban stormwater management. (Nine out of 38 officers reported this.)

Catchment-based Capacity

- The preparation and approval of the most of the catchment-based urban stormwater plans is a significant achievement of the program.
- Over 50 councils participated in the preparation of catchment-based urban stormwater management plans that required the establishment and coordination of 40 new catchment steering committees. These steering committees resulted from the program and directly resulted in extensive new working relationships for the council officers.
- The council officers identified the development of catchment-based relationships as the most significant overall achievement of the Urban Stormwater Program. Of particular note were the beneficial partnerships established with the officers working in other councils within the catchment.
- Approximately two-thirds of councils surveyed reported that they were either currently implementing or were proposing to implement joint projects with other stormwater managers, including other councils, State agencies and community groups in the catchment. (Twenty-four out of 37 officers reported this.) These projects are predominately source-reduction and community education projects.

3.2 Regional Councils

Council Officer Capacity

- Approximately two-thirds of all officers surveyed strongly agreed that their urban stormwater management skills had improved as a direct result of participating in the planning process. (Sixteen out of 25 officers reported this.)
- Just under half of the officers agreed that the Section 12 Direction was helpful to their work. (Twelve out of 25 officers reported this.)
- Over 65% of the detailed written evaluation surveys sent to council officers who agreed to participate in the survey were returned. This indicates that officers were committed to

supporting the future of the USP. This is also a significant achievement, because the surveys are comprehensive and were reported to have taken between 2 and 3 hours to complete.

- All interviews conducted with the officers were insightful, and constructive information was freely offered during the evaluation. The officers were keen to discuss their experiences and have their views represented to the EPA and the Stormwater Trust. These officers were also forthcoming with suggestions about the program and how it could be improved to better meet the needs of their councils. Almost all of the officers interviewed requested to be personally informed about the outcome of the evaluation.

Council Organisational Capacity

- Approximately half of the council officers surveyed agreed that the profile of stormwater quality issues had improved within their councils because of the planning process. (Twelve out of 25 officers reported this.)
- The development of the stormwater management planning strategy for councils was identified as the most significant overall achievement of the Urban Stormwater Program.
- Approximately half of the urban stormwater management plans were reported to have been formally incorporated into council management plans. (Twelve out of 24 council officers reported this.) Half of the councils surveyed reported that they had started to implement their stormwater plans. (Thirteen out of 23 council officers reported this). One-third of the councils surveyed agreed that, subject to funding, it was likely that there was sufficient commitment within their councils to implement all the activities and projects identified in their implementation strategies. (Eight out of 25 council officers reported this.)
- Almost all of the council officers surveyed reported that source-reduction and education activities were prioritised as implementation activities in their urban stormwater management plans. (Twenty-four out of 25 council officers reported this.) Many of these officers said that the focus of the second- and third-round Stormwater Trust grants and the lower cost of these types of solutions were influential in enhancing the status and/or the likely future funding of these types of projects.
- Approximately half of the council officers reported that they believed their councils would take action to address the implementation strategies. A small number of officers also reported that they believed it was likely that new positions involving urban stormwater management would be created within their councils. (Three out of 25 council officers reported this.)

Catchment-based Capacity

- The preparation of urban stormwater management plans by all regional councils is a significant achievement of the program. While a number of the councils are awaiting reviews of their draft plans, they are clearly demonstrating a strong interest in getting feedback on the quality of their councils' plans.
- A smaller number of the councils surveyed reported that they were either currently implementing or were proposing to implement joint projects with other State agency stormwater managers and/or the community. (Five out of 25 officers reported this.)

4. Council Officer Capacity for Effective Stormwater Management Planning

4.1 Expected Outcomes

Improving the overall stormwater management expertise of council officers, including their abilities to formulate and implement stormwater plans, was one of the three key expected outcomes of the program. The program designers recognised that building the individual skills and competence of council officers was a key part of improving their capacity to manage urban stormwater quality effectively. The expected outcomes in the program design for council officer capacity-building are listed below in Box 1.

Box 1: Improving Officers' Management Expertise in Planning and Plan Implementation

Expected Outcomes

- improve the officers' stormwater knowledge of the catchment
- develop officers' skills in, and commitment to, integrated urban stormwater management planning
- improve the officers' expertise with at-source and preventive action solutions
- ensure that officers are able to communicate stormwater issues and options to the community and council
- ensure that officers can work cooperatively with other stormwater managers in the catchment
- develop officers' skills in identifying the most appropriate responses to stormwater management issues

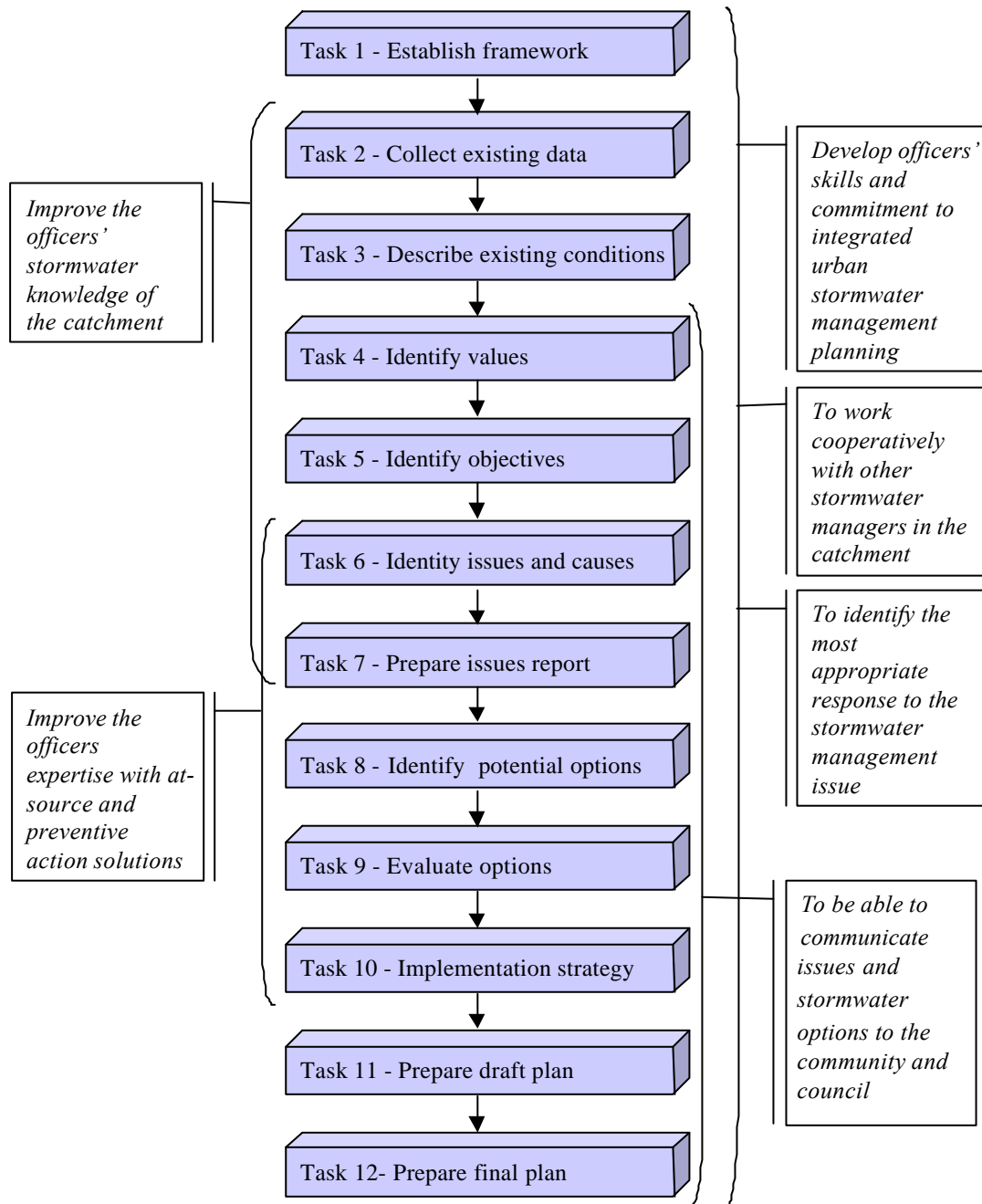
Figure 2 depicts the 12-step planning methodology applied by council officers while preparing urban stormwater management plans. Depicted is the link between each expected outcome, as identified in Text Box 1 above, and the program logic of how each expected outcome is to be achieved through applying the 12-step planning process.

4.2 Current Position

The program has been successful in building the knowledge, skill and enthusiasm of individual officers who participated in preparing the urban stormwater plans. Approximately one-quarter of these officers have since been promoted to more senior positions, either in other

organisations or within the councils. While high staff movement has left some councils without this expertise, the knowledge, enthusiasm and skill has been transferred elsewhere.

Figure 2 The 12-step plan preparation methodology and corresponding expected program outcomes



The principal task these officers undertook while conducting the planning process was the coordination and preparation of urban stormwater management plans. For a significant majority of both greater metropolitan and regional council officers, this work was undertaken in conjunction with consultants.

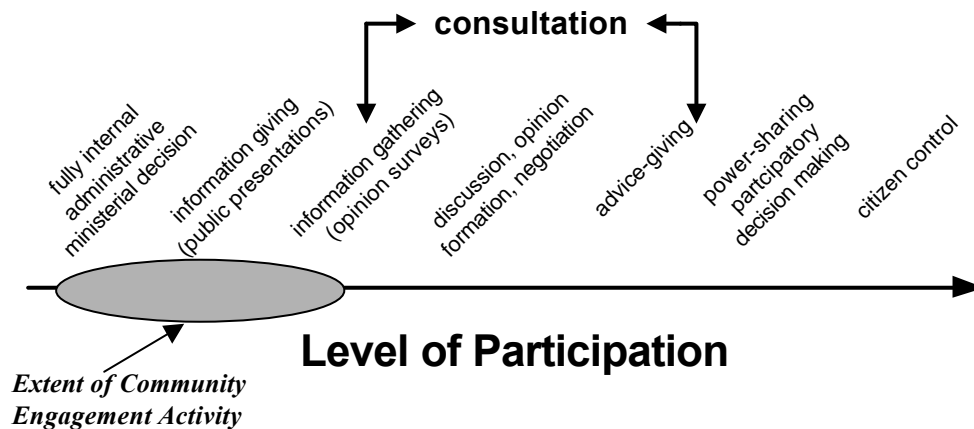
The majority of officers from across NSW who participated in this evaluation reported that their stormwater knowledge of their respective catchments had improved. However, many officers further reported that there was still much to learn about the 'science of urban stormwater quality

impacts’ and about the principal causes and impacts of poor stormwater quality. The evaluation evidence demonstrates that these officers do not have sufficient knowledge of the social profiles and activities within their catchment and local government areas. This is a significant deficiency in their broader stormwater knowledge.

Almost every officer surveyed across NSW reported that they included at-source and preventive action solutions in their councils’ implementation strategies. However, it was perceived during the evaluation that many officers placed little value on the potential effectiveness of these types of strategies. A significant majority of these source-control strategies were proposed by engineers and environmental scientists, and many of these officers reported that they either ‘guessed’ or somehow ‘worked out’ how to devise and budget for the implementation of these strategies.

Overall, the officers were highly unsuccessful in communicating with and engaging the community on stormwater issues and the planning process. However, a majority of the officers were disappointed in the outcomes of their attempts to consult with the community. However, despite this poor outcome, the same majority of officers have said they believe that community consultation is an essential element of the planning process. The techniques used to engage the community were unsophisticated and were mainly in the form of highly ineffective public meetings. As Figure 3 demonstrates, a limited approach was attempted for community engagement in the planning process. This reflects both lack of officer expertise and the officers’ disciplinary backgrounds.

Figure 3 Extent of community engagement expertise exercised in the planning process (modified source: Scales 1997)



A majority of greater metropolitan officers reported that working cooperatively with the officers from other councils within the catchment was the most beneficial achievement of the program. This message was strongly reinforced during the focus groups convened during the evaluation. Many positive relationships have developed as a direct result of the planning component of the USP. However, many of the officers generally reported that they did not have the opportunity to work cooperatively with the State agency representatives in their catchments, owing to high levels of staff turnover and other organisational priorities in these agencies. For the councils that already had established relationships with catchment management committees and bush care groups, the cooperation and planning process interaction worked well.

4.3 Improving Officers' Expertise

In both the surveys and interviews the officers identified a clear need for information about the effectiveness of non-structural solutions. This can be addressed in the future program by conducting benchmarking and best-practice research of the broad range of non-structural solutions that have been implemented and funded by the Stormwater Trust grants.

There is a clear need for these officers to start working with the community services section of their councils and to broaden their expertise base for working with communities in future planning processes. Councils need more expertise in understanding the nature of the community and how to build the community's capacity for future planning. This can also be addressed in the future program by providing incentive measures for officers in other departments of councils to get involved in future planning, project design and implementation work.

A key recommendation of this evaluation is that the program should focus on maintaining and harnessing the expertise that has already been developed. The future program should focus on approaches that facilitate the integration of this skill and knowledge into the horizontal and vertical structures of the council organisation.

5. Council Organisational Capacity for Effective Urban Stormwater Management

5.1 Expected Program Outcomes

The building of effective urban stormwater management capacity within council organisations is a key target of the implementation of the planning component of the USP. The expected program outcomes related to council organisational capacity are listed in Box 2.

Box 2: Building Council Organisational Capacity to Manage of Urban Stormwater Quality

Expected Outcomes

Organisational capabilities

- improve the stormwater management capabilities of councils
- enable councils to review and address the 'in-house' activities that potentially affect stormwater
- increase council use of source-control solutions for improving urban stormwater
- encourage councils to develop an appropriate mix of local actions to protect the health and amenity of urban waterways

Whole-of-council approach

- raise the awareness and profile of stormwater issues with the senior management of councils
- generate greater council ownership of stormwater issues
- integrate the management of stormwater across council departments and activities

Commitment to implementation

- increase council expenditure on, and financial commitments to, stormwater management and infrastructure
- encourage councils to implement the cost-effective solutions identified in their plans

5.2 Current Position

Organisational Capabilities

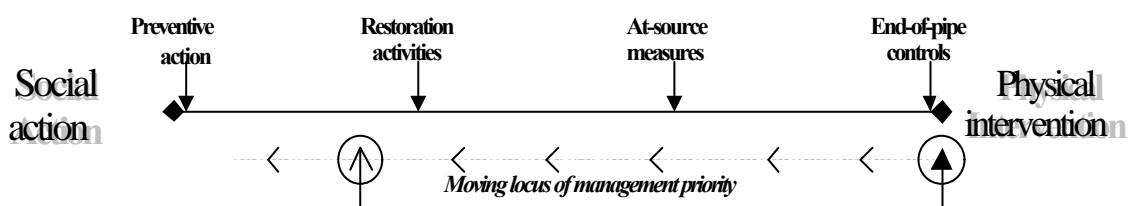
Before the USP commenced, the existing capabilities for stormwater management varied significantly across council organisations. It is difficult to make specific claims about the level of improvement of councils’ stormwater management capabilities without due regard to their previous experience and expertise in the area.

A clear organisational resource that strengthens councils’ capabilities is the urban stormwater management plan that each individual council now owns. The plans include detailed information about specific stormwater issues in the urban catchment and a prioritised implementation schedule to address these issues. The regional councils reported that the development of the urban stormwater management plans was the most beneficial outcome of the USP.

Prior to the USP, a small number of councils were setting up stormwater pollution control infrastructure and, to a lesser extent, installing artificial wetlands and ponds for stormwater pollution control. This dominant focus on end-of-pipe controls reflects the concept of best-practice stormwater management before the commencement of the USP.

Since the USP began, a significant majority of greater metropolitan and regional councils have reported that their stormwater management priorities are shifting from solely end-of-pipe solutions towards preventive actions and source-reduction solutions such as education, as depicted in Figure 4. However, the evaluation evidence indicates that this shift in management priority is not directly due to the planning process, but rather the source-reduction and integrated focus of the second- and third-round Stormwater Trust grants. This is also validated by a very small number of councils that reported that their focus is now even more on end-of-pipe, because they were awarded first-round Stormwater Trust grants for end-of-pipe structural works.

Figure 4 Transition in the urban stormwater management priorities of councils



All councils reported that their stormwater plans propose community education strategies and other similar non-structural actions to reduce the generation of stormwater pollution at the source. While this is a significant achievement, these proposed activities and interventions have been underdeveloped and inadequately budgeted for. Effective implementation will therefore be difficult. The expertise and skill base used to develop the projects was limited owing to the lack of broader organisational participation in the planning process. This issue is discussed in the following section.

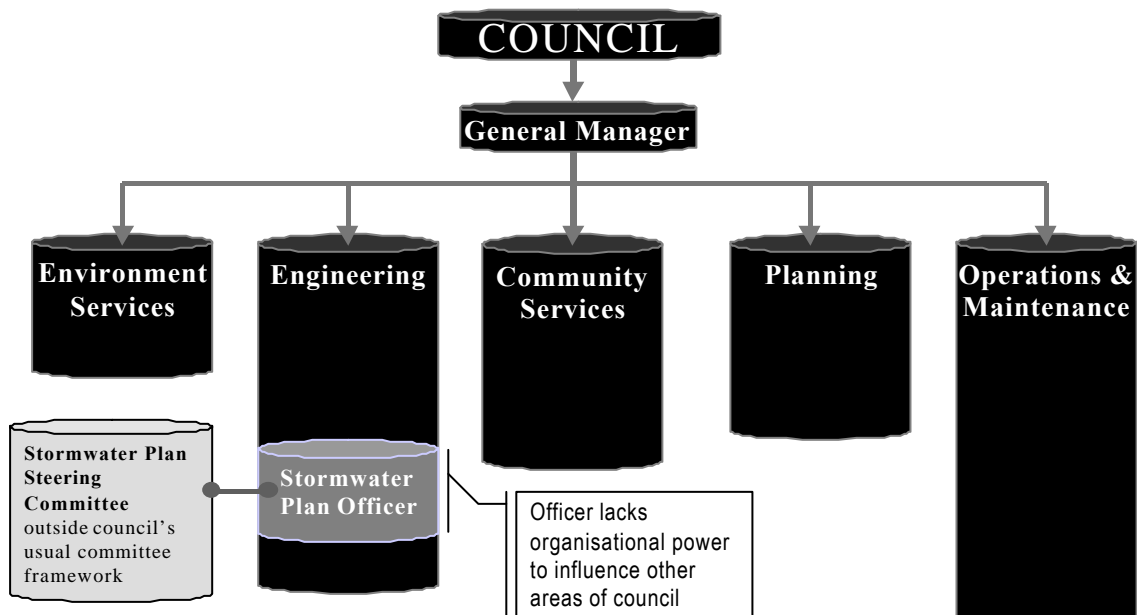
Whole-of-council Approach

To effectively achieve the expected outcomes of the program, officers need access to information and the participation of other council departments in the planning process. A whole-of-council approach to manage urban stormwater effectively requires that roles and responsibilities be integrated across the horizontal and vertical structures of council. This integration is required because the whole range of existing council activities affects the management of stormwater quality. Critical to this is the commitment of councils' senior executives and elected representatives.

Even though a majority of councils reported a significant increase in the profile and awareness of stormwater issues within their councils, this does not reflect a broader organisational interaction or engagement with the planning process. Achieving interdepartmental participation proved difficult for councils during the planning process. This is attributed to the current structure of councils, by which their functions are divided into organisational silos, as illustrated in Figure 5. These departmental structures are not sympathetic to an integrated, whole-of-council planning approach for urban stormwater management.

Responsibility for a council's preparation of urban stormwater management plans was often delegated to a single staff member at the officer level. The planning process involved predominantly one or two areas within councils, usually the works or engineering department or the environmental services section of council. A majority of the council officers reported that they either had limited contact with another officer in one other department, or they worked solely on their own within the council. The small number of officers who reported contact with more than one other department specified that this contact was predominately restricted to receiving comments on the draft urban stormwater management plan. Therefore, the pool of skills involved in preparing the plan was primarily limited to the physical sciences – predominately engineering and then environmental science.

Figure 5 Impact of a model council departmental structure



As the officers lacked organisational power, they struggled to work across departments and to generate interdepartmental involvement or commitment. This affected the success of the planning process. Some officers found that proposing solutions for other departments put them 'in conflict with other officers in council'. It was reported that before finalising the stormwater plans, some council departmental directors refused to agree to proposed management actions that were identified as their department's responsibility. This was because 'it was not part of their performance measures' and they did not consider stormwater management as part of their responsibility or role.

There is still a distinct lack of specifically identified roles and responsibilities for urban stormwater management across council. The major reason reported for this is that 'urban stormwater quality is not considered core council business' (identified as roads, rates and rubbish) and sometimes is seen by council senior executives as 'only a State Government responsibility'. Stormwater management activities 'can be integrated with every part of council including strategic planning, engineering, accounts and child care, yet it is difficult to identify a lead role for any one department'. Responsibility for urban stormwater management needs to be integrated within councils' broader management planning and budgetary processes. This is discussed in the next section.

Commitment to Implementation

The majority of councils in the greater metropolitan region have reported that they have started to implement their urban stormwater management plans. However, the implementation is a small portion of the overall plan and primarily relates to work where either a Stormwater Trust grant has been awarded or to improving areas of existing council work related to stormwater quality management. The council officers have reported significant uncertainty surrounding plan implementation. The reasons most often given for this are a lack of dedicated sources of funding and the lack of senior executive and elected representative support for the implementation process.

A significant majority of greater metropolitan councils and a small number of the regional councils have incorporated their stormwater plans into their council management plans. However, incorporation into a council management plan alone is not sufficient to ensure the achievement of expected program outcomes. The following quotes typify the concerns expressed by council officers on this issue:

If you don't put the stormwater plan into council's budgetary process, it just won't happen.

For my council putting the stormwater plan in the management plan means that council supports its philosophy or its underlying principles – but it still won't get funded.

Council's management plan is like a vision – our council agrees to put anything on it. We have over \$70 million worth of work in it, but only a minute amount will get funded. It is all about council's priorities.

Our management plan is a joke. If we wanted to fly to the moon next year that would go in the plan – but it wouldn't get funded.

For councils to increase or refocus their expenditure on urban stormwater management, not only must stormwater plans be incorporated in the council management plans, but also it is essential that action strategies be incorporated into budgetary processes via councils' departmental business plans. This will ensure that responsibility for the actions identified in the stormwater plan will become part of departmental directors' performance measures.

To ensure council commitment to integrating the stormwater plan into council budgetary processes, both council resources and political will are necessary. The most significant impediment identified by both greater metropolitan and regional councils was 'lack of available

funds in a very tight budget' for implementation. Officers reported that elected representatives and the senior executive of councils were not willing to set objectives or outcomes that they could not be sure they could achieve, as this would ultimately affect their own performance assessments.

Summary

The level of existing knowledge about stormwater management and council practices that affect stormwater management within councils was generally low at the start of the process. Some officers reported that they still did not know what the other parts of council did that affected urban stormwater quality.

The existing departmental structures of local government are divided into organisational silos, dominated by function. These structures are not sympathetic to an integrated, whole-of-council approach to urban stormwater management.

The dominance of engineering departments conducting the planning process promoted a focus on structural solutions. It also prohibited integration and effective community consultation.

The current performance management environment for council senior managers does not include stormwater management. This reduces the likelihood of these activities becoming a priority of local councils.

Getting organisational commitment to implement the stormwater plans was viewed by many officers as one of the most difficult parts of the planning process.

The interest of councillors in the planning process was very limited unless stormwater was a high-profile local issue.

5.3 Improving Organisational Capacity

Integration of USP across council areas will ensure more effective preventive actions (vertical and horizontal integration). Inter-departmental cooperation will enhance the trans-disciplinary approach (horizontal integration). Improved commitment by senior officers and councillors will promote budget allocations and consequently activities needed to improve water quality (vertical integration).

Further significant gains can be made in the second phase of the program. The planning process has raised the awareness and profile of urban stormwater for councils, but further work is needed to manage this area of work across the vertical and horizontal dimensions of the organisation.

Some proposed solutions are:

- Provide incentives that will generate local political support for urban stormwater management at the local government level.
- Provide a mix of incentive structures for integrating the plan into councils' budgetary and management planning process.
- Formalise the role and responsibility of urban stormwater management across council departments, perhaps instigating programs that specifically address the community services and operations sections.
- Benchmark best practice and provide feedback to officers on the first round of the planning process.

- Concentrate on strategies for transferring the new-found knowledge and skill of individual officers into the organisation.

6. Catchment-based Capacity for Urban Stormwater Management

6.1 Expected Outcomes

The development of effective collaboration and relationships among all stormwater managers and stakeholders within the catchment through the implementation of the planning component is a key target of the USP. The stormwater managers and stakeholders within the catchment include councils, State agencies, industry, community organisations and catchment residents. The expected program outcomes for building effective catchment-based relationships are listed in Box 3.

Box 3: Catchment-Based Capacity Building for the Management of Urban Stormwater Quality

Expected Outcomes

Relationships between Stormwater Managers

- improve the coordination and relations between stormwater managers within the catchment
- develop a partnership between State and local government for managing urban stormwater pollution

Relationships with the Community

- involve the community in stormwater planning and management
- engender community ownership of the planning process

Joint Projects and Financial Commitment

- encourage joint spending between stormwater managers on catchment-based projects

6.2 Overview of Typical Catchment Relationships

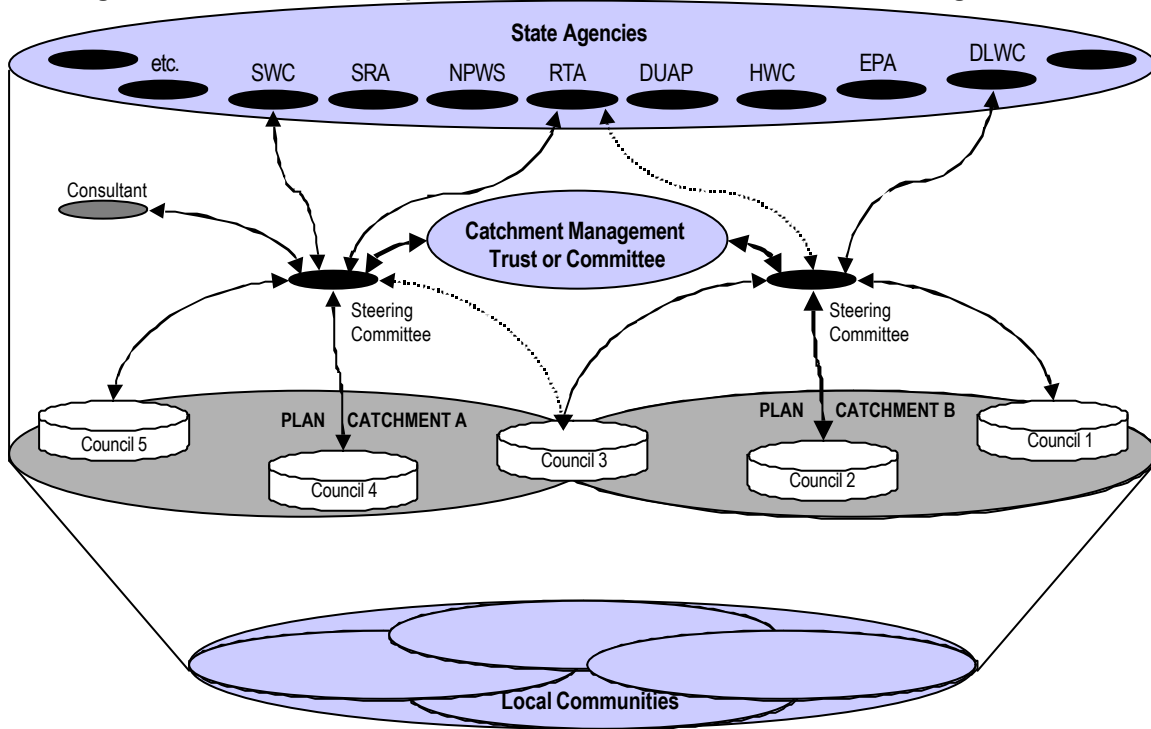
Relationships between stormwater managers were principally driven by the formation of catchment steering committees for preparation of the plans. Ideally these committees would include representatives from all stormwater-managing organisations and stakeholders in the catchment, such as all councils in the catchments (for the greater metropolitan region), State

agencies, the catchment management committee or Trust, industry and businesses, community interests groups and residents.

The complexity of the steering committee relationships is significantly higher for the greater metropolitan councils. A majority of the greater metropolitan councils worked in two or more catchments, whereas for the regional councils the catchment was the urban area located within the council's local government boundary area. This is because the greater metropolitan councils' political boundaries and the communities' social boundaries are not aligned with the natural catchment boundaries.

To aid understanding of the relationships within the catchments in the greater metropolitan regions, Figure 6 schematically illustrates the inter-catchment complexity between only two example catchments (Catchment A and Catchment B). Each catchment has its own steering committee, with council and State agency representatives. Council 3 is located across both Catchment A and Catchment B and therefore must negotiate both the issues within the two catchments and council's priorities on both steering committees. If the catchment is located within a Catchment Management Trust (CMT) they participate in the steering committee, otherwise it would be a representative from the local catchment management committee.

Figure 6 Relationships Affecting the Urban Stormwater Planning Process



6.3 Current Position: Relationships Between Stormwater Managers

The evaluation evidence clearly demonstrates that there has been an initial establishment of new catchment-based relationships and the enhancement of existing relationships between stormwater managers within both the greater metropolitan and regional council catchments. These relationships were valued more by the greater metropolitan council officers (where plans

were prepared jointly), with the officers reporting that the relationships were the greatest benefits from the USP. The following section will discuss the key relationships within the steering committees and the relationships between the steering committees and councils, state-wide agencies and catchment management committees (CMCs), and catchment management trusts.

Relationships Within the Steering Committees

The relationships developed between different councils and others on the catchment steering committees in the greater metropolitan regions were identified as the most beneficial parts of the USP. A range of issues emerged around the establishment of these committees. Some of these issues posed constraints for the successful implementation of the planning process. These constraints relate primarily to the time taken to establish the committees and who was represented on the committees.

For the greater metropolitan councils, the establishment of these relationships and the identification of roles for committee members took between three and six months, depending on the number of stormwater managers within the catchment. (Where there were existing relationships between councils the working relationships were easier to establish.) For many councils this resulted in significant time delays within the allocated 12-month planning time frame. A significant majority of officers reported that after experiencing these time delays at the start of the planning process they felt they needed to engage an external consultant or project coordinator, owing to the lack of time and resources they then had available.

A majority of both the greater metropolitan and regional council steering committees were not representative of all the stormwater managers and stakeholders within the catchment. Therefore, not all stormwater players effectively influenced the activities of the steering committees. Most notable was the absence of the Department of Urban Affairs and Planning (DUAP), which may have reduced the focus on planning solutions evident in the plans.

However, the steering committees that had participation from a range of expert disciplines (for example, engineering, environmental science, planning, community development) had a more successful planning process. Also, participation by senior council officers or councillors enhanced the status of the steering committee activities.

Presently there is no incentive to keep these relationships going in the implementation phase of the program (with the exception of those steering committees that have been jointly awarded a Stormwater Trust grant for a joint project), and officers have expressed concern over this.

Relationships Between the Steering Committees and Councils

The following points characterise the main factors that shaped the relationships between the catchment steering committees and council organisations:

- The momentum generated by the steering committees was difficult to transfer to council organisations. (Refer to the discussions in Section 5 about the organisational structure and management processes for more detail.) A major constraint to successful planning emerged when the relationships and the knowledge developed from the planning process primarily remained only with the individual officers and the steering committee. The evaluation identified little transfer of information into the operations of councils. These individuals were usually in more junior organisational positions and lacked the organisational power to enhance the organisational learning and integration of the process into activities of councils. This issue was particularly evident when so many of the officers who prepared plans left their organisations shortly after the completion of the plans.

- Councils that participated in more than one plan had to use the \$30,000 allocated by the Stormwater Trust across all of their plans. This created inequities between councils within the catchments and also affected the time that officers had available for each of their catchments.
- If councils were involved in three or more catchments without additional resources (that is, without coordination assistance from catchment management trusts or catchment management committees) there was a net negative impact on the planning process.
- In cases where steering committees recruited consultants, some councils within the catchments reported that the consultant work did not meet **their** council's needs. In the surveys the officers reported that the consultants did meet the needs of the EPA directive for their catchments.
- When a relatively small portion of an individual council's urban area was located within a catchment, that particular area and catchment was given significantly lower priority by the council in the planning process. This resulted in the catchment having an incomplete stormwater plan owing to the lack of that individual council's full participation.
- The differences in resource availability between the catchment councils produced fragmented organisational commitments to the planning process. Resource availability differences included differences in levels of funding such as a dedicated environmental levy, and differences in previous experience with, and the existing profile of, urban stormwater within councils.

Relationships Between the Steering Committees and Statewide Agencies

Sydney and Hunter Water Corporations and the Roads and Transit Authority (RTA) were formally directed to participate in the planning process. The participation of Sydney Water Corporation and the RTA in the steering committees was reported as being affected by the high turnover of staff during the planning process. The staff who attended catchment steering committee meetings had little power in, or knowledge of, their own organisations. Council officers reported that because there was little perceived commitment early on in the process from the State agencies, the council officers had to make assumptions on their behalf and then 'later we had to fight out what the implications of these assumptions were'.

The Department of Land and Water Conservation (DLWC) had less participation than the above agencies through personnel, but provided information through pre-existing plans. Participation of DLWC personnel was higher for the regional councils.

The role of the Department of Urban Affairs and Planning (DUAP) relative to the other State agencies was identified as critical to the key planning issues, but this agency's potential contribution was unrealised.

Overall, officers considered the participation of State agency representatives to be important to the planning process. In summary, two main issues were identified as constraints. These were:

- the high turnover of staff representation on the catchment steering committees
- the lack of organisational power that these representatives had.

Relationships Between the Steering Committees and Catchment Management Committees and Catchment Management Trusts

The participation of catchment management committees varied widely across the councils. For some councils, their participation was integral to the process and they took a significant role in coordinating between councils and participating in the process. At the councils where this was the situation, there were mixed views about catchment management committees' participation. Some officers said that 'the catchment management committee's involvement was fantastic and the quality of our plan was improved significantly, especially when it came to developing the catchment values for the plan'. Other officers felt that 'the catchment management committees had a hidden agenda and only wanted to participate because they saw that there might be something in it for them'.

Officers from councils that had minimal input from catchment management committees said that 'the catchment management committees did not really see any connection between their work and the planning process or 'the catchment management committees did not think that the responsibility of the planning process should have been given to local government'.

Officers from councils that were located within areas where a catchment trust had jurisdiction found the Trust's participation highly valuable in terms of 'taking a lead coordination role' and being 'good at getting councils to work together'. Some officers also said that 'the Trust saw this as an opportunity for sustaining themselves'.

In summary:

- Where the catchment management trusts assumed an active coordination role this proved beneficial to the planning process.
- The participation of catchment management committees varied significantly across the State.
- Where catchment management committees were actively involved in the planning process and also assumed an active coordination role, this proved beneficial to the planning process.

These valued relationships were reported as being at risk from 'fizzling out', because the catchment management committees have been disbanded, leaving no existing formal incentives to keep the process active.

6.2 Current Position: Relationships with the Community

The overall lack of community involvement in the entire planning process (with a couple of exceptions) was the most common theme across councils for the entire evaluation. From the evaluation findings it would be fair to conclude that the community consultation effort across both the greater metropolitan and regional council catchments proved to be unsuccessful. A majority of officers voiced their disappointment with the community response to either their own or the consultant's efforts. A majority of the officers' conclusions were that 'the community are apathetic about stormwater' or 'the community just does not care because the issue is not sexy enough'.

The small number of councils that reported this part of the process to be a success usually worked with a very small number of highly developed community organisations with which they had existing well-established relationships. Where there were previously active community organisations, such as catchment management committees and bush care groups, participation from these organisations was high to very high.

The evaluation demonstrates that a majority of the officers and consultants that participated in the planning process did not have experience with working with the community. The approach mostly employed was to hold public meetings, and this was considered a ‘major flop’. Nearly all the officers reported that they were lucky if a handful of community people turned up to the meetings. And when these people did turn up to the meetings they were either ‘pushing their own pet topic or issue’ or ‘were the usual suspects that turn up to every meeting and we know what they want anyway’.

Officers that had first-hand attempts at consulting with the community during this planning process found that ‘the community couldn’t separate the issues between urban stormwater quality and other environmental issues, and when we explained the program, they thought it sounded artificial and suspicious’. Also stated was ‘for the small numbers of people who did turn up to meetings they wanted to talk about other issues like sewer overflows’.

The community consultation was not directed at existing concerns of the community (that is, the quality of water in the local river, or land care activities), so on the whole the community did not identify with stormwater as a topic.

The other conclusion drawn about community knowledge was that ‘the community is only interested in litter and visible pollutants’. ‘They do not understand that organics can be pollutants and that many pollutants that you cannot see are in fact more nasty than visible pollutants’. ‘The community were mainly interested in cleaning up rubbish’. This had impacts on the planning process overall in terms of setting councils’ priorities for their implementation strategies.

Some officers believed that ‘the EPA have no idea how to work with the community, as demonstrated by the lack of expertise in their guidance in the council handbook’. Most of the officers quickly concluded that ‘holding public meetings about preparing strategic stormwater quality plans simply does not work’. The officers believed that ‘the EPA should have anticipated this program flaw’ and ‘provided more sophisticated advice about working with the community’. Many officers felt that the 12-month planning timeframe was simply ‘too unrealistic to develop any new relationships with the community about stormwater’.

Overall, we made the following conclusions about the relationships between the steering committees and the community:

- Attempts at developing relationships between the planning process and the community proved largely unsuccessful.
- The ones that were most successful were built on existing relationships with established environmental community groups, but these efforts did not extend into the broader community.
- Officers said that the steering committees did not have the relevant expertise in building community engagement in urban stormwater issues.
- Officers also said that the EPA guidance on community consultant approaches was inadequate.
- Some officers did not value community input into the planning process.

In summary, the corresponding reasons why the community consultation process was unsuccessful include:

- lack of officer expertise with dealing with the community
- lack of involvement of community services departments in councils (which also relates to links with councils’ management planning process, as discussed in Section 5).
- lack of EPA guidance, and a short time frame

- lack of community identification with stormwater quality as an issue
- lack of community knowledge about urban stormwater.

In conclusion, despite the unsuccessful attempts at community involvement a significant majority of both the greater metropolitan and regional council officers reported that community involvement was a necessary element in the planning process, and that community ownership was essential.

6.5 Current Position: Joint Projects and Financial Commitment

Many officers raised concerns about the political and legal complexities of implementing projects jointly with other councils in the catchment. In the focus groups and interviews, council officers frequently said that ‘it is not possible to spend ratepayers’ money outside of council boundaries’. (However, it was not essential to the program that joint projects relied on the transfer of councils’ revenue). This report was followed up by the view of a small number of officers that ‘the Department of Local Government told us to set up 355 committees to make joint projects happen, but they forget that us officers do not have the political power to make our general managers authorise this’.

Despite this feedback, approximately two-thirds of the greater metropolitan councils surveyed reported that they were either implementing or proposing to implement joint projects with other stormwater managers, including other councils, State agencies and community groups in the catchment. (Twenty-four out of 37 officers reported this.) A smaller number of regional councils surveyed reported that they were either currently implementing or were proposing to implement joint projects with other State agency stormwater managers in the catchment. (Five out of 24 officers reported this.)

Of the greater metropolitan councils, 14 of the 24 councils are currently implementing joint projects. These mainly include education projects in partnership with other councils and/or State agencies. Four of the five regional councils proposing joint projects are currently implementing them. Three of these regional projects involve education and one involves remediation.

It is evident that both (a) the design of the second- and third-round Stormwater Trust Grants Program and (b) the existence of the catchment steering committees and the relationships developed have been instrumental in facilitating and encouraging the development of joint projects. It is also evident that source-reduction and community-education-type strategies are politically more conducive at the inter-council catchment level.

6.6 Improving Catchment-based Relationships

To improve catchment-based relationships and capacity for urban stormwater planning, the players on the steering committee need to have more organisational power and improved commitment from their own organisations.

It is also important that the knowledge and enthusiasm gained from the partnerships can be transferred through the respective organisations.

What is most important is that the partnerships become sustainable. Many officers have reported that they currently do not have clear reasons for keeping the momentum for the partnerships going.

How the community is conceptualised and involved into the planning process needs to be seriously reviewed. The communities do not relate to the stormwater issues as they are presented in the planning process. Also, the program design and guidance for engaging the community needs to be researched further and reworked.

Far more program feedback and assistance in terms of the step-by-step expectations of all key players in the coordination process need to be designed and documented, with due regard to flexible solutions.

Some proposed solutions are:

- Formalise the role of the catchment steering committees.
- Investigate the potential of the new catchment management boards for assisting in a coordination role.
- The role of DUAP in particular needs to be formalised into the planning process.
- The Stormwater Trust should provide a detailed guidance framework for the coordination processes through doing case studies on the first round of the planning process.
- Funds and assistance should be provided by the Stormwater Trust for social research on appropriate community engagement strategies and on building the community's capacity for urban stormwater management.

7. Review of Program Facilitation and Administration

The EPA's Stormwater Team facilitated and administered the planning component of the USP on behalf of the government's Stormwater Trust. The key issues that emerged during the evaluation in relation to the program facilitation and administration were:

- the need for a framework for coordinated planning in the catchment
- facilitation and guidance
- program funding
- improving the program facilitation and administration.

The lack of a designed framework (for coordination processes among all the players in the catchment) for the planning process at the initiation of the USP was clearly a significant issue for greater metropolitan councils. Other key issues proved consistent across both the greater metropolitan and regional councils. The following sections discuss each of the key issues listed above.

7.1 Framework for Coordinated Planning in the Catchment

This key issue is about the lack of information and guidance in the form of a framework for coordinating the planning process at the catchment. This issue has been separated from the next section because it emerged as such a strong response theme from the greater metropolitan council officers.

The major concerns were the 'general lack of guidance for the coordination processes between stormwater managers and stakeholders in the catchment'. It was considered that 'the program was deficient because a detailed framework for the coordination was missing'. This part of the program design was one of the most significant response themes because 'it was demanding' on officers' time and created 'frustration with attempts to coordinate the stormwater managers'. Also, it was perceived by officers that 'the EPA did not understand how this part of the program should work' and that 'they probably don't value how important the coordination processes are to the success of the plans'. Establishing steering committee meetings and identifying what their specific roles and functions should be was a major learning process for some and 'a major source of frustration' for many officers.

However, this concern was not as significant for the small number of councils that:

- had a catchment management trust or catchment management committee assisting in the planning coordination process, or
- already had senior executive support and/or higher profile environmental assets.

This was because the above conditions ensured that there was both political status and additional resources to help in the coordination of the planning process.

7.2 Facilitation and Guidance

The EPA's facilitation and guidance was one of the strongest themes to emerge from the evaluation. The most common response can be characterised by this quote: 'despite everything, the quality of the frontline staff was excellent, but we feel they were terribly under-resourced and obviously under a lot of pressure'. There was a general impression that 'five people in the EPA running a state-wide program was ridiculous', and that 'the EPA was certainly not resourced properly to give the necessary support and guidance for this process'.

The officers felt overall that the EPA under-participated, particularly in the steering committees, and was unable to collaborate adequately in the planning process. They felt that the quality of their stormwater plans would have been significantly higher if 'the EPA had participated in the catchment steering committee meetings and got their hands dirty'. They also thought that they would have had 'higher-level support and commitment from the senior executive and across council departments' if the EPA had been more involved in the process.

Regional council officers identified feedback from the EPA on draft plans and formal written queries from councils as particularly poor.

Council officers felt there was not a real partnership between them and the EPA; the officers believed that this partnership was needed to make the process a success. Primarily, such a partnership would have lessened the sense among officers that the Section 12 Direction was externally imposed from one level of government to another.

Therefore, overall, the officers reported that the EPA should have assumed a collaborative role in the planning process. They felt that this experience would have helped the EPA to learn the coordination and decision-making processes of local government; it would have resulted in a significant improvement in the EPA's understanding and broader facilitation of the USP.

7.3 Program Funding

The funding structure for planning was such that funds were matched by the Stormwater Trust by up to \$30,000 for greater metropolitan councils and regional urban councils and up to \$15,000 for the smaller rural councils. Overall, this funding was not considered sufficient to reflect to amount of work undertaken by the officers preparing the plans, and many of the officers prepared the plans in their own time on top of their other duties. Also, the amount of funding was considered too small: four officers said that their councils' contributions 'in-time' ranged from \$55,000 to \$70,000. These officers believed that the plans for each of the councils could not have been prepared for \$60,000, 'as estimated by the EPA'. However, for the small number of councils that have a dedicated source of funding (such as an environmental levy), funding was not seen as a major constraint.

The EPA's rationale for this funding process was generally questioned. Many of the officers 'felt it was an inequitable process' because 'some councils had to prepare three or four plans', while 'other councils only had to prepare one plan'. The funding was not considered nearly enough for the councils participating in more than one plan.

Many officers felt constrained by the fact that they knew their organisations did not have the necessary resources in place to fund the implementation of the plan. However, many saw the

grants scheme as a potential way to fund the implementation of some of the options and strategies in the plan.

The Stormwater Trust grants were generally viewed as ‘great’ – particularly the administration of the third-round grants. The grants were seen as helping to implement actions from the stormwater plans, and also as supplementing the councils’ core budgets. However, the grants were reported to create an ongoing management and resource strain for many councils. Many officers suggested that the grant round and the planning process might have been better coordinated with respect to the timing of available funds.

7.4 Improving Program Facilitation and Administration

If the resourcing of the program facilitation is improved it will be possible to improve the capacity for the Stormwater Trust to collaborate on and facilitate the planning process.

The officers believed that the planning process would be improved significantly if the Stormwater Trust were to directly partner and participate with the other stormwater managers in the catchment steering committees. The types of improved outcomes were considered to include:

- significantly improved understanding by council officers of the Stormwater Trust ’s expectations of the planning process
- improved commitment by stormwater managers to contributing effectively to the catchment steering committees
- improved and more productive relations between State and local government
- more efficient and detailed feedback directly relating to the specific circumstances of each individual catchmen
- a stronger incentive for the senior executive and elected level of council to take more interest and actively participate.

Some proposed solutions might include:

- The Stormwater Trust could be allocated more resources for administrating the next phase of the program, particularly for benchmarking and best-practice of the first-round planning process.
- The Stormwater Trust could be more involved in the planning process as a stormwater stakeholder, and could work collaboratively with local government through providing catchment-based extension workers.
- The Stormwater Trust could prioritise overseeing and participating in the planning process, and could give equal priority to the quality of catchment relationships and the quality of urban stormwater management plans.

8. Review of Current Program Design

This review of the design of the current program is divided into the following sections:

1. the program's focus on urban stormwater quality
2. the planning time frame
3. the planning methodology
4. improving the current program design.

Case studies of the different organisational types revealed the following important nuances relevant to the design of the program.

8.1 Program Focus on Urban Stormwater Quality

The formal focus of the program was on improving the health and amenity of urban waterways through more effective management of urban stormwater quality. The rationale, as expressed by the EPA administrators, is 'that councils have significantly higher capacity for managing stormwater quantity and it is important to improve councils' capacity for managing stormwater quality to the same level'. However, this rationale did not appear to be clearly understood or accepted by council officers across the State.

The focus was considered to be a limited conception of how to manage stormwater effectively and was perceived to 'compound the constraints of the program for working with other departments within council organisations and working with communities'. The following key concerns were identified across different council types. (There was a link between the response type and council type.)

Lack of Integration Between Stormwater Quality and Quantity

Councils that are highly developed, with limited physical environmental assets and light-to-medium industrial land-use areas, are predominately concerned with the limitation of not being able to integrate and prioritise stormwater quantity management into the planning process

Lack of Integration Between Urban and Rural Areas

Greater metropolitan councils that have land designated for development, low-to-moderate physical environmental assets and reportedly low support from their senior executive were primarily concerned with the lack of integration between rural and urban stormwater run-off. However, this group demonstrated concern with all three key perceived constraints. They perceived the constraint of the lack of integration between stormwater quality and quantity as a given and 'obvious program flaw'.

For regional councils this was the most common concern, because the proportion of urban area in their catchments is relatively small, and they have reported that a majority of their water

quality issues derive from rural and agricultural run-off. Trying to integrate the planning process into their organisations was difficult, because the program focus was not perceived to be addressing what the key water quality issues were for these catchments.

Lack of Integration of All Environmental Issues Within the Catchment

For those councils that had significant environmental assets and were well supported by council through funding and senior executive commitment, the biggest concern was lack of integration of environment issues within the catchment. Although they were concerned about the other two constraints, these councils saw them as just a part of the whole picture. Generally, these councils have well supported environmental or catchment management groups and work across many environmental issues. They found the planning program conceptually limiting, in that they had to try to integrate the outcomes of the stormwater plans back into the other types of environmental programs and management plans run by their councils.

8.2 The Planning Time Frame

The time frame of 12 months for preparing an urban stormwater plan was considered an impediment to the success of the planning process across all councils. The 12-month planning time frame was considered by all greater metropolitan officers as ‘far too restrictive to produce a USMP (stormwater plan)’. (The Stormwater Trust and the EPA eventually extended the planning process to 15 months, as councils needed more time for their planning processes.) Many of these concerns addressed the fact that councils needed a significant amount of time and effort to develop a coordination process or framework within their catchments to prepare the plans. These concerns were compounded by the fact that officers believed the program design had omitted this part of the process. Generally, the officers felt that the EPA had not given this part of the process due consideration in the program design, and that they needed more guidance on the expectations and operation of this process.

Also, the time frame was considered too restrictive for developing the stormwater plan to a sufficient level of detail to be incorporated into councils’ management processes. ‘The plan ended up very generic, and council will have to write a new one in sufficient detail to understand what actually needs to be done, so it can be incorporated into council’s management plan’.

8.3 The Planning Methodology

Overview

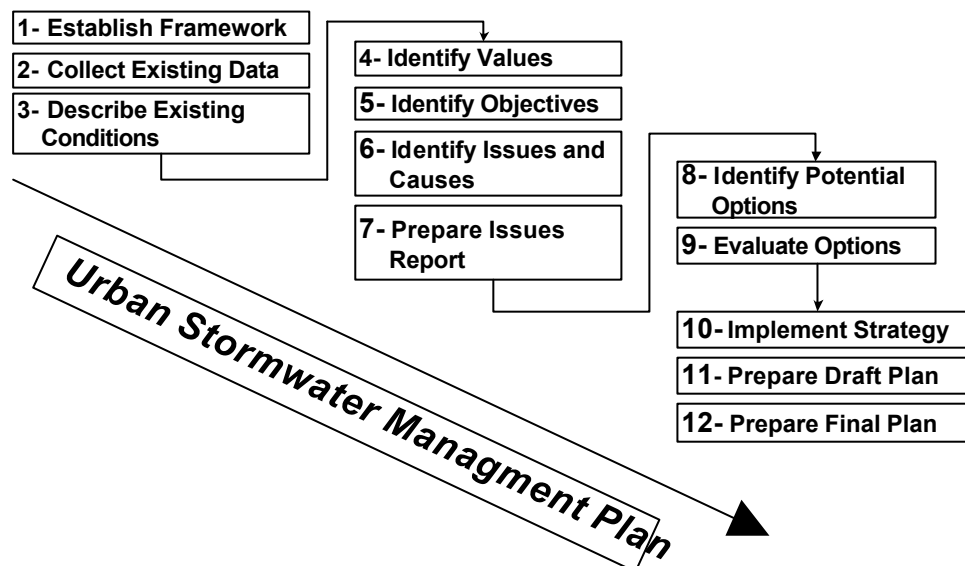
Overall, the officers considered the 12-step methodology for the planning process (refer to Figure 7), as outlined in the EPA’s council handbook, ‘a good start’. However, specific parts of the planning process were considered not to work or make sense at both the organisational and the community level when put into practice.

The first problem area reported was that of conceptually distinguishing between values and objectives and the difficulty in trying to present this to council and the community. The next major problem was that of evaluating the options. This was particularly an issue for comparing

end-of pipe and source-control solutions. Also, the benefit–cost analysis proved to need reworking, because in practice officers found the process to be dominated by an economic concept rather than an environmental protection agenda, and this needed to be mediated. Ranking these options for the implementation strategy to develop operational plans for each particular council was also viewed as difficult. These difficulties arise from the different contexts within which each council operates, such as differences in resource availability, environmental assets and basically different priorities between councils.

Generally, the officers thought the planning methodology was a suitable model. They gave responses such as ‘I thought it was really useful and helpful for preparing our plan’ and ‘the advantage of having the suggested framework is that it created consistency’. However, it is important to note that many of these officers went on to identify key constraints with particular stages in the planning methodology; these are discussed below.

Figure 7 Urban stormwater management: 12-step planning methodology



Catchment Values and Objectives (Steps 4 and 5)

Out of the 12-step planning process, this phase evolved as one of the most difficult and confusing for the officers to implement. The officers interviewed felt that the EPA did not understand how this process worked and that ‘in theory it sounds OK, but in practice it does not make sense’.

Conversely, the officers also considered that lack of success in the community consultation process made the officers’ job of writing the values, objectives and issues for the stormwater plans ‘much easier’. This was also confirmed in our evaluation when we asked, ‘If the “establishing the catchment values” component was removed from the 12-Step process, would you have developed the same objectives?’ The general response was ‘Yes’.

Quite a few of the officers that were environmental scientists also emphasised the fact that linking community values with measurable scientific objectives was an important problem. They believed that this part of the program had some clear and significant tensions that affected the whole plan. The officers found that ‘if you derive the plan objectives from the community’s values, they are really just elaborating on their own values’. These officers found it difficult to conceptualise a process whereby objectives could be set on the basis of community values and

‘have a scientific rigor to them’. The tension can be characterised by the following quote: ‘How can you ethically mould together the community’s values with a scientific-outcome-driven approach?’

Evaluating the Options (Step 9)

Ranking of options proved to be the next biggest challenge in implementing the planning process. Officers felt that the process did not meet their needs and caused significant controversy among councils, and yet these officers struggled to articulate a better system when queried by the evaluators. Some officers reported that they had used an approach that was a modified version of that recommended by the EPA. Other officers said they had simply played with the numbers and weightings enough so that the ranking priority looked like what they intuitively thought their senior executive would be happy with.

Some officers interviewed said that they ‘put in a lot of cheap education projects because they would end up on the top of the priority list and not cost council much money’. Low-cost education projects were also ranked highly in the implementation plans, because these officers reported that they ‘heard the stormwater grant rumour that education projects are what will get funded in the third-round grants’.

There were also other issues of a different nature highlighted by councils that had more resources for the environment, such as environmental levies. These issues were primarily about the different resource levels within councils. For councils with significantly more resources it was very difficult to prepare the implementation plans and set priorities, because they could implement more actions than the other councils and had different priorities. This made the ranking process ‘tricky and difficult between councils because of our clearly different capacities for implementation’ and also ‘frustrating for the other councils’.

Implementation Strategy (Step 10)

The implementation strategy is the implementation plan prepared as part of the stormwater plan. It gives details of the prioritised actions that each stormwater manager within the catchment is responsible for implementing. The implementation strategy is then incorporated into the council management plan.

The design of the implementation strategy was considered an impediment to both integrating the plan into council’s management and providing the appropriate level of detail for the officer to demonstrate a real need for the project within council.

It was mainly more senior officers and managers who considered the design of the implementation strategy to be deficient. This deficiency specifically related to the lack of detail required on performance measures for each of the implementation actions. ‘Unless there is detail about the performance measures, which requires another level of work again, it is very difficult to feed the implementation strategy into council’s management processes’.

8.4 Improving the Current Program Design

The Planning Process and the Role of the EPA

- The twelve-month planning time frame was considered too short for this program. Council officers spent a significant amount of their time developing coordination processes and establishing a coordination framework between the stakeholders within the catchment.
- There were problems with implementing the 12-step planning process. The main problems occurred with setting the catchment values and objectives, evaluating the options, and ranking the options for the implementation strategy.
- The EPA was considered to have limited capacity, because of resource constraints, to be actively engaged with more than a few plans. It was felt that this reduced the quality of the plans and the commitment of councils to the process.
- The focus of the program on only stormwater quality inhibited the integration of the process across the catchment by segregating stormwater quality from quantity, rural stormwater issues from urban stormwater issues, and stormwater from other environmental concerns within the catchment.

Potential solutions might be:

- Particularly for regional councils, the program could include rural run-off.
- The Trust could investigate the potential for integrating the planning process into the whole water cycle.
- There could be more detailed research and advice on how to engage the community to set catchment values. There could also be research into more sophisticated evaluation and ranking methodologies.
- Future program design might include consideration of the funding of council implementation strategies. A number of possible models exist, including models for funding for roads and flood mitigation.
- Clear outcomes need to be developed for the program and for program evaluation.

9. Conclusion

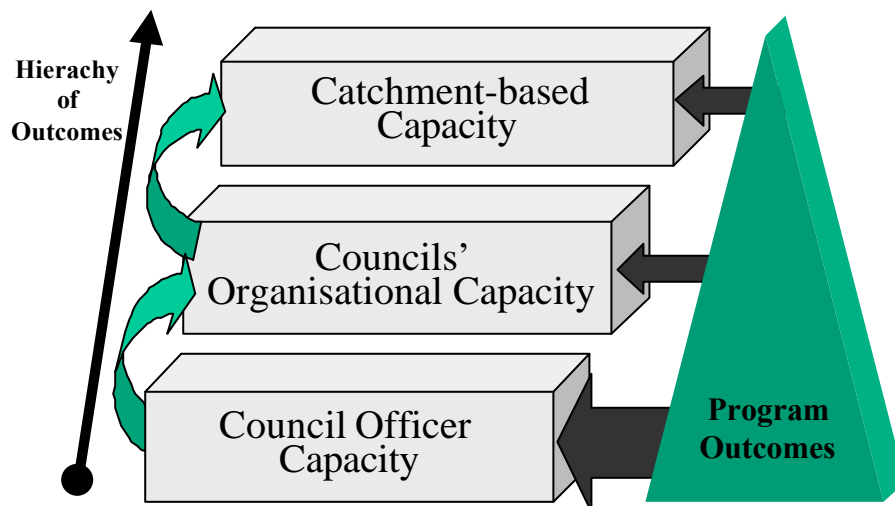
9.1 Overall Achievement of Expected Outcomes

Council Officer Capacity

The building of the capacity of council officers from both greater metropolitan and regional councils to manage stormwater is clearly the expected program outcome that was the most successfully achieved. The significance of this increased management capacity has emerged through the officers' application of each of the evaluation techniques. The enthusiasm and motivation demonstrated by the officers throughout the evaluation is a clear measure of the success of the program. These gains need to be maintained, built upon and utilised to help increase the capacities of council organisations and catchments to manage urban stormwater effectively.

A foreseeable risk of not continuing the current program is that the valuable skills and knowledge acquired by council officers as a result of the planning process will not be transferred into their organisations. Already, several greater metropolitan council officers have since left their councils and moved to other organisations. This has left some of these councils struggling with the question of what to do with their urban stormwater management plans.

Figure 8 Current levels of achievement of program outcomes



Council Organisational Capacity

During all the focus groups and interviews it was clear that a significant majority of greater metropolitan councils had complied with the Section 12 requirement for future revising of plans and the linking of their implementation to the council management planning process prescribed in the *Local Government Act 1993*. Also, a significant majority of the regional councils said that when they had produced their final plans they would be incorporated into their councils' management plans. It was clear that many of these plans were prepared in isolation from the rest

of the council organisation, owing to both the lack of incentives for other departments to participate and the short planning time frame.

Both greater metropolitan and regional council officers made concerted attempts during the evaluation to emphasise the fact that incorporating the stormwater plans into the council management planning process did not necessarily correlate with council ownership of stormwater management issues, or in other words, it did not necessarily build the council's capacity to manage stormwater. It became clear that a majority of the stormwater plans had not been integrated into councils' budgetary processes and into roles and responsibilities across the vertical and horizontal structure of the organisations.

It is clearly more difficult to assess the achievements of building 'organisational capacity' as an expected outcome at this early stage, but the feedback about the program being at risk of 'fizzling out' or 'losing its momentum' is a very strong indicator that this capacity has not been clinched. This is also compounded by the lack of resources dedicated to urban stormwater quality management generally across local government, with the exception of those councils that have special rates or environmental levies. Another strong indicator to support this claim is that a significant portion of councils recently (and unsuccessfully) applied for a special rate for stormwater or an environmental levy. A majority of officers reported that preparing the stormwater plans was an influential factor in the decision to apply for an external source of revenue.

Catchment-based Capacity

Greater metropolitan officers identified the relationships that they developed with officers from other councils within the catchment as the most beneficial result of the program. However, the problem with this is that many of these officers have not collaborated again since the finalisation of their plans in 1999. Many officers expressed disappointment with this situation but felt constrained by (a) their current workloads and (b) the lack of a formal requirement to keep the catchment-based relationships continuing.

Clearly there is much work yet to be done in building the capacity for effective coordination and management of urban stormwater among all stormwater stakeholders in the catchment. One of the most significant issues that emerged is that of program facilitation and guidance. It was clearly acknowledged across a significant majority of councils that if the EPA had assumed a collaborative role in the catchment planning process, the effectiveness and outcomes of the planning process and its status within councils would have been better. Also, the officers believed that a real partnership with the EPA 'would be just as beneficial to the EPA in terms of improving their understanding of the culture and challenges of local government as it would be to local government'.

The major failing of the planning process across the State was the attempt at community engagement. This has significantly affected the quality of the urban stormwater plans, because the plans are meant to reflect community values. This issue is addressed further in the next set of recommendations.

9.2 Progress Towards Expected Outcomes

The key conditions identified as important to achieving the expected outcomes of the planning component during the evaluation can be categorised into the broad themes of resources, time and expertise. The main factors that comprise each of these themes are presented below.

Influential Resource Conditions

The following resource factors were identified throughout the evaluation as keys to improving the effectiveness of the planning process. The higher the quality or level of achievement of the following listed conditions, the higher the planning effectiveness. These conditions are:

Council

- the quality and existence of baseline information, including organisational practices, physical catchment conditions and social diversity and activities
- the significance and value to council of environmental assets within the catchment
- the council's history of experience and expertise with stormwater planning and management
- council officers' levels of skill, knowledge and enthusiasm for stormwater management
- the council's view on whether or not protection of the environment is a political priority
- the degree of council inter-departmental participation in stormwater management issues

Catchment Stormwater Managers and Stakeholders

- existence of a history of positive intergovernmental relations between councils and State and local government
- existence of catchment coordination assistance from either a catchment management trust or an active catchment management committee
- the level of existing capacity for engagement of community groups and residents
- the complementary resource priorities of other stormwater managers within the catchment

Funds for Implementation

- the size of the council's budget for urban stormwater planning and improved management practices
- the council's capacity to gain access to external funding sources, such as a council environmental levy or special stormwater management rate

The EPA

- The time and involvement dedicated by the EPA within the catchment planning process

Influential Time Conditions

The following time factors were identified throughout the evaluation as keys to improving the effectiveness of the planning process. Increasing the quality or level of achievement of the following conditions within the catchment results in improved planning effectiveness. These conditions are:

Council

- the level of existing information available within the catchment
- the amount of support for the process from elected representatives of council
- participation by the council senior executive in catchment steering committee meetings

Catchment Stormwater Managers and Stakeholders

- the time needed to build and establish the coordination and relationships of all stormwater stakeholders within the catchment
- the number of issues and conflicts that require negotiating between stormwater stakeholders within the catchment
- the availability and potential of stormwater stakeholders to contribute to the planning process

The EPA

- the time frame allocated in the Section 12 Direction for preparing the urban stormwater management plans
- the quality of the feedback and guidance from the EPA

Influential Expertise Conditions

The following expertise factors were identified throughout the evaluation as keys to improving the effectiveness of the planning process. Increasing the quality or level of achievement of the following conditions within the catchment results in improved planning effectiveness. These conditions are:

Council

- the breadth of access to other officers across council departments

Catchment Stormwater Managers and Stakeholders

- the council officers' level of skill for conducting urban stormwater management planning
- the breadth of the disciplinary input from the catchment steering committees into the planning process
- the opportunities and skill needed to effectively engage the community around urban stormwater management issues

9.3 Important Macro Level Questions to be Considered for the USP

There are clearly important questions to be addressed for the future of the USP. These questions are broader than those we have addressed above.

The broader questions of future institutional arrangements cannot be adequately addressed in this evaluation in isolation from the evaluations of the Stormwater Trust grants and the education components of the program. However, key questions for the future have emerged from this evaluation of the planning process, and it is important that they are considered specifically:

- How can we achieve integration of the program's expected outcomes across State agencies, in particular Sydney Water Corporation, the Department of Land and Water Conservation and the Department of Urban Affairs and Planning? Who should administer the planning program in the long term if there is to be broad integration of the management of the health of urban waterways?

- How appropriate is the urban focus of the program, particularly for regional councils? It is anticipated that this planning program will never be really successful in catchments that have significant portions of rural areas that contribute to water quality issues.
- How can the planning and implementation complexities of greater metropolitan catchments that involve three or more councils that are not associated with a catchment management trust (such as Cooks River and Mill Pond Creek) be dealt with? Planning for these catchment types will need to operate differently in the future because of the complexities of the catchment relationships.
- How can the sophistication and effectiveness of implementing non-structural solutions be improved across catchments? Non-structural solutions will continue to be undervalued and poorly implemented by councils while the planning process remains dominated by engineers and environmental scientists. This will be particularly compounded in the face of lack of data about the success or outcomes of these types of solutions. These strategies need to be significantly better resourced for benchmarking, best practice and skill-based training.
- How can the planning and management processes of urban stormwater be effectively implemented while councils do not know who their communities are and lack the capacity to effectively engage these communities in the planning and management process? This lack of baseline information and existing capacity to engage communities ultimately influences the effectiveness of urban stormwater management.

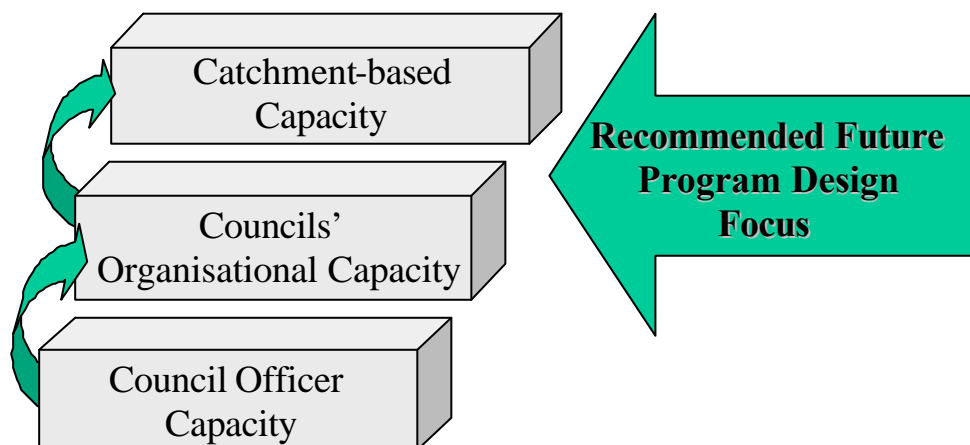
10. Recommendations

10.1 Staged Focus for the Future Program

We strongly recommend that the planning component of the USP be continued and given enough funding to enable it to proceed effectively in the future. The existing program has resulted in a significant achievement across NSW: council officers' capacity to manage stormwater has been increased in this first phase. However, this success will be at risk if this increased capacity is not harnessed and developed to help achieve the next level of expected program outcomes. As discussed in Section 2.3, this developed officer capacity is a necessary baseline for building both the organisational and catchment-based capacity necessary for improving urban stormwater management planning and ultimately the health of urban waterways.

It must be acknowledged that building organisational and catchment-based capacity for urban stormwater management is more difficult and requires incremental changes in some circumstances. We recommend that the future program design (a) clearly acknowledges the relational links between organisational and catchment-based stormwater management capacity (as depicted in Figure 9 below) and (b) incorporates interventions that take advantage of this interdependent situation. This will ensure that the program is well focused and specifically designed for measuring its impact, while having the flexibility to make informed structural changes where necessary and ultimately strengthening the overall program outcomes.

Figure 9 Recommended program focus for future urban stormwater management planning



It is critical that the design of the next program phase takes advantage of and incorporates both bottom-up and top-down program implementation measures. The bottom-up approach would focus primarily on maintaining, transferring and integrating council officers' knowledge and expertise into the vertical and horizontal structures of their council organisations. The top-down approach would focus on developing measures and incentives to ensure that urban stormwater management becomes and/or remains a priority and commitment of council senior executives and local elected representatives.

Owing to the highly interdependent nature of the capacities of council organisations and catchments to manage stormwater, it is highly likely that gains in one area will naturally result

in gains in the other. It is too early, without knowing the outcomes of the future or next program phases, to specifically characterise the design of the following or third program phases. However, we predict that it would include either the implementation or targeting of dedicated funding sources for local government and catchment management of urban stormwater. It would also be concerned with the design of more sophisticated coordination processes between the catchment steering committees and the newly developed community capacity for urban stormwater management that would result from the next phase of the program.

The next sections address specific questions in the project brief about the future of the program, the future role of the EPA, and how future evaluations of the program can be improved to provide more effective feedback to the EPA and the Stormwater Trust.

10.2 Response to Project Brief Questions about the Future of the Program

The project brief for this evaluation specifically identified six questions about the future of the planning component for the USP. These issues, listed below, are consecutively addressed in this section:

1. future revision of the plans
2. auditing implementation of plans
3. community involvement in stormwater management
4. requirements for improved guideline documents
5. requirements for institutional changes
6. requirements for future or ongoing community education programs

Future Revision of the Plans

Even though the officers generally reported in the surveys that it was likely that the stormwater plans would be reviewed in three years, the interview and focus group data do not confirm this. When the evaluators went into detailed discussions about the future review of the plans, all councils, with the exception of those that had environmental or special stormwater levies, reported that they did not believe there was enough incentive for their councils to conduct a future review of the plans. When the greater metropolitan council officers were asked for any feedback they would like passed on to the EPA, a majority requested that their councils should be legally imposed upon again to review the plans. This view was not held by a majority of the regional council officers.

We recommend that the urban stormwater management plans be formally revised through a mechanism such as a Section 12 Directive for the greater metropolitan catchments. This direction should be delivered to councils to be started in mid 2002, three years after EPA approval of their first plans. A two-to-three-year time frame should be allocated for the revision of the plans. We also recommend that the EPA takes appropriate action in helping councils to incorporate this direction in council management planning processes early in 2002 to ensure adequate resources and time are made available in councils' budgetary processes for such work.

We recommend that consideration first be given to the program design and scope for regional councils before any such directive is imposed. The future directive may include work beyond a revision of plans and include integration of the plans into other plans owned by regional

councils that address water and land management issues in rural areas. If a direction is imposed on regional councils, we recommend that it be delivered in mid 2004. It should also have a two-to-three year revision time frame, which will end approximately three years after all the first plans have been approved. We also recommend that the EPA takes appropriate action in helping councils to incorporate this direction in council management planning processes early in 2004 to ensure adequate resources and time are made available in councils' budgetary processes for such work.

Auditing Implementation of Plans

In response to the overwhelming concerns of councils about lack of available council resources and dedicated sources of funding, we do not recommend that an immediate audit of stormwater plan implementation be conducted.

However, we recommend two interim auditing measures:

- Stormwater Trust to conduct an audit of each council's existing stormwater expenditure and capabilities for implementing the urban stormwater management plans. This will provide important baseline information for assessing the relative performance of each council for effective urban stormwater management within its own context. This will also help inform the program design (through understanding the financial needs of different councils) for future grants and/or other external funding sources.
- Stormwater Trust to conduct an audit of the internal activities of councils to ensure that low-cost organisational functions are implemented. This could include reviews of organisational practice changes, such as improved development control policy practices and improved outdoor operations and maintenance.

Only when the outcomes of these two auditing measures are implemented can an informed decision be made about whether to audit the overall implementation of the stormwater plans.

Community Involvement in Stormwater Management

We strongly recommend that it is formally acknowledged that the community is a necessary and important part of any future stormwater planning process. We also strongly recommend that the future USP directly address the broad-scale failure of the community engagement processes experienced in this first stage of the planning process. The following points are recommended activities that will help to address this program failure:

- a formal recognition that there is a lack of community consultation expertise at both the State and local government levels
- the Stormwater Trust to help local government in the development of effective community engagement and capacity building strategies for each catchment. This work is to be linked and integrated into councils' community consultation obligations, as identified in the *Local Government Act 1993*.
- the Stormwater Trust to collaborate with and implement program incentive structures to encourage involvement from both the community services and planning sections of council organisations for effective urban stormwater planning and management
- future program funds to be made available to local government to build the community's capacity to deal with the issue of urban stormwater quality management.

Improved Guideline Documents

We recommend that future considerations of program guidance and facilitation significantly move away from primary concerns about providing quality guidance documents and towards direct collaboration and partnership. While it is important to improve the existing draft guidance documents, more critical steps should be implemented for the effective future planning of urban stormwater management. These steps include:

- Benchmarking and best-practice research need to be conducted with the first round of planning efforts by local government. The outcomes of this work need to be made available to all councils to clearly promote what the potential obstacles are and what effective planning practices consist of.
- A contact forum for all council officers involved in the planning process needs to be set up. This recommendation has come directly from the officers that participated in the focus groups throughout the evaluation. This forum can be coordinated by the EPA and needs to promote the sharing of experience, knowledge and relationship building between State and local government.
- Detailed guidance is to be provided by the EPA on the catchment coordination processes necessary for preparing the plans. This information will in part derive from the best-practice research recommended above. The ideal roles and relationships of all stormwater stakeholders should be clearly set out so that these become clear objectives for the planning process.

Are Institutional Changes Required?

This area of recommendation is difficult to comprehensively address in this evaluation in isolation from the evaluation outcomes from both the Stormwater Trust grants and the education component of the USP. However, there are several recommendations to be made about institutional changes that would improve the quality of the planning processes:

- A dedicated external funding model needs to be investigated for this program. Two State Government models designed for local government funding were suggested and considered appropriate by several council officers. These models were a program administered by the Roads and Traffic Authority and another administered by the Department of Land and Water Conservation. Both of these models are an ongoing funding source that councils can apply for on an annual basis for funding projects, based on demonstrated need.
- Incentive structures need to be set up to keep the momentum of the catchment steering committees continuing. As reported by many officers, this was considered a very beneficial part of the planning process, but since the stormwater plans have been finalised there has been no incentive to keep these committees going. We recommend that investigations into formalising these steering committees be undertaken.
- We recommend that coordinator positions for each of the greater metropolitan catchments be established. The evaluation evidence clearly demonstrated that catchments that had either an active catchment management committee or catchment management trust clearly had more successful catchment coordination between the key players and had more effective planning processes. We recommend that, since the catchment management committees have been disbanded, the future potential of the newly established catchment boards for undertaking this role should be considered.
- We recommend that the incentives to use external consultant organisations to prepare future plans be addressed. The evaluation evidence demonstrates that the catchment councils that appointed a temporary project officer (that is, a proxy catchment coordinator) had more

ownership of the planning process and believed the needs of their council were better represented than the catchment councils that engaged larger consultancy organisations.

Are Future or Ongoing Community Education Programs Required?

This area of recommendation is also difficult to address comprehensively in this evaluation in isolation from the evaluation outcomes from both the Stormwater Trust grant education projects and the education component of the USP. The recommendations for this section are the same as those set out in the *Community Involvement in Stormwater Management* section above.

10.3 The Future Role of the EPA

We consider that the next phase of the future program should be facilitated and administered by the EPA. It was evident throughout the evaluation that the individual staff members within the Stormwater Team were highly valued by the council officers, and the recent departure of one of the team's key members was considered a significant loss, particularly by the regional council officers. This knowledge developed by individual EPA members and existing intimacy with the program needs to be harnessed and integrated within the EPA to ensure the transfer and integration of this important capacity.

During the evaluation, one of the strongest themes that emerged about the role of the EPA Stormwater Team was that they did not have sufficient resources to facilitate and administer the program adequately.

- We strongly recommend that in future planning processes the EPA should be more appropriately resourced to provide extension workers during the planning process. These extension workers would take on an active participation role in the catchment steering committees. They would share information across catchments and help councils and other State agencies to address concerns and catchment coordination issues.
- These Stormwater Trust extension workers would operate in partnership at the catchment level with the primary aim of facilitating the transfer of the existing council officers' skills and knowledge back into their council organisations. This would be done through helping council officers to identify potential roles and responsibilities across the vertical and horizontal dimensions of the council organisation, with due regard for the individual culture of each council organisation.
- Direct partnership with the Stormwater Trust at the catchment level has been identified as potentially elevating the status of the steering committee and urban stormwater management, and improving the opportunities for gaining senior executive attention within councils. Extension workers should also be charged with the responsibility of keeping abreast of the political priorities of each council and using this knowledge to help the future program to become part of councils' political agenda.
- The Stormwater Trust needs to collaborate further with the Department of Local Government, Local Government and Shires Associations, Regional Waste Boards, Regional Organisation of Councils and other forums that have connection and influence with the elected representative level of local government. The objective of this collaboration is to develop and refine political incentive strategies for effective urban stormwater planning and management at a local level. This recommendation is an imperative, following the officers' claims that there is a lack of political will within councils to move stormwater management plans from councils' management plans into council's budgetary processes for implementation priority.

10.4 Recommendations for Future Program Evaluation

Although this evaluation was well supported by the Stormwater Trust, the EPA and all the other players in the planning process, the objectives and expected outcomes of the program have not been clearly defined. For future evaluations the Stormwater Trust and the EPA need to be clearer about what these objectives are, so that effective and informative performance measures can be put in place to continually improve the program to meet the needs of all stormwater stakeholders and ultimately improve the health of urban waterways. Some of the future objectives could include:

- Implement and adequately research and resource strategies to reduce non-structural pollution sources.
- Achieve appropriate community engagement in the planning process, focusing towards improved civic environmentalism.
- Ensure that councils can demonstrate adequate data sources on areas such as council activities, community knowledge and awareness and organisational integration.
- Ensure that there is a clearly established consensus between all stakeholders on each catchment's coordination processes, and that all stakeholders recognise the importance of the ongoing nature of these processes for successful ongoing stormwater management planning outcomes.
- Encourage councils to benchmark their current positions according to program design criteria, such as existing financial capacity for stormwater management, specific details of council outdoor activities, lines of organisational communication, and decision-making processes that affect stormwater management activities. If these types of criteria are specifically benchmarked, councils can appropriately measure their performance and achievements in stormwater management with due regard to their context relative to other council organisations.
- Ensure that the Stormwater Trust improves its understanding of the organisational issues of local government, so that the program design and administration meets the needs of all players in the planning process. This could be achieved through direct collaboration and participation with catchment steering committees and individual council officers.
- Ensure that the Stormwater Trust improves the design of the program, so that the planning process is effectively coordinated with other programs and planning instruments operated by other State agencies.

11. References and Further Reading

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