



# Institutional arrangements for urban water

Final report

Public report prepared for the Urban Water Reform Committee

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# Contents

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1. Introduction .....	1
1.1. Context and background .....	1
1.2. Objectives .....	1
1.3. Scope and approach .....	2
1.4. Guide to this report .....	4
2. Principles for engagement .....	5
3. Framework for advancing urban water through improved institutional arrangements .....	6
3.1. Developing a conceptual framework .....	6
3.2. Developing proposed model institutional arrangements .....	11
4. Water supply and wastewater .....	12
4.1. Policy and planning .....	12
4.2. Regulation .....	18
4.3. Service delivery .....	24
5. Stormwater .....	27
5.1. Policy and planning .....	31
5.2. Regulation .....	32
5.3. Service delivery .....	32
6. Integrated water cycle management .....	33
6.1. Policy and planning .....	37
6.2. Regulation .....	38
6.3. Service delivery .....	39
7. Conclusion and next steps .....	40
7.1. Conclusion .....	40
7.2. Next steps .....	42
References .....	43

## Tables

Table 1:	Policy and planning outcomes, roles, activities, and proposed model institutional arrangements – water supply and wastewater .....	13
Table 2:	Regulation outcomes, roles, activities, and proposed model institutional arrangements – water supply and wastewater .....	19
Table 3:	Service delivery outcomes, roles, activities, and proposed model institutional arrangements – water supply and wastewater .....	25
Table 4:	Outcomes, roles, activities, and proposed model institutional arrangements – stormwater .....	28
Table 5:	Outcomes, roles, activities, and proposed model institutional arrangements – IWCM ....	35

## Figures

Figure 1	Conceptual framework – water supply and wastewater .....	8
Figure 2	Conceptual framework – stormwater .....	9
Figure 3	Conceptual framework – integrated water cycle management.....	10

## Abbreviations

IWCM	Integrated water cycle management
NWI	National Water Initiative
NWRC	National Water Reform Committee
QWRAP	Queensland Water Regional Alliance Program
UWRC	Urban Water Reform Committee
WSUD	water-sensitive urban design

### About this report

This work was commissioned by the Urban Water Reform Committee (UWRC). The report was developed by Aither and involved extensive consultation with UWRC members. This is a public version of the report delivered in 2020. It has been edited to remove personal and sensitive information, and to improve readability for publication.



# 1. Introduction

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## 1.1. Context and background

The Productivity Commission's 2017 triennial assessment of the National Water Initiative (NWI) called for a renewal of the NWI and identified a range of specific needs and opportunities for the urban water sector to be improved (Productivity Commission 2017). In addition to ongoing efforts by individual jurisdictions, this has generated an increased focus on urban water reform and opportunities for national collaboration and coordination through the Urban Water Reform Committee (UWRC).

In 2019, Aither was engaged to develop a pathway for advancing the urban water sector by identifying priorities and actions and stepping out how they could be achieved. After consulting widely with service providers, local, state/territory and federal Governments, regulators (economic, health and environmental), and water industry representative organisations across all jurisdictions, and taking into account existing reports on and inquiries into the sector, a number of priorities and actions were identified (Aither 2019) and a framework for articulating the overarching vision, objectives and core elements of urban water management was developed (see Appendix A).

Development of this framework was premised on the value in having a common organising framework for stepping out issues and priorities and having a shared vision and objectives to inform the direction of actions in response. The framework, endorsed by the National Water Reform Committee (NWRC) in October 2019, focused on five core elements of urban water management, one of which was 'institutional arrangements'. 'Institutional arrangements' were identified as both a core element of urban water management and a priority area for improvement. This included improvements to realise greater value from many of the significant reforms and steps individual jurisdictions have taken, as well as to fill gaps and address emerging issues and needs.

This report responds to the identified set of priorities and actions for 'institutional arrangements' identified in the *Advancing the urban water sector* report (see Appendix B). It seeks to encourage self-reflection among jurisdictions and promote mutual learning in relation to institutional arrangements to:

- allow jurisdictions to self-diagnose potential gaps and challenges in current institutional arrangements to ensure that these arrangements are optimised to achieve the vision and objectives for the urban water sector in the context of current and emerging challenges
- identify how a diversity of institutional structures can co-exist with a universally agreed set of model institutional arrangements for ensuring that institutional arrangements support achievement of the vision and objectives for the urban water sector, and
- promote development and, ultimately, endorsement of such a set of model institutional arrangements to stand as a reference point to guide the design of current and future institutional arrangements in the Australian urban water sector.

## 1.2. Objectives

This report seeks to:

- identify model institutional arrangements for advancing urban water reform across all jurisdictions, including water, wastewater, stormwater and integrated water cycle management<sup>1</sup> (IWCM) functions in metropolitan and regional areas, and
- provide relevant examples of existing (or intended) urban water institutional arrangements in jurisdictions (especially where these exemplify recurrent issues/challenges or provide insights for mutual learning among jurisdictions), noting that most jurisdictions worked with Aither through the course of this project to complete a stocktake of existing arrangements.

The purpose of this report is to reflect jurisdictions' self-diagnosis of challenges in their institutional arrangements and propose model arrangements that are pragmatic and fit-for-purpose. The report does not attempt to benchmark jurisdictions through specific assessment and comparison of arrangements, rather it provides a framework against which future reform commitments and/or assessments (whether completed by an individual jurisdiction, or nationally) could be structured. All jurisdictions should pursue an outcomes-based approach, optimising their arrangements to maximise the benefits of adhering to model arrangements at minimum cost. This will:

- ensure that the aims of integrated management are achieved in the most efficient manner, and
- safeguard against duplications in institutional structures and governance arrangements.

Written information inputs provided by jurisdictions, telephone consultations with UWRC members and/or their delegates, and existing reports form the evidence base for this report.

The model arrangements proposed in this document are consistent with national reform commitments made through the NWI, and are intended to aid in the implementation of, rather than supersede or replace, existing reform commitments as these relate to institutional arrangements.

## 1.3. Scope and approach

### 1.3.1. Scope

This report is strictly focused on institutional arrangements and their potential to support achievement of the vision and objectives of urban water management captured in the *Framework for advancing the urban water sector* and endorsed by the NWRC in 2019. It does not consider in detail any of the other priorities identified by the UWRC in the 2019 report, although clear and effective institutional arrangements do underpin effective planning and investment decisions and, indeed, all of the core elements of urban water management. Alignment of jurisdictional arrangements with any or all of the model arrangements set out in this report is not of itself sufficient to ensure achievement of the agreed vision and objectives. Due to the breadth and diversity of current arrangements across jurisdictions (noting this report considers all areas – metropolitan and regional – within all jurisdictions), this report does not make recommendations individually tailored to the circumstances of any one jurisdiction. As such, some of the findings and recommendations may apply more to some

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<sup>1</sup> In its report, the Productivity Commission (2020) defined IWCM as 'a whole-of-system, multidisciplinary approach that aims to manage the entire urban water cycle by integrating the delivery of water, wastewater and stormwater services to contribute to the full suite of water security, public health, environmental and urban amenity outcomes that the community seeks.'

jurisdictions than others and/or require more effort in some jurisdictions to fully implement; this is an inevitable outcome of seeking to provide nationally consistent guidance.

### 1.3.2. Approach

The approach adopted to achieve the objectives above consisted of four phases of work, described in turn below.

#### *Stocktake of existing urban water institutional arrangements*

Aither sought insights in relation to current institutional arrangements from each jurisdiction through the completion of a stocktake document by UWRC members. This aligned with the process initiated and endorsed by the NWRC through the 2019 project.

Aither provided a series of questions to UWRC members designed to elicit jurisdictions' views on the effectiveness, efficiency and appropriateness of their own institutional arrangements, including in relation to the suitability of these arrangements to respond to emerging challenges. Aither also provided each jurisdiction with tables describing, based on information held by the Department and by Aither, the roles and responsibilities for water supply, wastewater, stormwater and IWCM within that jurisdiction, with a request that these pre-populated tables be expanded and/or corrected as required. We thank jurisdictions for their responsiveness and engagement with this exercise.

#### *Development of a conceptual framework for advancing urban water through improved institutional arrangements*

To provide a basic structure against which to analyse the stocktake responses received from jurisdictions, and to map out high-level gaps or areas where roles and institutional arrangements could be improved, Aither developed a conceptual framework for advancing urban water through proposed model institutional arrangements (henceforth, 'conceptual framework'). The conceptual framework builds on the endorsed *Framework for advancing the urban water sector* by stepping out proposed model institutional arrangements for the different functions (water, wastewater, stormwater and IWCM) and elements (policy and planning, regulation, and service delivery) within the sector.

#### *Consultation with individual jurisdictions*

Following circulation of both the summary of issues raised through the stocktake exercise and the draft conceptual framework, Aither provided an opportunity for bilateral conversations with representatives of each jurisdiction to talk through the conceptual framework, discuss the draft outcomes, example activities, and proposed model institutional arrangements identified therein, and to canvass the applicability and appropriateness of these to jurisdiction-specific arrangements and constraints. Each jurisdiction that participated in the stocktake exercise took up the opportunity to speak with Aither's consulting team, and those conversations informed adjustments and additions to the substantive content presented through the conceptual framework.

#### *Development of an analytical report*

Based on information collected, and material developed, through each of the three phases of work above, Aither developed this analytical report, focusing on describing activities and proposed model institutional arrangements in detail for each of the functions and elements within the sector.

## 1.4. Guide to this report

This report establishes proposed model institutional arrangements for achievement of the vision and objectives of urban water management captured in the *Framework for advancing the urban water sector* and endorsed by the NWRC in 2019. Recognising that there are numerous factors that may shape institutional arrangements in individual jurisdictions or in geographies within those jurisdictions (e.g. regional areas), the report notes where relevant constraints and/or options should be considered. The remaining sections of the report are as follows:

- **Section 2 – Principles for engagement:** Restates a set of guiding principles for effective participation of states, territories and the Commonwealth developed and endorsed by the UWRC in 2019.
- **Section 3 – Framework for advancing urban water through improved institutional arrangements:** Identifies the outcomes, roles, activities and proposed model institutional arrangements for the different functions within the urban water sector, for both metropolitan and regional areas, and describes the approach to developing proposed model institutional arrangements consistent with established guidance.
- **Section 4 – Water supply and wastewater:** Provides further detail on activities and proposed model institutional arrangements for the water supply and wastewater functions within the sector, including selected examples of how this activity is being undertaken or presents challenges for one or more individual jurisdictions, and considering applicability to regional areas (as relevant).
- **Section 5 – Stormwater:** As with Section 4, for the stormwater function.
- **Section 6 – Integrated water cycle management:** As with Sections 4 and 5, for the IWCM function.
- **Section 7 – Conclusion and next steps:** Synthesises findings from across the functions and elements of the sector, and presents some potential priorities for additional work and collaboration.
- **Appendix A – Framework for advancing the urban water sector:** Presents the framework for articulating the overarching vision, objectives and core elements of urban water management developed and endorsed by the UWRC in 2019.
- **Appendix B – Actions for resilient and effective institutional arrangements in metropolitan areas:** Presents the identified set of priorities and actions for 'institutional arrangements' identified in the *Advancing the urban water sector* report, which have formed the foundations of the present project.



## 2. Principles for engagement

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Gaining the agreement of the Commonwealth, states and territories on shared priorities and actions is critical to success, but may not be straightforward. Achieving full agreement to the NWI took time and particular reforms were more challenging to accept for some, arguably because requirements did not sufficiently reflect different characteristics or needs of jurisdictions.

There is a need for any future agreement to address these types of issues. This includes ensuring any commitments are fit for purpose, reflect the current position of different parties, and focus on achieving consistent outcomes rather than consistent or overly prescriptive inputs or processes.

Cognisant of these issues, in 2019 the NWRC endorsed the following principles as outlined in the previous report for engagement for the Commonwealth, state and territory governments:

- The NWRC and UWRC endorse the vision, objectives and core elements of the framework as an initial step, and further discussions should be held on the details of the priorities and their associated actions.
- Participation in actions is based on the needs and interests of each individual jurisdiction (i.e. the Commonwealth and relevant states and territories 'opt in'), reflecting that not all actions and tasks will be of relevance to each jurisdiction.
- Actions should not resort to the lowest common denominator solution; there should be a focus on lifting performance whilst also incentivising leadership and innovation across the sector.
- Priorities and actions should recognise and build on existing efforts by jurisdictions, including reflecting best practice to help others where relevant.
- An open and collaborative approach should be taken to share practices and learn from past experiences.
- Actions should provide sufficient flexibility for states and territories to implement them, including through a focus on outcomes rather than prescriptive approaches.
- Any consideration or provision of future Commonwealth funding should be linked to a clear and agreed vision and set of objectives for the urban water sector, as identified in the 2019 report.

This project has been undertaken consistent with or considering these principles. We thank each of the jurisdictions and, specifically, each of those agencies/organisations and individuals that contributed to the development of this report.

# 3. Framework for advancing urban water through improved institutional arrangements

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## 3.1. Developing a conceptual framework

As outlined in section 1, Aither developed a framework for articulating the overarching vision, objectives and core elements of urban water management in 2019 (see Appendix A), which was subsequently endorsed by the NWRC. A conceptual framework for advancing urban water through improved institutional arrangements was then developed for this report. The conceptual framework builds on the *Framework for advancing the urban water sector* endorsed in 2019 by stepping out proposed model institutional arrangements for the different functions (water supply, wastewater, stormwater and IWCM)<sup>2</sup> and elements (policy and planning, regulation, and service delivery) within the sector.

The conceptual framework (Figure 1, Figure 2 and Figure 3), divided across three related diagrams, includes the vision, objectives and core elements of the urban water sector – policy and planning, regulation, and service delivery – as outlined in the *Framework for advancing the urban water sector*. By referencing the vision, objectives and core elements articulated in the organising framework endorsed in 2019, the conceptual framework is intended to focus on institutional arrangements while contributing to the same vision and objectives already endorsed by the UWRC and NWRC.

The purpose of the conceptual framework is to provide a basic structure against which to analyse the stocktake responses received from jurisdictions, and to map out high-level gaps or areas where roles and institutional arrangements could be improved, where:

- **outcomes** describe what is sought through urban water management, consistent with the vision and objectives endorsed in 2019
- **roles** reflect the basic elements required to deliver the different functions within the urban water sector
- **activities** describe examples of the specific actions that could be undertaken by relevant parties to achieve the outcomes, focussing on high-level activities, rather than all the sub-activities,<sup>3,4</sup> and

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<sup>2</sup> IWCM considerations could feasibly be reflected across the other three functions rather than as a separate function and this may better reflect the objective of improved integration to be achieved by implementing IWCM. However, Aither has retained IWCM as a stand-alone function, reflecting practice in *Advancing the urban water sector* and encouraging a focus on, and clarity around, IWCM considerations consistent with the view from many jurisdictions that this was needed.

<sup>3</sup> For example, for ‘water security planning’, there would be detailed activities such as hydrologic modelling under various future inflow scenarios that underpin system-wide water security planning. The intention was not to step out activities to this level of detail. Rather, the activities focus on the high-level function to enable the link to institutional arrangements to be identified. Furthermore, a number of areas that were raised in the 2019 report such as engaging with the community on recycling are better addressed through a separate piece of work.

<sup>4</sup> Aither acknowledges that there are likely to be a number of ways in which outcomes might be achieved. The examples in Figure 1, Figure 2 and Figure 3 and in the following sections of this report present one approach, drawing from observations across jurisdictions.

- **proposed model institutional arrangements** explain how the different roles could be performed, including to achieve NWI-consistent separation of roles for water resource management, standard setting and regulatory enforcement, and service provision, recognising that the specific ways in which these proposed model institutional arrangements are reflected in practice will vary by jurisdiction.

Analysing the jurisdictional stocktake responses has uncovered potential improvements as well as the merits of establishing specific institutional arrangements or roles at a national level in these areas, noting recent developments such as the publication of the Productivity Commission’s research report on IWCM (Productivity Commission 2020). We envisage that, for the most part, implementation of proposed model institutional arrangements will not require significant machinery of government change or creation of new agencies or entities. Rather, the focus is placed on clarifying roles of existing institutions, including by identifying opportunities for greater networking of accountabilities and responsibilities between existing bodies and arrangements.

We acknowledge the contributions of UWRC members and their delegates from individual jurisdictions in commenting verbally on an earlier draft of the content of Figure 1, Figure 2 and Figure 3, and the ensuing sections of this report.

<b>VISION</b>	The Australian urban sector provides safe, secure and resilient water, wastewater and stormwater services to all Australians in an economically efficient and sustainable manner – contributing to our growing economy, meeting the diverse and growing needs of customers and communities, and providing security and resilience in the face of climate change.		
<b>OBJECTIVES</b>	<ol style="list-style-type: none"> <li>1. Serve the long-term and evolving interests of customers</li> <li>2. Ensure efficiency and affordability of services</li> <li>3. Drive independence, transparency and accountability in decision-making</li> <li>4. Ensure security and resilience of urban water services</li> <li>5. Contribute efficiently and appropriately to liveability, environmental and health outcomes</li> </ol>		
<b>ELEMENTS</b>	<b>POLICY AND PLANNING</b>	<b>REGULATION</b>	<b>SERVICE DELIVERY</b>
	<b>INFORMATION &amp; KNOWLEDGE</b> to inform policy and planning, regulation, and service delivery		
<b>OUTCOME(S)</b>	Secure, affordable and resilient urban water supply (including in the context of supply and demand side uncertainty) and reliable and affordable wastewater services, underpinned by transparent infrastructure decision-making.	<ol style="list-style-type: none"> <li>1. Mitigation of the impact of the urban water sector on the environment in accordance with defined environmental standards or outcomes.</li> <li>2. Safe drinking water supply and wastewater collection, treatment, reuse and disposal.</li> <li>3. Prudence and efficiency including to promote competitive neutrality.</li> </ol>	Safe, affordable and resilient urban water supply and wastewater service delivery that meets customer needs.
<b>ROLES</b>	<ul style="list-style-type: none"> <li>• Governance and regulatory frameworks</li> <li>• Water security planning</li> <li>• Policy and innovation in water recycling</li> <li>• Transparent investment decision-making</li> <li>• Monitoring, evaluation, reporting and adaptive management for achieving overall objectives</li> </ul>	<ul style="list-style-type: none"> <li>• Setting standards, monitoring, enforcement, and reporting (for environmental and health regulation)</li> <li>• Price determination, licensing oversight, assessment of capital and operating programs, and encouraging water use efficiency and innovation (for economic regulation)</li> </ul>	<ul style="list-style-type: none"> <li>• Investment in and operation of water supply infrastructure (headworks, bulk transport, distribution/collection, and retail) and wastewater infrastructure (transfer, treatment, recycle/disposal) to cost effectively meet the needs of customers</li> <li>• Coordinated planning and investment</li> <li>• Customer interface (including complaints/hardship)</li> </ul>
<b>ACTIVITIES</b>	<ul style="list-style-type: none"> <li>• Clearly define and communicate sector objectives and outcomes and reflect these in level of service objectives</li> <li>• For water supply, clearly define triggers and demand-side and supply-side responses to achieve water security</li> <li>• Undertake consistent investment appraisal with independent oversight to respond to need for water and wastewater infrastructure augmentation</li> </ul>	<ul style="list-style-type: none"> <li>• Clearly define regulatory objectives and principles in legislation for economic, environmental and health regulation and establish regulators</li> <li>• Establish economic regulatory oversight of pricing and service delivery outcomes</li> <li>• Development of regulatory frameworks for each of environmental health and public health</li> </ul>	<ul style="list-style-type: none"> <li>• Optimisation of bulk water supply to meet level of service objectives at least cost over the long term</li> <li>• Plan for and deliver infrastructure investment in a coordinated and collaborative manner</li> <li>• Manage customer complaints and define policies for financial hardship</li> </ul>
<b>PROPOSED MODEL INSTITUTIONAL ARRANGEMENTS</b>	See detailed descriptions in section 4.1 of this report	See detailed descriptions in section 4.2 of this report	See detailed descriptions in section 4.3 of this report

Source Aither.

Figure 1 Conceptual framework – water supply and wastewater

<b>VISION</b>	The Australian urban sector provides safe, secure and resilient water, wastewater and stormwater services to all Australians in an economically efficient and sustainable manner – contributing to our growing economy, meeting the diverse and growing needs of customers and communities, and providing security and resilience in the face of climate change.		
<b>OBJECTIVES</b>	<ol style="list-style-type: none"> <li>1. Serve the long-term and evolving interests of customers</li> <li>2. Ensure efficiency and affordability of services</li> <li>3. Drive independence, transparency and accountability in decision-making</li> <li>4. Ensure security and resilience of urban water services</li> <li>5. Contribute efficiently and appropriately to liveability, environmental and health outcomes</li> </ol>		
<b>ELEMENTS</b>	<b>POLICY AND PLANNING</b>	<b>REGULATION</b>	<b>SERVICE DELIVERY</b>
	<b>INFORMATION &amp; KNOWLEDGE</b> to inform policy and planning, regulation, and service delivery		
<b>OUTCOME(S)</b>	Catchment-wide risk-based flood mitigation in urban areas	<ol style="list-style-type: none"> <li>1. Mitigation of the impact of stormwater on the environment in accordance with defined environmental standards or outcomes</li> <li>2. Encourage prudence and efficiency through independent oversight of pricing and service delivery outcomes</li> </ol>	Sustainable investment in stormwater asset operation, maintenance, renewal and disposal
<b>ROLES</b>	<ul style="list-style-type: none"> <li>• Coordinated catchment-wide stormwater flood mitigation planning and investment decision making</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental regulation (setting standards, monitoring, enforcement, reporting)</li> <li>• Economic regulation (price determination, licensing, assessment of capital and operating programs)</li> <li>• Management of customer complaints</li> </ul>	<ul style="list-style-type: none"> <li>• Invest in new and operate and maintain existing flood mitigation assets</li> </ul>
<b>ACTIVITIES</b>	<ul style="list-style-type: none"> <li>• Develop clear objectives and responsibilities for measurable, risk-based levels of service for stormwater flood mitigation on a catchment scale</li> <li>• Develop an investment decision-making framework aimed at catchment-wide planning</li> </ul>	<ul style="list-style-type: none"> <li>• Incorporate stormwater service provision into regulatory frameworks</li> </ul>	<ul style="list-style-type: none"> <li>• Develop cost sharing arrangements for asset funding and pricing</li> </ul>
<b>PROPOSED MODEL INSTITUTIONAL ARRANGEMENTS</b>	See detailed descriptions in section 5.1 of this report	See detailed descriptions in section 5.2 of this report	See detailed descriptions in section 5.3 of this report

Source      Aither.

Figure 2 Conceptual framework – stormwater



<b>VISION</b>	The Australian urban sector provides safe, secure and resilient water, wastewater and stormwater services to all Australians in an economically efficient and sustainable manner – contributing to our growing economy, meeting the diverse and growing needs of customers and communities, and providing security and resilience in the face of climate change.		
<b>OBJECTIVES</b>	<ol style="list-style-type: none"> <li>1. Serve the long-term and evolving interests of customers</li> <li>2. Ensure efficiency and affordability of services</li> <li>3. Drive independence, transparency and accountability in decision-making</li> <li>4. Ensure security and resilience of urban water services</li> <li>5. Contribute efficiently and appropriately to liveability, environmental and health outcomes</li> </ol>		
<b>ELEMENTS</b>	<b>POLICY AND PLANNING</b>	<b>REGULATION</b>	<b>SERVICE DELIVERY</b>
	<b>INFORMATION &amp; KNOWLEDGE</b> to inform policy and planning, regulation, and service delivery		
<b>OUTCOME(S)</b>	<ol style="list-style-type: none"> <li>1. Maximise social, economic and environmental benefits through the coordinated management across the water cycle</li> <li>2. Ensure that decentralised IWCM approaches are considered on an equal footing alongside other water supply and management approaches</li> </ol>	<ol style="list-style-type: none"> <li>1. Mitigation of the impact of the urban water sector on the environment in accordance with defined environmental standards or outcomes.</li> <li>2. Safe drinking water supply and wastewater collection, treatment, reuse and disposal.</li> <li>3. Prudence and efficiency including to promote competitive neutrality.</li> </ol>	As for water supply, wastewater and stormwater.
<b>ROLES</b>	<ul style="list-style-type: none"> <li>• Coordination across all elements of the water cycle (water, wastewater, stormwater) and planning (e.g. urban planning)</li> <li>• Definition of liveability objectives and options for achieving them</li> <li>• Coordination of planning and investment decision making</li> </ul>	<ul style="list-style-type: none"> <li>• Setting standards, monitoring, enforcement, and reporting (for environmental and health regulation)</li> <li>• Price determination, licensing oversight, assessment of capital and operating programs, and encouraging water use efficiency and innovation (for economic regulation)</li> <li>• Management of customer complaints</li> </ul>	<ul style="list-style-type: none"> <li>• As for water supply, wastewater and stormwater</li> </ul>
<b>ACTIVITIES</b>	<ul style="list-style-type: none"> <li>• Develop and endorse clear objectives and outcomes for IWCM</li> <li>• Integrate land use and water planning and investment decision making</li> <li>• Consider all options for managing water, wastewater and stormwater on the basis of a transparent assessment of costs and benefits</li> </ul>	<ul style="list-style-type: none"> <li>• Adopt an outcomes-based approach to managing the impact of the urban water cycle on the environment and public health</li> <li>• Incorporate IWCM into the economic regulatory framework</li> </ul>	<ul style="list-style-type: none"> <li>• Develop cost sharing and cost recovery arrangements and ensure mechanisms are in place to fund asset renewal and investment</li> </ul>
<b>PROPOSED MODEL INSTITUTIONAL ARRANGEMENTS</b>	See detailed descriptions in section 6.1 of this report	See detailed descriptions in section 6.2 of this report	See detailed descriptions in section 6.3 of this report

Source      Aither.

Figure 3 Conceptual framework – integrated water cycle management

## 3.2. Developing proposed model institutional arrangements

As described above, the proposed model institutional arrangements developed through this project explain how activities could be implemented (i.e. by whom and with what division of roles/responsibilities) to achieve the desired outcomes (which are consistent with the vision and objectives already endorsed by the NWRC).

While in some cases these arrangements are individually justified or evidenced when they are discussed in detail in this report, it was not possible to do so consistently within the scope of this project. However, each of the arrangements proposed here has been developed on the basis of previous advice provided to and accepted by governments, and informed by engagement with jurisdictions through the course of this project.

Since the development of the 1994 COAG Water Reform Framework and 1995 Competition Principles Agreement and associated *Competition Policy Reform Act 1995 (Cth)*, a consistent suite of high-level principles and considerations have evolved in Australia to inform the types of divisions of roles and responsibilities (including between government and private actors) that are observed (or aspired to) in Australia today. While it is not the role of this report to exhaustively catalogue these, the following insights have informed the development of the detailed arrangements described here:

- Governments have a role to develop legislation and policy to serve national (or state or territory) interests, provide public goods, correct market failures, and set 'the rules of the game' for interactions between service providers and customers.
- Those actors that are best placed to affect an outcome should generally have responsibility for related activities (e.g. water service providers are best placed to determine how best to meet prescribed levels of service).
- Policy, regulatory and service delivery functions should be separated to the extent practicable (e.g. water service providers should not set their own service levels or define the standards for public or environmental health that they have to meet).
- Government businesses should not enjoy any net competitive advantage simply as a result of their public sector ownership, and competition should be promoted to the extent possible.
- Natural monopolies and poorly contestable markets (which are relatively common in provision of water services) should be regulated and/or structurally reformed (e.g. through corporatisation) to prevent economic inefficiency, conflicts of interests, and suboptimal outcomes for customers.

These have been consistently considered and applied in developing the proposed model institutional arrangements set out in this report. In addition to these broad principles, the specific requirements and principles established through the NWI have also served as a significant source of evidence to support the claims made in this report, reflecting (as they do) the basis of a nationally agreed blueprint for water reform in Australia. The model institutional arrangements proposed in this report are NWI-consistent.

## 4. Water supply and wastewater

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This section describes outcomes, roles, activities, and proposed model institutional arrangements for the water supply and wastewater functions within the urban water sector. These are treated together here as the roles and arrangements are largely consistent across the two functions; this was reflected in jurisdictions' stocktake responses and during consultation for this project.

For each of policy and planning (section 4.1), regulation (section 4.2), and service delivery (section 4.3), a table is used to synthesise and present the information, before each individual activity relevant to that element is discussed in further detail. For each activity, a basic narrative structure is followed:

1. The proposed model institutional arrangements for that activity are described.
2. In some instances, selected examples of how this activity is being undertaken or is intended to be undertaken or is considered to present challenges for institutional arrangements, at the level of one or more individual jurisdictions, are presented.
3. Considerations for implementation of the activity and proposed model institutional arrangements in regional areas are presented, where relevant (noting the working assumption is that these arrangements could apply similarly across metropolitan and regional areas where considerations for regional areas have not been explicitly mentioned).

### 4.1. Policy and planning

Table 1 describes outcomes, roles, activities, and proposed model institutional arrangements for policy and planning for the water supply and wastewater function within the urban water sector. Individual activities are then discussed in further detail below the table, according to the narrative structure set out above.

Table 1: Policy and planning outcomes, roles, activities, and proposed model institutional arrangements – water supply and wastewater

Outcome	Roles	Activities to achieve outcomes	Proposed model institutional arrangements
Secure, affordable and resilient urban water supply (including in the context of supply and demand side uncertainty) and reliable and affordable wastewater services, underpinned by transparent infrastructure decision-making.	<ul style="list-style-type: none"> <li>• Governance and regulatory frameworks.</li> <li>• Water security planning.</li> <li>• Policy and innovation in water recycling.</li> <li>• Transparent investment decision-making.</li> <li>• Monitoring, evaluation, reporting and adaptive management for achieving overall objectives.</li> </ul>	<ul style="list-style-type: none"> <li>• Activity 1.1: Clearly define and communicate sector objectives and outcomes and reflect these in level of service objectives.</li> </ul>	<ul style="list-style-type: none"> <li>• Government policy agency develops agreed objectives and outcomes for urban water supply and wastewater, and institutional and regulatory arrangements to deliver on those objectives and outcomes. Where collaboration is required between government agencies, the lead policy agency sets the framework for this.</li> <li>• Government policy agency or regulator sets level of service standards and enshrines these within a regulation or service provider operating licence – this process should consider the trade-offs between level of service and cost/price and, where necessary, involve sufficient customer consultation to inform the decision.</li> <li>• Service provider reports performance against prescribed levels of service in a format and at a time step defined by the government policy agency.</li> <li>• Party responsible for setting the levels of service refines and monitors them within an adaptive management framework, in consultation with customers and with consideration for trade-offs between level of service and cost/price.</li> </ul>
		<ul style="list-style-type: none"> <li>• Activity 1.2: For water supply, clearly define triggers and demand-side and supply-side responses to achieve water security.</li> </ul>	<ul style="list-style-type: none"> <li>• Water service providers, in consultation with customers, set triggers and trigger-specific responses to achieve water security at a network-wide scale.</li> <li>• Water service providers respond in the manner specified in the triggers as supply changes.</li> </ul>

Outcome	Roles	Activities to achieve outcomes	Proposed model institutional arrangements
			<ul style="list-style-type: none"> <li>Water service providers refine and monitor triggers on an ongoing basis in consultation with the community.</li> </ul>
		<ul style="list-style-type: none"> <li>Activity 1.3: Undertake consistent investment appraisal with independent oversight to respond to need for water and wastewater infrastructure augmentation.</li> </ul>	<ul style="list-style-type: none"> <li>Government policy agency develops an investment decision-making framework consistent with the agreed objectives and outcomes for urban water and wastewater supply.</li> <li>Once a trigger is reached to investigate infrastructure augmentation, service providers, in consultation with the policy agency and (where relevant) independent infrastructure advisory body, investigate options for system-wide augmentation in accordance with the investment decision-making framework.</li> <li>Once the preferred infrastructure augmentation option has been established, service providers undertake and deliver the project in accordance with the preferred delivery model.</li> </ul>



### *Activity 1.1: Clearly define and communicate sector objectives and outcomes and reflect these in level of service objectives*

Government agencies should develop (including through collaboration and consultation with service providers and the community and with consideration of the trade-offs between level of service and cost/price) agreed objectives and outcomes for urban water supply and wastewater, and institutional and regulatory arrangements to deliver on those objectives and outcomes. Where collaboration is required between government agencies, the lead policy agency sets the framework for this. Objectives and strategies for urban water management may be developed at a state/territory-wide scale and/or for individual regional areas as appropriate.

The government policy agency or regulator should set level of service standards and enshrine these within a regulation or service provider operating licence. Where government policy agencies have a leading role, this is consistent with the recognised role of government in resolving trade-offs between competing objectives and interests (and acting in jurisdictional interests) through consultation and policy development. Where regulators are leading, it may be that the government policy agency is responsible for establishing a requirement that level of service standards are set in the context of price-setting and with engagement between the price-setter, customers and service providers, and then regulators have specific responsibility for establishing standards by following this process. Either way, the mechanism should make transparent to customers the measurable level of service objectives or standards they can expect in the provision of water and wastewater services.

It should then be the role of the service provider to deliver and report performance against prescribed levels of service. Performance reporting should be in a format and at a time step defined by the government policy agency.

Levels of service should be refined on an ongoing basis as part of an adaptive management approach. The party responsible for setting the levels of service should be the one to monitor and refine them in consultation with the service provider and customers (via the service provider), with consideration of the trade-offs between level of service and cost/price. Clearly defining the level of service in consultation with customers allows the trade-off with cost (and by extension charges to customers) to be developed collaboratively. Specifying that the service provider delivers against the level of service objectives aligns with the core function of the service provider and allows the service provider the flexibility to innovate and deliver against the level of service objectives in the most efficient manner. The service provider is then best placed to report performance against outcomes based on the decisions they've taken. Where local governments provide water and wastewater services, the model above is still broadly applicable, noting that in some jurisdictions local government service providers are also licensed as retailers under the applicable Act. In practice however, the local government will set level of service standards with reference to agreed objectives and outcomes for regional urban water and wastewater supply defined by state government. The local government owned service provider then delivers and reports against the standards.

Water and wastewater service providers in less populated regional areas face challenges in delivering services unlike those faced in metropolitan areas and larger regional centres. For example, in regional New South Wales and Queensland, water and wastewater services for urban customers are provided by local councils. Many of these service providers serve relatively small populations and face challenges in managing assets, and maintaining the service levels expected by customers. It was noted that this was often due to geographical remoteness and the lack of financial, technical and operational resources. However, jurisdictions have introduced measures to try and combat these challenges. For example, the Queensland Government sponsors the Queensland Water Regional Alliance Program

(QWRAP) while in NSW many councils and their local water utilities are members of Joint Organisations. Both of these initiatives assist regional service providers to collaborate at a regional level to improve their service delivery.

### *Activity 1.2: For water supply, clearly define triggers and demand-side and supply-side responses to achieve water security*

The service provider, in consultation with customers, should set triggers and trigger-specific responses to achieve water security at a regional (network-wide) scale. Water service providers are then responsible for responding in the manner specified in the triggers as supply changes. Water service providers are responsible for monitoring and refining triggers on an ongoing basis in consultation with the community and government, to manage supply and demand side uncertainty as part of an adaptive management approach.

Climate change and population growth are among of the biggest challenges facing the sector, and effective water security planning is a critical part of the solution in both metropolitan and regional areas. Current institutional arrangements for water security, supply and demand planning were identified by some jurisdictions as an area for improvement. In at least one jurisdiction, there is currently no formal requirement from government for urban water service providers to undertake long term supply and demand planning.

In Queensland, the Queensland Bulk Water Opportunities Statement sets out emerging challenges in water security for the state and provides strategic directions to meet the Government's objectives for water resources. For some regional and remote service providers, their size, location and workforce may affect their ability to meet existing and future obligations, including recognising and responding to emerging issues like water security planning. To manage this, Queensland have implemented the Regional Water Supply Security Assessment program, which is a partnership between local councils and the Department of Natural Resources, Mines and Energy that is designed to improve water supply planning in regional areas. The arrangements in Queensland provide an example of an approach to manage urban water security in regional areas.

### *Activity 1.3: Undertake consistent investment appraisal with independent oversight to respond to need for water and wastewater infrastructure augmentation*

A vital step in ensuring appropriate investment in system-wide supply capacity and wastewater infrastructure is through the development of an investment decision-making framework by the relevant government policy agency. The investment decision-making framework outlines the steps required to support sound investment decision-making<sup>5</sup>. Once a trigger is reached to investigate infrastructure augmentation, the service provider(s), in consultation with the policy agency and (where relevant) an independent infrastructure advisory body, should be responsible for investigating options for system-wide augmentation of supply capacity in accordance with a water investment decision-making framework<sup>6</sup>. Where a state-based infrastructure advisory body exists, the relevant government policy agency defines the role for that body. The investigation should be transparent, ensuring:

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<sup>5</sup> See for example, Infrastructure Australia's Assessment Framework. Several jurisdictions have similar state-based frameworks.

<sup>6</sup> Independent infrastructure advisory bodies are in place in some, but not all, jurisdictions. The role of the independent infrastructure advisory body differs across jurisdictions. For example, an infrastructure advisory body may have an advisory or review role on projects with a smaller capital budget all the way through to a role to lead business cases for projects with a larger capital budget.

- independent investment oversight is aligned with defined expenditure thresholds, and
- business cases are released publicly in accordance with defined expenditure thresholds.

Once the preferred infrastructure augmentation option has been established, it is the responsibility of the service provider to deliver the project in accordance with the preferred delivery model.

This approach is consistent with leading practice where planning and investment decision-making is undertaken with regard to net public benefit and where decisions are transparently communicated to the public, who, as customers of water service providers, generally pay for investments through water and wastewater charges.

Feedback received from jurisdictions highlighted the importance of robust economic appraisal and investment decision-making to deliver the right water and wastewater infrastructure (at the right scale, space and time). Several jurisdictions noted cost-benefit analysis is a critical tool for enabling this. However, investment decision-making processes and economic appraisal of water and wastewater infrastructure projects is not undertaken consistently across Australia. Furthermore, investment decision-making is not always undertaken with reference to a defined investment decision-making framework.

Sound planning and investment decision-making is as important in regional areas as it is in metropolitan areas. That said, it is not practical for an infrastructure advisory body to be involved in investment decision-making in regional areas. A model whereby state governments set the expectations and guidelines for investment decision-making, which service providers then adhere to, is more appropriate.

## 4.2. Regulation

Table 2 describes outcomes, roles, activities, and proposed model institutional arrangements for regulation for the water supply and wastewater function within the urban water sector. Individual activities are then discussed in further detail below the table, according to the narrative structure set out above.

Table 2: Regulation outcomes, roles, activities, and proposed model institutional arrangements – water supply and wastewater

Outcomes	Roles	Activities to achieve outcomes	Proposed model institutional arrangements
<p><b>Outcome 1:</b> Mitigate the impact of the urban water sector on the environment in accordance with defined environmental standards or outcomes.</p> <p><b>Outcome 2:</b> Ensure safe drinking water supply and safe wastewater collection, treatment, reuse and disposal.</p> <p><b>Outcome 3:</b> Encourage prudence and efficiency including to promote competitive neutrality and to enable public and private sector service providers to:</p> <ul style="list-style-type: none"> <li>- Promote the long-term interests of customers</li> </ul>	<p>Environment and health:</p> <ul style="list-style-type: none"> <li>• setting standards</li> <li>• monitoring</li> <li>• enforcement</li> <li>• reporting</li> <li>• customer engagement</li> </ul>	<ul style="list-style-type: none"> <li>• Activity 2.1: Clearly define regulatory objectives and principles in legislation for economic, environmental and health regulation and establish regulators.</li> </ul>	<ul style="list-style-type: none"> <li>• Government policy agency defines regulatory objectives and principles in legislation.</li> <li>• Government policy agency establishes regulators, and clearly defines their powers.</li> <li>• Government policy agency or the regulator clearly specifies obligations and performance targets for service providers.</li> <li>• Government policy agency, in consultation with regulators and service providers, formalises processes for cooperation between regulatory agencies and with stakeholders.</li> </ul>
	<p>Economic:</p> <ul style="list-style-type: none"> <li>• price determination</li> <li>• licensing oversight</li> <li>• assessment of capital and operating programs</li> <li>• encourage water use efficiency and innovation</li> <li>• customer engagement</li> </ul>	<ul style="list-style-type: none"> <li>• Activity 2.2: Establish economic regulatory oversight of pricing and service delivery outcomes.</li> </ul>	<ul style="list-style-type: none"> <li>• Government policy agency appoints an independent economic regulator.</li> <li>• Government policy agency makes a decision on the geographic coverage of economic regulation.</li> <li>• Independent economic regulator establishes a detailed fit-for-purpose economic regulatory framework.</li> </ul>
		<ul style="list-style-type: none"> <li>• Activity 2.3: Develop framework for environmental regulation.</li> </ul>	<ul style="list-style-type: none"> <li>• Government policy agencies, in consultation with service providers, establish the principles and objectives for the environmental regulatory framework.</li> <li>• Government policy agency specifies the roles of the environmental regulator and service providers to ensure overlap of roles is avoided.</li> </ul>



Outcomes	Roles	Activities to achieve outcomes	Proposed model institutional arrangements
<ul style="list-style-type: none"> <li>- Achieve financial sustainability</li> <li>- Protect against pricing intervention by government</li> <li>- Promote innovation.</li> </ul>			<ul style="list-style-type: none"> <li>• Independent regulator details framework to provide guidance to service providers as to how the regulator intends to meet its objectives under the Act.</li> </ul>
		<ul style="list-style-type: none"> <li>• Activity 2.4: Develop regulatory framework for public health.</li> </ul>	<ul style="list-style-type: none"> <li>• Government policy agency establishes the public health regulatory framework, in consultation with other relevant government agencies to ensure it can be effectively and efficiently implemented by the health regulator.</li> <li>• Government policy agency defines the roles of the health regulator and service provider to ensure overlap of roles is avoided.</li> </ul>

### *Activity 2.1: Clearly define regulatory objectives and principles in legislation for economic, environmental and health regulation and establish regulators*

For each of environmental, public health and economic regulation, the relevant government policy agency should clearly define regulatory objectives and principles in legislation, ensuring they do not conflict with other government objectives and responsibilities of regulators do not overlap.

Regulators, usually governed under their own legislation with clearly defined powers, should be established by government across all three regulatory elements. As part of the arrangements, the relevant government policy agency develops an effective compliance monitoring and enforcement process to monitor the capacity and remit of the regulator, ensuring that the benefits from regulation continue to outweigh the costs over time. Furthermore, the legislation should provide scope to:

- enable incentive and outcome-based regulation
- collaborate with service providers to achieve desired outcomes, and
- monitor, evaluate and report against defined objectives and outcomes.

The establishment of such regulators, independent of government policy agencies, is consistent with the 1994 Council of Australian Governments' (COAG) Water Reform Framework. The NWI included an additional requirement for independent bodies to set or review prices or price setting processes on a case-by-case basis. While there are several price oversight mechanisms available to meet the NWI requirement, the NWI requires an independent body to play a role. Independent economic regulation is a proven means to meet the desired outcomes and conform to the NWI and is reflected accordingly in the model institutional arrangements proposed in this report, with exceptions for smaller service providers (see Activity 2.2).

Clearly specified obligations and performance targets for service providers can be enshrined in regulation or via licensing and permits. The imposition of monitoring and reporting obligations on service providers can either be undertaken by the government policy agency or the independent regulator – this will depend on the framework that is set up and the powers that have been bestowed upon the independent regulators. Formalised processes for cooperation between regulatory agencies and with stakeholders should also be established, including formalised reporting arrangements and engagement with customers (ensuring separation from reporting undertaken by service providers).

The specific arrangements for each of the environmental, public health and economic regulators are covered in the following activities.

### *Activity 2.2: Establish economic regulatory oversight of pricing and service delivery outcomes*

In establishing regulatory oversight of water service provider pricing and service delivery outcomes, the government policy agency establishes the principles and objectives for a statutory economic regulatory framework and appoints an independent economic regulator. The government policy agency makes a decision on the geographic coverage of economic regulation taking into account the costs of regulation for service provider(s), the attributes of the service provider(s) and the environment in which they operate, particularly in regional areas. Where it is apparent independent economic regulation is not suitable for a particular geography or service provider(s) and it does not make sense practically, a bespoke set of activities should be established, relying on guidelines, collaboration and performance reporting. Alternatively, in circumstances where economic regulation is desired for all service providers in a particular jurisdiction but it is apparent that one-size-fits-all economic regulation is not appropriate due to the regulatory burden it may present for smaller providers, a more light-

handed approach may be applied to smaller providers where appropriate. For example, in South Australia, small and intermediate service providers are required to report to the regulator, however are subject to a more principles-based approach to pricing that differs from the regulatory requirements applied to the major service provider (SA Water).

A detailed fit-for-purpose framework is defined by the independent economic regulator to provide guidance to regulated service providers as to how the regulator intends to meet its objectives under the Act. The regulatory framework should deliver benefits that outweigh the costs of the framework, with the capacity for the framework to evolve over time ensuring it continues to deliver benefits that outweigh the costs and deliver on its intention of promoting the long-term interests of customers. The regulatory framework should encompass the following characteristics:

- Require service providers to adopt a customer-centric approach to service delivery.
- Adopt an outcomes-based approach – aligning service provider incentives with the outcomes that customers desire.
- Ensure risk is allocated to those best able to manage it (incorporating financial viability testing for the long-term sustainability of regulated entities).
- Allow for potential competition in the industry where appropriate.
- Incorporate effective decision appeal mechanisms for decisions made by the regulator.

The types of economic regulation currently vary across jurisdictions and within jurisdictions. The arrangements in Victoria under the PREMO pricing framework provide an example of a customer-centric and outcomes-based regulatory framework. Previous work commissioned by Infrastructure Australia suggests that the regulatory approach adopted in Victoria reflects elements of best practice (Frontier Economics 2017). The arrangements for economic regulation in other jurisdictions mostly vary across metropolitan and regional areas, while some jurisdictions do not employ independent economic regulation at all.

### *Activity 2.3: Develop framework for environmental regulation*

When developing an environmental regulatory framework, government policy agencies, in consultation with service providers, should establish the principles and objectives for the environmental regulatory framework. The appointed independent regulator is required to determine the detailed framework to provide guidance to service providers as to how the regulator intends to meet its objectives under the Act. The framework should enable the utilisation of risk and market-based approaches to regulation, by:

- targeting the framework to reflect the level of risk and associated costs (engaging with other regulators and stakeholders), minimising the level of prescription where possible
- enabling market mechanisms including offsets to drive incentives and catchment-wide outcomes of water cycle management, and
- enabling incentive mechanisms for resource, carbon, and energy efficiencies.

The roles of the environmental regulator and service providers should be clearly specified by the government policy agency to avoid overlap of roles.

For the most part, feedback from jurisdictions did not raise any issues with the arrangements for environmental regulation. However, it was noted in a few instances that there is overlap in responsibilities. South Australia's current process of streamlining its reporting requirements provides

an example of an active approach to limit the overlap of regulators, perceived or otherwise, in order to establish clearly defined roles and responsibilities for institutions.

#### *Activity 2.4: Develop regulatory framework for public health*

The government policy agency should establish the public health regulatory framework, in combination with other agencies within government to ensure it can be effectively and efficiently implemented by the government health department. The framework should:

- ensure provision to incorporate incentive-based regulation
- ensure collaboration occurs with water service providers to achieve desired outcomes
- formalise processes for cooperation with other regulatory bodies in regulatory processes to achieve common objectives, and
- direct the government health department to issue operating licences that incorporate a risk-based approach to performance targets imposed on service providers.

The roles of the health regulator and service providers should be clearly specified by the government policy agency to avoid overlap of roles.

Similar to feedback on environmental regulation, a few instances of overlap in responsibility for health regulation were noted in responses received from jurisdictions but, overall, few institutional issues were raised with respect to health regulation for water supply and wastewater services.

### 4.3. Service delivery

Table 3 describes outcomes, roles, activities, and proposed model institutional arrangements for service delivery for the water supply and wastewater function within the urban water sector. Individual activities are then discussed in further detail below the table, according to the narrative structure set out above

Table 3: Service delivery outcomes, roles, activities, and proposed model institutional arrangements – water supply and wastewater

Outcome	Roles	Activities to achieve outcomes	Proposed model institutional arrangements
Safe, affordable and resilient urban water supply and wastewater service delivery that meets customer needs.	<ul style="list-style-type: none"> <li>Operate water supply infrastructure (headworks, bulk transport, distribution/collection, and retail) cost effectively to meet the needs of customers.</li> <li>Invest in and operate wastewater infrastructure (transfer, treatment, recycle/disposal) cost effectively to meet the needs of customers.</li> <li>Coordinate planning and investment.</li> <li>Manage customer interface (including complaints and hardship).</li> </ul>	<ul style="list-style-type: none"> <li>Activity 3.1: Optimise bulk water supply to meet level of service objectives at least cost over the long-term.</li> </ul>	<ul style="list-style-type: none"> <li>Bulk water service provider(s) optimises supply across the supply network in accordance with level of service standards.</li> </ul>
		<ul style="list-style-type: none"> <li>Activity 3.2: Plan for and deliver infrastructure investment in a coordinated and collaborative manner.</li> </ul>	<ul style="list-style-type: none"> <li>Relevant government agency formalises processes for collaboration between water service providers (bulk and retail), land use planners, developers and other stakeholders to coordinate planning and investment in water and wastewater infrastructure.</li> </ul>
		<ul style="list-style-type: none"> <li>Activity 3.3: Manage customer complaints and define policies for financial hardship.</li> </ul>	<ul style="list-style-type: none"> <li>Service provider manages customer complaints and defines policies for managing financial hardship for customers.</li> <li>Independent body manages unresolved customer complaints.</li> </ul>



### *Activity 3.1: Optimise bulk water supply to meet level of service objectives at least cost over the long-term*

As water supply increasingly moves to an integrated grid network approach comprising a mix of climate dependent and independent supply sources, it is critical that the network is optimised. The bulk water service provider, as the agency responsible for managing the bulk water network, is responsible for optimising supply across their supply network in accordance with level of service and supply triggers.

### *Activity 3.2: Plan for and deliver infrastructure investment in a coordinated and collaborative manner*

Early integration of regional and local land use planning into water and wastewater asset renewal and investment decisions is vital for effective decision-making and service delivery. Formalised processes should be developed for collaboration between water service providers (bulk and retail), land use planners, developers and other stakeholders to coordinate planning and investment in water and wastewater infrastructure. This is an example of an area where greater networking of accountabilities and responsibilities between existing bodies and arrangements, rather than creation of a new entity, is the desired approach. Government agencies are best placed to lead this process.

Victoria's framework, as set out in *Water for Victoria*, provides an example of an approach to clearly outlining roles and responsibilities including strengthening links across portfolios to better align land use and water management planning where a deep level of engagement and cooperation is required.

### *Activity 3.3: Manage customer complaints and define policies for financial hardship*

The service provider manages customer complaints via a transparent internal dispute resolution process and defines policies for managing customer financial hardship in a manner consistent with a customer service code. The customer service code can be specified by the economic regulator pursuant to its statutory remit. The service provider should develop its customer hardship policies in consultation with relevant government departments, an independent ombudsman (or equivalent), customer and social services representative bodies, and the economic regulator.

An independent industry-based ombudsman-type body manages customer complaints in circumstances where the water service provider's internal dispute resolution process is unable to resolve a customer complaint. Membership of such a body by the service provider should form part of the conditions of a service provider's operating licence, noting establishment of such a body where one does not already exist may be cost-prohibitive and any such proposal should be subject to a thorough cost-benefit assessment.

## 5. Stormwater

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This section describes outcomes, roles, activities, and proposed model institutional arrangements for the stormwater function within the urban water sector.

For policy and planning (section 5.1), regulation (section 5.2), and service delivery (section 5.3), a single combined table is used to synthesise and present the information, before each individual activity relevant to that element is discussed in further detail. For each activity, a basic narrative structure is followed:

1. The proposed model institutional arrangements for that activity are described.
2. In some instances, selected examples of how this activity is being undertaken or is intended to be undertaken or is considered to present challenges for institutional arrangements, at the level of one or more individual jurisdictions, are presented.
3. Considerations for implementation of the activity and proposed model institutional arrangements in regional areas are presented, where relevant (noting the working assumption is that these arrangements could apply similarly across metropolitan and regional areas where considerations for regional areas have not been explicitly mentioned).

Table 4 describes outcomes, roles, activities, and proposed model institutional arrangements for policy and planning, regulation, and service delivery for the stormwater function within the urban water sector. Individual activities are then discussed in further detail below the table, according to the narrative structure set out above.

Table 4: Outcomes, roles, activities, and proposed model institutional arrangements – stormwater

Outcomes	Roles	Activities to achieve outcomes	Proposed model institutional arrangements
<b>Policy and planning</b>			
<p>Catchment-wide risk-based flood mitigation in urban areas.</p> <p><i>(On stormwater as an alternative water supply source, see Table 5 below).</i></p>	<ul style="list-style-type: none"> <li>Coordinated catchment-wide stormwater flood mitigation planning and investment decision-making.</li> </ul> <p><i>(On stormwater as an alternative water supply source, see Table 5 below).</i></p>	<ul style="list-style-type: none"> <li>Activity 4.1: Develop clear objectives and responsibilities for measurable, risk-based levels of service for stormwater flood mitigation on a catchment scale.</li> </ul>	<ul style="list-style-type: none"> <li>Government policy agencies (or an agency with a catchment scale remit) set objectives and outcomes for stormwater flood mitigation.</li> <li>Service providers set risk-based levels of service standards for stormwater flood mitigation on a catchment scale.</li> <li>Government policy agencies enshrine these service standards within a regulation or service provider operating licence, develop a performance reporting framework and define the entity or entities responsible for meeting the objectives, outcomes and levels of service for stormwater flood mitigation.</li> <li>Government policy agencies communicate the objectives and levels of service to urban planners, developers and other stakeholders.</li> <li>Stormwater service providers manage for the service standards set by the government policy agency and report performance against defined levels of service.</li> <li>Government policy agencies, in consultation with asset owners and the community, review and refine risk-based levels of service as part of an adaptive management approach to ensure they continue to be fit-for-purpose.</li> </ul>

Outcomes	Roles	Activities to achieve outcomes	Proposed model institutional arrangements
		<ul style="list-style-type: none"> <li>Activity 4.2: Develop an investment decision-making framework aimed at catchment-wide planning.</li> </ul>	<ul style="list-style-type: none"> <li>Government policy agencies or statutory bodies develop investment decision-making frameworks to guide new investments.</li> <li>Stormwater service providers investigate options for investment in accordance with the framework.</li> <li>Stormwater service providers undertake and deliver projects once preferred infrastructure options have been selected.</li> </ul>
<b>Regulation</b>			
<p>Mitigate the impact of stormwater on the environment in accordance with defined environmental standards or outcomes.</p> <p>Encourage prudence and efficiency through independent oversight of pricing and service delivery outcomes.</p>	<ul style="list-style-type: none"> <li>Environmental regulation (setting standards, monitoring, enforcement, reporting).</li> <li>Economic regulation (price determination, licensing, assessment of capital and operating programs).</li> <li>Management of customer complaints.</li> </ul>	<ul style="list-style-type: none"> <li>Activity 4.3: Incorporate stormwater service provision into regulatory frameworks.</li> </ul>	<ul style="list-style-type: none"> <li>The Minister, supported by the government policy agency, defines the regulatory objectives and principles in legislation, ensuring they do not conflict with other government objectives.</li> </ul>
<b>Service delivery</b>			
<p>Sustainable investment in stormwater asset operation, maintenance, renewal and disposal.</p>	<ul style="list-style-type: none"> <li>Invest in new, and operate and maintain</li> </ul>	<ul style="list-style-type: none"> <li>Activity 4.4: Develop cost sharing arrangements for asset funding and pricing.</li> </ul>	<ul style="list-style-type: none"> <li>Government policy agencies develop cost sharing arrangements.</li> </ul>

Outcomes	Roles	Activities to achieve outcomes	Proposed model institutional arrangements
	existing, flood mitigation assets.		<ul style="list-style-type: none"> <li>Service providers are responsible for asset renewal, investment, operation, maintenance, and cost recovery.</li> </ul>

## 5.1. Policy and planning

### *Activity 4.1: Develop clear objectives and responsibilities for measurable, risk-based levels of service for stormwater flood mitigation on a catchment scale*

Government policy agencies (or an agency with a catchment scale remit), in consultation with asset owners, should set the objectives and desired outcomes for stormwater flood mitigation on a catchment scale. The government policy agency should enshrine the objectives and outcomes for stormwater flood mitigation within a regulation or service provider operating licence.

A government policy agency should define the performance reporting framework that the service providers report against. The government policy agency is also responsible for communicating the objectives and outcomes to asset owners (e.g. councils and developers), urban planners and other stakeholders.

It is the responsibility of stormwater service providers to set risk-based levels of service standards (e.g. spatial-specific Annual Recurrence Intervals) to achieve the objectives and outcomes set by the government policy agency and report performance on stormwater flood mitigation against defined levels of service. The government policy agency, in consultation with asset owners and the community, reviews and refines the objectives and outcomes as part of an adaptive management approach to ensure they continue to be fit-for-purpose. Service providers refine risk-based levels of service.

A common concern raised by the majority of jurisdictions centred around the roles and responsibilities of institutions with regard to stormwater management, noting that more holistic outcomes in managing stormwater flooding could be achieved if roles were better defined and arrangements for collaboration across institutions were established. Such institutional and governance issues are likely to become more material in the face of population growth, urban densification and climate change.

Several jurisdictions are already in the process of reviewing arrangements for stormwater. For example, Victoria stated that it is currently clarifying and updating urban stormwater institutional arrangements in Melbourne. NSW noted that reviews currently underway for the Greater Sydney Water Strategy and Lower Hunter Water Plan will be looking into opportunities for stormwater to substitute for potable water and provide liveability benefits. South Australia is also in the process of reviewing stormwater roles and responsibilities. These reviews may provide opportunities for learning across jurisdictions.

### *Activity 4.2: Develop an investment decision-making framework aimed at catchment-wide planning*

As with water and wastewater infrastructure investments, government policy agencies should develop an investment decision-making framework to guide new investments. Stormwater service providers should be responsible for investigating options for investment in accordance with the framework. Decisions should be prioritised based on risks to people, property and the environment. Once the preferred option has been established, it is the responsibility of the service provider to undertake and deliver the project. This approach is consistent with that outlined above for water and wastewater infrastructure investments.

## 5.2. Regulation

### *Activity 4.3: Incorporate stormwater service provision into regulatory frameworks*

The Minister, supported by the government policy agency, should define the regulatory objectives and principles in legislation, ensuring they do not conflict with other government objectives. This will improve governments' ability to achieve desired outcomes and monitor performance of assets and services.

Environmental and health regulation is the same as for water supply and wastewater.

Economic regulation, including instances of price determination, occurs in some jurisdictions, where these services are provided by a regulated service provider. In circumstances where local governments or other smaller agencies are the service providers, price determinations are not always practical and a more light-handed regulatory approach based on NWI-consistent pricing principles may be appropriate. In lieu of this, pricing principles and cost sharing guidelines, endorsed by the government policy agency, are required.

## 5.3. Service delivery

### *Activity 4.4: Develop cost sharing arrangements for asset funding and pricing*

Stormwater services should have transparent pricing and sustainable funding sources which promote the long-term interests of communities (users) and reflect user values and understanding of risk. Pricing principles, cost sharing guidelines and mechanisms to recover costs are required to fund stormwater asset renewal and investment. The government policy agency should develop the pricing principles and cost sharing arrangements, while service providers should be responsible for asset renewal, investment and cost recovery in accordance with these guidelines.

Several jurisdictions raised issues with current funding arrangements for stormwater assets, noting, for example, that institutional and funding arrangements for stormwater management can pose challenges to meet increased levels of service in the face of emerging challenges such as climate change. Furthermore, it can be difficult to ensure that opportunities are not lost while different organisational funding processes and priorities are aligned. One jurisdiction stated that inadequate funding for stormwater management, particularly in light of changed runoff from infill development and climate change, is a challenge, especially when considered in light of aging infrastructure. In that instance, there are no clear mechanisms for transparent funding sources, and no specific drainage charges.



## 6. Integrated water cycle management

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This section describes outcomes, roles, activities, and proposed model institutional arrangements for the IWCM function within the urban water sector.

For policy and planning (section 6.1), regulation (section 6.2), and service delivery (section 6.3), a single combined table is used to synthesise and present the information, before each individual activity relevant to that element is discussed in further detail. For each activity, a basic narrative structure is followed:

1. The proposed model institutional arrangements for that activity are described.
2. In some instances, selected examples of how this activity is being undertaken or is intended to be undertaken or is considered to present challenges for institutional arrangements, at the level of one or more individual jurisdictions, are presented.
3. Considerations for implementation of the activity and proposed model institutional arrangements in regional areas are presented, where relevant (noting the working assumption is that these arrangements could apply similarly across metropolitan and regional areas where considerations for regional areas have not been explicitly mentioned).

Table 5 describes outcomes, roles, activities, and proposed model institutional arrangements for policy and planning, regulation, and service delivery for the IWCM function within the urban water sector. Individual activities are then discussed in further detail below the table, according to the narrative structure set out above.

### Box 1

#### A note on IWCM

In 2017, the Productivity Commission recommended that urban water management should be a major focus of a renewed NWI, recognising customer expectations and future challenges faced by the urban water sector and the need to facilitate the delivery of an integrated approach to meet them. However, it identified a number of impediments to achieving effective and efficient IWCM in the urban water sector. As part of the 2020 inquiry into the progress of NWI reforms, the Productivity Commission is investigating options for overcoming barriers to delivering amenity and liveability outcomes through IWCM.

Feedback received from several jurisdictions concurred with the Productivity Commission on the importance of IWCM in delivering on the future needs of the community. Acknowledging the high level of interest in further developing and refining institutional (and other) arrangements to achieve liveability objectives, a summarised approach to the identification and development of IWCM investments is provided here, in addition to the specific activities and proposed model institutional arrangements for IWCM presented below.

1. The government policy agency defines the overarching objectives and outcomes for urban water, which could include explicit outcomes that IWCM can help deliver (e.g. amenity, wellbeing, public health, and environmental benefits). Water, wastewater and stormwater service providers (noting this may include developers) deliver the defined outcomes.

2. The full suite of costs and benefits are considered in relation to any investment decision. This may result in a preferred option that is not the least cost option. Given this, an investment decision-making framework should provide clear guidance on how utilities should recover the additional costs associated with the preferred option. To enable this, the government policy agency needs to ensure that the economic regulatory framework allows the regulator to consider the full suite of social, environmental and economic costs and benefits when assessing the prudence and efficiency of proposed capital and operating costs.
3. The government policy agency defines an investment decision-making framework with the following attributes:
  - a. cost sharing and cost recovery principles are incorporated (noting responsibility for developing these will be delegated to the economic regulator in some cases),
  - b. the service need is clearly defined (i.e. the problem being addressed or the opportunity to be realised),
  - c. all options to deliver the service need are considered, including 'non-traditional' IWCM options (where relevant), and
  - d. sound economic appraisal includes the full suite of costs and benefits, comprising social, environmental and economic costs and benefits, noting:
    - i. benefits will be specific to the option being assessed – where relevant and feasible, IWCM outcomes such as public health (including mental health and recreation), amenity, non-use benefits (e.g. habitat protection) and avoided environmental management, supply augmentation, and stormwater and wastewater overflow costs should be quantified,
    - ii. care needs to be taken to avoid double-counting and transfers, and
    - iii. the economic appraisal should clearly define the beneficiaries and distributional impacts of an investment, allowing for consultation with all stakeholders and identifying willingness to pay and potential cost sharing and cost recovery mechanisms in accordance with cost sharing and cost recovery principles.
4. The entity proposing an IWCM response option, be it a local council, water service provider or developer, applies the steps above and considers IWCM options on their merits in the same way that a 'traditional' response option would be evaluated. The proponent consults with other agencies as part of developing the business case and considers cost sharing principles to capture multiple beneficiaries.
5. If the IWCM response option is to be implemented, the proponent does so.

This approach demonstrates that the fundamental principles and arrangements outlined for water supply, wastewater and stormwater above can and should also be applied in respect of IWCM. This recognises that though there are multiple and diverse actors involved in IWCM projects, this is true of most water sector projects. As with other projects, a lead proponent and clear framework for options appraisal is required, as is a flexible yet robust approach to cost sharing and cost recovery mechanisms.

In summary, institutional arrangements are only one of a number of factors that need to be considered to facilitate evaluation of IWCM options alongside traditional options.

Table 5: Outcomes, roles, activities, and proposed model institutional arrangements – IWCM

Outcomes	Roles	Activities to achieve outcomes	Proposed model institutional arrangements
<b>Policy and planning</b>			
Maximise social, economic and environmental benefits through the coordinated management of water supply, wastewater, stormwater (and the infrastructure that supports these services) across the water cycle.	<ul style="list-style-type: none"> <li>Coordination across all elements of the water cycle (water, wastewater, stormwater) and planning (e.g. urban planning).</li> </ul>	<ul style="list-style-type: none"> <li>Activity 5.1: Develop and endorse clear objectives and outcomes for IWCM.</li> </ul>	<ul style="list-style-type: none"> <li>Government policy agency develops clear objectives and outcomes for IWCM.</li> <li>Government policy agency reflects these objectives and outcomes in service providers' statements of responsibilities to the extent required. Objectives and outcomes can also be defined in statutory planning instruments.</li> </ul>
	<ul style="list-style-type: none"> <li>Definition of liveability objectives and options for achieving them.</li> </ul>	<ul style="list-style-type: none"> <li>Activity 5.2: Integrate land use and water planning and investment decision-making.</li> </ul>	<ul style="list-style-type: none"> <li>Objectives and outcomes defined in statutory planning instruments or through other arrangements to better align land use planning and IWCM.</li> </ul>
Ensure that decentralised IWCM approaches are considered on an equal footing alongside other water supply and management approaches, particularly in the planning of new developments to support urban growth.	<ul style="list-style-type: none"> <li>Coordination of planning and investment decision-making.</li> </ul>	<ul style="list-style-type: none"> <li>Activity 5.3: Consider all options for managing water, wastewater and stormwater on the basis of a transparent assessment of costs and benefits.</li> </ul>	<ul style="list-style-type: none"> <li>Government policy agencies develop an investment decision-making framework and guidelines for economic appraisal of IWCM options.</li> <li>Bodies responsible for IWCM investment decision-making work collaboratively and are empowered and resourced to consider all options on an equal footing.</li> </ul>
<b>Regulation</b>			
Mitigate the impact of the urban water sector on the	<ul style="list-style-type: none"> <li>Economic regulation (price determination,</li> </ul>	<ul style="list-style-type: none"> <li>Activity 5.4: Adopt an outcomes-based approach</li> </ul>	<ul style="list-style-type: none"> <li>Government policy agencies and Ministers adopt an outcomes-based approach to achieving desired outcomes.</li> </ul>

Outcomes	Roles	Activities to achieve outcomes	Proposed model institutional arrangements
<p>environment in accordance with defined environmental standards or outcomes.</p> <p>Ensure safe drinking water and mitigate the impact of sewage overflows on public health.</p> <p>Encourage prudence and efficiency through independent oversight of pricing and service delivery outcomes including to promote competitive neutrality for public and private sector service providers.</p>	<p>licensing, assessment of capital and operating programs).</p> <ul style="list-style-type: none"> <li>Environmental and health regulation (setting standards, monitoring, enforcement, reporting).</li> <li>Management of customer complaints.</li> </ul>	<p>to managing the impact of the urban water cycle on the environment and public health.</p> <ul style="list-style-type: none"> <li>Activity 5.5: Incorporate IWCM into the economic regulatory framework.</li> </ul>	<ul style="list-style-type: none"> <li>Environmental and public health regulators define, monitor and enforce wastewater discharge and reuse and potable water standards in a regulatory environment free of policy bans or mandates.</li> <li>Water service providers promote a conversation with customers regarding the importance of considering all options on an equal footing.</li> <li>Economic regulatory framework allows the regulator to consider the full suite of social, environmental and economic costs and benefits when assessing the prudence and efficiency of proposed capital and operating costs.</li> </ul>
<b>Service delivery</b>			
<i>As for water supply, wastewater and stormwater.</i>	<i>As for water supply, wastewater and stormwater.</i>	<ul style="list-style-type: none"> <li>Activity 5.6: Develop cost sharing and cost recovery arrangements and ensure mechanisms are in place to fund asset renewal and investment.</li> </ul>	<ul style="list-style-type: none"> <li>IWCM proponent (project owner) develops cost sharing and cost recovery arrangements to support realisation of the economic, social and environmental benefits of implementing IWCM, including through coordination with urban planning agencies and developers.</li> <li>IWCM proponent (project owner) is responsible for asset renewal, investment and cost recovery.</li> </ul>

## 6.1. Policy and planning

### *Activity 5.1: Develop and endorse clear objectives and outcomes for IWCM*

Government policy agencies should develop clear objectives and outcomes for IWCM. These objectives and outcomes may then need to be reflected in service providers' statements of responsibilities or licences. This is consistent with the strategic direction-setting role of the state or territory government.

There are no nationally consistent IWCM principles<sup>7</sup>. This is a commonly noted gap, and many jurisdictions are currently grappling with what the best institutional arrangements for realising IWCM objectives and outcomes (with different strategies and approaches prevailing in different jurisdictions). At least one jurisdiction raised a concern during consultation that service provider incentives in that jurisdiction are not presently aligned with liveability outcomes. Some jurisdictions (e.g. NSW and Victoria) have developed relevant strategies for integration across functions within and beyond the urban water sector to realise liveability objectives and outcomes. For example, the Victorian Government released the Victorian Integrated Water Management Framework in 2017 establishing 15 Integrated Water Management Forums covering the state. The purpose of the forums is to establish a systematic means of ensuring collaboration and knowledge across the different organisations responsible for different parts of the water cycle.

An expansion of service provider responsibilities to include outcomes related to liveability and/or coordination clearly raises considerations relating to resourcing and capacity levels, and any expansion of mandates will need to be considered in this light, particularly for regional providers (some of whom are already facing challenges finding and retaining appropriately skilled staff).

In general, IWCM exemplifies the need for greater networking of accountabilities and responsibilities between existing bodies and arrangements across the urban water sector, even without considering options for creating new entities or implementing onerous machinery of government changes.

### *Activity 5.2: Integrate land and water planning and investment decision-making*

Mechanisms for integrating water supply, wastewater and stormwater infrastructure planning with parallel land use, transport and development planning processes should be progressively introduced, ideally through pilots as has already occurred in some jurisdictions (e.g. planning for South Creek Corridor Project in NSW). In those jurisdictions where regional services are provided by councils, there may be opportunities to facilitate integration at a broader geographic scale (especially where councils share single supply sources) to minimise burden on local service providers and improve the cost-effectiveness of finding and implementing IWCM solutions.

Numerous jurisdictions noted that enhanced integration of statutory land planning and catchment-scale water supply planning and service provision (as envisaged by IWCM) requires significant clarification of roles and responsibilities, and development of appropriate mechanisms for achieving integration. One jurisdiction suggested that high-level planning principles that promote integration, and identify specifically how this should occur, could be developed, with regional service providers being singled out as requiring significant assistance. Such principles could feasibly be developed through the UWRC with the ability for individual jurisdictions to apply them to the extent helpful.

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<sup>7</sup> Principles do, however, exist in certain individual jurisdictions.

To the extent it is possible and effective, integration of land and water planning at a scale broader than that of a single service provider's service area may help to alleviate capacity constraints. In regional NSW, for example, local water service providers are required to develop IWCM strategies to identify and consider all viable infrastructure and non-infrastructure and demand and supply-side options to address water security and water servicing needs.

*Activity 5.3: Consider all options for managing water, wastewater and stormwater on the basis of a transparent assessment of costs and benefits*

Government policy agencies should develop an investment decision-making framework and guidelines for economic appraisal of IWCM options. Bodies responsible for IWCM investment decision-making should then work collaboratively to consider all options on an equal footing. Decentralised IWCM approaches should be considered alongside other water supply, wastewater and stormwater delivery and management approaches, particularly in the planning of new developments to support urban growth. All options (build and non-build) should be fully and transparently considered, including both centralised and decentralised approaches (including indirect and direct potable reuse, and reuse of stormwater), and decisions adapted in response to new information. Consistent application of cost-benefit analysis that considers the full suite of costs and benefits, comprising social, environmental and economic costs and benefits allows each option to be considered through a common metric (net present value).

## 6.2. Regulation

*Activity 5.4: Adopt an outcomes-based approach to managing the impact of the urban water cycle on the environment and public health*

The impacts of the urban water cycle on the environment and public health should be monitored, and acceptable standards defined and enforced, in a regulatory environment free of policy bans or mandates. This requires government policy agencies and Ministers to adopt an outcomes-based approach and water service providers to promote a conversation with customers regarding the importance of considering all options on an equal footing. This is consistent with a best practice approach to outcomes-based regulation and accords with the UWRC and NWRC's endorsement of an approach to reform that is driven by outcomes. It also supports achievement of Activity 5.3 relating to transparent options assessment.

Several jurisdictions currently prevent suitably treated recycled wastewater or treated stormwater from augmenting supplies of potable water, and only two – Western Australia and Queensland – explicitly allow suitably treated recycled wastewater to indirectly augment the supply of potable water by returning it to the natural environment. This may be resulting in higher costs to customers through lost opportunities to implement the most cost-effective solution to customer needs and preferences in a given situation.

*Activity 5.5: Incorporate IWCM into the economic regulatory framework*

The Minister, supported by the Government policy agency, should define the regulatory objectives and outcomes for IWCM, ensuring they do not conflict with other Government objectives.

An outcomes-based regulatory framework should allow the economic regulator to consider the full suite of social, environmental and economic costs and benefits when assessing the prudence and efficiency of proposed capital and operating costs.

### 6.3. Service delivery

#### *Activity 5.6: Develop cost sharing arrangements and ensure mechanisms are in place to fund asset renewal and investment*

Government policy agencies should take responsibility for developing cost sharing and cost recovery principles.

The economic appraisal and business case should then clearly define the beneficiaries and distributional impacts of an investment and identify willingness to pay and potential cost sharing and cost recovery mechanisms in accordance with cost sharing and cost recovery principles.

Service providers should be responsible for asset renewal, investment and cost recovery, in accordance with cost sharing arrangements established through completion of this activity.

Issues were raised by most jurisdictions with regard to the ability to address challenges due to current funding arrangements, particularly for funding of liveability and IWCM projects. Numerous jurisdictions identified that a lack of clarity regarding who should pay for the benefits of liveability or water-sensitive urban design (WSUD) type investments was diminishing the ability to identify cost-effective projects and implement them. One jurisdiction noted that the requirement to apply non-market valuation techniques to quantify intangible benefits meant that determining which customers benefit, who should pay for those benefits, and how to recover costs appropriately was difficult. Another noted that while many IWCM projects may be economically viable, they are not financially viable for a single organisation (such as a water service provider) to implement and so the broader community benefits associated with such investments need to be quantified and costs appropriately apportioned between beneficiaries (including, in some cases, government acting on behalf of the environment).

The responsibility for funding, financing and delivering WSUD projects is often dispersed across local government, water service providers and developers, making it difficult for any one party to establish the case for WSUD and other non-traditional engineering solutions, and to raise sufficient levels of revenue through charges or other mechanisms to fund them.



## 7. Conclusion and next steps

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### 7.1. Conclusion

#### 7.1.1. An evolving and incomplete reform agenda

The Australian urban water sector has pursued a series of significant institutional, structural and governance reforms over the past 25 years, with reforms implemented by states and territories to differing extents and through diverse mechanisms. The Commonwealth has historically played a steering and coordinating role, including by establishing strategic directions in accordance with national interests and offering financial incentives through the provision of conditional funding (e.g. competition payments to state governments conditional on compliance with National Competition Policy requirements). Major urban reforms implemented to varying extents across jurisdictions since the establishment of a national reform agenda by the Council of Australian Governments in 1994 include:<sup>8</sup>

- separation of policy, regulatory and service delivery functions
- corporatisation of state-owned water and wastewater service providers
- regulation of government-owned and private service providers, in the areas of public health, environmental health and economic performance
- establishment of independent economic regulators and pricing reform, and
- enabling of private sector involvement where possible.

As these reforms, and the strategies and agendas through which they have been organised and prosecuted, have evolved over time, they have been adjusted and accelerated at different times in response to several drivers. These drivers for change spanned economic, social and environmental factors. For example, the implications of the economic downturn in the early 1990s focused attention on sector inefficiencies and opportunities for greater efficiency, while drought was a dominant influence throughout much of the 2000s. Throughout the period (and into the future), stakeholder receptiveness to and readiness for further reform has affected the direction and rate of progress.

Throughout, and of course prior to, this quarter-century of reform, varying rates of change and idiosyncrasies in reform implementation identifiable across jurisdictions have been driven by, and have contributed to, different institutional realities. While there are broad similarities in institutional form between different states and territories, arrangements do, and will continue to, differ by jurisdiction. This is entirely appropriate given diversity in water and wastewater service supply and demand circumstances (including trends in these), customer and stakeholder preferences, and broader government objectives. In recognising that there are multiple ways to achieve the same outcome, UWRC members have consistently preferred an outcomes-based approach (see section 2).

In this context, there are nonetheless several opportunities to improve institutional arrangements to more efficiently and effectively deliver on the vision and objectives for the urban water sector endorsed by the NWRC in 2019 (see Appendix A). These are described in the following section.

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<sup>8</sup> Numerous histories of the Australian urban water reform 'journey' have been written over the years and this report does not seek to add to the existing literature on the subject.

### 7.1.2. Opportunities for improvement and mutual learning

The most significant opportunities for improving institutional arrangements in the urban water sector identified through completion of this project are as follows, noting these all apply to multiple (but not all) jurisdictions and there will be others that are relevant to single jurisdictions that are not summarised here:

- More could be done to clarify the respective roles of governments and service providers to support effective water security planning, including with respect to major (system-wide) supply augmentations, water efficiency improvements, and other non-infrastructure interventions. The model institutional arrangements set out in this report describe responsibilities for both government policy agencies and service providers in making major water planning decisions, noting specific arrangements are likely to differ across jurisdictions. It is imperative that these roles are clearly defined in each jurisdiction to avoid duplication of roles or an absence of authority. Increasing uncertainty in relation to future supply (including due to the effects of climate change) means the costs of unclear decision-making structures for future water security (and the range of values and benefits that supports) is significant.
- Improved implementation of institutional arrangements is needed for planning and delivering liveability outcomes. Mechanisms for integrating water supply, wastewater and stormwater infrastructure planning with parallel land use, transport and development planning processes could be progressively introduced, ideally through pilots as has already occurred in some jurisdictions. Importantly, institutional arrangements should allow for the consistent application of cost-benefit analysis to ensure adoption of innovative IWCM options is done transparently by comparing the costs and benefits of achieving liveability outcomes in these ways with more traditional approaches. In all cases, as with other water sector projects, a lead proponent and clear framework for options appraisal is required, as is a robust approach to cost sharing and cost recovery. The fundamental principles and arrangements outlined for water supply, wastewater and stormwater in this report largely can and should also be applied in respect of IWCM.
- Implementation of IWCM requires increased cooperation between government policy agencies, service providers and regulators (and setting of expectations by government policy agencies accordingly). For example, service providers may increasingly be affected by competing regulatory and policy intent. A service provider may be expected to deliver liveability outcomes but options to deliver these outcomes will not always be least cost options. If the economic regulator does not have the ability to consider environmental, social and economic outcomes (e.g. net public benefit), the regulator may be unwilling to allow costs to be passed through. This disincentivises IWCM options being considered by regulated service providers.
- A tailored approach is needed in many regional areas. Specifically, where it is apparent independent economic regulation is not suitable for a particular geography or service provider and does not make sense practically, there is a need to rely on guidelines, collaboration, performance reporting, and funding support. Alternatively, in circumstances where economic regulation is desired for all service providers in a particular jurisdiction, a more light-handed approach may be applied to smaller providers where appropriate. Additionally, it is not practical for an infrastructure advisory body to be involved in all investment decision-making, particularly investment decision-making in regional areas. A model whereby state governments set the expectations and guidelines for investment decision-making, which service providers then adhere to, is more appropriate. For some regional and remote service providers, their size, location and workforce may affect their

ability to meet existing and future obligations, including recognising and responding to emerging issues like water security planning.

As noted throughout this report, there is significant potential for knowledge sharing between jurisdictions on particular aspects of institutional arrangements. It is hoped that this report, complemented by the detailed jurisdictional stocktakes co-created by Aither and UWRC members, will inform such conversations.

Individual jurisdictions are encouraged, in addition to engaging with one another through knowledge sharing activities, to consider using the conceptual frameworks developed through this project to inform their own self-assessments or reflections on their institutional arrangements as they compare to the proposed to the model arrangements presented here.

## 7.2. Next steps

As noted in *Advancing the urban water sector*, national collaboration and coordination has not been a significant driver of change in urban water in recent years. However, positive engagement between jurisdictions, including with the Commonwealth, through the UWRC highlights the opportunity to learn from one another and share successes to drive further improvements. The following next steps should be considered:

1. The UWRC considers and acts (as a group or in smaller groupings) to share learnings in relation to institutional arrangements, including (but not limited to) as set out in section 7.1. This may include documenting specific approaches adopted by one or more jurisdictions in water supply, wastewater, stormwater and/or IWCM.
2. The UWRC considers the next tranche of actions identified and agreed in *Advancing the urban water sector* and makes a determination on future priorities, recognising that the benefits of improvements to institutional arrangements (including those identified in this report) will only be fully realised if implemented as part of a holistic suite of improvements across all five core elements of urban water management.

# References

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Aither, 2019, Advancing the Urban Water Sector: A framework and roadmap for coordinated action.

*Competition Policy Reform Act 1995 (Cth)*

Council of Australian Governments, 1994, Council of Australian Governments' Water Reform Framework, Communiqué, Hobart, Tasmania.

Frontier Economics, 2017, Urban water regulation reform, A report prepared for Infrastructure Australia.

Productivity Commission, 2020, Integrated Urban Water Management — Why a good idea seems hard to implement, Commission Research Paper, Canberra.

# Appendix A – Framework for advancing the urban water sector



# Appendix B – Actions for resilient and effective institutional arrangements in metropolitan areas

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## Priority 1: Resilient and effective institutional arrangements in metropolitan areas<sup>9</sup>

Action 1.1: Develop an institutional framework that separately identifies policy, regulatory and service delivery roles for water, wastewater, stormwater and IWCM functions.

Action 1.2: Use the institutional framework to inform a stocktake of current roles and responsibilities, and levels of service across each jurisdiction for water, wastewater, stormwater and IWCM functions.

Action 1.3: Using the stocktake, commission an independent review to investigate the appropriateness of current institutional arrangements in light of current and emerging challenges, and help develop the case for change. This should cover (but not be limited to) the following key areas (1) supporting effective system-wide and local level decision-making, (2) delivering 'core' water, sewerage and stormwater services, and (3) delivering IWCM and liveability outcomes.

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<sup>9</sup> The final agreed scope for this consultancy includes regional as well as metropolitan areas across all jurisdictions.

# Document information

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