

Chapter 4

Management of stormwater by state governments, local governments and water utilities

4.1 Stormwater management is the responsibility of state and local governments. This chapter considers the evidence received about the roles that water utilities, local governments and state governments perform in stormwater management, and the implications of these arrangements for how stormwater is managed.

Local governments and water utilities

4.2 Many submissions commented on the stormwater management roles performed by water utilities and local governments. One issue that was noted is the legal ownership of stormwater as a resource, and the implications that this has for the overall approach to stormwater management. The limited resources available to local governments were also noted. These issues were summed up by the Cooperative Research Centre (CRC) for Water Sensitive Cities, which observed in its submission:

There are very few incentives for water authorities/utilities to co-develop water resource management strategies with local government, and local governments have limited resources and jurisdictional role in delivering public space strategies around the cleansing of stormwater and managing it as a resource.¹

4.3 The following paragraphs explore these issues.

The 'ownership' of stormwater is seen as a problem

4.4 The Australian Water Association noted that the one consistent attribute in how water and wastewater is managed is that 'the water utilities do not manage or own the stormwater assets'. Instead, local government is responsible.² Various stakeholders consider that this arrangement, where different water sources are managed by different entities, is problematic. The Stormwater Industry Association WA, for example, argued that:

Significant pressures on our water resources in recent times, particularly from declining rainfall runoff and population growth, have highlighted the importance of urban and regional water planning. It is no longer appropriate to consider elements of the water cycle independently, in order to provide for water supply, sewerage or drainage, as this will result in disconnected systems which often lead to impacts on the water quality of waterways,

1 Cooperative Research Centre (CRC) for Water Sensitive Cities, *Submission 44*, p. 12.

2 Australian Water Association, *Submission 47*, p. 2.

wetlands and the groundwater as well as the inefficient, single use of water.³

4.5 Some submissions argued that stormwater has been seen by local councils as a problem that needs to be 'avoided and discharged as quickly as possible', and that this has shaped the approach taken to stormwater management.⁴ As Stormwater Australia put it, 'stormwater is not "owned" by any agency'.⁵ Mr Andrew Allan, President, Stormwater Australia, observed that stormwater-related projects are, at present, 'probably a public good type investment' because stormwater is not owned by anyone at the moment. As such, Mr Allan reasoned that stormwater management 'is different to the other types of water supply and services that are provided in the urban context'.⁶

4.6 The CSIRO stated that the 'separation of management functions among and within institutions in each jurisdiction for water supply and sewage, stormwater, groundwater, streams, and aquatic ecosystems in and near urban areas' has been a factor in the urban water sector being 'slow to adopt basin water planning approaches'.⁷

4.7 The City of Melbourne explained that the governance of stormwater, which it considers is 'currently quite complicated', has implications for decision-making on the use of stormwater as a resource. The City explained that although the council owns and manages the majority of stormwater drainage infrastructure, it does not own the water. The following overview of the legal status of stormwater in Victoria, and some of the implications of the current arrangements, was provided:

Current legislation is interpreted to state that water falling on building roofs (rainwater) is the property of the building owner, but once it reaches the ground and becomes stormwater it become the property of the crown. This puts council in a position of owning and maintaining the assets but not its contents. To date this has not been a problem as it is an undervalued resource and we have good working relationship with the relevant authorities. But there is not surety of supply with upstream landowner able to capture water irrespective of any downstream systems. For example, if the parliament building in Spring St was modified to capture all the stormwater falling on it, then the 45 million [litre] Fitzroy garden scheme

3 Stormwater Industry Association WA, *Submission 21*, p. 2.

4 Dr Darren Drapper, *Submission 10*, p. 2.

5 Stormwater Australia, *Submission 19*, p. 16.

6 Mr Andrew Allan, National President, Stormwater Australia, *Committee Hansard*, 18 May 2015, p. 3.

7 The CSIRO observed that 'approvals have been required from up to eight or more organisations in some cases for establishing schemes such as the harvesting of stormwater via managed aquifer recharge'. CSIRO, *Submission 42*, p. 5.

would lose 25% of its catchment and hence the corresponding inflow volume.⁸

4.8 Different approaches and policies of various local governments also present challenges for the stormwater industry. Stormwater Industry Association WA advised that 'standards and policies of local governments are often inconsistent and this significantly reduces efficiency of approach for the stormwater industry as time is spent negotiating minutia instead of focussing on outcomes'.⁹

4.9 The Waterway Ecosystem Research Group stated that 'certainty around "ownership" of the stormwater resource is required to facilitate investment'. It was suggested that the committee 'should consider the merits of facilitating the involvement of water authorities and municipalities as "providers" of stormwater services (treatment, mitigation and supply as a resource), overseen by a suitable body with the power to ensure optimal outcome'.¹⁰ The Australian Water Association called for the management of stormwater infrastructure to be integrated into the water/wastewater utility 'once the basic flood mitigation role has been resolved'. The Association noted that 'the skill sets involved in management and maintaining water and wastewater assets are very similar to those required to manage and maintain stormwater assets'. Water utility models in New Zealand were cited as examples.¹¹

4.10 In Australia, Melbourne Water was put forward as being 'one of the better models in existence'. Mr Adam Lovell, Executive Director, Water Services Association of Australia (WSAA), explained that as Melbourne Water operates the trunk mains for water, wastewater and stormwater, they are well-placed to work with retail water companies. Mr Lovell continued:

In Melbourne there is the bulk supply, which is Melbourne Water, and you have got the three retailers that operate in the rest of the city. They operate the smaller, defined area of water and wastewater reticulation systems. But what Melbourne Water can do under their model, because of their legislative nature, is bring in councils, the local water utilities and government very effectively to deliver fantastic projects. In our submission there is a case study of a project in Clayton, in the wetlands, which produced a fantastic outcome. That is the sort of model which could

8 City of Melbourne, *Submission 43*, p. 8. Sydney Water also noted that both it and local councils are involved in stormwater, and consequently there is an opportunity to improve stormwater management. See *Submission 36*, p. 1.

9 Stormwater Industry Association WA, *Submission 21*, p. 10.

10 Waterway Ecosystem Research Group, The University of Melbourne, *Submission 17*, p. 6.

11 Examples of water utilities that manage stormwater include Capacity Infrastructure Services (trading as Wellington Water) in Wellington, New Zealand and Metrowater, in Auckland. See Australian Water Association, *Submission 47*, p. 3.

potentially apply here or in other places. Brisbane City Council had a very similar type of model.¹²

4.11 Mr Lovell argued that, although debates about ownership tend to arise, he considers that attention should instead be given to 'who has actually got the stewardship to bring in stormwater as part of the urban water cycle'. He concluded:

That is our last frontier in Australia. We lead the world in everything except having stormwater properly incorporated into the urban water cycle. So one model for South Australia could be the Melbourne water model.¹³

4.12 Professor Tony Wong, the Chief Executive Officer of the CRC for Water Sensitive Cities, highlighted how the growing global population will require a reassessment of current practices. Professor Wong observed that the traditional approaches to managing this pollution 'served us well when we had plenty of resources and the environment had plenty of capacity to assimilate the pollution that we discharge'. In relation to water management, he argued that a different institutional framework is now required so that better outcomes are encouraged. Professor Wong explained:

...many cities all over the world—it is not just us—were able to get away with simply compartmentalising water management in the past. The delivery of taps and toilet services was seen as one that would be revenue generating, while the delivery of flood mitigation, water quality protection and drainage is simply seen as a community service. We have now got to a point whereby those institutions are impeding our ability to integrate all of those services such that we can actually look at multiple outcomes delivered by multiple stakeholders to address this issue of climate extremes.¹⁴

4.13 Witnesses suggested that there are business opportunities available from alternative water management models. When asked why water utilities do not appear to utilise stormwater to a greater extent, Professor Timothy Fletcher, a professor of urban ecohydrology at the University of Melbourne, suggested that this outcome can be partly explained by such actions being outside of the water utilities' charters of operations, as well as the lack of economic incentives.¹⁵ Professor Fletcher outlined an alternative water management model that could encourage the greater utilisation of stormwater:

If someone has a problem, because they now cannot discharge water, and someone has a demand for that water we have a marriage made in heaven.

12 Mr Adam Lovell, Executive Director, Water Services Association of Australia (WSAA), *Proof Committee Hansard*, 26 August 2015, p. 5.

13 Mr Adam Lovell, WSAA, *Proof Committee Hansard*, 26 August 2015, p. 5.

14 Professor Tony Wong, Chief Executive Officer, CRC for Water Sensitive Cities, *Committee Hansard*, 18 May 2015, p. 25.

15 Professor Timothy Fletcher, Professor of Urban Ecohydrology, University of Melbourne, *Committee Hansard*, 18 May 2015, p. 34.

How to create that incentive is the real challenge...we have tended to find that water authorities stick to their narrow remit, and yet a lot of the work that has been done...suggests that there are attractive business models in water authorities being integrated across all sources of water.

Rather than just saying, 'I take water from a bulk water supplier who has a dam upstream of me; I take it and sell it to the punters,' a water authority could instead say, 'I manage a portfolio of water sources and I provide that to the community, including the services that facilitate those services.' For example, in a new development that is going to be constructed, a water authority might choose to be the provider of the water-tank system on individual houses and, with the very sophisticated telemetry systems that exist now—for example, telemetric flood control so that when a big rain is coming those rainwater tanks can be dropped down to provide protection for the upcoming flood—we can really imagine those water authorities having a much more integrated portfolio. I would argue that in terms of business models that makes them more resilient, in the face of a change in climate.¹⁶

Resources available to local government for stormwater management

4.14 Local governments face direct costs associated with managing the runoff caused by impervious surfaces. Several submitters, however, questioned whether local governments have sufficient resources and are otherwise well-placed to manage stormwater effectively. Stormwater Australia, for example, noted that:

- local governments find it difficult to raise a sustainable revenue stream to support the management of stormwater; and
- many of the public good outcomes that could be achieved from better stormwater management are not within the mandate of local government to deliver, or are benefits that would be derived by 'a broader community outside the specific local government's area of responsibility'.¹⁷

4.15 The various priorities that local governments have, the limited funding available to them and the implications of this tension for stormwater infrastructure was highlighted. Local Government NSW stated that its councils have a stormwater drainage infrastructure renewal backlog of \$633 million at 30 June 2012, which will 'continue to constrain local government's ability to renew existing and provide new infrastructure'.¹⁸

4.16 eWater submitted that often 'councils or other responsible authorities have no operational plans or funding to support the ongoing maintenance of stormwater infrastructure'. eWater added that where funding is available for infrastructure, it

16 Professor Timothy Fletcher, *Committee Hansard*, 18 May 2015, p. 34.

17 Stormwater Australia, *Submission 19*, p. 16.

18 Local Government NSW, *Submission 15*, p. 7.

'is also important to allocate sufficient funding to support the ongoing maintenance of stormwater infrastructures, not just to fund their capital costs'.¹⁹

4.17 Stormwater industry associations also noted asset management issues. In its submission, Stormwater Victoria advised that the estimated asset value of local government stormwater infrastructure is over \$11 billion. Stormwater Victoria contended that, with a general trend for competitive contracting of maintenance services, 'only the absolute minimum of service as required by the contracts' occurs. Stormwater Victoria argued that this is unsustainable and that a new funding model is needed 'so that the costs of renewing and replacing drainage infrastructure are not unsustainably transferred to future generations'.²⁰

Stormwater offsets and levies

4.18 The costs that local governments face can be recovered by stormwater levies, such as those used in New South Wales,²¹ and offsets, such as the offset scheme used in Melbourne. A stormwater offset program allows developers to 'pay an offset where it is not technically or economically feasible to meet best practice stormwater management onsite'.²² Stormwater Australia explained that the offset schemes involve the use of a 'proxy pollutant', such as nitrogen, to calculate contribution rates. The developer may either 'pay an offset or undertake water quality improvement works which achieve the desired regulatory outcome'. Stormwater Australia submitted that:

These schemes are considered effective at managing a component of stormwater impact (eg nutrient pollution as opposed to stormwater volume), however, they are generally limited to new (greenfield) developments, are not universally applied and because of their focus on the development phase, are not set up to address longer term operational issues.²³

4.19 The committee received evidence that demonstrated some of the limitations of existing levy and offset arrangements. Stormwater South Australia submitted that 'there is difficulty in establishing meaningful and legally enforceable cost-sharing provisions with developers for the upgrade of drainage systems which their development flows to but is not actually part of their development'.²⁴ Stormwater Victoria submitted that local governments need a mechanism to secure dedicated revenue for stormwater management. In Victoria, the water utility can levy a drainage charge, however, local councils cannot do so even though they control 'a significant

19 eWater, *Submission 9*, p. 5.

20 Stormwater Victoria, *Submission 20*, p. 7.

21 Local governments in New South Wales are permitted to impose a stormwater levy on ratepayers in relation to new stormwater management services, however, they are not able to impose a levy that relates to existing services. Local Government NSW, *Submission 15*, p. 6.

22 CSIRO, *Submission 42*, p. 4.

23 Stormwater Australia, *Submission 19*, p. 17.

24 Stormwater South Australia, *Submission 32*, p. 2.

proportion of the drainage network'. Instead, funding 'must be sourced from general rate revenue in competition with other services delivered by councils'.²⁵

4.20 In Local Government NSW's view, the ability for NSW councils to impose a stormwater levy on rate payers for new stormwater infrastructure 'has not removed the stormwater infrastructure backlog'.²⁶

4.21 SPEL Environmental was critical of stormwater offset schemes as it considers the introduction of stormwater offsets is not resulting in better management of stormwater. SPEL Environmental noted that Gladstone, Ipswich, Redlands, Logan, Toowoomba and Mackay councils started to collect offsets in 2012, however, none of these councils have implemented a treatment system. SPEL Environmental called on the Australian Government to:

...ban the use of stormwater offset schemes by councils as it is very damaging to the stormwater industry economics and the environment because the treatment is not occurring!²⁷

Role of state governments in stormwater management

4.22 State governments can have clear policy and leadership roles with respect to improving stormwater management in their jurisdiction. For example, in 2009 the South Australian Government released its water security strategy, *Water For Good*. That strategy included a target that, by 2025, up to 35 gigalitres per annum of stormwater is to be harvested in urban South Australia for non-drinking purposes (where economically and technically feasible). This target increases to 60 gigalitres by 2050 for Greater Adelaide, and an additional 15 gigalitres per annum in regional areas.²⁸

4.23 Evidence was received, however, which suggested that the effectiveness of state government efforts to improve stormwater management outcomes can be affected by jurisdictional arrangements within state public sectors and the relationship between state and local governments.

25 Stormwater Victoria, *Submission 20*, p. 7. This evidence was supported by the evidence given by the City of Melbourne. The City of Melbourne advised that although small-scale projects can be funded from the rate base, the majority of its large-scale stormwater harvesting projects have been co-funded by Australian and state government grants. Further, if development is occurring in flood prone areas, the City does not 'have a mechanism to levy a fee for the works that are required in order to provide this development with a better level of flood protection'. The City noted that, as part of its Elizabeth Street Catchment Plan, it intends to explore various options for developer contributions or an offset. City of Melbourne, *Submission 43*, p. 5.

26 Local Government NSW, *Submission 15*, p. 6.

27 SPEL Environmental, *Submission 12*, p. 3.

28 Government of South Australia, *Water for good: A plan to ensure our water future to 2050*, www.environment.sa.gov.au/files/sharedassets/public/water/water-for-good-full-plan.pdf (accessed 16 September 2015), p. 21.

4.24 Stormwater Australia suggested that the 'disparate responsibility arrangements' for stormwater at the state government level are a 'frustration', that results in attention being given 'to more familiar aspects of the water system...such as water supply and sewerage'.²⁹

4.25 Dr Peter Dillon, a retired CSIRO researcher and co-chair of the International Association of Hydrogeologists Commission on Managed Aquifer Recharge (IAH-MAR), stated that in some states, the state and local governments 'are not sharing water infrastructure nor cooperating on integrated urban planning, water resources planning and management, which would benefit all'. Using the federation-era rail gauge issue as an analogy, Dr Dillon stated:

...at this junction, it is not a problem of train tracks and different gauges. The gauges actually fit; we just have two different sets of assets that are run independently. If they were joined together, huge benefits could emerge, as long as the policies are appropriate.³⁰

4.26 The Stormwater Industry Association WA submitted that state governments need to provide better support to local councils. It stated:

Generally support for innovation is high within state government departments but unfortunately this rarely relates to practical assistance as a result of poor resourcing. There is a substantial need for increased investment in technical skills within State Government to provide support and guidance to local government and to assist the development and stormwater industries to develop and implement more innovative approaches to water management.³¹

4.27 Dr Darren Drapper suggested that there are other problems with the relationship between local and state government. To illustrate his concerns, he advised that when the Toowoomba Regional Council wanted to introduce rainwater tanks, it 'required a concerted effort, and significant additional reporting, to challenge the [Queensland] Public Works Minister'.³²

4.28 It was also claimed that state governments could be reluctant to promote the utilisation of stormwater for financial reasons. Dr Drapper, for example, noted that the utilisation of stormwater is potentially a threat to the revenue streams of both state-owned and privatised water utilities.³³

29 Stormwater Australia, *Submission 19*, p. 16.

30 Dr Peter Dillon, *Proof Committee Hansard*, 26 August 2015, p. 17.

31 Stormwater Industry Association WA, *Submission 21*, p. 10.

32 Another example provided was in Hobart, where sufficient non-potable water could be supplied to several industrial uses, however, this 'struggled because there was no legislative vehicle permitting council to capture and sell this resource'. Dr Darren Drapper, *Submission 10*, p. 1.

33 Dr Darren Drapper, *Submission 10*, p. 1.

Regulation of water utilities

4.29 One area where state governments can significantly influence stormwater management is the regulation of water utilities. Several submitters argued that the regulation and limited mandates of water utilities presents challenges for efforts to improve stormwater management outcomes. An example of this argument is that provided by Mr Adam Lovell, Executive Director, WSAA. Mr Lovell stated that 'there is no innovation in the way we fund nor in the way that we regulate stormwater'. A reason given for this is as follows:

Water utilities are regulated to death. One of the criticisms that I have seen in submissions and you will hear it in general is that water utilities have not done enough in this space. The fact is most water utilities operate off a very strict statement of obligations, operating licences or whatever you want to call them, which an economic regulator will look to in black-letter right down to the last cent. A water utility does not have licence to launch itself into stormwater, which it does not operate. Around the country, only Melbourne Water has a very strong legislative role in managing stormwater. Sydney Water operates about 10 per cent of stormwater assets in Sydney. In the rest of the country, zippo. Perth operates it from a drainage perspective.³⁴

4.30 Mr Lovell advised that more desirable outcomes could be achieved if the water utility sector was able to 'work with customers to see what they want'. He provided the following example from the United Kingdom where a water utility had the opportunity to involve its customers in decisions about its priorities, which revealed a preference for improved stormwater management:

...South West Water, over in the UK, has just gone through a price review. It is very similarly structured to Australia. The regulatory agency there said: 'We want to restore the primacy of the relationship between the customer and the water utility. We don't want to be the go-between. We don't want to be wagging our finger at the water utility, saying, "You must do this, you must do that, and this is the price you are going to charge." We want to say to the water utility, "Here is your price cap or here is your revenue cap. You work with your customers to understand what they would like to see from the local water system.'" South West Water is a beautiful part of the coast down there in England. A lot of the customers said, 'We'd like to see stormwater management improved.' Just like in Australia, that water utility does not have control over the stormwater. Through that process, they went back to the regulator and said: 'Customers have asked for better stormwater management. They love their beaches and they want them to be clean as much as possible.' The regulators said: 'Fine, you go and work with the local councils. Here is the funding that the customers actually agreed to go and do that.'³⁵

34 Mr Adam Lovell, WSAA, *Proof Committee Hansard*, 26 August 2015, p. 2.

35 Mr Adam Lovell, WSAA, *Proof Committee Hansard*, 26 August 2015, p. 6.

4.31 As water utilities generate significant revenue, Mr Lovell acknowledged that it could be considered that the money for stormwater management already 'is there'. In his view, 'it is about the way utilities are regulated'. Mr Lovell concluded that the water utilities need greater flexibility to identify and work to achieve the outcomes their customers and local governments want:

I agree that taking a light-handed approach is like a piece of string, but we need to loosen that up. The utilities should be given a revenue or price cap—whatever suits the local circumstances. But they should be told, 'Go and work with your customers and the local councils to determine what sort of outcomes you would like to achieve and then go and achieve it.'³⁶

4.32 Other stakeholders also recognised the difficulties that water utilities can face if they want to perform a greater role in stormwater. Dr Coombes suggested that it could take water utilities 'years of argument with all sorts of different state agencies with different opinions' to gain support for a stormwater project. Dr Coombes used the term 'exhaustion cost' to describe the situation:

It is not the opportunity cost. I would call it the 'exhaustion cost': the cost of battling through all sorts of perceptions and different agendas in different departments and different rules that are set for them in their statement of obligation that get in the road of being able to efficiently deliver those solutions..³⁷

4.33 Dr Coombes illustrated his concerns by referring to a project known as the Werribee Employment Precinct:

We found the best option there in the west of Melbourne was to put stormwater in the aquifer, bring it back out and make it part of the water supply solution—therefore, making more water available to farmers downstream—improving the water quality and deferring some fairly substantial augmentation to get this new city running...When the water authority went to the Essential Services Commission to say, 'This is a great solution,' they said, 'No, we can't consider that because we do not consider stormwater to be water supply and it is outside of our jurisdiction. Go away and do a traditional solution.' They did not quite say that but that was the battle. That is why we need intervention at a higher level.³⁸

36 Mr Adam Lovell, WSAA, *Proof Committee Hansard*, 26 August 2015, p. 7.

37 Dr Peter Coombes, *Proof Committee Hansard*, 26 August 2015, p. 12.

38 Dr Peter Coombes, *Proof Committee Hansard*, 26 August 2015, pp. 12–13.

4.34 Dr Coombes also recognised that the water utilities handle significant revenue. Dr Coombes stated:

I am not saying you take more money off our friends in the water monopolies; I am saying that we better target those funds so we get best use of public money because there is currently a substantial amount of money in environment levies and dividends that has been taken.³⁹

Lack of economic incentives and private sector involvement

4.35 How state and local governments manage stormwater has implications for whether the private sector is able, or has adequate incentives, to develop solutions to stormwater challenges or to become involved in stormwater management.

4.36 Dr Peter Dillon told the committee that, although private sector investment exists for wastewater reuse, in established areas there is 'currently no private sector investment in stormwater management'. He argued that this is 'due to barriers to entry in urban water markets, monopoly positions of state owned water utilities, and the public-good nature of other benefits such as coastal water quality improvement and urban amenity space'. Dr Dillon outlined several developments that, in his view, would need to occur to promote greater private sector involvement in stormwater:

Market mechanisms such as tradable discharge permits, scarcity pricing, water banking and water supply insurance, flood insurance underwriting, greenspace quotas and build-own-operate transfer contracting await development which would provide economic incentives for private investment in stormwater infrastructure and management.⁴⁰

4.37 Mr Adam Lovell, Executive Director, WSAA, noted that the lack of overarching objectives for stormwater management affects the level of private sector investment. He explained:

...each state, each city, each council has different objectives for the way they manage stormwater. That is fine in itself but what it does inhibit is private sector involvement. It inhibits innovation coming into the marketplace to deliver great new ways of managing stormwater.⁴¹

39 Dr Peter Coombes, *Proof Committee Hansard*, 26 August 2015, p. 10.

40 Dr Peter Dillon, *Submission 46*, p. 3.

41 Mr Adam Lovell, WSAA, *Proof Committee Hansard*, 26 August 2015, p. 2.

