

2020-24 Key investment areas

Year 3

To 30 June 2023



Government of
South Australia

Summary

Programs	Proposed RD20 spend (2020-24) (millions, including inflation)	Spend progress 2020-23 (millions, including inflation)
Water network reliability	\$540.0	\$365.2
Water quality	\$217.5	\$118.9
Reducing wastewater overflows	\$97.9	\$69.7
External responsibilities	\$259.7	\$150.3
Dam safety	\$101.3	\$23.2
Enabling growth	\$375.1	\$273.9
Operating our business	\$138.5	\$75.8
Total	\$1,727.0	\$1,077.0

For the period 2020-21 to 2022-23, we have invested \$1,077 million of the \$1,727 million allowed for infrastructure capital delivery. Key highlights include:

Significant improvements in water network reliability

This includes 180 kilometres of water main relays in metropolitan and country areas and 45 kilometres of new sewer mains and associated valves, to reduce service interruptions for customers going forward.

The Kangaroo Island Desalination plant

The Kangaroo Island Desalination Plant is on track to deliver safe, clean drinking water to the townships of American River, Island Beach, Sapphire town and Baudin Beach in 2023-24. The project includes the construction of a new desalination plant and the installation of 50 kilometres of large underground pipeline on Kangaroo Island, this will improve drinking water security and support the Island's tourism and agriculture industries.

Tea Tree Gully Wastewater works

This project is well underway, transitioning properties connected to the City of Tea Tree Gully's Community Wastewater Management System to our modern sewer system. Overall, the project encompasses working with approximately 4,700 properties and 12,000 people, with more than 171 properties already connected to our network.

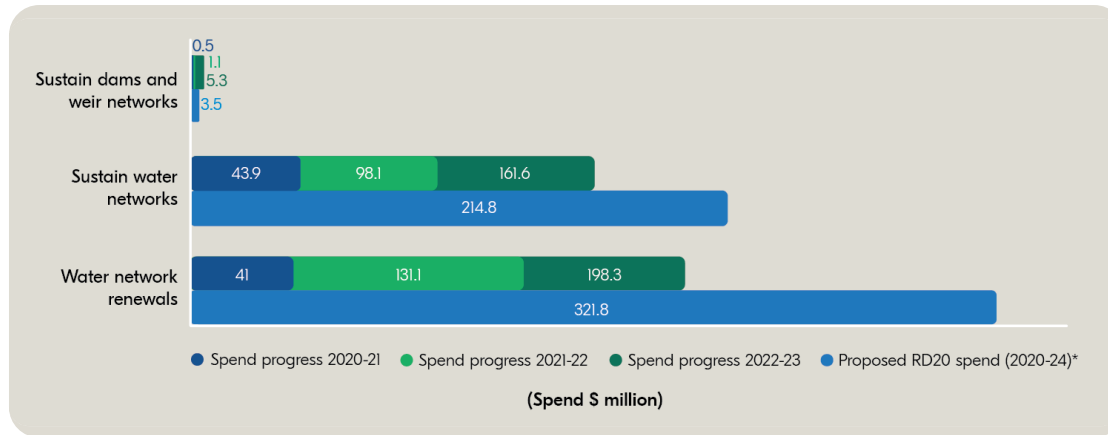
A number of external factors have impacted delivery of the program to date including COVID restrictions and escalating costs of delivery with a global price increase on materials and fuel, freight and electronic shortages, inflation rates and increasing labour costs.

Water network reliability



Service outcome for customers

- Reliable water supply with minimal unplanned water service interruptions



* Adjusted for inflation

Sustaining dams and weirs networks

In 2020 to 2023, the renewal of dam assets and infrastructure included upgrades at Barossa Dam, and design and development on a number of weir screen upgrades.

Works commenced in June 2023 at Warren Dam to replace control valves and pipework to improve the reliability of mechanical equipment. The project scope was revised to refurbish existing valves and control rods, to limit sediment discharge from the reservoir while ensuring the reservoir can be refilled in time for peak water demand. The project included the safe relocation of the reservoirs native fish and turtles to the South Para Reservoir and is scheduled for completion by mid-September.

The sustaining dams and weirs program spend was updated to prioritise the delivery of the Warren Outlet Valves project, having been originally deferred. Revised RD20 spend is anticipated to be \$6.2 million.

Sustaining water networks

This program of works includes the renewals of water storages (water tanks and earth banks) and pump stations, with a focus on structural integrity and operational reliability. From 2020 to 2023, \$99.1 million was spent on water storage renewals, and \$41.6 million was spent on pump station upgrades. New high voltage switchboards have been commissioned on three pump stations on the Mannum to Adelaide Pipeline to improve system reliability and operability.

A new \$19.4 million 32 megalitre water storage near Port Lincoln is currently in construction, ensuring a reliable water supply for Eyre Peninsula customers.

Water network renewals

Through our water main management program from 2020 to 2023, 180 kilometres of new water reticulation mains were laid, 62 kilometres in metropolitan Adelaide and 118 kilometres in our regions. We installed 439 valves across the metropolitan network, forecast to prevent 1,655 temporary service interruptions in 2023-24.

The largest water network renewal projects for 2023 were third party works which are currently in construction including: South Road Torrens to Tonsley Tunnels, Victor Harbor Road duplication, Main South Road duplication (stage 1 and 2), and the new Women's and Children's Hospital.

Water network reliability (continued)



Service outcome for customers

- Reliable water supply with minimal unplanned water service interruptions

Temporary service interruption

The number of customers experiencing three or more unplanned service interruptions has a target of less than 1,750 by 2024.

We will achieve 1,750 by 2024 by setting incremental targets each year: 2,400 by 2020-21; 2,184 by 2021-22; 1,968 by 2022-23; 1,750 by 2023-24. In 2022-23 we are ahead of target, with 1,848 properties experiencing three or more interruptions.

The number of customers (per 1,000 properties) experiencing an unplanned interruption event has increased from the previous year from 145.7 in 2021-22 to 188.7 in 2022-23. As a result, active measures are being taken to improve reliability outcomes, we remain on track to meet our target of less than 153 per year by 2024.

How this is measured	Target by 2024	Achieved in 2020-21	Achieved in 2021-22	Achieved in 2022-23
Number of customers experiencing three or more temporary service interruptions a year by 2024	<1,750 by 2024	2,073	1,482	1,848
Number of properties a year experiencing an unplanned temporary service interruption	<153 per 1,000 properties	169.4	145.7	188.7

Key network reliability projects completed at the end of year 3 include South Road trunk main replacement, Beetaloo trunk main replacement (stages 1 to 3), and North Terrace gravity mains replacement.

The Morgan to Whyalla Pipeline renewal works has Environmental Protection and Biodiversity Conservation (EPBC) approval delays with the Federal Government after a new protected species area was declared in the months prior to construction.

Key focuses for the coming year include:

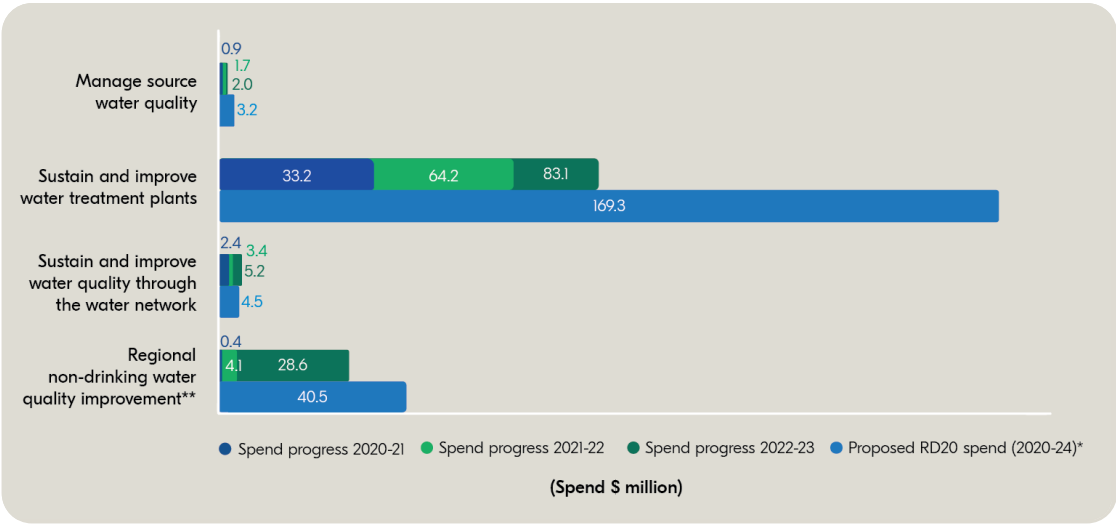
- Finalising environmental approvals and starting construction for the Morgan Whyalla Pipeline Renewal works.
- Network installation as part of major third party projects on South Road (Torrens to Darlington), Victor Harbor Road, Main South Road (stage 1 and 2) and the new Women's and Children's Hospital, to meet expected customer service requirements.
- Completion of valve installation and reticulation renewal programs.
- Completing the smart network program rolling out leakage and pressure sensors on pressure reducing valves, trunk mains and facilities to provide proactive monitoring protection for the water network.
- Making operational boundary changes to the network to lower the static operating pressure in high pressure areas.

Water quality improvements



Service outcome for customers

- Supply of safe, quality drinking water



* Adjusted for inflation.
**Investment as directed by the South Australian Government under the *Public Corporations Act 1993* and the *South Australian Water Corporations Act 1994*.

How this is measured	Target by 2024	Achieved in 2020-21	Achieved in 2021-22	Achieved in 2022-23
Compliance with the <i>Safe Drinking Water Act 2011</i>	100%	100%	100%	100%
Customer perception of overall quality of water	80%	84%	78%	79%

Our 10 reservoir reserves welcomed 417,959 visitors in 2022-23, and since Myponga Reservoir Reserve opened in April 2019, we have recorded over one million visitors across all our reservoir reserves. We continue to effectively manage water quality risks associated with recreational access at these sites which are home to important drinking water sources, while also making these green, open spaces available to support the health and wellbeing of our active, thriving communities.

In 2022-23, we responded to a high flow event in the River Murray at a scale not seen since 1956. In addition to works required to protect our assets from the flood water, the raw water quality in the river deteriorated. High levels of organic matter and low dissolved oxygen posed significant challenges to our Riverland water treatment plants.

This increased our operating costs, impacted network disinfection residuals and resulted in short-term active measures being taken to ensure a high standard of water quality was maintained in affected regions. Our water treatment plants used powdered activated carbon to ensure we continued to deliver safe drinking water throughout the flood event and as flood waters receded.

In the same period we continued investment to sustain and improve water quality with key investments including UV upgrades at our Happy Valley water treatment plant and our Oodnadatta Desalination Plant upgrade.

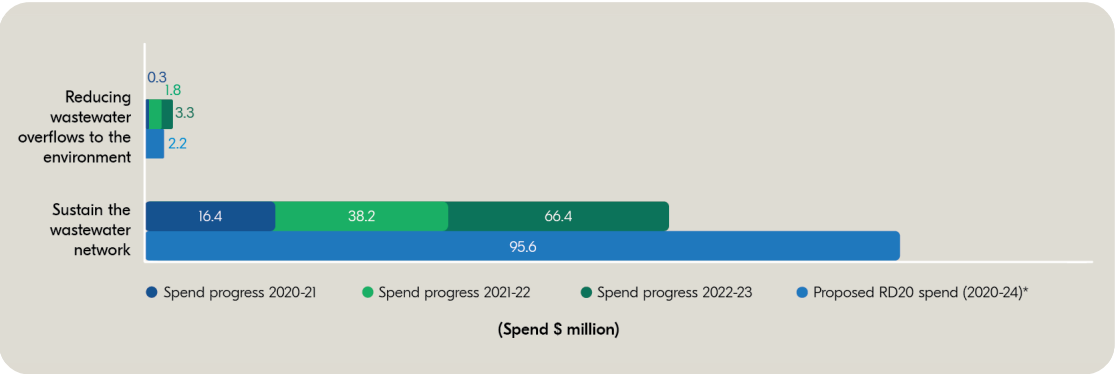
There has been an increase in customer satisfaction with overall water quality in 2022-23, with 79 per cent satisfaction (compared to 78 per cent in the previous year).

Reducing wastewater overflows



Service outcome for customers

- Improved environmental protection from reduced number of wastewater overflows to the environment
- Reliable wastewater services for customers



* Adjusted for inflation

Sustaining the wastewater network

Through our wastewater main management program, 30.3 kilometres of wastewater reticulation mains and 14.7 kilometres of wastewater trunk mains have been renewed across the first 3 years of the current regulatory period.

Reducing wastewater overflows to the environment

Capital expenditure includes investments to improve the reliability of wastewater pump stations, ensuring sufficient storage capacity, and establishing backup power mechanisms to address potential outages.

In 2022-23, we invested in the installation of permanent generators across four wastewater pump stations in the Hahndorf and Mount Barker area. The initiative is intended to resolve the recurrent issue of power outages and, once operational, the generators will automatically start if the sites lose power. The project is currently in the Issue for Construction stage, with construction anticipated to finish in 2023-24.

Construction of a one megalitre overflow storage tank at Gould Lane Wastewater Pump Station has been completed, in order to contain sewage inflows during storm events.

In the current regulatory period, we have implemented an enhanced wastewater mains cleaning regime following a change in approach to better manage safety and risks related to the undertaking of multiple field activities simultaneously.

Mains are first cleaned, and then inspected using CCTV to identify any structural issues that may cause further tree root intrusion or breaks. Proactive CCTV inspections help us address issues before they impact our customers and/or the environment.

While this change in approach was being implemented, it temporarily limited our ability to carry out enhanced sewer mains cleaning activities for a short period. However, we continued to see positive results associated with the reduction in the number of environmental overflows associated with the wastewater pipe network in 2022-23.

Reducing wastewater overflows (continued)



Service outcome for customers

- Improved environmental protection from reduced number of wastewater overflows to the environment
- Reliable wastewater services for customers

How this is measured	Target by 2024	Achieved in 2020-21	Achieved in 2021-22	Achieved in 2022-23
Number of customers experiencing more than one wastewater internal overflow in five years	< 21	34	34	48
Number of Type 1 and Type 2* environmental overflow events reported to the Environment Protection Authority (five year annual average)	< 135	120	128	131
Number of customers that have had an internal overflow in the past 12 months	< 191	212	296	235

* Type 1 event is an overflow >100kL, Type 2 event is an overflow to a watercourse or stormwater >5kL.

A decreasing trend in the number of internal overflows in the past 12 months has been achieved through initiatives introduced to improve methods and data performance monitoring. Identification and monitoring of a key failure mode (blowback) was introduced to proactively manage the performance of any remedial actions.

Communication and media activity from July 2022 about what not to flush or rinse resulted in a significant reduction in 'unflushables', such as cooking fats and oils, and wet wipes, entering the state's sewers. The message to change flushing and rinsing habits provided practical tips and the impact continued after the communication activity finished. This was supported by a targeted sewer cleaning program with proactive maintenance to help reduce blockages and overflows in hotspot suburbs such as Athelstone, Blackwood and Rostrevor.

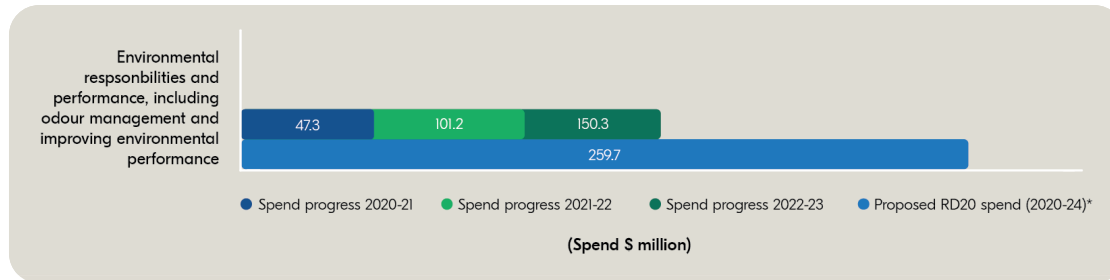


External responsibilities



Service outcome for customers

- Our environmental responsibilities are met
- Security of future water supply
- Odour is well managed with minimal customer impact



* Adjusted for inflation

Between 2020-21 and 2022-23, more than \$150 million was spent renewing our wastewater treatment facilities to sustain services, improve reliability and enable the safe treatment of wastewater, including:

- \$7.2 million at Christies Beach Wastewater Treatment Plant renewing assets, refurbishing primary sedimentation tanks and replacing membranes
- \$18.5 million to renew ageing assets and \$25.7 million to replace pipework in multiple process areas and refurbish digesters 2 and 3 at Bolivar Wastewater Treatment Plant
- \$9.4 million to renew ageing assets and \$14.3 million to improve galleries and bioreactors and install new primary effluent pipeline at Glenelg Wastewater Treatment Plant.



External responsibilities (continued)



Service outcome for customers

- Our environmental responsibilities are met
- Security of future water supply
- Odour is well managed with minimal customer impact

How this is measured	Target by 2024	Achieved in 2020-21	Achieved in 2021-22	Achieved in 2022-23
Compliance with environmental protection obligations	98%	99%	100%	99%
Number of odour complaints received	< 450	556	576	611

Compliance with environmental protection obligations

In 2022-23, we exceeded our target of 98 per cent with a 99 per cent compliance of legislated environmental protection responsibilities being achieved. In the same year, \$8.5 million was spent on:

- improving the Northern Adelaide Irrigation Scheme infrastructure
- installing monitoring bores across wastewater treatment plants to detect leakage from lagoons
- investigating options to improve performance across regional and metropolitan sites to achieve environment improvement programs compliance. This includes developing preferred solutions for Millicent and Port Augusta East Wastewater Treatment Plants in consultation with stakeholders (Environmental Protection Authority, Department for Health and Wellbeing), and local communities and businesses
- research into Adelaide coastal waters.

We renegotiated and signed a revised Environment Improvement Program for Hahndorf Wastewater Treatment Plant which is expected to reduce the original proposed investment of approximately \$4.5 million.

Investment of more than \$572,000 at Myponga Wastewater Treatment Plant has minimised peak wet weather rates by 186 per cent, from 130 litres a second to 70 litres a second. Other key infiltration investigations at Millicent and Naracoorte have progressed, and are expected to provide similar reduction of inflows to those wastewater systems.

Number of odour complaints received

While the number of odour complaints remains above target, investment through operating and capital expenditure will address root causes of odour in hotspots and complaint clusters in the coming years. In 2020-23 the focus was on:

- data collection and analysis
- root cause analysis of odour hotspots
- developing options and progressing design for a complex program of upgrades including chemical dosing in the network
- investment in odour control units at pump stations
- developing mains cleaning program.

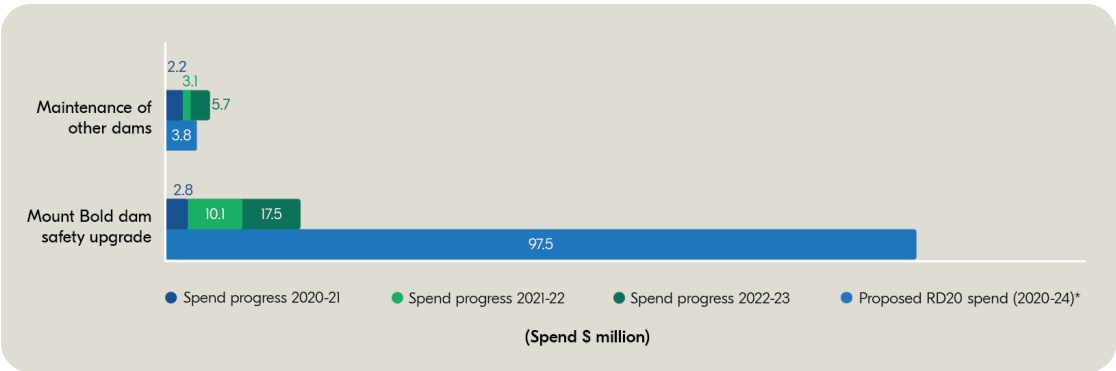
There will be high expenditure in 2023-24 with the commencement of construction to implement odour control stations in Whyalla, Bolivar North and West Beach, and delivering stage odour controls for Aberfoyle Park, Queensbury and Largs Bay. Capital investment will target reduction in the number of odour hot spots, which we anticipate will have a corresponding impact on the number of customer complaints.

Dam safety



Service outcome for customers

- Dam structures are safe



* Adjusted for inflation

How this is measured	Target by 2024	Achieved in 2020-21	Achieved in 2021-22	Achieved in 2022-23
Meet guidelines set by the Australian National Committee on Large Dams (ANCOLD) by July 2028	17 of 20 dams compliant	16 of 20 dams compliant	16 of 20 dams compliant	16 of 20 dams compliant

We proactively manage 20 large dams across South Australia, to help us deliver trusted water services to our customers. Dam safety risk is minimised through an ongoing dam safety upgrade program where works are prioritised across the portfolio to progressively reduce the risk and works are scheduled to maintain water security, balance other corporate risks and deliver best value for money. Currently all 20 of our dams are operated safely and efficiently, with four dams (Baroota, Warren, Sturt and Mount Bold) being assessed and requiring upgrades according to the updated guidelines set by the Australian National Committee on Large Dams Alignment (ANCOLD).

The upgrade at Mount Bold will be one of the largest dam projects ever delivered in our history. A change to the delivery timeframe allows for financially prudent optimisation of design options, elevates dam safety and provides some flood attenuation measures. Early construction work is expected to commence in 2027, with the upgrade completed in 2034.

We have progressed the dam safety investigation for Warren, completing the hydrology, dam break and consequence assessment studies, and a detailed risk assessment. The dam safety upgrade is now in the Options Study phase, which is due to be completed at the end of 2024.

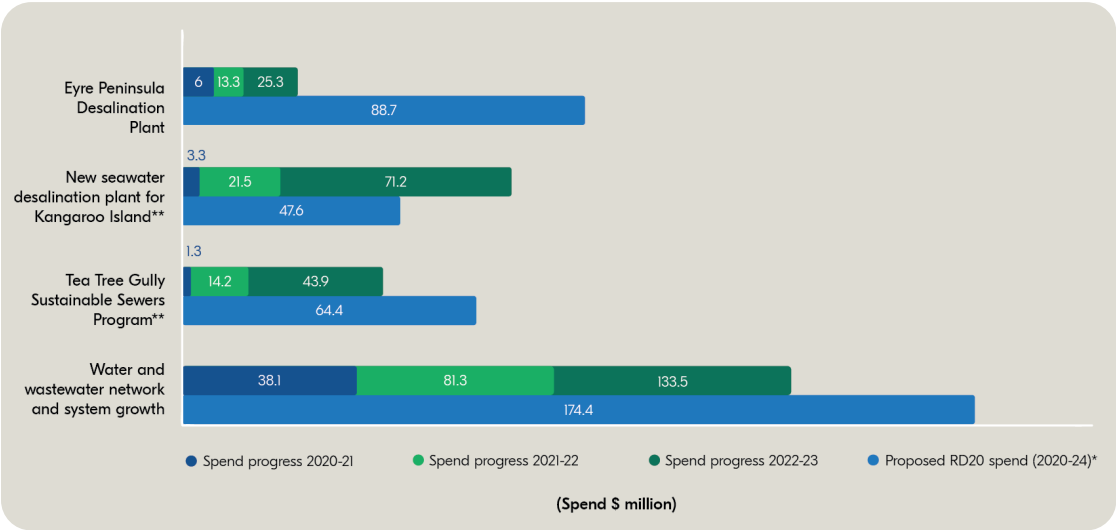
Investigations and designs have progressed in readiness for the delivery of a range of smaller asset renewal projects to continue to maintain overall dam safety.

Enabling growth



Service outcome for customers

- Increased demand for water and wastewater services is met



* Adjusted for inflation.

** Investment as directed by the Government of South Australia under the *Public Corporations Act 1993* and the *South Australian Water Corporations Act 1994*.

Project overspend has been funded through reallocation of other planned works.

Water and wastewater network and system growth project have included a \$133.5 million investment over 2020-23.

The key wastewater network and system growth projects include:

- \$15.9 million in upgrades for Bolivar Inlet projects
- \$12.3 million for Angle Vale wastewater network augmentation works
- \$14.2 million for Virginia wastewater network augmentation.

Key water network and system growth projects over the same period includes:

- \$13.7 million for upgrades in Metro North Adelaide (Barossa System)
- \$12.6 million in upgrades to increase supply to the Murray Bridge and Monarto area
- \$5.5 million to increase capacity in the Yankalilla system.

Kangaroo Island Desalination Plant

Installation of about 50 kilometres of large underground pipeline on Kangaroo Island is underway, and will be followed by the construction of a new desalination plant that will improve drinking water security and support the Island's tourism and agriculture industries.

Located at Penneshaw, the plant will have the capacity to produce 2 megalitres of water a day initially, with further investment in future that will enable the production of up to 6 megalitres a day, to supplement the existing desalination plant and Middle River Reservoir. It will be able to service four Island communities and other properties along the pipeline route not currently connected to our network.

The plant will deliver an additional climate-independent supply of drinking water, providing benefits to local residents, boosting economic activity and increasing the Island's bushfire resilience.

Construction of the plant's structure commenced in May 2023, with the plant expected to be complete by mid 2024.

Enabling growth (continued)



Service outcome for customers

- Increased demand for water and wastewater services is met

Eyre Peninsula Desalination Plant

In April 2023, the state government accepted our Board’s recommendation of Billy Lights Point as the site for a desalination plant on Eyre Peninsula.

The plant will provide a new reliable, climate-independent source of drinking water, to reduce the pressure on existing groundwater sources and the River Murray.

Our latest round of stakeholder engagement with the local community was undertaken in 2022-23 giving the Eyre Peninsula community an opportunity to provide feedback, including presentations to local councils, other government bodies and local schools, and community information sessions.

Subject to all required approvals, construction of the plant is planned to begin in mid-2024, with first water to be delivered from the end of 2025.

Once operational, the desalination plant will be able to produce 16 megalitres (16 million litres) of safe, clean drinking water per day.

How this is measured*	Achieved in 2020-21	Achieved in 2021-22	Achieved in 2022-23
Number of water connections constructed	9,988	10,305	9,684
Number of wastewater connections constructed	2,957	2,263	2,358

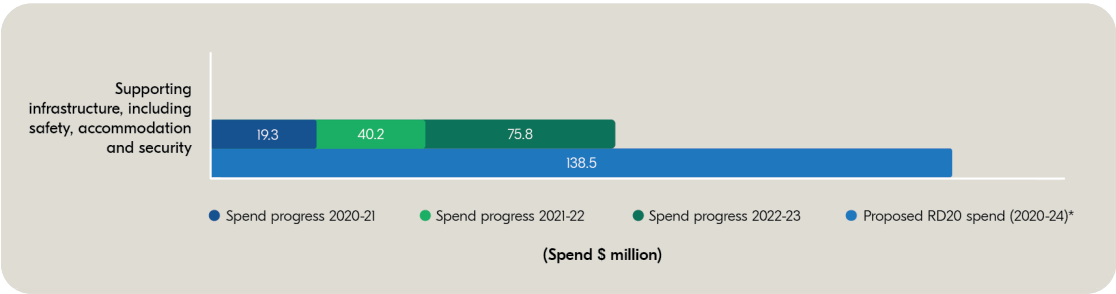
* This is connections data only and does not include CSIS data of created or cancelled accounts or acquired customers (such as 4,700 TTG customers).

Operating our business



Service outcome for customers

- Safe and secure operation of our business



* Adjusted for inflation

The majority of our investment for this category in included costs relating to:

- safe access to water tanks, electrical equipment and workshops (\$21 million)
- purchasing major plant and equipment (\$14.5 million)
- replacing customers' damaged water meters (\$7.8 million)
- upgrading our work sites (\$8.2 million)
- supervisory control and data acquisition upgrades (\$5.9 million).

