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Urban water services: regional and remote communities

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GUIDE TO THE SUPPORTING PAPERS (AND DESCRIPTOR)

SP A Water entitlements and planning (*Entitlements and planning*)

SP B Water trading and markets (*Trading*)

SP C Environmental management (*Environment*)

SP D Securing Aboriginal and Torres Strait Islander people's interests in water (*Cultural access*)

SP E Ensuring the integrity of water resource management (*Integrity*)

SP F Urban water services (*Urban*)

SP G Urban water services: regional and remote communities (*Regional*)

SP H Water reform in rural Australia (*Rural*)

SP I Government investment in major water infrastructure (*Infrastructure*)

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Key points

- Provision of water services can be more challenging and costly to supply to regional and remote communities than to major cities. Drought, bushfires and COVID-19 have brought service delivery issues into sharp relief across the country.
 - Parts of regional New South Wales and Queensland have experienced water security challenges, with some towns subject to severe and extended water restrictions. At the extreme, State governments have carted water into some towns.
 - Examples of poor drinking water quality have emerged. Some regional and remote towns have been forced onto poor-quality alternative water sources, and water source quality issues persist in some remote Aboriginal and Torres Strait Islander communities.
- Some providers have adapted to these shocks better than others, but at times State government responses have been ad hoc and reactive. Planning has been insufficient, which suggests inadequate capability in some local utilities. State and Territory government assistance programs could be better designed. Governance in the sector remains an issue, as does the interaction between utility operations and water resource management during extreme events.
- Water services across regional and remote Australia are likely to face greater challenges in the future.
 - Climate change projections point to drier and hotter conditions across much of inland Australia, affecting supply and demand for water, as well as the reliability of existing water sources in regional and remote areas.
 - Some regional towns are planning for growth, while others are contending with declining user bases and high asset renewal costs, posing financial sustainability challenges.
- State and Territory Governments should commit to ensuring access to a basic level of safe and reliable water for regional and remote communities. A renewed National Water Initiative should include principles for:
 - regional and remote urban water planning, including ensuring alignment between utility system planning, contingency planning and water resource planning
 - defining and ensuring access to a basic level of service, including guidelines for government subsidies for high-cost regional and remote water services
 - governance of regional and remote providers, including financial separation and a commitment to light-touch economic oversight for small urban water providers
 - performance monitoring and reporting of regional and remote water service outcomes, especially in remote Aboriginal and Torres Strait Islander communities.

The inquiry terms of reference request the Commission to consider ‘the provision of reliable water services to regional, rural and remote communities’. Provision of reliable, along with healthy and safe, water supplies is an agreed outcome of the National Water Initiative (NWI),¹ but the Commission’s assessment (*Assessment*: section 6.1) has highlighted that regional, rural and remote communities can face lower service quality (that is, service reliability and water quality) than residents of major cities. Although most jurisdictions are

¹ NWI paragraph 90(i).

taking steps to improve regional and remote service quality, some poor outcomes have been observed. These reflect a range of pressures — including drought, aging infrastructure, relatively poorer water sources and the capability and financial sustainability of some smaller providers.

Addressing disparities in access to essential services is a perpetual policy challenge, broader than water alone. In one reflection of that challenge, the 2020 National Agreement on Closing the Gap committed to develop a target towards parity of infrastructure, essential services (including water and sewerage services), and environmental health and conditions for Aboriginal and Torres Strait Islander communities (Australian Governments and the Coalition of Peaks 2020, p. 36). National water reform can play a role in supporting processes such as these.

Although the principles of best-practice urban water service provision (which encompass planning, pricing and institutional arrangements, regulation, and governance) apply in regional, rural and remote areas as well as major cities (SP F *Urban*), giving effect to best practice outside major cities can be more challenging. In recognition of that fact, this paper tailors the urban water principles outlined in SP F *Urban* to fit the context of regional and remote communities,² and proposes additional content for jurisdictions to consider in renewing the NWI.

The paper presents:

- background on regional and remote water service provision (section 1)
- an overview of challenges in supplying safe and reliable water services to regional and remote communities (section 2)
- principles for regional urban water planning and service delivery (section 3)
- advice for governments in supporting regional and remote water services (section 4)
- priorities to ensure safe and reliable water services in Aboriginal and Torres Strait Islander communities (section 5)
- advice to jurisdictions on content relating to water services to regional and remote communities in a renewed NWI (section 6).

² For the purpose of this paper, ‘regional and remote’ are defined in accordance with the ABS remoteness areas (ABS 2018). Broadly, this encompasses all areas (both urban and rural) outside of the capital cities and nearby major cities. Although separately referred to in the terms of reference, rural communities (smaller communities outside of cities and towns) are defined as a subset of ‘regional and remote’ communities in this paper.

1 Background

1.1 Why the Commission is looking at regional and remote water services separately from major metropolitan services

Access to reliable water services, at an appropriate quality, is essential for human health, hygiene and wellbeing. It primarily encompasses household access to safe water for drinking and washing, as well as wastewater removal and treatment — but also includes water for industrial uses, stormwater management and the maintenance of urban environments and green space.

Poor water quality can have a number of negative implications. It contributes to the prevalence of infectious diseases, affects the incidence and treatment of chronic conditions (especially in remote areas, section 5), and can have economic impacts (NHMRC, sub. 93, p. 3). Unreliable water supplies, which can lead to onerous water restrictions, or reliance on high-cost or poor quality alternative sources, also impose a range of direct and indirect costs on users.

Water service provision can be more complex (and costly) outside major cities

Although regional and remote water services are often subject to the same pressures as metropolitan services (including a drying climate, population changes and greater community expectations (SP F *Urban*)), they face additional challenges. Regional towns are smaller, with connections typically spread over a large area, such that fewer users are serviced by (and pay for) fixed infrastructure, such as water treatment plants. This leads to higher costs per connection and can mean a particular level of service is more expensive to provide in some areas compared with others (Engineers Australia, sub. 63, p. 17). Moreover, population decline can result in fewer users over the same network, while aging assets in some areas will necessitate substantial infrastructure renewals (relative to the number of users) (LGAQ, sub. DR183, p. 2). The supply of an appropriately skilled workforce is also limited in some areas which can affect the quality of service provision (qldwater, sub. DR142, p. 4) (SP K *Knowledge*).

Climate conditions vary significantly across regional and remote Australia, but rainfall can be less frequent or reliable, particularly in inland areas, and there may be fewer alternative supply options (such as seawater desalination or potable groundwater). Some remote communities are entirely reliant on a single groundwater source, without options to access surface water resources or to share bulk infrastructure (such as dams). And water quality issues can arise from many causes, including bushfires, algal blooms and other contaminants (NHMRC, sub. 93, p. 4). A lack of alternative water sources can make a water supply system vulnerable in the face of a water quality issue.

Access to safe and reliable water services is also an issue in some remote Aboriginal and Torres Strait Islander communities (*Assessment*: section 6.1). This can be due to poor quality water sources, inadequate water distribution and treatment infrastructure, and fragmented arrangements for service delivery.

Overall, it can be more costly, per consumer, to provide safe and reliable water supplies in some regional and remote communities, and there are fragilities in some supply systems. Many of these factors, however, vary between communities, and local circumstances (such as water source availability) affect the delivery of affordable and reliable water services.

1.2 Service delivery arrangements vary significantly between jurisdictions

In the past, regional urban water services were often provided by local governments. Over time, higher service standards, including those imposed by health and environmental regulation, have increased the cost and complexity of delivering water services. As a result, some State governments consolidated their regional providers into fewer, larger utilities with specialist expertise.

- In Victoria between 1982 and 2005, more than 400 local water utilities were divested from local governments and amalgamated into the current 13 State-owned regional utilities (PC 2017a, p. 231), to be 12 from 1 July 2021 following the merger of Western Water and City West Water (City West Water 2021). These are all subject to economic regulation by the Victorian Essential Services Commission (ESC 2019).
- Between 2008 and 2013, the Tasmanian Government amalgamated 29 local government-run utilities into a single state-wide provider (TasWater). TasWater is now co-owned by those local governments and the Tasmanian Government (TasWater 2018).

In South Australia, Western Australia, Tasmania, the Northern Territory and the ACT, a single jurisdiction-wide utility (owned by the State or Territory Government) is primarily responsible for regional and remote water services.

- The South Australian Government can direct SA Water to undertake non-commercial operations, including in Aboriginal communities, with government funding (SA Water 2019b). There are also 66 small or intermediate water service and/or wastewater providers (including local government providers) in parts of regional South Australia, (ESCOSA 2019).
- In Western Australia, the Water Corporation provides water services to most of the state, although there are three regional water corporations that supply Bunbury, Busselton and Kalgoorlie–Boulder (BOM 2020b, p. 126). There are also a number of small providers licensed to provide water and sewerage services.
- In the Northern Territory, Indigenous Essential Services (IES) (a subsidiary of Power and Water Corporation) delivers water and energy services to 72 remote communities (PowerWater 2019b).
- In the ACT, Icon Water services Canberra, although it does not provide potable water to some rural villages (BOM 2020b, pp. 111–112; SCETCS (ACT) 2020, p. 3).

In New South Wales and Queensland, a large number of small water service providers deliver regional and remote water services. Most are owned and/or operated by local governments, although there are different models in each state.

- In New South Wales, 90 (out of 92) regional water utilities are local government-owned and provide services to communities outside of Sydney and the Hunter Valley (NSW Water Directorate, sub. 37, p. 1). Some county councils supply bulk water to multiple local government owners, while many inland councils source bulk water from WaterNSW.
- In Queensland, 71 regional providers, including 15 Aboriginal councils and two Torres Strait Islander councils, provide water services (qldwater, sub. 47, p. 2). Most are owned and operated by local governments.

A summary of regional water service provision arrangements across Australia is in table 1.

Many rural properties self-supply their domestic needs through groundwater bores or rainwater tanks, as do some Aboriginal communities, particularly in remote locations. In some cases, this occurs with limited involvement or oversight from State and Territory Governments or water service providers. As a result, data on the quality of self-supplied water can be patchy.

The diversity of service models means that few general conclusions can be drawn about the effectiveness of regional water service delivery, nor is there merit in being prescriptive on the specifics of service provision. It does, however, allow for comparison of the benefits and costs of different models, and identification of better practice in delivering improved outcomes for regional and remote communities.

1.3 NWI coverage of regional and remote urban water services

Regional and remote water services are largely subject to the same NWI outcomes and actions as metropolitan urban water services — which, as discussed in SP F *Urban*, focus on best practice pricing and institutional arrangements, with relatively little treatment of urban water service delivery (beyond a commitment to ‘healthy, safe and reliable water supplies’).

NWI pricing commitments were designed so that water users would generally pay the long-run efficient costs of service delivery and so that utilities had adequate financial resources to deliver services without earning monopoly rents. Independent pricing regulators were to be given powers to set or review prices on a case-by-case basis, as well as report on pricing outcomes. The NWI also included requirements for institutional separation, and public reporting and benchmarking. (*Assessment*: section 3.1 outlines the NWI pricing and institutional commitments for urban water in more detail.)

Table 1 Regional potable water and wastewater providers

Excludes bulk water providers and self-supply schemes

Jurisdiction	Number of utilities	Providers by number of connections			Role of economic regulator in regional areas	Ownership in regional areas
		Total	> 100k	10k - < 100k		
NSW	92	1	27	64	Large providers licensed, others unregulated	Varies between State and local governments
Vic	13 ^b	1	12 ^b		Price setting	State Government
Qld	71	2	17	52	Large providers subject to monitoring, others unregulated	Varies between State and local governments
SA	67	1		66	Licensing, benchmarking and price determinations	Varies between State and local governments
WA	36	1	3	32 ^c	Licensing and benchmarking, some local governments exempt. Water Corporation subject to price monitoring	Varies between State and local governments
Tas	1	1			Revenue setting	Co-owned by the State and local governments
NT ^a	1		1		Licensing	Territory Government
ACT	1	1			Price setting	Territory Government

^a Includes Indigenous Essential Services, a subsidiary of the Power and Water Corporation. ^b From 1 July 2021, Western Water (approximately 75 000 connections) will merge with City West Water, reducing the number of regional utilities with 10 000–100 000 connections to 11 and the total number of regional utilities to 12. ^c Includes 16 licensed potable water and/or wastewater providers and 16 local governments exempt from licensing.

Sources: BOM (2020b); City West Water (2021); DPIE (NSW) (2020c); ERA (WA) (2020); ESC (2018); ESCOSA (2019, 2020); ICRC (2019); OTTER (2020); Power and Water Corporation (2019a); qldwater (2019).

The key distinction made for regional urban water was a lesser commitment to cost recovery, recognising that ‘there will be some small community services that will never be economically viable but need to be maintained to meet social and public health obligations’.³ ‘Rural and regional’⁴ water service providers were to set prices at lower bound levels (recovering all operational and asset replacement costs, but without a return on capital), with continued movement towards the upper bound (including a return on capital) ‘where practicable’.⁵

Where small community services are to be subsidised, the NWI requires that State and Territory Governments do so through a publicly reported community service obligation (CSO) payment and consider alternative management arrangements to remove the need for

³ NWI paragraph 66(v).

⁴ Defined as ‘water and wastewater services provided for rural irrigation and industrial users and in regional urban areas with less than 50,000 connections’ (NWI schedule B(i)).

⁵ NWI paragraph 66(v)(a)-(b).

an ongoing CSO.⁶ In other words, jurisdictions agreed that regional providers that can sustainably achieve full cost recovery should endeavour to do so, with CSOs provided as a last resort. State and Territory Governments were ultimately responsible for making a judgment on when a service is essential but unviable, and for determining the calculation of CSO payments to those services.

2 The challenge for regional and remote services

The difficulty (and cost) of maintaining safe and reliable water services to regional and remote communities is well understood. Yet since the Commission's 2017 inquiry, water quality and water security issues in a number of regional and remote communities have highlighted a range of shortcomings in the current arrangements.

2.1 A series of recent crises ...

Since 2017, persistent drought and severe bushfires across Australia have stretched local water supplies (*Report*: chapter 2).⁷ In the Murray–Darling Basin, the Sefton Review (2020, p. 63) found that some communities now faced:

... critical urban water supply and quality issues, as well as restrictions on water use. This situation has significant social and economic impacts, including costs from having water restrictions and accessing alternative supplies, reduced amenity and green open space, and poorer health and wellbeing outcomes from quality issues.

In New South Wales, more than 50 town water systems were identified as being at risk of failure in early 2020 (NSW Water Directorate, sub. 37, p. 13). Emergency water carting was needed in New South Wales (figure 1), Queensland and Western Australia (NSW Water Directorate, sub. 37, p. 13; AFA, sub. 45, p. 9; Western Australian Government, sub. 62, p. 3), while a number of emergency water infrastructure works have been undertaken in New South Wales to secure water supplies (figure 1).

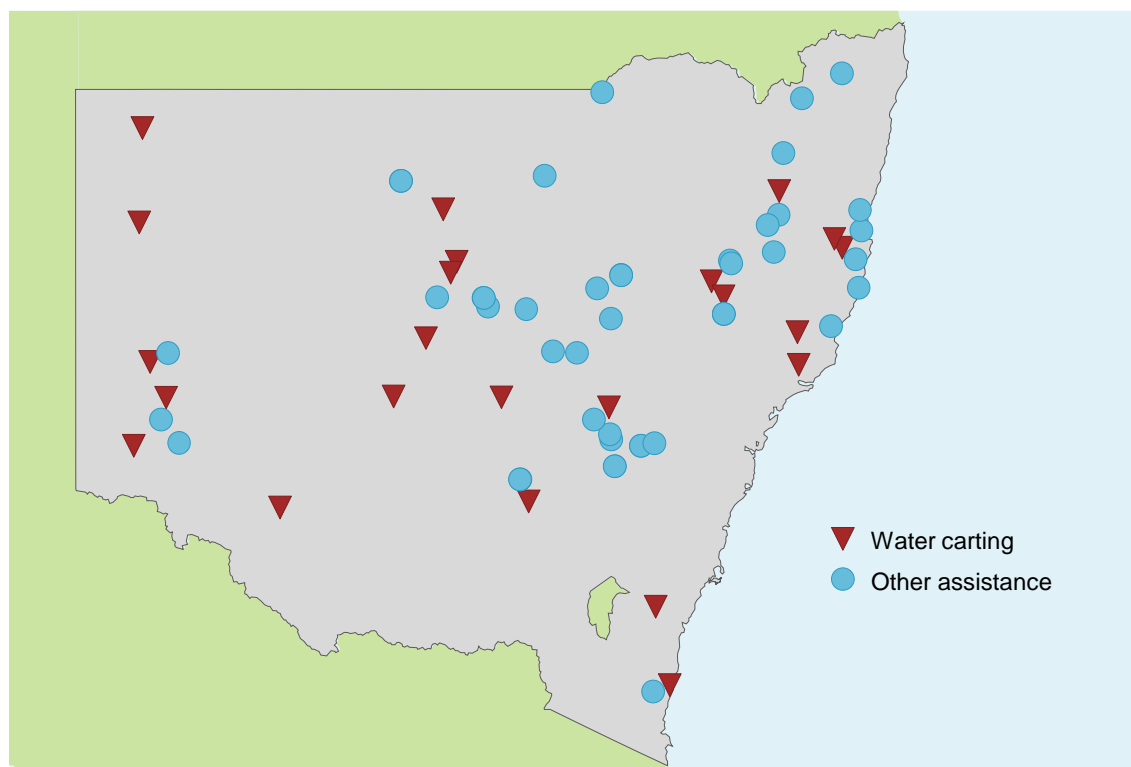
As noted above, some Aboriginal and Torres Strait Islander communities continue to lack access to safe and reliable water supplies. The NHMRC (sub. 93, p. 9) submitted that:

A high proportion of regional and remote Indigenous communities are experiencing intermittent and reoccurring water quality issues that lead to poor water safety and aesthetic outcomes. For example, the community of Walgett (NSW) has recently encountered elevated sodium concentrations in drinking water. In addition, elevated concentrations of uranium in drinking water have been a persistent problem in the remote community of Laramba (NT).

⁶ NWI paragraph 66(v)(c).

⁷ NSW Water Directorate, sub. 37; qldwater, sub. 47; CNSWJO, sub. 55.

Figure 1 **Map of New South Wales emergency water supply responses**



Source: DPIE (NSW) (2020b).

In many cases, poor water quality outcomes may persist because there are few alternatives to poor quality water sources. Zero Mass Water Australia (sub. 6, p. 5) highlighted that:

... all 72 remote communities in the Northern Territory that are supplied with drinking water rely on groundwater as the water source, even though there are known contaminants such as arsenic (Katherine region), barium (Bulla), chromium (Wallace Rockhole), fluoride (Alpurrurulam and Nyirripi), nitrates (Pmara Jutunta, Yuelamu) and uranium (Willowra, Wilora and Laramba).

2.2 ... has highlighted vulnerabilities in some regional water systems ...

Recent drought conditions in New South Wales, Queensland and Western Australia were, in some ways, unparalleled. The Bureau of Meteorology (2020a) reported that the recent drought:

... was a situation with no clear historical precedent ... The three years from January 2017 to December 2019 were the driest on record for any 36-month period starting in January, when averaged over the Murray–Darling Basin and New South Wales ... Other areas affected by longer-term rainfall deficiencies included:

- eastern Victoria

-
- eastern and northern Tasmania
 - eastern South Australia except for the southeast and some parts of the southwest
 - Western Australia.

Yet some responses to the dry conditions indicated a lack of planning and preparation, or inadequacies in the emergency response plans in place prior to the drought. Local Government NSW (sub. 75, p. 4) highlighted that:

... the extensive and devastating drought ... has exposed serious shortcomings in drought preparedness, response and resilience that has posed a serious threat to communities including those who have never experienced drought conditions before.

In early 2020, Infrastructure Australia moved to add ‘Town and city water security’ as a ‘High Priority Initiative’ on its Infrastructure Priority List (IA 2021, pp. 70, 86). In certain regions, the need for greater infrastructure investment is particularly acute. The Central NSW Joint Organisation (sub. 55, p. 22) viewed that the New South Wales Government’s passing of the *Water Supply (Critical Needs) Act 2019*, which aimed to expedite certain major water security investments, demonstrates ‘the failure of the existing system’.

During 2020, the COVID-19 pandemic created further challenges for some regional and remote water supplies. Smaller providers were found to have little or no redundancy in essential skills, meaning water supply systems were vulnerable in the event of a shock (such as a local COVID-19 outbreak) (qldwater sub. 47, p. 9).

And the Local Government Association of Queensland (sub. 32, p. 4) observed that:

COVID-19 has brought to light issues in planning for future pandemics. Contingency planning for supplies (such as chemicals for treatment plants), critical spares (pipes, valves etc) and resources (technical and financial support) is imperative to ensure communities are supported throughout a public health crisis with safe and reliable water supply.

As noted by qldwater (sub. 47), the lack of preparedness reflects broader issues in the capability of some regional water suppliers: many are small, have limited financial resources, and do not have the skills or organisational capability to undertake complex planning activities. Ongoing under-pricing of some water services, alongside continued grant funding, indicates that some providers are not financially sustainable (*Assessment*: section 3.1). Where utilities do not earn enough revenue to cover ongoing operational and maintenance costs, they are unlikely to be able to fund the infrastructure renewals necessary to maintain service standards over time, including maintaining water supplies during extreme events.

The recent drought in eastern Australia has been severe enough to test even larger and more well-resourced regional utilities. The NSW Water Directorate (sub. 37, p. 7) highlighted the case of Tamworth (a regional city with a population of 43 200 people (ABS 2019)), reflecting both on local planning decisions and the catchment water sharing plan.

The current experience is that water sharing plans in some parts of regional NSW are not as effective as they could be for protecting town water supplies, notwithstanding some significant

investment in water security infrastructure. For example, Tamworth in the Namoi-Peel valley has been on Level 5 restrictions for 11 months since 23 September 2019. Tamworth's Level 5 restrictions require residents to limit their water usage to less than 150 litres per person per day and asks businesses to reduce their consumption by at least 25%. We do not think it is sustainable for cities the size of Tamworth to be on Level 5 restrictions for such a long length of time.

In some catchments, the interplay between water sharing plans and water allocation decisions is likely to require review in the face of climate change (Inland Rivers Network, sub. DR136, p. 8). In the case of Tamworth, the city holds high security water entitlements well in excess of average annual use, with priority provided under the relevant plan to meeting urban water needs before making allocations to general security access licences. Yet in the year leading up to Tamworth's level 5 restrictions, more water was distributed to general security licence holders than for urban water use (WaterNSW 2019). This example demonstrates that, in addition to effective local planning and investment to support regional and remote service provision, system-level water planning needs to also ensure an appropriate prioritisation of water sharing between productive, urban and other uses that takes account of climate change. As new water plans are developed, greater specification of prioritisation under drought scenarios should be included (SP A *Entitlements and planning*).

2.3 ... and opaque arrangements in some jurisdiction-wide providers

Inquiry participants have also highlighted concerns with the transparency of regional and remote services provided by larger State and Territory Government-owned utilities.

- South Australian Council of Social Service (sub. DR176, p. 2), and research they have commissioned (Aither 2021), have highlighted that the extent and magnitude of the problems in regional and remote South Australian communities remains unclear.
- While the Northern Territory's Power and Water Corporation services major towns, a not-for-profit subsidiary, IES, provides water and power to remote Aboriginal communities. According to the Central Land Council (sub. 35, p. 16), IES's 'operational structure and legal obligations are opaque, with no legislation mandating licensing or particular levels of service or standards'.
- The Aboriginal Health Council of Western Australia (sub. 97, p. 8) criticised the 'lack of transparency around water, particularly in relation to the dissemination of testing data' in Western Australia.

There are further complications in some remote Aboriginal and Torres Strait Islander communities where there are multiple service delivery agencies. Funding for essential services can come from a range of Australian, State and Territory government sources, including remote funding arrangements for housing, guided by intergovernmental agreements such as the *National Partnership on Northern Territory Remote Aboriginal Investment* between the Australian and Northern Territory Governments (DOH 2017).

2.4 Many of these pressures will remain in the future

Looking ahead, a changing climate (increased average temperatures, higher-intensity rainfall and other extreme weather events) is likely to lead to declines in water availability across Australia (*Report*: chapter 2). This could threaten long-term water security in regional and remote Australia, just as in major cities (SP F *Urban*).

Extreme events (including floods and bushfires) are also likely to occur more frequently. Unanticipated water supply shocks will challenge the ability of regional providers — especially smaller ones — to maintain water quality and sustain reliable water services.

Population change will also require some regional centres to plan for and manage demand growth, but declining populations in others will result in fewer users over a fixed network, affecting the viability of services. In some areas, particularly with aging infrastructure, significant investments may be needed to deliver the same levels of service and minimise the risk of water supply or quality issues. As the LGAQ (sub. 32, p. 6) submitted:

The capital requirement to maintain service capacity into the medium-term is beyond the fiscal capacity of local governments operating small regional and remote schemes. Service disruptions and water quality incidents will inevitably increase without substantial State and Federal capital assistance.

In terms of investment decisions, a key issue is the “infrastructure cliff” and the inability of many regional and remote local governments to fund capital costs of refurbishing aging water and sewerage infrastructure. A concomitant issue is emerging public health and environmental risks to communities.

There is ultimately a trade-off between service quality (including drinking water quality, the reliability of water supply and the expected frequency of water restrictions) and the affordability of the service for each community. Maintaining levels of service in those communities will require some combination of external funding, a sharp increase in operational efficiency, and/or higher user charges.

And while these challenges parallel those facing the major cities, the context of some regional and remote water supplies — smaller service providers, higher average costs and a lack of alternative supplies — can impair long-term water security planning and financial sustainability, limiting their ability to ensure reliable water supplies without imposing sudden cost increases on their customers.

3 Government commitments to address these challenges

3.1 Governments are responsible for providing safe water

Governments have made a number of commitments to provide healthy water in regional and remote communities, in addition to the NWI commitment to ‘provide healthy, safe and reliable water supplies’.⁸

Australia is a signatory to the United Nations Sustainable Development Goals

The United Nations Sustainable Development Goals (SDGs), which include ‘the pledge to leave no one behind’, were agreed by 193 countries, including Australia, in 2015 (DFAT 2018; UN 2015). SDG 6 focuses on improving outcomes in water and sanitation (box 1).

Box 1 The United Nations Sustainable Development Goal 6

The United Nations Sustainable Development Goal (SDG) 6 focuses on ensuring access to safe water sources and sanitation for all. Achieving SDG 6 would lead to improved health outcomes and overall wellbeing, but there are also major challenges in doing so, including high demand for water due to population growth, and the effects of climate change on water availability.

The United Nations acknowledges that some progress has been made in improving access to water and sanitation globally, but more could be done to improve outcomes. Several of the targets under SDG 6 are relevant to providing healthy water, particularly for remote Aboriginal and Torres Strait Islander communities in Australia, including:

- 6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all
- 6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all ...
- 6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimising release of hazardous chemical and materials ...
- 6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity ...
- 6.B Support and strengthen participation of local communities in improving water and sanitation management.

Sources: UN (2016, 2020).

Jurisdictions have adopted the Australian Drinking Water Guidelines

The *Australian Drinking Water Guidelines* (2016) (ADWG) are based on the best available evidence and aim to provide nationally consistent advice to maintain public health

⁸ NWI paragraph 90(i).

(NHMRC, sub. 93, cover letter). The ADWG are indirectly referred to in the NWI⁹ and underpin all state and territory regulations on drinking water quality (NHMRC, sub. 93, p. 1).

As discussed in the Commission's assessment, it is not clear whether or not the ADWG are being met in remote communities (*Assessment*: section 6.1). Although State and Territory Governments use the ADWG framework to guide regulation of water quality standards, they do not always publicly report on compliance with them, especially for small schemes and remote areas.

3.2 Compliance with the current NWI is mixed

Based on the Commission's assessment of progress against the NWI (*Assessment*: sections 3 and 6) pricing and service delivery outcomes in regional and remote communities are generally good, but with clear need for improvement in some areas.

- A number of regional utilities are unlikely to be charging at full cost recovery levels. Cross-subsidies from other local government operations, or State government programs, are not always transparent. And many regional service providers are not subject to independent economic regulation or oversight.
- Some improvements have been made in the targeting of State government grants to small providers in New South Wales by widening the scope of the *Safe and Secure Water Program* to also include non-capital projects, and by allocating funding based on a risk assessment (rather than grant applications). However, most funding in New South Wales and Queensland still does not meet the NWI's criteria of a transparent CSO payment.
 - The Queensland Government has also committed funding to stage 2 of the Haughton Pipeline to secure Townsville's water supply. The business case suggests that the project does not meet the NWI criteria for economic viability.
- The design and implementation of the Northern Territory's grants to both the Power and Water Corporation and to IES are not transparent, and Western Australia's CSOs to the Water Corporation for regional services are not separated from subsidies for irrigated agriculture.
- Household water quality generally meets the standards set by the ADWG, and outcomes in some jurisdictions (particularly Tasmania) have improved since 2017.
 - Tasmania has now removed all permanent boil water alerts for regional and remote communities, compared with 13 that were in place in 2017.
- However, as noted above, participants have raised concerns about drinking water quality in remote Aboriginal and Torres Strait Islander communities. Monitoring and reporting on those service outcomes is still patchy.

⁹ NWI paragraph 7 refers to the National Water Quality Management Strategy under which the ADWG are maintained.

Many of these issues were also noted by the Commission’s 2017 inquiry into *National Water Reform* (box 2). The provision of capital grants (instead of transparent and recurrent CSO payments) was a key area of NWI inconsistency, as were issues with the quality of monitoring, reporting and benchmarking of pricing and service outcomes.

Some progress has been made against the Commission’s 2017 recommendations. Queensland now publishes more detailed information for providers with fewer than 10 000 connections, while funding processes in New South Wales are no longer as closely tied to capital expenditure as they were in 2017.

However, the past three years have shown that many of the key shortcomings remain — particularly with regard to the funding and capability of small utilities, which affects their capacity to manage the complex challenges they face.

Box 2 PC 2017 recommendations and findings: regional water services

In its 2017 *National Water Reform* inquiry, the Commission identified two key areas for reform of regional and remote water services — largely focused on the regulation of local water utilities in New South Wales and Queensland.

1. **Better targeting of State government assistance** to provide high-cost utilities with additional resources so they can maintain adequate quality services.

The Commission recommended replacing capital grants with community service obligation payments. Those payments should not be tied to capital expenditure, and should target unviable or high-cost regional and remote water services (recommendation 6.6).

2. **Achieving economies of scale** to improve service delivery through either amalgamation or collaboration.

The Commission recommended that local water utilities and the New South Wales and Queensland Governments should strategically examine opportunities to improve service delivery through collaboration, including by using contingent community service obligation payments to promote collaboration (recommendation 6.7).

The Commission also recommended improvements to the public reporting of performance monitoring data (recommendation 6.5), with priorities being for:

- the Queensland Government to extend the public reporting of financial information to service providers with fewer than 10 000 connections

the New South Wales and Queensland Governments to require appropriately qualified independent bodies to review financial performance frameworks to ensure that the pricing practices of regional service providers are monitored for consistency with National Water Initiative pricing principles.

Source: PC (2017a, pp. 217–235).

3.3 How can a renewed NWI help?

Many of the challenges in providing safe and reliable water to regional and remote communities are not new. But solutions are complex; they vary across regional and remote Australia and require an understanding of local circumstances and priorities, balanced with expertise and resourcing from higher levels of government. Moreover, climate and population changes necessitate a long-term, forward-looking approach.

The NWI, which focuses largely on the pricing of urban water services, provides only cursory treatment of water service quality (water quality and service reliability). Jurisdictions committed to providing ‘healthy, safe and reliable water supplies’, but the NWI contains no guidance nor specific actions to define what that means or *how* jurisdictions can achieve that outcome — particularly during extreme events or in response to climate and population change.

Moreover, beyond the commitment to institutional separation, and the requirement to fund unviable services through CSO payments, principles for governance of regional and remote water services — including the roles of State and Territory Governments in regulating, overseeing and (in some cases) subsidising regional services — are underdeveloped.

A renewed NWI that is aligned with other government commitments (including the SDGs and ADWG) can be seen as a means of achieving these. Further, the commitment of all governments under the National Agreement on Closing the Gap demonstrates an aspiration to remove disparities in access to essential services (including water and wastewater) for Aboriginal and Torres Strait Islander communities (Australian Governments and the Coalition of Peaks 2020, p. 36). National water policy should look to enable this aspiration.

The remainder of this paper focuses on areas where the NWI could support improved water service outcomes for regional and remote communities. Broadly, these are:

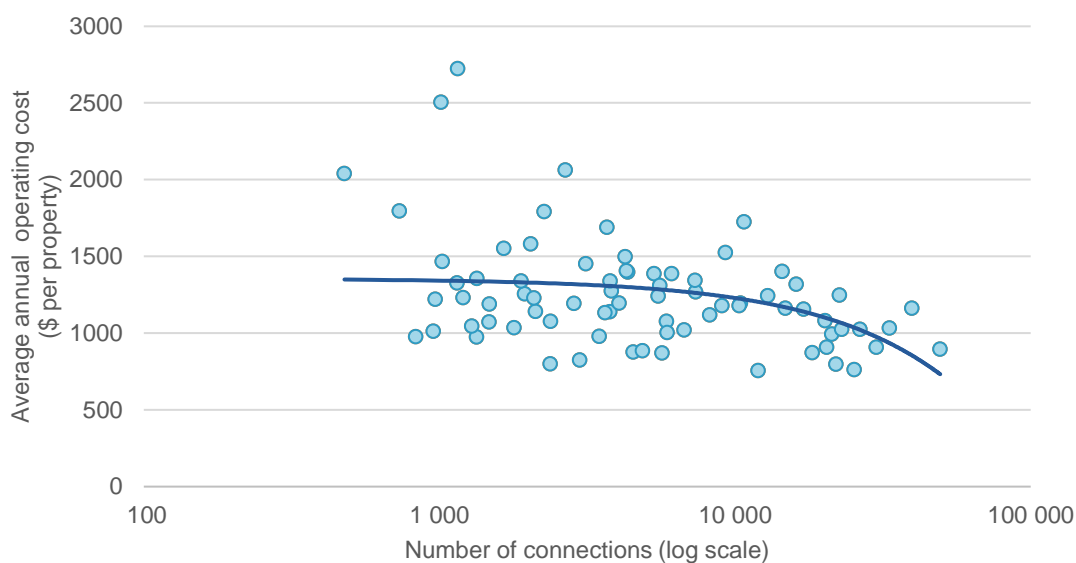
- better planning and service delivery arrangements for regional and remote urban water services (waste supply, wastewater and stormwater) which would include:
 - defining and planning for local levels of service (for safe and reliable water, as well as wastewater and stormwater), including during extreme events and in alignment with regional water resource planning
 - improving the capability of smaller providers through regional collaboration
- more efficient State and Territory government funding and oversight of regional and remote providers
- guidance on providing safe and reliable household water to remote Aboriginal and Torres Strait Islander communities.

4 Urban water planning and service delivery to regional and remote communities

In most jurisdictions, at least some responsibility for regional and remote water services is devolved to local or regional water service providers, which can either be owned and/or operated by local governments, or owned by the State or Territory government and operated at an arm's length. These providers come in many sizes (table 1), and their performance, in terms of service delivery outcomes and financial sustainability, is also variable (*Assessment*: section 3.1).

Provider performance does (somewhat) correlate with scale: smaller utilities tend to have higher costs per customer (figure 2) and are less likely to earn enough revenue to cover operational and asset renewal costs (*Assessment*: section 3.1). By contrast, larger regional utilities and jurisdiction-wide providers are usually more financially resilient and better equipped to manage risk.

Figure 2 **Average operating costs are higher for smaller utilities in New South Wales^a**



^a 2018-19 data. Connections displayed on a log scale, with trend line added. Central Coast Council excluded due to large number of connections.

Source: DPIE (NSW) (2020c); data accessed 12 October 2020.

Regardless of size, water service providers have a responsibility to deliver safe and reliable services to their communities. To achieve this outcome, they need to be adequately resourced, with enough capability to deliver those services efficiently. Although the NWI cannot be prescriptive, nationally-agreed principles could provide guidance for governments

and service providers in addressing challenges in regional and remote service provision across Australia.

4.1 Planning for defined levels of service

Long-term, strategic planning is necessary for utilities to affordably and sustainably deliver the objectives of a water system — including levels of service, as well as the health, safety and environmental standards set by governments — without imposing unnecessary costs on customers. Done well, planning ensures that investment in water infrastructure is efficient and community outcomes from those investments are maximised.

The principles of best-practice urban water system planning considered in SP F *Urban* apply to utilities of all sizes and in all locations. But embedding those principles in a renewed NWI provides an opportunity to account for the different circumstances between major cities and regional and remote communities, reflecting different circumstances and stages of maturity.

Regional water utilities can have different planning priorities

For system planning in major cities, the Commission’s NWI renewal advice has focused on overcoming barriers to integrated planning, incorporating all available water supply options, and establishing clear roles and responsibilities for utilities, governments and other planning entities — within the context of system objectives guided by community-agreed levels of service.

Although these are also worthy aspirations in regional and remote communities, there can be more pressing planning challenges for small utilities. Investment is a case in point. Major utilities may undertake millions of dollar in capital works a year, but as qldwater (sub. 47, p. 16) put it:

A new or upgraded water or sewage treatment plant will be one of the largest investment decisions a regional utility makes and is a rare occurrence not only in terms of political cycles but in the entire history of a council ... The ratio of the size of the initial and ongoing investment to the wealth and income of a small provider intensifies barriers to planning.

As outlined in section 2, the consequences of inadequate investment planning can be significant: poorer water security, impaired water quality and unnecessarily high ongoing costs imposed on a community.

Small utilities may lack the capacity to ensure these investment decisions are as efficient as possible and, under local government ownership, there may be political pressure to defer major investments in light of short-term priorities. Some urban water systems are reliant on bulk water infrastructure that services multiple towns and/or irrigation; in these circumstances, local investment decisions cannot be wholly divorced from the water resource management context.

By contrast, other elements of best-practice planning, such as integrated water management and diversifying water supplies, may be more straightforward than in major cities. Where utilities are owned by local governments, they may already be responsible for stormwater management. For example, the Orange City Council has undertaken stormwater harvesting to shore up its water supplies (CNSWJO, sub. 55, p. 15). And the smaller scale of some regional and remote water systems has allowed for innovative and decentralised supply options to be trialled — for example, in Borrooloola (Zero Mass Water Australia, sub. 6, pp. 8–9).

Simply put, the priorities for system planning can be different in regional and remote communities. This section considers those fundamentals of urban water planning that should be in place for regional and remote water services, including how they could be embedded as part of renewing the NWI. These fundamentals, which should represent a lower-cost approach of implementing planning approaches consistent with the metropolitan utilities, include:

- defining levels of service for regional and remote communities, in consultation with residents
- long-term system planning at a regional level
- short-term contingency planning to maintain water supply and quality during extreme events (integrated with long-term plans at the local and catchment scale).

Levels of service in regional and remote communities should be clearly defined

Levels of service form part of the long-term objectives of a water supply system, along with standards established by government (such as health, safety and environmental regulations). Agreed levels of service represent a trade-off between service quality (particularly water supply reliability, service standards and certain aspects of water quality, such as palatability), and the prices that customers pay. The process for determining levels of service needs to consider the benefits and costs of additional water supply in the context of a particular system and water plan.

Many major utilities have clearly defined levels of service objectives (SP F *Urban*). Although regional and remote providers face similar requirements to major utilities in terms of government health, safety and environmental standards, explicit levels of service are less frequently defined for those communities.

- In Queensland, level of service objectives are legislated for south-east Queensland, while the government has published guidelines to assist regional service providers in developing their own objectives (which are not mandated) (DNRME (Qld) 2018b).
- In New South Wales, levels of service are not clearly defined — although the revised *Safe and Secure Water Program* aims to ‘ensure a minimum level of service in smaller towns where the cost of critical infrastructure outweighs the economic benefits provided’ (DPIE (NSW) 2020a).

Inquiry participants highlighted the importance of clearly-defined levels of service to guide service delivery in regional and remote areas. The Water Services Association of Australia (sub. 88, p. 45) recommended that a new NWI ‘includes a commitment to achieve affordable levels of services for water and wastewater in regional and remote communities’, including sustainable funding arrangements and regional-scale planning. Qldwater (sub. 47, p. 7) also recommended establishing ‘typical levels of service and minimum standards for different communities and mechanisms for improving customer understanding of costs and pricing structures for urban services’.

The process of establishing local levels of service can be difficult in regional and remote communities, especially for smaller providers, or for water systems where the long-term trade-offs between cost and service quality are not well understood (Aither 2021, pp. 11–12). Information on options and capacity to undertake detailed consultation can be lacking.

Further, establishing levels of service may bring affordability into question. As noted by Goldenfields Water County Council (sub. 25, pp. 7–8), higher service standards may need to be matched with greater funding in order for smaller utilities to meet them.

But regardless of how levels of service are established, the process requires a high degree of community engagement so that local preferences concerning the trade-offs between service quality and prices are understood. Residents would have to be consulted, for example, on decisions concerning different water sources (which vary in terms of cost, palatability and reliability), anticipated frequency of water restrictions and the overall cost of the system.

State and Territory Governments should define a ‘basic level of service’

To circumvent complex determinations of service levels in small and remote communities, governments could instead define a basic level of service. State and Territory Governments would specify minimum standards of service provision (including safe and reliable drinking water) that would cover all households.

A basic level of service could also underpin the allocation of State and Territory government support for regional and remote urban water systems, consistent with the rationale for a CSO more generally. Government funding of that CSO should generally be limited to those areas where providing a basic level of service would not be commercially viable, and where other options (such as self-supply) are not feasible. Government funding should not be provided to water systems that can be operated commercially (that is, sustainably funded through user charges), except to ensure all members of a community are able to afford access for their basic water needs. (CSO funding is discussed in more detail in section 5 below).

The Commission considered similar issues in its *Telecommunications Universal Service Obligation* inquiry (PC 2017b). In that inquiry, the Commission considered how to establish a ‘baseline’ level of service quality for broadband and voice services in non-commercial

areas. In keeping with principles established by the Commission in that inquiry (PC 2017b, p. 169), a basic level of water service provision should be:

- founded on a clearly-specified rationale
- based on clear definitions of a basic service
- specified in the form of measurable user outcomes
- subject to review.

In response to the Draft Report, inquiry participants expressed overall support for a basic level of service and offered a range of views on how to define this concept.¹⁰ Defining a basic level of service should be a decision for State and Territory Governments, based on their own circumstances and community needs.

It is the Commission's view that the provision of safe and reliable drinking water should be part of the basic level of service across all States and Territories. A renewed NWI should include a commitment to ensure access to safe and reliable drinking water for all Australians. The definitions of 'safe' and 'reliable' would be a government decision. The definition of 'safe' should be aligned with the ADWG parameters for health-based performance, and be nationally consistent. Local circumstances will influence State and Territory Government definitions of minimum service reliability — that minimum standard could include the quantity of water available, the frequency of water restrictions, and/or clear arrangements to maintain services during extreme events.

In addition to safe and reliable drinking water, the definition of a basic level of service across other dimensions of service provision could differ between states and territories, based on local circumstances. State and Territory Governments should each decide on the appropriate service mix (beyond safe and reliable drinking water) and the definition of minimum standards (for example, whether aesthetic water quality standards for drinking water should be part of a basic level of service in that particular State or Territory). State and Territory Governments could also provide guidance on a definition of 'healthy' drinking water that considers the costs and benefits of provision.¹¹

Beyond this basic level of service, communities could, of course, agree to a higher standard of service funded through user charges. Agreement on a community-acceptable level of service will require effective consultation (SP J *Engagement*).

Long-term system plans should be in place to guide investment

Once the system objective is defined (incorporating both levels of service and government-imposed standards), a long-term plan is needed to pursue that objective in the

¹⁰ IWF, sub. DR120, pp. 2-3; NHMRC, sub. DR125, p. 1; NLC, sub. DR134, p. 27; qldwater, sub. DR142, p. 4; PIAC, sub. DR156, p. 14; SACOSS, sub. DR176, p. 4; LGAQ, sub. DR183, p. 5.

¹¹ NWI paragraph 90(i).

most efficient manner possible. Planning guides infrastructure decision making, including the type and timing of investments.

Long-term planning would provide a framework for managing expected population growth or decline, and the impacts of climate change on water supplies. It would also help guide local infrastructure investment, including any State, Territory or Australian government investments if they occur. Where State and Territory Governments provide CSO funding, they should be involved in the upfront planning process to ensure adequate oversight of investment decisions and scrutiny of costs — as well as to ensure all water supply options (including self-supply, entitlement purchase and emerging technologies such as small-scale desalination) are considered.

The coverage and quality of long-term system plans can vary between regional providers. In New South Wales, for example, utilities are required to prepare an integrated water cycle management (IWCM) strategy which ‘sets out town water priorities, including infrastructure and non-infrastructure investments, water conservation and drought measures’ and is approved by the New South Wales Government (Audit Office of New South Wales 2020, p. 1). Although this requirement has been in place since 2004, the Audit Office of New South Wales (2020, p. 18) confirmed that, of the 92 utilities subject to the guidelines, just half had submitted a strategy to the State Government for review, and only eight had an approved strategy in place.

Many fundamentals of system planning, including assessing long-term demand, are the responsibility of the service provider. It is important that any plan takes account of local circumstances, and occurs at the right scale. In many parts of Australia, this local planning would be sufficient.

In some systems, planning should take place at a regional scale — for example, at a catchment level in connected systems with multiple urban water supply systems and/or irrigated agriculture systems. This would allow the most cost-effective water supply options (both infrastructure and non-infrastructure) to be considered, and ensure system planning is consistent with broader-scale water resource planning. Some systems may present opportunities for inter-catchment transfers, so the planning process should take place at a higher scale for those options to be assessed alongside smaller-scale local options.

For example, Victoria’s *Sustainable Water Strategies* take a long-term view of water resources and ‘guide the development, integration and implementation of management plans prepared by [urban and rural] water corporations and catchment management authorities operating within each region’ in order to, among other things, ensure secure water supplies for towns (DSE (Vic) 2012, p. 19). This ensures planning is integrated across scales, and between urban and rural water systems.

Planning at a higher-level regional scale would allow for collaboration between providers, which can also assist smaller providers that may not be able to finance the specialist skills required. And there may be a role for the State or Territory Government to enable regional-scale supply augmentation options, as well as to support capacity-building and

encourage collaboration between providers to share expertise (discussed below). However, this should not extend to detailed planning requirements — some have observed that the New South Wales IWC strategies are an onerous and overly-prescriptive process (Goldenfields Water County Council, sub. 25, p. 5).

Irrespective of capability, local utilities do not always have an incentive to undertake detailed long-term supply planning — particularly, where investments might impact on short-term customer affordability, or if the State or Territory government is likely to step in and guarantee water supplies during an emergency (a ‘provider of last resort’). This reflects a broader question concerning governance where regional utilities are owned by local governments — this is considered below.

Contingency planning for extreme events should be consistent across scales

As noted above, the recent drought highlighted inadequacies in the contingency planning of some utilities (section 2).

In some cases, multiple utilities share bulk water infrastructure and, while collaboration occurs in some places, there is not always a formal mechanism to ensure local utility extreme event plans align with the extreme event provisions in the broader catchment plans. This can lead to uncoordinated responses during extreme events. According to the Inland Rivers Network (sub. 86, p. 14):

Poor water quality and extreme events are mostly out of the control of regional and remote water service providers who are dependent on State level plans and policies. Thus any benchmarking of service levels required by small service providers should have reciprocal arrangements that ensure smaller providers have access to a certain standard of water quality and quantity.

There is a need to align centralised expertise and information with local knowledge to ensure that town water supplies do not fall through the cracks during a drought. Some jurisdictions have recently taken steps to address this: for example, Queensland’s *Regional Water Supply Security Assessments* aim to develop a shared understanding of the potential water supply security risks for prioritised communities — although water service providers are responsible for implementing actions to ensure water security (DNRME (Qld) 2018a).

Contingency plans should lay out clear triggers for imposing water restrictions and engaging emergency supplies, with reference to the extreme event provisions in the broader water plan (where relevant) as well as aligning to planned augmentations or access to alternative water holdings under the long-term system plan in a timely way (that is, ensuring there is enough time to undertake a planned augmentation or water entitlement purchase before a critical water shortage occurs). Contingency plans should also clarify if, when and how State and Territory Governments should intervene to alleviate critical supply shortages as a provider of last resort. This aspect in particular should be developed in concert with the relevant State or Territory government, with input from the community — particularly to ensure they understand the need for contingency measures (such as water carting) in an emergency.

4.2 Improving small utility capability through regional collaboration

Regional service providers need capability to efficiently and sustainably deliver water services to agreed levels of service. As highlighted in section 2, there are concerns with the capability and resourcing available to smaller providers to effectively achieve these outcomes — in part, because they lack of economies of scale, as well as ongoing under-pricing and a concomitant lack of financial resources in some cases.

The Commission's previous work has found that economies of scale are often present in water service delivery; that is, the cost of supplying each litre of water tends to decrease as a given provider supplies more water (PC 2011, pp. 118–126). In this case a larger provider can (all else being equal) deliver the same service as a smaller one at a lower cost to consumers. Further, larger organisations are (generally) better able to plan for and manage risks and shocks. It can be unreasonably costly for every small provider to employ certain specialist or technical occupations, or to maintain enough redundancy in staffing to ensure service continuity during extreme events.

The benefits of economies of scale, however, must be balanced against the need to account for local circumstances, especially in areas of lower population density where average costs are higher and supply options fewer. Fit-for-purpose water supply options may be needed, and water service provision must still be accountable to the community.

Utilising collaboration to realise economies of scale

In its 2017 inquiry, the Commission considered that some benefits of economies of scale could be realised by small utilities collaborating on service delivery (PC 2017a). This view was endorsed by number of inquiry participants.¹²

Collaboration can take a number of forms, from informal information sharing, to contractual agreements to share staff, or commitments to construct and share infrastructure in accordance with regional-scale system planning (where warranted; discussed above). In some cases, smaller utilities have fully merged parts of their operations, such as under New South Wales' county council model, which retains local government ownership of a joint bulk water entity (such as Goldenfields Water County Council (sub. 25)).

Collaboration between service providers has also helped address business continuity during extreme events (such as COVID-19). For example, qldwater (sub. 47, p. 9) noted that, in response to the risks created by the pandemic, 'the qldwater membership responded extremely well, sharing business continuity planning experience and ideas to support continued services in the event of an outbreak'.

Collaboration, however, is not a silver bullet. Some submissions have argued that collaboration should not be seen as a replacement for institutional reform (such as

¹² LGAQ, sub. 32, pp. 5-6; NSW Water Directorate, sub. 37, p. 12; qldwater, sub. 47, p. 17; CNSWJO, sub. 55, p. 15; LGNSW, sub. 75, p. 5; WSAA, sub. 88, p. 42.

amalgamation of water utilities) where that is likely to improve outcomes (AWA, sub. 89, p. 10). Indeed, there may be limited economies of scale in sparsely populated regions and remote communities, and collaboration may do little to overcome the high costs of a spread out network.

State and Territory Governments can support collaboration

State and Territory Governments should look to facilitate collaboration where it is likely to improve service delivery efficiency. Some are doing so already, such as through the *Queensland Water Regional Alliance Program* (QWRAP) and the recently established *Town Water Risk Reduction Program* in New South Wales (NSW Government, sub. DR138, p. 9; qldwater, sub. DR142, p. 5; LGAQ, sub. DR183, p. 3).

One option available to governments (as recommended by the Commission in 2017) is to make any State or Territory support for high-cost water services (considered below) contingent on a certain degree of collaboration.

Peak bodies can also be a mechanism for collaboration. For example, arrangements are in place to support local government associations in Queensland and South Australia in undertaking functions on road access, with a national regulator assisting local governments in improving access decisions (PC 2020a, pp. 315–323). Similar arrangements could be considered for water infrastructure decisions. There may also be merit in larger providers supporting smaller ones, although this should not unduly burden those larger providers (LGNSW, sub. 75, p. 10).

5 Funding and governance for regional and remote services

In some cases, State and Territory Governments play a more active role in ensuring access to safe and reliable water services for regional and remote communities. This can encompass direct funding of some utilities, as well as ensuring appropriate governance arrangements are in place (including economic oversight, and monitoring and reporting).

NWI renewal provides an opportunity for jurisdictions to identify and endorse leading-practice approaches to government support (and oversight) of regional and remote water services.

5.1 State and Territory government support for high-cost services

State and Territory government funding for urban water can be warranted ...

Some high-cost regional and remote urban water systems are not commercially viable.¹³ This can mean that a service is not provided, or, even where a service is available, high prices can mean members of a community may be unable to afford their basic water needs — payment may represent an unacceptable cost burden, or some households might underutilise what is an essential service, with health and welfare implications.

To ensure access to a basic standard of safe and reliable drinking water in those areas, there is a role for State and Territory Governments to partially subsidise some urban water systems to reduce prices and prevent onerous cost imposts on consumers. The NWI requires that this occurs as a publicly reported CSO payment (although the agreement provides no additional guidance). Governments already provide CSOs for government-owned service providers to compensate them for the costs of delivering an essential service to a high-cost area, particularly where uniform pricing is in place. In the water sector, some State and Territory Governments provide CSO payments to government-owned utilities to cover the costs of servicing higher-cost regional communities, as well as concessional rebates for pensioners and other groups (box 3).

Box 3 Community service obligations in the urban water sector

In South Australia, SA Water's charter establishes the basis of State government funding to cover agreed non-commercial operations, including to some Aboriginal communities (SA Water 2019b, pp. 6–7).

The Western Australian Government provides operating subsidies to the Water Corporation, and the Bunbury and Busselton water corporations, to deliver services to high-cost country towns, pensioner and senior concessions, and charities (Western Australian Government, sub. 62, pp. 6–7).

The Northern Territory government provides community service obligation payments to the Power and Water Corporation for pensioner concessions, as well as capital and operational grants to Indigenous Essential Services for remote power and water services (PowerWater 2019a, pp. 80, 96).

¹³ That is, full user charging would exceed the willingness of users to pay (SP I *Infrastructure*). A commercially-focused entity would not provide the service as consumers would be unwilling (or unable) to pay prices that would meet the full cost of supply (inclusive of a competitive return on capital and management). This definition of a 'commercial' service is based on a provider charging at the 'upper bound' (Upper and lower bound pricing are discussed in *Assessment*.) Under the NWI, many regional providers charge at the 'lower bound' only and do not earn a return on existing capital. Permitting lower bound pricing, by accepting a lower rate of return for a government-owned corporation, constitutes a form of CSO funding for an uncommercial service (IC 1997, p. 24). The discussion in this paper focuses solely on where *additional* CSO funding is required to enable providers in high-cost areas to achieve lower bound cost recovery.

... but funding decisions are more complicated under local government ownership

In New South Wales and Queensland, where most regional and remote water services are delivered by local government-owned providers, State Governments often provide funding support through non-recurrent grants rather than untied CSO payments.

There are some reasons put forward for this approach. State Governments do not have a clear line of sight to service delivery costs in regional and remote communities. Local providers may have an incentive to misrepresent costs (or to underperform) in pursuit of an untied subsidy, or under-manage risks if the State government is likely to act as a provider of last resort. Grants are therefore said to provide a degree of scrutiny on infrastructure decision making, and are seen by funders as a way of ‘ensuring rigour around proposals’ (qldwater, sub. 47, p. 17).

Capital grant funding, however, is not consistent with the NWI (*Assessment*: section 3). In its 2017 inquiry, the Commission noted that grant funding creates a number of distortions (PC 2017a, pp. 228–229). In particular, capital grants are often poorly targeted to areas of need, are at risk of political interference, and the tying of funding to infrastructure projects introduces ‘capital bias’, in that infrastructure spending is preferred over other forms of operational expenditure, including planning, maintenance or staffing costs. Further, capital grant processes often give inadequate consideration to ongoing maintenance costs, compared with upfront construction costs, leaving recipients with high life-cycle costs for assets (IWF, sub. 30, pp. 14–15, qldwater, sub. 47, p. 16). And non-recurrent funding sources can undermine longer-term strategic planning by operators.

To improve compliance with the NWI, the Commission (2017a, p. 38) recommended that the New South Wales and Queensland Governments:

... replace existing capital grants to regional water utilities with transparent Community Service Obligation payments that are not tied to capital expenditure, and that are targeted at unviable (high-cost) regional and remote services.

A renewed NWI could outline principles for urban water CSOs

Beyond stating a preference for support in the form of CSO payments, the NWI does not specify how payments to unviable urban water systems are to be calculated, nor did it define scheme viability, leaving both as decisions for State and Territory Governments.

The lack of prescription has allowed State and Territory Governments to approach their funding decisions in ways that reflect the diversity in their service delivery models. But it has also meant that there are no agreed principles on how to fund regional and remote community services — which has arguably enabled inefficient funding processes in jurisdictions with many smaller regional providers. Qldwater (sub. 47, p. 13) submitted that:

The Commission’s past recommendations around the replacement of capital grants with CSOs are welcomed, however the lack of guidance on how to manage a transition seems likely to be used as an ongoing excuse for inaction.

There is therefore a case to include principles in a renewed NWI to guide CSO payments to unviable areas, with a focus on how governments can sustainably fund smaller providers while maintaining incentives for efficient service delivery. This requires a clear outline of the objective or rationale of the CSO (determined by governments), followed by consideration of how that CSO is funded (NSW Treasury 2019; PC 2017b, p. 33).

The Commission's advice on principles follows.

Design CSO funding to ensure access to a basic level of service

The justification for State government funding hinges on the costs of supplying water to a particular community, which informs whether or not a service is commercially viable if funded solely by users. Commercial viability is determined through a technical assessment of both the efficient long-run cost of service provision, the standard of service provided and the willingness of customers to pay. Each element introduces estimation challenges.

- The revealed cost of delivering services to a particular standard reflects both underlying cost drivers (such as population density and water source quality) and the operational performance of service providers. In the absence of economic regulation, disentangling the two to arrive at an estimate of an 'efficient' cost is complex.
- The standard of service provided also affects delivery costs. More stringent health, safety and environmental standards, although worthwhile, can increase costs and affect viability of some small schemes. Similarly, the levels of service objective for a water system (for example, a target for how frequently water restrictions will be applied) also affects costs — higher reliability will generally cost more.
- Assessing the willingness of a community to pay for water is contentious. In jurisdictions without postage stamp pricing, water prices can vary significantly and, in some cases, be below the long-run cost of service provision. Yet, as put by qldwater (sub. 47, p. 15), there is still a tendency for 'most communities' to consider their water and sewerage services to be overpriced.

In the absence of both a competitive market and economic regulation, establishing whether a service is commercially unviable requires judgment. A view on the service standard that *should* be provided (which forms the basis of the government objective) and the willingness of the community to meet the associated cost (given both their ability to pay and level of access to alternative supplies) are relevant. These are difficult estimations, and there are a number of ways to determine the cost of providing a CSO (IC 1997).

Some submissions suggested ways to estimate the ability of regional communities to pay, such as the ABS Socio-Economic Indexes for Areas (qldwater, sub. 47, p. 15). However, these indices tend to only provide averages across regions, and do not reflect the diversity of socioeconomic outcomes within them. Disadvantaged members of a community — who may have genuine affordability issues — can be better targeted through rebates (as already occurs; box 2), rather than place-based measures of disadvantage.

The Commission's view is that CSO payments should be designed to ensure access to a basic level of service (as defined by the relevant State or Territory government; discussed above) in those communities where such service provision would otherwise be unviable.

For those communities, the amount of funding provided under the CSO should be adequate to ensure that a basic level of service is affordable. That is, CSO funding should provide operational subsidies that allow the utility to achieve and maintain lower-bound cost recovery, subject to:

- there being no other more cost effective means to supply a basic level of service (such as self-supply)
- the utility charging a price considered to be affordable.

This determines what share of costs are borne by users (through user charges), and what share is to be subsidised by taxpayers.

Ultimately, assessing affordability is a decision for a government, depending on its budget priorities. Any specific affordability concerns for vulnerable community members should continue to be addressed through separate policy tools, such as the concessional rebates provided by governments for groups such as pensioners.

Clear and credible data are required to estimate the costs of delivering a basic level of service in each system, and in making assessments of affordability. A high-quality estimate is needed to ensure the estimate of commercial viability is credible, and that the subsidy is set at a prudent level and does not overly burden taxpayers.

State and Territory Governments already collect a range of performance information on utility operations that could contribute to this decision — although there is an argument for data collection to occur at an arm's length from policy-making to ensure data are credible. Independent economic regulators could have a role, as part of improving economic oversight of regional providers (discussed below).

CSOs should maintain local incentives to efficiently deliver services

Subsidies (including CSO payments) carry both direct costs to governments, as well as economic costs that arise from distortions to decision making. In the case of water utilities, there is a moral hazard problem. The availability of a subsidy dulls incentives for utilities to improve efficiency or to charge users cost-reflective prices. Maintaining user charges below cost-reflective levels can mean water use is higher than might be efficient, while imposing an ongoing cost on taxpayers across the state.

Any subsidy should be designed to ensure a utility has clear incentives (and adequate resources) to provide effective and efficient water services to their communities, including by enabling ongoing improvement at the local level. It should support improved operational performance, and not allow utilities to under-price their services in pursuit of affordability, or under-treat risk in hope of the State government stepping in during a crisis.

To help provide certainty for long-term water system planning by regional and remote providers, CSO payments should be calculated in a predictable fashion to provide a reliable source of funding.

Additionally, governments should make funding provided to regional utilities conditional on basic standards of corporate operations (such as reporting, planning and asset management, along with commitments to improve pricing practices where relevant), including any minimum system planning, monitoring and reporting standards embedded in a renewed NWI. Annual reporting against these performance indicators could form part of CSO determination. And as noted above, state government funding could also be made contingent on utilities pursuing regional collaboration, where this helps reduce the costs of service delivery and improves operational performance.

Summing up

Government subsidies to regional and remote urban water services should be:

- designed to ensure access to a basic level of service in those communities where such service provision would otherwise be unviable
- adequate to ensure a basic level of service is considered affordable
- based on credible data on efficient service costs, subject to a degree of independent oversight, following State or Territory government involvement in system planning
- calculated in a predictable fashion to provide a reliable source of funding
- conditional on ongoing operational improvements, such as improvements to utility governance, better service outcomes (based on performance monitoring), compliance with guidelines for system and contingency planning, or for pursuing collaboration.

5.2 Governance and economic oversight of regional and remote services

Many concerns with regional service provision stem from governance

A longstanding principle in the urban water sector is that of institutional separation: service providers should focus on delivering water services at the lowest cost, according to commercial objectives, at an arm's length from governments who set standards that providers must comply with. However, this does not always occur; governments can impose implicit policy obligations on utilities, or direct them to undertake non-commercial activities without compensation. Such governance challenges are acute in major cities but also in regional areas, particularly where:

- utilities are owned and/or operated by local governments, but subject to State government standards (such as environmental and health standards) and without economic oversight

-
- State government departments can be conflicted in simultaneously enforcing performance standards on utilities, while also trying to build the capacity of small providers to meet those standards.
 - ... The New South Wales Audit Office (2020, p. 17) observed, in the case of the New South Wales government, ‘a lack of accountability in why and consistency in how the department undertakes its dual responsibilities to oversee and support [local water utilities]’.
 - local government and utility finances and operations are not always separated
 - In Queensland, ‘the financial performance of most service providers is intricately linked with their owner councils, making it difficult to assess the financial performance of the water supply operations specifically’ (qldwater 2019, p. 22).
 - State and Territory Governments act as a provider of last resort, creating a moral hazard that can undermine incentives for extreme event planning, as well as enabling utilities to prioritise short-term affordability concerns over long-term investment priorities
 - multiple departments or service delivery agencies operate in remote communities, including municipal services, housing services, and community development services, leading to unclear responsibilities, funding and ownership of assets (this is considered in section 5).

In each case, there needs to be clarity on the roles and responsibilities of different actors to ensure a clear point of accountability for delivering regional and remote water services.

At a minimum, financial separation should apply to local government utilities

More could be done to ensure a clear accountability between State and local governments, and between local governments and their water businesses, where regional utilities are owned by local governments.

Local water utility operations should be made financially distinct from their local government owners, to ensure scrutiny on operational performance, transparent cross-subsidies, and to allow for better assessment of the costs and financial sustainability of regional and remote water supply systems. Ideally, this should constitute operational separation — although this may not be worthwhile for smaller providers where economies of scope exist between water service provision and other local government operations.

But at a minimum, this requires that water functions are financially ring-fenced from other local government operations, and any cross-subsidies between water services and other local government operations are explicit.

Further, clearer arrangements are needed to specify the responsibilities of local and State governments. This includes clarifying the role of the State Governments in setting and enforcing standards, building capacity, maintaining a basic level of service and (if

applicable) operating as a provider of last resort during extreme events (which should be clearly laid out in water system contingency plans as discussed above).

Economic oversight could be more widely implemented

SP F *Urban* outlined the importance of independent economic regulation in the water sector, including principles of best-practice economic regulation.

Economic oversight of large utilities usually occurs through processes that set, recommend or monitor prices or revenues, as well as public scrutiny of capital investment decisions through pricing submissions. This type of oversight is not generally applied to smaller providers because the high costs of implementing such a regime are likely to exceed the benefits — the overall consequences of a local utility exploiting market power can be relatively minor. Yet small regional water utilities still function as monopolies: there is no commercial pressure to spur improved performance, and they can have an incentive to prioritise short-term affordability (due to community pressure) over longer-term investments in water security — a temptation worsened by the position of State Governments as a provider of last resort.

In practice, economic oversight of small providers is minimal (or non-existent) in some jurisdictions. In New South Wales and Queensland, the utility performance data collected by State governments provides a basic level of oversight. But although beneficial in providing transparency on utility performance, the systems are not independent of policy-making and do not feed into formal or public processes that compare utility performance and incentivise improvement. As highlighted by the Commission in 2017, the performance data reported in New South Wales ‘have not been adequately scrutinised to highlight areas where pricing practices have been deficient’ (PC 2017a, p. 218). This appears to still be the case.

Jurisdictions should agree to a consistent assessment framework to inform decisions concerning the type of economic regulation to apply, based on the risk (and potential impact) of a utility exploiting market power, and the costs to utilities and taxpayers of economic regulation (particularly for smaller utilities). This should ensure that ‘light touch’ independent economic oversight is in place for small providers (with greater scrutiny applied to larger providers).

Economic licensing of small providers could be more widely used to provide assurance of utility capability. For example, the Essential Services Commission of South Australia licenses small water and wastewater providers in that state to provide independent assurance that the provider is fit and capable of delivering services to a satisfactory standard (box 4).

Licensing ensures service providers are responsible for maintaining performance standards, which limits the need for State and Territory Governments to impose prescriptive requirements. Instead, State and Territory Governments can prioritise building local utility capacity (as discussed above in the context of regional collaboration), while the economic

regulator ensures that minimum performance standards are being achieved by monitoring compliance with licence conditions.

More robust approaches to performance monitoring and reporting (discussed below) would also contribute to economic oversight. Although monitoring and reporting of service and pricing outcomes is important for transparency (discussed below), independent regulators should also ensure that the information gathered is analysed to assess where pricing practices should be improved.

Box 4 Small water retailer licensing in South Australia

In South Australia, all retail water service providers must be licensed by the Essential Services Commission of South Australia (ESCOSA). The licence issued imposes obligations on retailers to ensure they meet their regulatory requirements. Under the *Water Industry Act 2012* (SA), ESCOSA can only issue a licence where satisfied that ‘the applicant has the capacity (including financial, technical, organisational and other necessary capacity) to provide the services safely and to appropriate standards that would be authorised by the licence’ (s. 20(2)(d)).

ESCOSA determines the appropriate form of regulation for each entity by considering the scale and nature of their operations, with different requirements for major retailers (more than 50 000 connections; only applies to SA Water), and for intermediate (500 to 50 000 connections) and minor retailers (fewer than 500 connections).

There are 66 minor and intermediate water retailers subject to licensing, including local governments and private entities. Most primarily provide wastewater services. Economic regulation of these providers includes:

- a retail code
- reporting and information requirements
- a compliance system and reporting guideline and enforcement policy
- a price determination.

The price-setting process is less stringent for minor and intermediate retailers than for SA Water. The price determination requires minor and intermediate retailers to comply with the National Water Initiative Pricing Principles when charging for water and sewerage services, and to report annually to ESCOSA on how they are complying with those principles.

Sources: ESCOSA (2013, 2019, 2020).

Performance data should contribute to decision-making processes

SP F *Urban* outlined the importance of maintaining monitoring and reporting of water service quality outcomes — including water quality and reliability measures. However, there are concerns over the value of some data currently collected. Qldwater (sub. 47, p. 20) noted that some providers:

... question the value of reporting when aside from politically sensitive indicators (e.g. water security) there is little outward-facing evidence of how the information is used.

For regional and remote services, a balance needs to be struck between the costs of performance reporting and the benefits of the data collected.

Maximising the benefits of performance monitoring relies on how the information is used. Benchmarking — which connotes a measurement of performance against a predetermined standard — can be more difficult (and potentially less informative) when small, heterogeneous services providers are not easily comparable. Yet simply reporting performance data is unlikely to deliver competition by comparison.

As the Commission noted in 2017, independent bodies should ‘analyse reported information so as to provide greater scrutiny of outcomes and so better highlight where performance is poor and improvement is required’ (PC 2017a, p. 217). This recommendation remains pertinent and should be considered as part of the NWI renewal.

Data collected should also feed into decision-making processes to maximise the benefits of that information. For small regional utilities where light-touch economic oversight is applied, the independent economic regulator could publicly report on the performance monitoring data (as ESCOSA already does).

Performance monitoring data could also assist in determining the targeting and level of CSO payments to high-cost areas, with a degree of independent oversight to ensure cost estimates are credible. Although this should not extend to a complex determination of a regulated asset base, for example, it could include annual reporting against performance indicators that feed into the annual determination of CSO funding (discussed above).

Similarly, performance monitoring data should be fit for purpose to enable regular reviews of progress against the renewed NWI (SP F *Urban*).

6 Water services in remote Aboriginal and Torres Strait Islander communities

The Aboriginal and Torres Strait Islander population is highly urbanised, with less than 20 per cent of the population living in remote or very remote areas (ABS 2016a). However, remote and very remote Australia is home to a higher proportion of Aboriginal and Torres Strait Islander people than is the case in major cities and regional areas.

The Commission has adopted the ABS definition of remote Aboriginal and Torres Strait Islander communities¹⁴ as those that are inhabited predominantly by Aboriginal or Torres Strait Islander people, with housing or infrastructure (power, water, sewerage) that is managed on a community basis (ABS 2016b). These communities (which include homelands and outstations) are distinct from other types of settlements in remote Australia (such as mining towns, pastoral stations or larger towns like Alice Springs).

¹⁴ The technical ABS term is ‘discrete communities’.

Many of these communities are not serviced by regional water utilities, but may self-supply or be supplied by state-wide providers. User charges may not be levied. And the consequences of poor water service provision can be more serious in these communities than in others. As Infrastructure Australia noted:

Many remote communities are home to a high proportion of Aboriginal and Torres Strait Islander people, meaning poor standards of water and wastewater services compound historical hardships and reinforce disadvantage. (IA 2019, p. 602)

6.1 Water quality remains an issue for some remote Aboriginal and Torres Strait Islander communities

In 2017, the Commission found that remote communities in parts of Queensland, Western Australia, Tasmania and the Northern Territory often experienced poor drinking water quality (PC 2017a). Although jurisdictions were taking action, they faced challenges in providing water services due to the high costs of service delivery and the difficulty in attracting staff.

It is not possible to determine whether the situation has improved. Comprehensive national data on drinking water quality has been lacking since the ABS *Community Housing and Infrastructure Needs Survey* ceased in 2006 (SCRGSP 2016). But evidence from state-level data and case studies suggests that problems with drinking water quality remain in many remote Aboriginal and Torres Strait Islander communities.

Water supplies in some remote communities have chemical and biological contamination and palatability issues (*Assessment*: section 6.1). And many issues affect the provision of water, including community infrastructure. Recent studies have found a lack of functioning taps, showers and toilets in remote communities (Bailie et al. 2010; Hall et al. 2017; Torzillo et al. 2008, as cited in Hall et al., sub. 84, p. 6). Moreover, as discussed in section 2, water security challenges caused by drought and extreme events also affect remote Aboriginal and Torres Strait Islander communities.

Ongoing water quality issues in some remote communities indicate that current arrangements for providing safe water are not adequate in some places.

6.2 Water quality is especially important to health outcomes in remote communities

Medical and social research have demonstrated that poor quality water and sanitation have flow on effects for health outcomes in remote Aboriginal and Torres Strait Islander communities (DFAT 2018). There are also key economic benefits in higher quality water services, both from reductions in the burden of disease on individuals and communities, and in reductions of the burden on health systems (WSAA, sub. 88, p. 42; NHMRC, sub. 93, p. 3).

Water is a protective factor against infectious diseases

A lack of safe and reliable water and sanitation can increase the risk of preventable, hygiene-related infections, such as:

- diarrhoeal illnesses
- skin infections such as boils, scabies, school sores and leprosy
- eye infections such as trachoma
- ear, nose and throat infections, especially middle ear infections.¹⁵

A lack of access to safe water and adequate sanitation can also worsen existing health issues (IA 2019, p. 602) and, if repeated infections occur, this can result in ‘chronic diseases of limited growth (stunting and wasting), blindness, rheumatic heart disease, renal failure and anaemia’ (Hall et al., sub. 84, p. 6). Rheumatic heart disease disproportionately affects Aboriginal and Torres Strait Islander people. Of all the people in Australia living with rheumatic heart disease, it is estimated that between 71 to 94 per cent are Aboriginal and Torres Strait Islander people (Telethon Kids Institute 2020, p. 11).

Water quality enables medical treatment on Country

In addition to helping prevent diseases, clean water is needed for the treatment of some health conditions. For example, in 2012-13, 18 per cent of Aboriginal and Torres Strait Islander adults had biomedical signs of Chronic Kidney Disease (CKD), more than twice the prevalence of this condition among non-Indigenous adults (adjusting for differences in population age profiles) (AIHW 2020, p. v). Successful treatment of end-stage kidney disease requires clean water for dialysis. To overcome shortages of clean water, mobile dialysis services travel to remote communities bringing the safe water required to operate (Purple House 2020).

Water quality will make a significant contribution to the Closing the Gap agenda

In 2020, all Governments committed to a refresh of the Closing the Gap agenda under the National Agreement on Closing the Gap (Australian Governments and the Coalition of Peaks 2020). Many of the targets are aimed at supporting health outcomes (such as child mortality and community infrastructure targets), and others are dependent on good health outcomes (such as education and employment targets). As outlined above, safe and reliable water has a direct effect on the achievement of health outcomes.

There are also indirect interactions between water and other factors that contribute to health outcomes. One such factor is the provision of uncrowded and reasonably comfortable housing and associated community infrastructure. In the Central Land Council’s view (sub. 35, p. 11), the delivery of sufficient community housing is impaired by assessments of

¹⁵ Hall et al., sub. 84, p. 6; WSAA, sub. 88, p. 42.

water sources that indicate ‘no existing capacity for remote development’. This can limit the stock of available housing in remote areas and exacerbate health issues associated with overcrowding.

6.3 Commitments to Aboriginal and Torres Strait Islander people

Most government commitments to water service provision apply to all Australians, but some have a particular focus on the needs and unique circumstances faced by remote Aboriginal and Torres Strait Islander communities.

Commitments under the United Nations Sustainable Development Goals

There is evidence that some remote Aboriginal and Torres Strait Islander communities are not meeting the targets under SDG 6 (IA 2019, p. 602). The Australian Government’s report on implementation of the SDGs also recognises the challenges in delivering access to water and sanitation services in remote Aboriginal and Torres Strait Islander communities (DFAT 2018, p. 50).

The commitment to SDG 6 applies to all Australians, including Aboriginal and Torres Strait Islander people who live on Country. Governments are responsible for determining how their commitment to SDG 6 is achieved. As the Commission has noted in its previous reports on *Transitioning Regional Economies* (PC 2017c, p. 185) and *Remote Area Tax Concessions And Payments* (PC 2020b, p. 22), in some cases there are compelling reasons why people cannot move, including Aboriginal and Torres Strait Islander people living on Country. In these regions, there may be a need for governments to directly address the disadvantages of life in remote areas.

A refreshed Closing the Gap agenda includes commitments on household water

As noted above, safe and reliable water supplies will be integral to achievement of many of the health targets in the National Agreement on Closing the Gap. The Agreement recognises this, and includes a commitment to develop a community infrastructure target within 12 months. This target will measure progress towards parity in infrastructure, essential services and environmental health and conditions. Development of the target will require data collection to measure essential service provision, including water and sewerage, to Aboriginal and Torres Strait Islander communities (Australian Governments and the Coalition of Peaks 2020, p. 36). The 2020 National Agreement on Closing the Gap has also led to new targets for land and water rights (SP D *Cultural access*).

6.4 Water service systems in remote Aboriginal and Torres Strait Islander communities face significant challenges

Consultations have highlighted a number of specific barriers to the provision of safe water in remote Aboriginal and Torres Strait Islander communities. Many issues (including underfunding of services and operational capacity) reflect broader issues in regional and remote service delivery discussed above — although these issues can be more intense or have a disproportionate impact in remote Aboriginal and Torres Strait Islander communities.

Specific issues include:

- that consumption-based charges are not often applied, or only charged at the community level, meaning costs are not recovered
- a lack of culturally-competent and capable staff
- poor-quality water sources in remote areas, with few alternatives
- fragmented governance in remote service delivery.

Consumption-based water charges are often not applied

Remote Aboriginal and Torres Strait Islander communities can have transient populations and an informal economy (QPC 2018, pp. 47, 53). These factors (among others) contribute to those communities not generating enough market income to pay the full costs of service delivery. Many communities are not charged for essential water and sewerage services. For example, the 16 Aboriginal councils in Queensland do not directly charge residents for water or sewerage services (qldwater 2019, p. 7). According to Hall et al. (sub. 84, p. 11), this is due to:

... legislation prohibiting rates to be raised on Indigenous land held in trust — despite these councils being responsible for managing and delivering a range of essential water, energy and local health services ... Without a rates base, Indigenous councils rely on sporadic government grants.

Some Aboriginal and Torres Strait Islander individuals are charged at the community level, as a result of living in properties with a shared water meter. For example, the Department of Family and Community Services (NSW) (2015, p. 4) noted that:

[Housing] providers are to calculate the charges for water usage based on ... a method to be developed by the provider to apportion the costs in shared meter properties.

In some cases, community-based pricing is warranted. This is particularly the case when consumption is based on factors outside of an individual's control, such as leaks. For example, the Central Land Council (sub. 35, p. 29) noted that in the Northern Territory:

At Iwupataka, poor quality water infrastructure supplying 18 outstations under Iwupataka Aboriginal Land Trust has resulted in recurring leaks and high water bills, yet the Iwupataka Water Aboriginal Corporation has not received sufficient funding to complete the scoped works to upgrade infrastructure for more than four of those outstations.

In other cases, the absence of consumption-based pricing may reduce individual and household incentives to conserve water. For example, while a variety of household cooling methods are used in remote Aboriginal communities in the Northern Territory, about 5 per cent of residents use water-dependent cooling methods, such as sprinklers on the lawn and house (IES 2015, p. 245).

There is a lack of culturally-competent training that uses local skills

According to Hall et al. (sub. 84, p. 10):

... it is crucial that the on-site water operators in remote communities are appointed from the local population and well supported, have the appropriate training on the equipment they operate, and all external stakeholders engaging with the community have cultural awareness and competence.

This is often not the case, with remote communities facing challenges such as minimal staffing, high turnover (Hall et al., sub. 84, p. 7), and limited community engagement and water literacy (Satur and Robertson 2020, p. 3). Costs associated with training staff and ongoing engagement in remote areas are likely to contribute to these challenges. However, there are some case studies of strong partnerships with remote Aboriginal and Torres Strait Islander communities to provide safe water (box 5).

There are poor quality water sources in remote areas

Water sources can be of especially poor quality in remote areas. Challenges to the provision of safe drinking water will vary across different water sources (table 2). For example, Walgett in New South Wales faces poor quality sources of drinking water, such as Great Artesian Basin bore water, when the Barwon and Namoi Rivers cease to flow (Dharriwaa Elders Group and Walgett Aboriginal Medical Service, sub. 104, pp. 6–7). These sources have higher salinity, and have led to high sodium concentrations in drinking water in Walgett (NHMRC, sub. 93, p. 9).

Poor quality water sources often require additional treatment to ensure drinking water is safe for human consumption. This increases the costs of delivering safe drinking water in remote areas. While the treated water may be safe, it may have an unacceptable taste, odour or colour (Hall et al., sub. 84, p. 7). This can have flow-on effects on health outcomes through the purchase of soft drinks (which contributes to diet-related conditions such as obesity or diabetes) or reliance on expensive bottled water (which reduces the budget available for other essentials) (Hall et al., sub. 84, p. 7).

Box 5 **Strong partnerships can provide safe water**

New South Wales

The New South Wales *Aboriginal Communities Water and Sewerage Program* is a partnership between the New South Wales Government and the NSW Aboriginal Land Council. The program was established in 2008, with a \$200 million investment over a 25 year period, and involved:

- the New South Wales Government delivering financing and technical expertise in partnership with the NSW Aboriginal Land Council and local Aboriginal land councils
- local Aboriginal land councils having long-term service agreements with local water utilities to implement routine maintenance, address repair backlogs and undertake emergency works
- Aboriginal community participation in four-monthly inspections and reviews.

As a result of the program, 63 Aboriginal communities are receiving improved water and sewerage services. Aboriginal communities in New South Wales generally achieved full chemical and microbiological compliance in 2018-19, although mixed outcomes were achieved on physical compliance, and samples were not collected in some communities.

Queensland

In 2016, there were 16 *E.Coli* detection incidents in the Torres Strait Islands. Several government and non-government agencies collaborated to address this issue, including the Queensland Departments of Health, Water, Infrastructure and Local Government and the Torres Strait Islands Regional Council. These organisations created the pilot program: *Safe and Healthy Drinking Water*, which carried out a variety of tasks including auditing water treatment, upgrading infrastructure, training and mentoring staff and conducting community engagement. Microbial drinking water incidents in the Torres Strait Islands fell from 16 incidents in 2016 to two incidents in 2018.

Western Australia

There have been a number of policy efforts to improve drinking water quality in Western Australia. In 2019, \$23 million was committed through the *Essential and Municipal Services Upgrade Program* to the WA Water Corporation to upgrade water services in three remote Aboriginal communities in the Kimberley. In 2020, \$38.9 million has been committed through the WA Recovery Plan to upgrade water services in a further four remote Aboriginal communities on the Dampier Peninsula in the West Kimberley. To deliver these services, the Water Corporation will partner with Aboriginal communities, and train and employ local Aboriginal people and businesses. As these initiatives are relatively new, it is too early to judge their effectiveness in delivering safe drinking water in remote Aboriginal communities in Western Australia.

South Australia

SA Water supplies water to 20 remote Aboriginal communities. Since taking management of water communities in the Anangu Pitjantjatjara Yankunytjatjara (APY) Lands, SA Water has commenced community-driven water infrastructure upgrade programs. SA Water's Remote Communities team works with local people through the processes of engagement, planning, design, construction and ongoing management and maintenance. Relationships with the local communities help to ensure water infrastructure meets the needs of the people it is serving.

Sources: *Assessment*: section 6.1, Government of Western Australia (2019, 2020); Hall et al., sub. 84, p. 8; NSWALC (2020); SA Water (2019a); Water Corporation (2020)

Further, climate change is expected to worsen vulnerabilities in water supply as there are often few alternative water sources in these remote communities (Central Land Council, sub. 35, p. 11, Engineers Australia, sub. 63, p. 17, Hall et al., sub. 84, p. 9, NHMRC, sub. 93, p. 7). For example, SACOSS pointed to the town of Scotdesco, 100 km west of Ceduna on the far west coast of South Australia, which has experienced critical water shortages in the last few years stemming from low rainfall.

The community has a population of 50 and primarily relies on rainwater for its supply (rainwater tanks connected to individual homes as well as self-managing its own rainwater catchment). In 2019, the community experienced critical water shortages due to lack of winter rainfall and required emergency water to be carted in at a cost of \$1,400 per truckload. As the Scotdesco community falls outside of the boundary of a prescribed area, it was unable to access the subsidised cost of \$300 for the same amount of water. (sub. DR176, p. 3)

Table 2 Remote community water sources can be poor quality

<i>Source</i>	<i>Security issues</i>	<i>Quality issues</i>	<i>Contamination issues</i>
Groundwater		Salinity, inorganic chemical hazards, pathogens	Sewage or other waste into groundwater Pollution from farming and mining areas
Surface water	Rainfall dependent	Salinity, pathogens	Sewage or other waste into surface water
Rainwater	Rainfall dependent	Pathogens	Dust contamination

Sources: Hall et al., sub. 84, p. 6; WSAA, sub. 88, p. 44.

Governance is fragmented

Inquiry participants have highlighted the complexity of service delivery in remote communities. Many organisations need to coordinate to deliver safe and reliable water services (NHMRC, sub. 93, p. 3), and this can create confusion regarding roles and responsibilities (WSAA, sub. 88, p. 43) and limit visibility of outcomes in remote communities (SACOSS, sub. 74, attachment B, p. 13).

The service delivery arrangements in remote areas can be significantly different to arrangements in urban areas, contributing to fragmented responsibilities for water supply. For example, in the Northern Territory, while the Power and Water Corporation services major towns, its not-for-profit subsidiary, IES, provides water to remote Aboriginal communities. In the view of the Central Land Council (sub. 35, p. 4), IES is subject to less regulatory oversight than the Power and Water Corporation, and, as a result, there is no agency ‘directly accountable (via legislation) to the residents of Indigenous communities for the supply of water to them’ (p. 22).

Government arrangements for delivery of safe water supplies and associated infrastructure for remote communities can be complicated and fragmented. In some jurisdictions, multiple

agencies need to come together and coordinate activities to provide required services. This sort of complexity can result in confusion, reduce transparency and lessen public accountability.

The Commission's work on *Overcoming Indigenous Disadvantage* has highlighted that service delivery outcomes for Aboriginal and Torres Strait Islander people can be improved through stable policy environments, responsiveness to local contexts, improved coordination among government agencies, reduced duplication of services and learning from evidence (SCRGSP 2020, p. 5.38).

6.5 Greater attention in national water reform is needed

Although many of the water service delivery issues in Aboriginal and Torres Strait Islander communities are similar to those experienced elsewhere (section 2), some elements require more tailored policy attention to ensure delivery of safe and reliable water supplies.

A defined basic level of service should guide service delivery in remote communities

As discussed in sections 3 and 4, State and Territory Governments should be responsible for ensuring access to a basic level of service for safe and reliable drinking water in all communities. This objective should guide government funding of water service provision.

The specifics of providing a basic level of service will differ by community, depending on the type, quality and availability of water sources, but should focus on the local provision of drinking water to support health outcomes. Water supply options will need to be fit for purpose, based on available water sources and the technical expertise of the local community to operate and maintain the infrastructure in question.

The precise approach to a basic level of service is a decision for each jurisdiction, drawing on insights from community engagement, and this objective should guide the delivery of essential water services across all agencies with responsibility for remote service delivery.

Data collection and reporting in remote Aboriginal and Torres Strait Islander communities should be improved

A renewed NWI could help ensure safe and reliable water in remote communities by:

- ensuring that the community infrastructure target, under the National Agreement on Closing the Gap, is reflected in the renewed NWI
- linking NWI monitoring and reporting activities with any data collection and reporting undertaken as part of the National Agreement on Closing the Gap.

Under the National Agreement on Closing the Gap, the Australian, State and Territory Governments have committed to developing a national target for community infrastructure, including data development work to measure essential service provision to Aboriginal and Torres Strait Islander communities (incorporating water and sewerage services). Data to inform the reporting on progress against the Closing the Gap targets will be publicly available via the Productivity Commission’s Closing the Gap Information Repository, and the Productivity Commission will conduct three yearly reviews of progress under the National Agreement on Closing the Gap (Australian Governments and the Coalition of Peaks 2020, pp. 36–37, 41).

In the short term, reporting under the National Agreement on Closing the Gap could collate data available at the State and Territory level to produce an overview of outcomes at the national level. This could involve collaborating with the National Performance Report or the National Working Group on SDG 6 to undertake expanded reporting. However, current data reporting excludes some remote Aboriginal and Torres Strait Islander communities (for example, if they form part of a system with fewer than 10 000 connections), while state-wide providers may only publish state-wide averages which do not capture issues in particular communities.

In the long term, data collection needs to be improved at the community level. The Australian Government could build on previous initiatives, such as the ABS Community Housing and Infrastructure Needs Survey, which collected information on drinking water source, restrictions and quality in all communities, outstations and dwellings (ABS 2006).

7 NWI renewal

A renewed NWI should include expanded coverage of urban water services (SP F *Urban*), with a more nuanced treatment of regional and remote services. The overall aspiration of the urban water sector, consistent with other water services, should be for effective, efficient and equitable provision that meets the needs of customers and communities in a changing climate. The Commission has proposed a set of contemporised and detailed objectives towards that end (SP F *Urban*).

Many of the principles for best practice service delivery apply to major urban utilities as well as regional and remote water services; the key difference is how to balance efficiency and equity of service delivery in higher-cost regions of Australia. The NWI could support this through principles to guide planning, governance, economic oversight, and performance monitoring and reporting.

7.1 Ensuring access to a basic level of service

As in major cities, integrated urban water system planning for regional and remote communities should be guided by clear system objectives that incorporate levels of service

(across water supply and stormwater), compliance with government standards and contributions to broader amenity outcomes. Community and customer engagement should underpin the development of those objectives.

To support planning by smaller utilities, State and Territory Governments should define a ‘basic level of service’ that ensures access to an adequate quantity of safe and reliable water.

State and Territory Governments should accept responsibility to ensure access to that basic level of service, and to determine what share of costs are to be borne by users, and where State or Territory government funding is warranted. It should be defined with reference to health standards for water quality, and with reliability objectives based on local circumstances.

In some regional and remote areas, the high cost of providing a basic level of service may make it non-commercial. As under the current NWI, any operational subsidies to service providers should be provided as a transparent and untied CSO payment. The Commission has proposed principles to guide CSO funding.

In line with best-practice system planning principles for major utilities, the NWI could also include guidelines for both system planning and contingency planning for regional and remote communities. These guidelines should highlight the importance of:

- local fit-for-purpose water supply options, in line with relevant levels of service
- supply augmentation decisions occurring at the right regional scale to ensure the full range of options (including transferring water between sectors or regions) are considered
- ensuring that local system and contingency plans are integrated with catchment-level water resource planning
- realistic timing of planned augmentations under contingency plans, linked to system plans.

Government funding of regional water services could be made conditional on adhering to those guidelines.

NWI RENEWAL ADVICE 12.4: ENSURING ACCESS TO A BASIC LEVEL OF SERVICE

A renewed National Water Initiative should include a commitment by State and Territory Governments to each develop a definition of, and to ensure access to, a basic level of water services for all Australians. At a minimum, this would include safe and reliable drinking water. The definition of 'safe' could be nationally consistent, while the definition of 'reliable' will vary according to local circumstances.

Cost-reflective user charges should remain the default arrangement, but some regional and remote services in high-cost areas will require operational subsidies to maintain a basic level of service to all customers. Any subsidies to those areas should be provided as transparent community service obligation payments. Payments to local government-owned providers should be:

- designed to ensure access to a basic level of service in those communities where such service provision would otherwise be unviable
- adequate to ensure a basic level of service is considered affordable
- based on credible data on efficient service costs, subject to a degree of independent oversight, following State or Territory government involvement in system planning
- calculated in a predictable fashion to provide a reliable source of funding
- conditional on ongoing operational improvements, such as improvements to utility governance, better service outcomes (based on performance monitoring), compliance with guidelines for system and contingency planning, or for pursuing collaboration.

7.2 Governance and economic oversight

The NWI should reinforce good governance in the regional and remote urban water sector as part of principles for the urban water sector more broadly. The NWI should not prescribe particular service delivery models, but instead outline the principles that underpin efficient service delivery, including institutional separation (including under local government ownership) and transparent funding for uncommercial services.

As under the current NWI, institutional separation is key to ensuring efficient water service delivery. Service providers should continue to adopt a commercial focus to supplying services in line with the needs of their customers, while complying with the standards set by governments.

However, governance arrangements for local government-owned water services are more complex; clarity could be provided in the NWI. Financial separation requires that utility finances are, at a minimum, ring-fenced from local government finances, and any cross-subsidies are transparent. Ideally, water providers should be fully distinct entities. The roles of State and Territory Governments, including setting and enforcing health, safety and

environmental standards, building capacity and (in limited cases) operating as a provider of last resort to ensure a basic level of service, should also be clarified.

Further, governance of water service provision in remote Aboriginal and Torres Strait Islander communities can be fragmented and opaque, particularly where the roles of different service providers are not clear. Clarifying these arrangements would contribute to improved service outcomes in those communities.

As envisioned in the current NWI, independent economic oversight is key to providing assurance that utilities are delivering services efficiently. Independent oversight could be better utilised to increase the transparency of regional and remote service delivery and provide incentives for improved operational performance.

The best model of economic oversight depends on the benefits and costs of particular options in particular contexts. Comprehensive (and costly) price-setting processes are generally warranted for major utilities, but this does not necessarily apply to smaller providers — particularly where the risks from (and consequences of) monopoly pricing are relatively minor.

A renewed NWI should include a commitment to independent economic oversight of small providers, based on a transparent assessment of the benefits and costs of different models. Light-touch models for small providers could include licensing by independent economic regulators in order to provide assurance of utility capability.

NWI RENEWAL ADVICE: GOVERNANCE OF REGIONAL AND REMOTE SERVICES^a

A renewed National Water Initiative should contain agreed principles for governance of regional and remote water services where local governments retain ownership of utilities. Financial separation should be maintained, with utility finances ring fenced from local government finances. Clear roles for State and Local Governments during extreme events should be defined.

Jurisdictions should commit to light touch independent economic oversight for small regional and remote urban water providers.

^a The following box incorporates renewal advice from chapters 11 and 12 of the summary report, specifically advice 11.3 and 12.5.

7.3 Performance monitoring and reporting

Monitoring and reporting service outcomes should be maintained, with key performance indicators publicly reported for providers of all sizes (including those with fewer than 10 000 connections), including reporting water quality outcomes against the existing ADWG. This reporting could be incorporated within the existing National Performance Report if the likely benefits of doing so exceed the costs (as is currently being considered by the NPR Indicator Review, SP H *Urban*).

Operational and financial indicators should also be reported to contribute to economic oversight and policy making. The indicators used should be selected to enable independent oversight of utility performance, calculation of CSO funding (where relevant) and to enable regular assessments of progress against the NWI.

For small utilities, performance data should also be collected or overseen by an independent body, particularly where that information is used to calculate or determine eligibility for CSO payments. That body should also scrutinise outcomes and highlight where performance improvements are required.

There should also be a stronger focus on monitoring and reporting on water quality and service outcomes in remote Aboriginal and Torres Strait Islander communities, with explicit reference to priorities under the National Agreement on Closing the Gap.

NWI RENEWAL ADVICE: PERFORMANCE MONITORING AND REPORTING ON REGIONAL AND REMOTE SERVICE QUALITY^a

All urban water service providers, including those with fewer than 10 000 connections, should be subject to jurisdictional monitoring and public reporting.

Monitoring and reporting of water quality and service outcomes in remote Aboriginal and Torres Strait Islander communities should be coordinated with the development of data collection required to measure progress against the community infrastructure target under the National Agreement on Closing the Gap.

^a The following box incorporates renewal advice 12.3 and 12.6 from chapter 12 of the summary report.

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