Cooperate or coerce? Intergovernmental approaches to mainstreaming Water Sensitive Urban Design

P Morison¹, R Brown²

¹School of Geography & Environmental Science, Monash University, peter.morison@arts.monash.edu.au
²School of Geography & Environmental Science, Monash University, rebekah.brown@arts.monash.edu.au

Abstract

Water Sensitive Urban Design (WSUD) is still largely in its infancy, and many governments, organisations, and communities are still reinforcing the traditional urban water management approach of highly engineered, mutually exclusive water supply, wastewater, and drainage systems. Many agree that institutionalising WSUD to establish widespread practice can only be achieved through a cooperative partnership approach that includes state and local governments. However, there is no consolidated assessment of the necessary ingredients and key factors that produce successful intergovernmental arrangements for WSUD.

This paper contributes to this important knowledge gap by reporting on: a critical analysis of intergovernmental urban water policy and program design; and a comparative analysis of two case studies (Urban Stormwater Program and Flood Prone Land Policy) in New South Wales that apply ‘coercive’ and ‘cooperative’ intergovernmental policy mandates to institutionalise improved water management practices. Important conclusions drawn from the analyses are: blanket coercive or cooperative policy mandates do not influence the policy commitment of local governments; and that pre-existing local government commitment to urban water policy goals are a better determinant of intergovernmental program success. Consequently, program designers need to consider a blend of policy instruments that address the variable capacity and commitment of local governments.

Introduction

With the rise of environmentalism and community concern for more sustainable uses of water and the protection of local water systems (Beder, 1991, John, 1994, Strang, 2006), the management of urban water has changed from engineering efficient conveyance schemes, fundamentally designed to protect public health, toward integrated approaches that address environmental conservation, public health and safety (see Chocat et al., 2001, Newman, 2001, Niemczynowicz, 1999, Rauch et al., 2005). Accordingly, a number of recent concepts have emerged across the globe, such as Water Sensitive Urban Design (WSUD), that embrace the aspects of sustainability in urban water management (Brown, 2005). Governments have followed these concepts, formulating specific policies and grant programs, exhorting at-source rainwater capture and reuse facilities, and prescribing stormwater pollution treatment and runoff-reducing technologies for urban developments and public assets (Mitchell, 2006, Wong, 2006).

However, the prevailing institutions impede this movement toward WSUD; the observed ‘institutional inertia’ is partly attributed to the inherent complexity of the institutions and their administrative arrangements and functions (Brown, 2005). In particular, water catchments often do not align with electoral boundaries, and the complex array of supply, waste, drainage, and natural systems are generally governed by a multiplicity of organisations with differing agendas and objectives (Imperial, 2006, Thomas et al., 1997). This fragmentation and duplication of responsibility is widely recognised as posing a significant policy design challenge at the intergovernmental level (Brown, 2004, Brown, 2005, Keath and White, 2006).

With the preponderance of multiple governments managing urban water systems at both vertical and horizontal governance scales, it is clear that effective intergovernmental policy
implementation is essential if sustainable urban water management practices are to be mainstreamed. While much attention has been focused on the configurations of intergovernmental management programs (O’Toole, 2000, Sabatier, 1986), there has been limited attention given to the relationship between the overall policy mandate style and the success of the intergovernmental environmental programs (see Burby, 1995, May et al., 1996). The style of policy mandates are typically either cooperative or coercive with an intent of co-opting lower-level governments to meet the policy objectives (May and Handmer, 1992).

Cooperative intergovernmental mandates aim to enhance local government capacity to work toward achieving higher-level policy goals without prescribing the means to which the goals are attained. Financial and technical devices are used to enhance local council commitment to policy goals and building capacity in part. There is an assumed knowledge by the directing governments of the policy framework but not in the implementation of the policy – the local governments devise the specific actions that arise from the policy. There is also an assumed commitment by local governments to the policy goals, defined as ‘normative commitment’ (May et al., 1996). The effectiveness of such a policy mandate is determined by the level of commitment and ownership achieved by local governments, as demonstrated through their new implementation practices.

Coercive mandates expect local governments to act as ‘regulatory agents’ of the higher tiers of government, whereby they are charged with conforming to rules prescribed by the higher-order governments. Sanctions are applied when the local governments fail to undertake or deviate from their prescribed roles and procedures. The capacity of the local governments to conform and undertake the procedures is considered but not a focus of coercive mandates; rather, compliance monitoring of local governments is the dominant mechanism put to use by higher-order governments. Policy compliance by local governments through compulsion is the result of ‘calculated commitment’, where these organisations previously calculated the consequences of failing to comply (May et al., 1996).

With the limited research into the effects of intergovernmental policy mandates, it remains uncertain as to whether a coercive or a cooperative mandate, or a blend of both mandates, produces the most effective outcomes for urban water management. This paper attempts to resolve this issue by drawing upon a retrospective meta-analysis of the outcomes of two case studies with different policy mandates. The first is a cooperative mandate – floodplain management planning under the New South Wales (NSW) Flood Prone Land Policy (Handmer, 1996, May et al., 1996), and the second is a coercive mandate – stormwater management planning in the Sydney metropolitan area under the same state’s Urban Stormwater Program (Brown, 2003). The similarity of scale (catchments in NSW), administrative arrangements (state and local governments), and political cultures within local councils provides a unique opportunity to analyse the effects of policy mandate with a high degree of confidence. The findings of the analysis are summarised within a framework of policy mandate design, implementation commitment, and capacity-building initiatives, with concluding comments on a recommended model for future intergovernmental program design.

Case 1: The Cooperative Policy Mandate for Floodplain Management Planning in NSW
In 1984, the NSW Government introduced a state-wide flood policy that established a ‘merits’ approach to regulating development in flood-prone areas (Handmer, 1996). To receive state government assistance under the policy, local governments (councils) are expected to
cooperatively prepare floodplain risk management studies and plans, which aim to reduce the impacts of flooding within flood-affected catchments (DNR, 2005). The merits approach allows councils to regulate (but not preclude) urban developments within the floodplain using risk management and triple bottom line principles. The incentives for councils to follow the approach are the financial grants for mitigation works and plan development, and the immunity from legal liability for flood losses (s. 733, Local Government Act, 1993).

The salient cooperative aspects of the NSW Flood Prone Land Policy and its Floodplain Management Program are: the focus on policy goals, rather than prescribed standards, that are shared by state and local governments; guidance for floodplain management plans to be prepared in accordance with the Floodplain Development Manual (DNR, 2005); funding for flood studies and floodplain risk management plans according to their true cost; and the flexibility to develop floodplain management studies and plans that are locally relevant.

**Case 2: The Coercive Policy Mandate for Stormwater Management Planning in NSW**

In 1997, the NSW Government committed $60 million (AUD) to a three-year Urban Stormwater Program to encourage and support improved urban stormwater quality management practices (Sharpin et al., 1999). As part of the program, 166 local councils throughout NSW were legally directed\(^1\) by the state government’s Environmental Protection Authority (EPA) to prepare stormwater management plans (Brown and Ryan, 2000). The plans were to be prepared jointly across catchments, pre-determined by the EPA, with neighbouring local councils and other ‘stakeholders’ (other relevant state agencies and the community) in accordance with a twelve-step planning process (Sharpin et al., 1999). Councils in the Sydney metropolitan area were given fifteen months to prepare and submit the plans to the EPA\(^2\). The main focus of the plans was on water quality improvement through stormwater management interventions, including exhortation and education programs, pollutant removal techniques, and riparian improvements (EPA, 1997). A draft guidance document, called the “Council Handbook” (EPA, 1997), explained the aims of the process, detailed the twelve steps of plan development, and included a series of technical appendices to assist councils in the preparation of the plans. Due to the misalignment of local government boundaries with catchments, a majority of Sydney councils participated in at least three stormwater management plans.

The salient coercive aspects of the stormwater management planning requirements are: a legal direction imposing local governments to prepare stormwater management plans; the requirement to produce stormwater management plans by a non-negotiable date using a predetermined process and format; an expectation for councils to take full responsibility for preparing the plans in cooperation with neighbouring councils and relevant stakeholders; and inflexible funding for plan preparation, irrespective of the number of plans each council needed to prepare.

**Effects of the Policy Mandates**

Despite the relatedness of the stormwater management and floodplain management planning processes, and the technical staff involved and the departmental structures of local councils, the state’s adoption of the polarised policy mandates impacted on the commitment of the local

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1. The direction under Section 12 of the *Protection of the Environment Administration Act 1991* was sent as a letter to each council’s General Manager.
2. Forty-four local councils in the Sydney ‘Greater Metropolitan Region’ (as defined by the EPA) were sent the letter on 24 April 1998. The plans were due in July 1999. Rural and regional councils were later directed to prepare the plans.
councils. As identified in Table 1, differing aspects of two policy mandates devised by the NSW government created two distinct cultures of commitment. The floodplain management planning policy instruments – the methods used to achieve the policy objectives (Bridgman and Davis, 2004) – appealed to a culture of normative commitment among the councils that had subscribed to them. On the contrary, the stormwater management planning instruments created a culture of calculated commitment, whereby councils made a decision to follow the prescribed recipe-book planning process and to submit plans by the due date in the fear that their refusal might lead to penalisation.

Table 1: Aspects and Effects of the Policy Mandates

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Case 1: Floodplain Management Planning</th>
<th>Case 2: Stormwater Management Planning</th>
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<tbody>
<tr>
<td>Policy Objective</td>
<td>Achieving goals – balancing the social, economic, and environmental costs and benefits of floodplain regulation.</td>
<td>Adherence to processes and standards primarily addressing ecological issues.</td>
</tr>
<tr>
<td>Policy Approach</td>
<td>Cooperative emphasis.</td>
<td>Coercive emphasis.</td>
</tr>
<tr>
<td>Intergovernmental Relations</td>
<td>State guidelines; local refinement of standards; local approval and adoption of plan.</td>
<td>State prescriptions; local implementation of prescriptions; state approval of locally adopted plan.</td>
</tr>
<tr>
<td>Capacity-building Instruments</td>
<td>Floodplain Development Manual sets out guidelines; technical assistance for local flood studies and floodplain management studies and plans; flexible funding for plan development; creation of local floodplain management committees with state flood unit delegates.</td>
<td>Council Handbook details out process required in direction and further technical guidelines; limited technical assistance for plan development; fixed funding for plan development; creation of local stormwater planning committees generally without regular EPA involvement.</td>
</tr>
<tr>
<td>Commitment-related Instruments</td>
<td>Tax incentive for leaving flood prone land vacant; liability waivers for flood related actions or decisions consistent with state policy; funding for plan implementation.</td>
<td>Legal direction with deadline for plan submission; funding for plan implementation.</td>
</tr>
<tr>
<td>Effects</td>
<td>Significant gaps in commitment; committed councils produced high quality plans and regulatory instruments; increased organisational capacity for floodplain management within the committed councils.</td>
<td>High level of compliance (plans submitted); significant commitment deficit; little impact on organisational capacity for stormwater management.</td>
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(Source: Brown (2003); Brown & Ryan (2000); Handmer (1996); May et al (1996))

However, both policy mandates did not facilitate high levels of commitment, as evidenced in Table 2. Approximately forty percent of the councils displayed low levels of commitment after implementation of the policies, and under the stormwater management planning directive, only eleven percent of the Sydney councils were high performers. These findings are consistent with other studies of the effects of policy mandates on the commitment of local governments to state policy goals for planning (Dalton and Burby, 1994), and environmental hazards (Petak and Atkisson, 1982, Rossi et al., 1982).

The Symbiosis of Commitment and Capacity

Given cooperative or coercive state policy mandates do not appear to significantly impact on the policy commitment of local governments, the question remains as to what does affect their commitment. This ‘commitment conundrum’ (May et al., 1996) is a problem for analysts in understanding the key drivers for effective policy implementation, yet the previous research does not provide clear answers to this important question.
<table>
<thead>
<tr>
<th>Degree of commitment</th>
<th>Under cooperative floodplain management planning mandate</th>
<th>Under coercive stormwater management planning mandate</th>
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<tbody>
<tr>
<td>Low</td>
<td>39%</td>
<td>43%</td>
</tr>
<tr>
<td>Moderate</td>
<td>17%</td>
<td>46%</td>
</tr>
<tr>
<td>High</td>
<td>44%</td>
<td>11%</td>
</tr>
<tr>
<td>Number of Cases</td>
<td>115</td>
<td>44</td>
</tr>
</tbody>
</table>

1 Burby & May (1998) defined commitment as ratings by local planning director (or similar official if no planning director) of the degree of commitment of elected officials to hazard mitigation.
2 Brown (2003) defined commitment as ‘performance’ using the following criteria: (1) a list of high quality management strategies in each council’s management plan; and (2) the implementation of the majority of the proposed first year strategies as specified in the management plans.

Burby and May (1998) identified the following factors that induced commitment under the NSW flood policy mandate: the quality of the plan; previous natural disasters; community attention to natural hazards; and local population growth and the related demand for land in hazardous areas. For the Sydney councils involved in the stormwater management planning process, Brown (2003) identified consistent qualities in the high performing, committed councils. Each had developed a whole-of-council commitment to stormwater management that was supported by the elected officials and the local community. Those councils were autonomous, and felt stymied by the ‘antiquated’ programs run by state agencies (Brown, 2004). Among the poor commitment councils, however, were the common characteristics of low stormwater management priorities, and a disposition toward minimal compliance with state-driven directives. Any assumption that the state program alone was sufficient for mobilising local government commitment was proved erroneous (Brown, 2004).

A common theme in the two cases is the influence of pre-existing organisational capacity on the policy commitment of the councils. The political influence and involvement of the community clearly appears in both case studies, increasing the capacity of the local governments to prepare and implement the plans. While organisational capacity builds organisational commitment, the reverse argument carries as well. Organisational commitment garners political and community commitment, which in turn, buttresses greater organisational capacity, and so on. Thus, the two key ingredients are symbiotic – both are interdependent and cannot be considered in isolation.

The capacity-building instruments executed by the state agencies to induce local government commitment varied considerably. As summarised in Table 1, the floodplain management planning support was in the form of technical assistance, flexible funding for plan development, and the creation of a locally representative floodplain management committee. The Floodplain Development Manual provided guidance to local governments to undertake studies and formulate plans that gave them exemption from liability for flood advice, actions, or decisions. This provided an incentive for plan preparation. Local government officers involved in the program experienced satisfactory technical assistance from state agency officers, and the support of funding for plan development that was based on actual costs (May et al., 1996). The institution of floodplain management committees to oversight the preparation of studies and plans included members of the community and local elected officials, in addition to state and local government officers. The committee provided an opportunity for the diverse group of delegates to discuss the floodplain issues relevant to the community with the input of technical advice and political support.

In contrast, the NSW stormwater management planning regime provided a draft guidance document that lacked a detailed framework for coordination with the community and other
stakeholders, competent but limited technical support from EPA officers (with only five staff appointed to implement the program), inflexible funding ($30,000 AUD per metropolitan council) for plan preparation irrespective of the number of plans required, and the requirement for local planning committees with no community and political representation (Brown and Ryan, 2000). With the limited staff complement within the EPA, few occasions allowed for their attendance on the committees. What capacity building there was came in the form of informational and guidance materials for improved stormwater management practices. Yet a number of the promised technical documents remained unpublished by the end of the planning process (Brown, 2005).

With the implementation of organisational capacity-building instruments as part of a program, one may expect the commitment of councils to improve. However, the results for the floodplain management planning program, while capacity-building efforts were well-received (May et al., 1996), did not instil a high level of commitment among the local councils (Table 2). May and Handmer (1992) observe the typical pattern for cooperative programs as one for which the ‘leading’ organisations (in this case, councils) advance further, while the ‘lagging’ organisations fall further behind. The rationale behind this observation is the normative commitment of the ‘leaders’ (as previously discussed), who take advantage of the capacity-building features of the policy to enhance their own capacity to prepare and implement the floodplain management plans. For the ‘laggards’, lacking the initial, normative commitment to the policy leaves them to fall behind.

The answer to the commitment conundrum, it appears, is not in the application of exclusively coercive or cooperative policy mandates but a blend of policy mandates that relate to the relative capacities of the local governments. The following section explores this perspective.

**Commitment, Capacity, and Clever WSUD Policy Instrument Choice**

Applying either form of policy mandate will require adjustments over time in response to changes in the commitment of the target lower-level governments. Policy adjustments are made in terms of the selection of policy instruments from the policy toolkit. Altering, deleting, and swapping the policy instruments will fundamentally transform the effectiveness and efficiency of policy implementation.

For the state-local intergovernmental WSUD domain, choosing, mixing and optimising policy instruments to meet the policy goals are not simple. This issue has received greater attention over the last decade for the regulation of industries and enterprises (e.g. Gunningham and Grabosky, 1998, Gunningham and Sinclair, 2002, Howlett, 2005). Little information is known about how best to select and mix policies in an intergovernmental context, but scholarly guidance is growing (see Eliadis et al., 2005, May, 2003, Salamon, 2002).

To improve the commitment of local governments to intergovernmental WSUD policy will involve a process of instrument choice and mix, trial, and policy learning using adaptive management approaches. Choosing instruments will rely on the known capacities of the organisations to implement them. For local governments, an organisational development model has been developed and applied that takes into consideration the relative capacities of individual councils (Brown, 2004). Within the model, five variables make up the organisational capacity of local councils: stormwater commitment and action (relating to non-conventional, sustainable stormwater management); political capital (relating to external, socio-economic and civic community contexts); expertise (technical and human resource
capabilities); organisational structure (intra- and inter-organisational domains); and organisational culture (the interplay between government actors and institutions).

In applying the model, Brown (2003) identified a distinct spread of local governments capacity along a continuum of low to high organisational capacity. A relevant finding of this research is the clear correlation between organisational capacity and commitment. The low-performing and high-performing councils, discussed earlier in this paper, exhibit the distinct features of ‘laggards’ and ‘leaders’ (Gunningham and Sinclair, 2002), respectively.

The essence of policy instrument choice is to select the instruments that will bring the laggard organisations up to a minimal standard, while providing incentives and rewards to the leaders (Gunningham and Sinclair, 2002). This is imperative where policy goals require the entire commitment of the policy network. The imperative is valid in this case, where to meet policy goals in the form of receiving water quality targets necessitates the wholesale commitment of local government to WSUD across the target catchments. With such an imperative, a careful mix of regulatory tools and capacity-building instruments for the laggard councils (e.g. exhortation and education programs for councillors and senior staff) may be required, while incentive programs (e.g. rebates, industry promotion) and self-management schemes (e.g. ISO-14001 programs) may provide the impetus for continuous improvement among the leading councils. This is an area for further research that over the next three years will inform the design of an intergovernmental stormwater program in Melbourne.

Conclusion
Mainstreaming WSUD is an arduous exercise, where the policy subsystem to which it relates involves numerous organisations across a spectrum of government and private industry. The review of urban water policy implementation in this paper highlights the complexity of policy implementation, even within the lesser intergovernmental domain. The case studies of management planning under the NSW Flood Prone Land Policy, and the NSW Urban Stormwater Program, provide insights into the variable commitment of local government to either cooperative or coercive policy mandates, and its relationship to organisational capacity. A key finding of this research is that the simplicity of cooperative or coercive policy mandate choice is inadequate for addressing the variable commitments of organisations and achieving successful policy outcomes. As a consequence of this commitment conundrum, WSUD policy should be redrafted to include sophisticated instrument mixes that correspond to the organisational capacity and commitment of local governments.

References