



Status of major projects supplement

Water performance report 2017-18

10 December 2018



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Overview to major projects in 2017-18

The commission's approved pricing determinations for the 2013-14 to 2017-18 pricing period included 100 major capital projects for the 17 urban water corporations. We have monitored the progress of these projects across the five-year period to track how water corporations have delivered against their proposals made in 2012-13. Table 1 summarises the status of each corporation's scheduled major projects at the conclusion of the pricing period.

Table 1 2017-18 summary of major projects scheduled for 2013–18

	No. major projects	Completed on time	On-schedule	Completed late	Cancelled	Deferred	Delayed
Melbourne Water	6	2		3			1
City West	4	3					1
South East	6		1	4		1	
Yarra Valley	5	1	1	1		1	1
Barwon	7	4			1	1	1
Central Highlands	7	6					1
Coliban	7	3		2		1	1
East Gippsland	4	1				2	1
Gippsland	3	2		1			
Goulburn Valley	6	2		1		3	
GWMWater	8	6		1		1	
Lower Murray	6	3				1	2
North East	5	1		2		1	1
South Gippsland	5	1		1		1	2
Wannon	7			4		2	1
Western	8			1	2	2	3
Westernport	6	3		2		1	
TOTAL	100	38	2	23	3	18	16

Of the 100 major projects listed in the pricing determinations, a total of 61 projects have been completed by the end of 2017-18, with another two projects still proceeding on schedule. Thirty-four projects are either delayed or deferred, with many of these projects now expected to be completed in the next pricing period which commenced on 1 July 2018.

In the first year of the 2013–18 period, the state government’s Fairer Water Bills review helped water businesses identify opportunities to reduce expenditure by deferring projects where possible. Businesses then passed on these cost savings to customers through lowered prices or bill rebates, so they did not recover revenue for the projects which were no longer going ahead. As a result of this review, more projects have been deferred this period than in previous periods.

Gippsland Water has completed all three projects listed in its price determination, with GWMWater completing seven of its eight projects and one deferred five years to be completed in 2020-21. Central Highlands Water has completed six projects on time, with the remaining project delayed, with City West Water completing three projects on time with the remaining project delayed. Westernport Water has completed five projects, with the remaining project deferred five years to be completed in 2022-23.

Melbourne Water, South East Water, Yarra Valley Water, Coliban Water, East Gippsland Water, Goulburn Valley Water, North East Water, South Gippsland Water, Wannon Water and Western Water have the majority of their projects recorded as delayed, deferred or completed late. Our new pricing framework to apply from 2018 requires water businesses to propose more realistic delivery schedules for their major projects, so the costs will not appear in customer pricing ahead of project completion. We expect businesses will complete more projects on schedule in future.

Three projects have been cancelled: one by Barwon Water because a more cost-efficient alternative option was identified; and two by Western Water due to slower growth than expected and recent planning outcomes.

Read all of our 2017–18 water performance resources

Find all of our 2017-18 performance information at <https://www.esc.vic.gov.au/water/water-sector-performance-and-reporting/water-performance-reports>, including:

- our annual report comparing the performance of the 16 urban water businesses
- this supplement discussing how water businesses are tracking on major project delivery
- water business profiles that provide a snapshot of each business’s performance
- a summary of the data behind our tables and charts in the report.

Background

In their pricing submissions for the 2013–18 pricing period, water corporations included their proposed major capital investment projects that were to be progressed or completed during the period. Some projects commenced in the previous 2008–13 pricing period, but rolled-over to incur major capital expenditure in the 2013–18 period. The commission’s final pricing determination for each corporation included a scheduled list of these projects allowed for in pricing, along with the anticipated start and completion years.

Customers’ prices include recovering capital investment costs in accordance with this approved project schedule. Therefore, it is appropriate water corporations explain delays or alterations to their project schedules, because approved funds will flow from pricing whether the expenditure is incurred or not, unless the water corporations lower their prices accordingly.

This section tracks the corporations’ progress against their original schedule of projects.

The major project status categories are:

- on-schedule — no significant changes to the project start and end dates
- delayed — either the project start was delayed, or completion will be later than scheduled
- deferred — the corporation rescheduled the entire project, either within the current pricing period or into a future period
- cancelled — the project will not proceed in the foreseeable future
- completed on time — the project was completed in accordance with the original scheduled completion date (includes early completion)
- completed late — the project was completed within the period, but later than the original scheduled completion date.

Project details

Project delays

Project schedules can be delayed for a range of reasons, both internal and external to the water corporation. Projects might be delayed in the early stages for additional design or investigation work, or during construction due to unforeseen difficulties. External factors can be beyond the direct control of the water corporations, such as local government approvals or planning appeals, supplier issues, as well as weather impacts on construction.

Projects may also fall behind schedule simply because the project timeline is unrealistic, or is too tight with no allowance for any unforeseen delays.

Of the 16 projects listed as delayed this year, the reasons provided by the water corporations included:

- four projects encountered planning, permit or licence issues
- three projects were delayed as a result of change in delivery program or priorities
- two projects were delayed while awaiting external funding approvals
- one project was affected by contractor issues
- one project is taking longer than planned due to weather impacts
- one project was delayed due to slower customer growth.

The remaining four projects are just a little behind schedule and will mostly be completed within one year of the original target completion date.

Project deferrals

Deferring or cancelling projects does not necessarily reflect poor project management, but may in fact show prudent investment decisions if priorities changed or the need for a particular project no longer exists. Water corporations may reinvest the available capital funds by bringing forward other pressing projects, or they may choose to return the unrequired funds to customers through lower prices.

The water corporations identified the following reasons for deferring 18 of the 100 projects:

- six projects were deferred because a provisional upgrade or alternate facility effectively 'bought time' before the major investment was required
- four projects were postponed because of slower than expected customer demand growth

- four projects required additional time for further design or assessment of alternatives
- two projects were deferred following further analysis of the supply demand strategy
- one project was deferred due to delays in land use planning in a future growth area
- one project was deferred following reassessment of the need for the project against competing priorities.

In addition to the deferrals, three projects were cancelled because they were re-evaluated as no longer required.

By way of comparison, water corporations deferred 14 of 120 major projects scheduled for the 2008–13 pricing period to the 2013–18 pricing period or beyond. Another five were cancelled or suspended indefinitely due to changing requirements and circumstances.

New projects for 2013–18

Water businesses commenced, and in some cases completed, nine new major projects that they did not include in the submissions they made in 2012, for the 2013-18 price determination:

- East Gippsland Water has two new projects, a water storage upgrade and a pipeline upgrade, which are proceeding on schedule.
- GWMWater completed its Wimmera Mallee Pipeline augmentation project in 2015-16, which had Commonwealth and Victorian Government funding. GWMWater also has two new water supply projects which have both been delayed by a year, but will be completed in 2018-19.
- North East Water has two new water security projects for Beechworth and Goorambat that have been completed on time.
- South Gippsland Water completed its Wonthaggi sewer system upgrades project in 2017-18.
- Wannon Water has a wind energy project that will reduce costs at its Portland site. The project has been delayed, but will be completed in 2018-19.

Six major projects had been carried over from the 2008–13 period across City West Water, South East Water, Central Highlands Water, Gippsland Water and Lower Murray Water. These projects were not specified in the price determinations for the 2013–18 period.¹ Of these, four are now completed. One has completion delayed until 2018-19, and one has completion deferred until 2027-28 because demand was lower than planned.

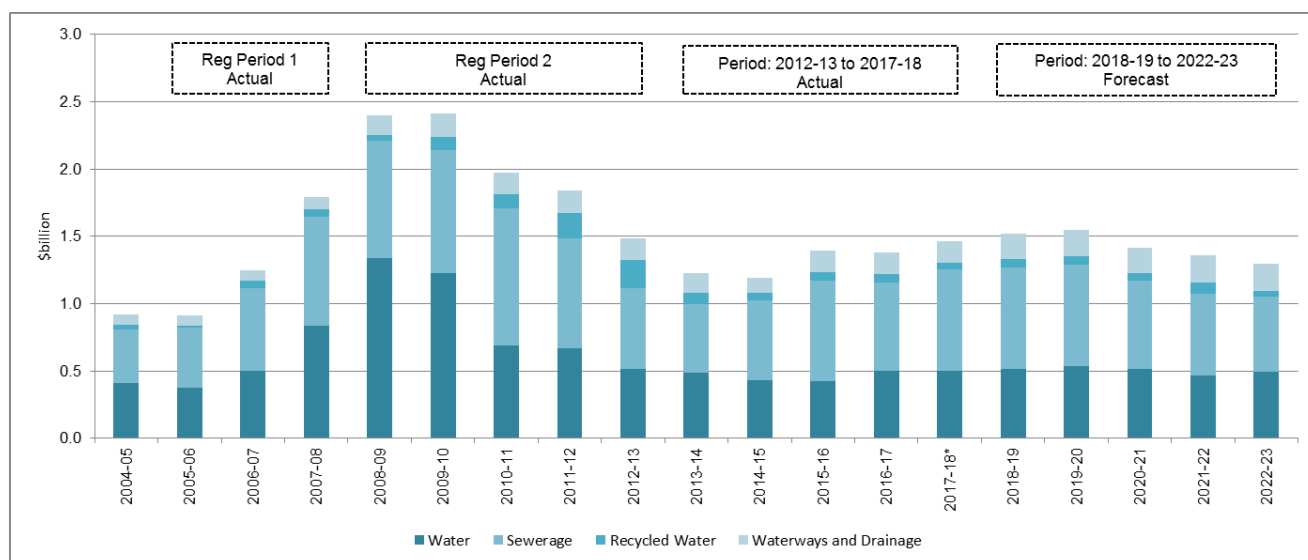
¹ Many major capital investment projects that were underway and mostly completed at the end of the 2008–13 pricing period had incurred much of the expenditure. The remaining expenditure to be incurred in the 2013–18 pricing period did not put the project into the water corporation's 'major project' category.

Capital expenditure

Total capital expenditure across all urban water corporations and Melbourne Water is shown in Figure 1. Capital expenditure for the 2013–18 period was lower than in the preceding 2008–13 period, where considerable investment was required to manage the impacts of the millennium drought.

Figure 1 Total Capital Expenditure

(\$billion, \$2017-18)



Note: based on latest actual and forecast data for each water business.

Table 2 provides details for each scheduled major project for each water corporation, including:

- a brief description or project name
- the original scheduled start and end years (as per the pricing determination)
- corporations' latest updates of the actual or expected start and end years
- an overall project status (on-schedule, delayed, deferred, cancelled or completed)
- general comments to explain any relevant details of the project and its current status.

Table 2 also includes some projects from the 2008–13 pricing period that were not completed before the end of 2012-13, and were therefore carried over into the 2013–18 pricing period. All major capital projects will be monitored through to their completion.

Summary of major projects

Table 2 Summary of major projects by water corporation

Project description	Scheduled start date	Scheduled completion date	Expected/actual start date	Expected/actual completion date	Status	Water corporation comments
Melbourne Water						
St Albans-Werribee pipeline — stage 2	2013-14	2015-16	2014-15	2016-17	Completed late	Practical completion was granted to the contractor in December 2016. The project was completed well under budget. The pipeline is now fully operational.
Water mains renewals — North Essendon–Footscray	2013-14	2015-16	2014-15	2016-17	Completed late	The project was delayed due to finalising the licence agreement between Melbourne Water and Essendon Airport Pty Ltd. This is now finalised and the project, which was originally scheduled for completion in 2015-16 was completed in October 2016.
Western Treatment Plant capacity augmentation — stage 2	2013-14	2016-17	2014-15	2018-19	Delayed	Siteworks began early February 2017. Construction is approximately 80 per cent complete. Commissioning scheduled to commence in November 2018. Asset scheduled to be placed into service by end of first quarter 2019. The project is currently on schedule to the revised time and within budget.
Western Treatment Plant sludge drying augmentation	2013-14	2015-16	2013-14	2015-16	Completed on time	This project achieved Practical Completion on schedule and under budget in August 2015.
Water main renewals — Preston	2013-14	2016-17	2013-14	2017-18	Completed late	Site pipe laying was completed on 30 November 2017. Construction was delayed in 2015-16 to address community concerns over the reinstatement plans for the St Georges Rd centre median. However the project was completed on time and under budget with regards to the amended schedule.
Sewer main rehabilitation — North Yarra	2013-14	2017-18	2013-14	2015-16	Completed on time	The project was completed in October 2015.

Continued on next page

Table 2 Summary (continued)

Project description	Scheduled start date	Scheduled completion date	Expected/actual start date	Expected/actual completion date	Status	Water corporation comments
City West Water						
West Werribee dual water supply scheme	Carried over	2016-17	2010-11	2018-19	Delayed	The project began delivery of potable water to customers in 2014 via the potable water network, and a blend of recycled water and potable water via the recycled water network in November 2016. The Salt Reduction Plant will be completed in 2018-19, allowing delivery of fully recycled water to meet customer needs.
Office relocation	2013-14	2013-14	2013-14	2013-14	Completed on time	Practical completion of fit out works for the new Brooklyn Maintenance Depot occurred in April 2014. Practical completion of the fit out for the new Footscray head office facility occurred in June 2014. Staff relocated from Sunshine to the Footscray office in July 2014.
Program Arrow	2013-14	2015-16	2011-12	2017-18 (R2)	Delayed	<p>The Arrow program was a transformation program to upgrade CWW's corporate systems. The program comprised three distinct releases, two of which were implemented during the 2013-18 regulatory period. They were:</p> <ul style="list-style-type: none"> • Release 1 (finance, contract, procurement, etc.) which went live in May 2014, and • Release 2 (asset management and field mobility) which went live in August 2017. <p>The proposed Arrow Release 3 (billing and customer management) will be delivered as one or more future projects set out in CWW's 2018 Price Submission.</p>
Aquifer storage and recovery - construction	2013-14	2017-18	2015-16	2015-16	Completed on time	Construction of the West Werribee ASR scheme was completed on schedule. The operational trial started in July 2017 and is expected to be completed by mid-2018. It is expected it will take 2-3 years to grow the plume to the point the water can be extracted. Water extracted from the scheme will be used to supply peak recycled water demands.

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Table 2 Summary (continued)

Project description	Scheduled start date	Scheduled completion date	Expected/actual start date	Expected/actual completion date	Status	Water corporation comments
City West Water (continued)						
Stormwater projects (various)	2013-14	2017-18	2010-11	2016-17	Completed on time	<p>The following stormwater schemes are now complete and operational:</p> <p>Keilor Public Golf Course and Green Gully Stormwater Harvesting schemes (completed November 2013) supplying up to 83 ML per year of fit-for-purpose storm water.</p> <p>Paisley Park Stormwater Harvesting scheme (completed October 2013) supplying up to 42 ML per year of fit-for-purpose storm water.</p> <p>Afton Street Stormwater Harvesting scheme (completed August 2015) delivering up to 20 ML per year of fit-for-purpose storm water.</p> <p>Lake Caroline Stormwater Harvesting scheme (completed in November 2016) supplying up to 52 ML per year of fit-for-purpose storm water.</p> <p>Laverton Recreational Reserve Stormwater Harvesting scheme (completed January 2017) supplying up to 88.8 ML per year of fit-for-purpose storm water.</p>

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Table 2 Summary (continued)

Project description	Scheduled start date	Scheduled completion date	Expected/actual start date	Expected/actual completion date	Status	Water corporation comments
South East Water						
Sherbrooke sewer backlog scheme reticulation	Carried over	2013-14	2013-14	2015-16	Completed late	This project was completed in 2016. 80 per cent of properties have connected to the reticulation system.
Pound Road sewerage pump station	2013-14	2013-14	2013-14	2014-15	Completed late	This project was completed in February 2015. Electricity connection and a substation for the site were delayed, deferring commissioning.
Cranbourne recycled water tank	2013-14	2013-14	2013-14	2014-15	Completed late	This project was completed early in 2015, slightly behind schedule. The project was delivered for \$7.3 million against an approved \$11.1 million.
Mt Martha treatment plant — long term sludge upgrade	2013-14	2014-15	2013-14	2015-16	Completed late	This project was completed a little behind schedule in November 2015. The delay was due to unforeseen issues with upgrading the existing infrastructure without disrupting the plant performance.
Lang Lang treatment plant upgrade	2013-14	2016-17	2014-15	2017-18	Completed late	Construction of the Lang Lang treatment plant upgrade was completed in February 2018. The commissioning phase of the contract is currently underway.
Boneo treatment plant capacity upgrade	2013-14	2016-17	2016-17	2018-19	Deferred	Interim works and operational changes have allowed the start of the next major upgrade, including both activated sludge and sludge drying works, to be deferred until 2018-19 without adverse impacts.
Dromana–Portsea backlog scheme	2013-14	Beyond 2017-18	2013-14	2018-19	On schedule	Final reticulation and transfer main construction completed in 2015 and in operation. Portsea, Sorrento, Blairgowrie, Rye and St Andrews Beach property connections continuing beyond 2018 as originally planned. As at end of June 2018, 4419 properties have been connected to the network.

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Table 2 Summary (continued)

Project description	Scheduled start date	Scheduled completion date	Expected/actual start date	Expected/actual completion date	Status	Water corporation comments
Yarra Valley Water						
Warrandyte North sewerage project	2013-14	2013-14	2014-15	2016-17	Completed late	Project completed and sewers declared available for connection in December 2016.
Donvale sewerage project	2013-14	2015-16	2013-14	2018-19	Delayed	The commencement of construction has been delayed by planning approval timeframes and construction progress has been slower than expected due to rock and inconsistent ground conditions. The project is being delivered as four construction packages. One package has been completed, three are currently underway and scheduled for completion in 2018-19.
Amaroo branch sewer	2013-14	2016-17	2014-15	2016-17	Completed on time	This project has been completed. Practical Completion was awarded in June 2017.
Lockerbie branch sewer	2013-14	2017-18	2018-19	2021-22	Deferred	The project was deferred following an upgrade of the Wallan Sewage Treatment Plant to accept additional flows and produce Class A recycled water. Completion is rescheduled for 2021-22. The treatment plant upgrade avoided construction of irrigation assets that would become redundant when the Lockerbie main sewer is commissioned.
Epping branch sewer tunnel	2016-17	Ongoing–2020	2017-18	2019-20	On schedule	Department of Treasury and Finance approval has been received for the project and construction work commenced in late 2017 with completion expected in 2019-20.

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Table 2 Summary (continued)

Project description	Scheduled start date	Scheduled completion date	Expected/actual start date	Expected/actual completion date	Status	Water corporation comments
Barwon Water						
Torquay West high level feeder main	2013-14	2013-14	2019-20	2025-26	Deferred	Deferred due to delays in the land use planning for this future growth area. Project to be completed in stages as development proceeds through growth area.
Apollo Bay bulk water supply expansion	2013-14	2014-15	2010-11	2014-15	Completed on time	This project commenced during the 2008–13 pricing period, and continued into the 2013–18 period. The project was completed according to the revised schedule in January 2014.
Pettavel water basin upgrade	2013-14	2014-15	2013-14	2014-15	Completed on time	The project was completed in 2014-15.
Black Rock water reclamation plant hydraulic capacity upgrade	2013-14	2015-16	2013-14	2018-19	Delayed	The upgrade to the Black Rock Inlet works was initially delayed due to the principle contractor going into voluntary administration and a substantial quality defect (valves) delaying the start of commissioning. Whilst works under the contract are now substantially complete and the works have reached a point of operational reliability at Average Dry Weather Flow, the testing and commissioning process has highlighted a serious capacity deficit with the works only performing at around 45% of the specified requirement. Responses from the principal contractor have been unsatisfactory, and various contractual remedies are being considered to rectify the defective works. It is likely that the work of rectification could take another 4-6 months to complete. The requirement for additional capital funding will be dependent on the decision around preferred commercial resolution.
West Lara transfer system	2013-14	2015-16	2013-14	2015-16	Completed on time	This project was completed in 2015-16.

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Table 2 Summary (continued)

Project description	Scheduled start date	Scheduled completion date	Expected/actual start date	Expected/actual completion date	Status	Water corporation comments
Barwon Water (continued)						
Aireys Inlet pipeline (replaces Aireys Inlet Water Treatment Plant Upgrade)	2014-15	2016-17	2013-14	2016-17	Completed on time	This project was completed in 2016-17.
Inverleigh low level feeder main	2015-16	2017-18			Cancelled	An alternative more cost efficient staged investment is being implemented to meet growing water demand in Teesdale and Inverleigh. This comprises Bannockburn to Teesdale Transfer Pump Station in 2017-18 for \$0.35M, Bannockburn to Teesdale Transfer Main in 2028-29 for \$9.4M, Bakers Lane Tank Augmentation in >2029 for \$4.2M and Teesdale to Inverleigh Feeder Main in 2025-26 for \$5.9M.
Central Highlands Water						
Blackwood sewerage	Carried over	Deferred to next pricing period	2016-17	2017-18	Completed	Stage 1 of the Blackwood Localised Septic Program was successfully completed. Stage 2 is scheduled for the 2018–23 regulatory period.
Raw water pipeline replacement	2014-15	2017-18	2017-18	2018-19	Delayed	Stage 1 of this project, associated with Talbot raw water customers, is complete. Stage 2, the replacement of prioritised sections of the Evansford raw water main, has commenced and is now scheduled to be completed in 2018-19.
Living Victoria/Living Ballarat — Ballarat West aquifer storage and recovery project	2013-14	2014-15	2013-14	2014-15	Completed on time	The aquifer recharge injection pilot and rooftop water quality collection program is complete. This is being used to inform options in the Ballarat City Integrated Water Management Plan.

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Table 2 Summary (continued)

Project description	Scheduled start date	Scheduled completion date	Expected/actual start date	Expected/actual completion date	Status	Water corporation comments
Central Highlands Water (continued)						
Ballarat South flow containment project — Ballarat South outfall sewer	2016-17	2017-18	2016-17	2017-18	Completed on time	Proposed design works for the Ballarat South trunk sewer upgrade have been completed, along with preliminary survey and geotechnical needs. The project is scheduled for delivery during the 2018–23 regulatory period.
Ballarat South wastewater treatment plant augmentation works	2013-14	2017-18	2013-14	2017-18	Completed on time	Major asset improvement works have been completed including a new large diameter clarifier, three digesters rehabilitated, electrical and aeration performance improvements delivered.
Ballarat West urban growth zone	2013-14	2017-18	2013-14	2017-18	Completed on time	Planned water and sewer trunk pipeline projects have been completed with further projects scheduled in the next pricing period in accordance with Ballarat West subdivisional development needs.
Lexton water supply project	2013-14	2013-14	2013-14	2013-14	Completed on time	Works to deliver this water quality improvement upgrade were completed in mid-2014.
Maryborough water quality improvement project	2013-14	2017-18	2013-14	2017-18	Completed on time	Works to deliver this water quality improvement upgrade were completed in mid-2017.
Coliban Water						
Rochester wastewater connection to Echuca	2013-14	2013-14	2013-14	2013-14	Completed on time	The project was completed as expected. Final costs were above budget due to variation with increased scope.

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Table 2 Summary (continued)

Project description	Scheduled start date	Scheduled completion date	Expected/actual start date	Expected/actual completion date	Status	Water corporation comments
Coliban Water (continued)						
Harcourt rural modernisation project	2013-14	2014-15	2012-13	2016-17	Completed late	The project was completed in late 2016. All customers now access their rural supply from the pressurised pipeline. Cost was above budget (+\$6M) and completion date delayed due to issues with the original contractor becoming insolvent, requiring the business to engage a new contractor.
Heathcote backlog sewerage	2013-14	2014-15	2018-19	2018-19	Delayed	Construction commenced in September 2018. Implementation was initially delayed due to dynamic management of the capital portfolio prioritising other works ahead of this project. This project will be delivered in line with the proposed budget.
Echuca and Cohuna water treatment plant upgrades	2014-15	2015-16			Deferred	These scheduled works were for PAC dosing at each plant. Recent feedback from customers has demonstrated a good level of satisfaction with water quality in both systems, so these works have not been prioritised and may not be required. Deferral of this project resulted in approximately \$1.7M capital expenditure being available for other projects during WP3.
Coliban main channel	2013-14	2016-17	2015-16	2017-18	Completed late	Works commenced in 2015-16 and were completed in June 2018. This was delivered within budget, noting a change of project scope to include work on an additional section of the main channel. Works were staged over multiple years to enable the business to continue to source water for customers.
Cohuna water reclamation plant refurbishment	2016-17	2017-18	2016-17	2016-17	Completed on time	The works have been completed, under budget (\$2.8M compared to budget \$10.9M). The project was able to deliver required upgrades and EPA compliance with reduced scope.
Bridgewater and Laanecoorie water treatment plant upgrades	2014-15	2017-18	2014-15	2016-17	Completed on time	The project was completed with a modified scope and reduced cost, with a saving of \$1.3M compared to the budget.

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Table 2 Summary (continued)

Project description	Scheduled start date	Scheduled completion date	Expected/actual start date	Expected/actual completion date	Status	Water corporation comments
East Gippsland Water						
Sarsfield — additional tank or liner	2013-14	2014-15	2017-18	2019-20	Deferred	Deferred early in the period, functional design for this project was completed in 2017-18, and construction is on-track for completion in 2019-20.
Bairnsdale sewer master plan bridge sewer pump station	2013-14	2015-16	2013-14	2015-16	Completed on time	Construction of three kilometres of dedicated rising main from Bridge SPS to Bairnsdale WWTP has been completed. Further works on the pump station and connections have also been completed.
Paynesville main supply pipeline (stage 2)	2014-15	2015-16	2017-18	2025-26	Deferred	Review of the Mitchell River Water Supply Demand Strategy and risk assessment enabled deferral of the construction stage of this project to 2025-26. Functional Design for stages 2 and 3 was completed in 2017-18, and construction works will be staged over the next ten years.
Bairnsdale wastewater treatment plant upgrade	2014-15	2017-18	2014-15	2018-19	Delayed	The main plant treatment components have been completed (digester, combined heat and power unit, and gas storage unit), and are in operation. Construction of head-of-plant flow balancing tank has commenced for completion in 2018-19.
Wy Yung Basins Storage Upgrade ***NEW PROJECT***		2020-21	2016-17	2020-21	On schedule	Project was triggered by failure of the primary liner of the earthen storage at a key water storage/distribution facility. Functional design and geotechnical investigations were completed in 2017-18. Detailed design has commenced and project construction is expected to be completed in 2020-21.
Sarsfield Tank to Harmans Road Main Supply Pipeline Upgrade ***NEW PROJECT***	2017-18	2020-21	2017-18	2018-19	On schedule	Functional design was completed in 2017-18. Detailed design and statutory approvals are in progress. Pipe procurement is complete. Expected completion brought forward to 2018-19.

Continued on next page

Table 2 Summary (continued)

Project description	Scheduled start date	Scheduled completion date	Expected/actual start date	Expected/actual completion date	Status	Water corporation comments
Gippsland Water						
Drouin wastewater treatment plant upgrade	Carried over	2015-16	2015-16	2015-16	Completed on time	Practical Completion on the construction contract was issued in April 2016 and the grit removal and screens have been operating since that time removing inert solids and grit hence improving the treatment capacity of the Drouin WWTP lagoons. The project was delivered on budget and has improved the operational performance and treatment capacity of the plant.
Sale water treatment plant upgrade	2013-14	2014-15	2014-15	2015-16	Completed late	Project involved replacing ageing aeration towers and non-compliant chemical storage delivery and handling facilities (part 1 of a plant upgrade) to improve water quality. Project achieved practical completion in December 2015, with demolition works completed March 2016. The project was delivered under budget and has improved water quality to customers in Sale, while also improving safety at the plant.
Warragul-Hazel Creek trunk sewer (stage three)	2013-14	2014-15	2013-14	2014-15	Completed on time	Construction works began in September 2014 to make way for gas relocations. The project was completed on budget in June 2015 and will reduce the risk of wastewater overflows and cater for significant population growth in the Warragul area, while reducing operating costs.
Loch Sport sewerage scheme	2013-14	2016-17	2012-13	2015-16	Completed on time	The Loch Sport township was declared fully serviceable in line with Gippsland Water's commitment to the community in October 2015 and has been operating without incident from that date. The community were a key stakeholder in the successful delivery of the project both individually and through the Loch Sport Community reference group. The project was delivered on budget and will ensure that wastewater impacts on the Gippsland Lakes from the Loch Sport township are reduced and customers have a healthier built environment.

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Table 2 Summary (continued)

Project description	Scheduled start date	Scheduled completion date	Expected/actual start date	Expected/actual completion date	Status	Water corporation comments
Goulburn Valley Water						
Cobram — MGC unfluoridated water pipeline	2013-14	2014-15	2013-14	2017-18	Completed late	The project was delayed until funding commitment was provided. Construction of the pipeline was completed in May 2017 with commissioning completed in September 2017. Delivery of this project has supported the operations of a significant industrial customer whilst removing some demand from the town's reticulation system, supporting further growth before upgrades are required. The project was delivered on budget (in terms of GVW's contribution).
Kilmore wastewater management facility additional winter storage	2014-15	2015-16	2023-24	2025-26	Deferred	Planning and design stages are substantially completed for a base project option. An alternative innovative option was identified, which involves environmental offsets rather than constructing infrastructure. Implementing the base project option has been deferred until a later date; with offset projects commencing in 2016-17.
Mansfield wastewater management facility additional winter storage	2014-15	2015-16	2023-24	2025-26	Deferred	Planning and design stages substantially completed for a base project option, which requires significant land acquisition. An alternative innovative option was identified, which involves environmental offsets rather than constructing infrastructure. Implementing the base project option has been deferred until a later date, with offset projects commencing in 2016-17.
Marysville new water treatment plant	2013-14	2015-16	2013-14	2014-15	Completed on time	This project was completed in June 2015 and has removed substantial water quality risks associated with previous treatment processes, as well as ensuring compliance with current Department of Health Regulations. The project was delivered slightly over budget.

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Table 2 Summary (continued)

Project description	Scheduled start date	Scheduled completion date	Expected/actual start date	Expected/actual completion date	Status	Water corporation comments
Goulburn Valley Water (continued)						
Numurkah water treatment plant upgrade	2013-14	2015-16	2013-14	2015-16	Completed on time	This project was completed in August 2016 and has delivered additional treated water capacity for the township of Numurkah to support future growth, as well as reducing water quality risks. The project was delivered under budget.
Shepparton water treatment plant upgrade	2014-15	2017-18	2018-19	2019-20	Deferred	The water treatment plant capacity upgrade works were deferred following the successful implementation of plant optimisation works. Water quality improvement works are still required, but were deferred to commence in 2018.
GWMWater						
Intelligent rural pipeline networks	2013-14	2013-14	2013-14	2015-16	Completed late	This project was completed in June 2016, later than scheduled because project planning, the tendering process and finalising funding agreements delayed the commencement of the project.
Irrigation network decommissioning	2013-14	2014-15	2013-14	2014-15	Completed on time	This project was delivered and completed as scheduled.
Rupanyup sewerage scheme	2013-14	2014-15	2014-15	2014-15	Completed on time	This project was completed in October 2014 and the scheme was declared operational on 1 July 2015.

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Table 2 Summary (continued)

Project description	Scheduled start date	Scheduled completion date	Expected/actual start date	Expected/actual completion date	Status	Water corporation comments
GWMWater (continued)						
Upgrade of Donald wastewater and reuse system	2015-16	2015-16	2017-18	2020-21	Deferred	Wastewater treatment plant upgrade deferred to the next pricing period. A section of the sewer reticulation system most prone to groundwater intrusion was relined in 2015. This work is being assessed to establish whether the relining work has been successful in reducing intrusion of groundwater and whether further relining work is warranted and likely to be a cost-effective and enduring solution. Proposed works will address further issues at the plant to ensure that effluent achieves EPA licence requirements and that reclaimed water is suitable for reuse.
Donald treated water supply	2013-14	2014-15	2013-14	2013-14	Completed on time	Treated water supply to Donald was available from June 2014.
Wycheproof treated water supply	2013-14	2013-14	2013-14	2013-14	Completed on time	Treated water supply to Wycheproof was available from June 2014.
Rupanyup treated water supply	2013-14	2014-15	2013-14	2013-14	Completed on time	Treated water supply to Rupanyup was available from June 2014.
Minyip treated water supply	2013-14	2013-14	2013-14	2013-14	Completed on time	Treated water supply to Minyip was available from June 2014.

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Table 2 Summary (continued)

Project description	Scheduled start date	Scheduled completion date	Expected/actual start date	Expected/actual completion date	Status	Water corporation comments
GMMWater (continued)						
Wimmera Mallee Pipeline Augmentation ***NEW PROJECT***	2013-14	2017-18	2013-14	2015-16	Completed on time	<p>Remaining funded projects related to the Wimmera Mallee Pipeline (WMP) Project were completed in 2015-16. The final Commonwealth and State funding acquittal for the project was completed in 2016-17. Projects delivered with residual funding included:</p> <ul style="list-style-type: none"> - Wimmera Irrigation System Decommissioning Project - WMP Firefighting Infrastructure Project - Landsborough Valley Water Supply Project - WMP Peripheral Development – Pella, Quambatook, Wartook, South West Loddon (Stage 1)
Mallee towns treated water supply (Brim, Beulah, Woomelang and Sea Lake) ***NEW PROJECT***	2017-18	2017-18	2017-18	2018-19	Delayed	<p>Project commenced in 2017-18, due to be completed late 2018. The project involves the construction of 137 km of pipeline utilising the excess capacity of the Warracknabeal Water Treatment Plant. Strategic option analysis confirmed this to be the most prudent and efficient option for delivering drinking water to these towns rather than constructing standalone water treatment plants.</p>
South West Loddon rural water supply (Stage 2) ***NEW PROJECT***	2016-17	2017-18	2016-17	2018-19	Delayed	<p>Substantial progress made to 30 June 2018 with Stage 2.1 almost complete. The current schedule has the installation of all trunk main and the majority of distribution pipes to be completed by the end of 2018. The final pump station and tank commissioning is expected to be completed early in 2019.</p> <p>The project will provide a secure domestic and stock water supply for the climate-stressed region of south west Loddon in north west Victoria and is expected to connect 633 properties covering 1,670 km², and supply 780 megalitres per year. The project will increase water access and security for the communities of the south west Loddon area.</p>

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Table 2 Summary (continued)

Project description	Scheduled start date	Scheduled completion date	Expected/actual start date	Expected/actual completion date	Status	Water corporation comments
Lower Murray Water						
Mildura Trunk Extension	Carried over	2014-15	2014-15	2015-16	Completed late	The Mildura water supply 14 th Street trunk main extension project was deferred because demand was lower than planned. It has now been completed in three stages: <ul style="list-style-type: none"> • Stage 1: completed in 2015. • Stage 2 & 3: completed June 2016. • Completed on budget. Outcome – Supply to cater for city growth.
Relocation of 14 th Street tower	Carried over	2018-19	2023-24	2027-28	Deferred	This project was deferred during the 2008–13 pricing period because demand was lower than planned. The project is to prepare for future requirements in the relocation of this tank, with works now scheduled in the 2023–28 pricing period
Mildura water supply strategy	2015-16	2015-16	2015-16	2015-16	Completed on time	This project involved two major stages. Stage 1 (Riverside Avenue) and Stage 2 (Benetook and Cureton Avenues). Project was completed on budget July 2016. Outcome – Supply to cater for city growth.
Red Cliffs WTP upgrade	2013-14	2014-15	2013-14	2014-15	Completed on time	This project was completed on schedule and budget in December 2014. Outcomes – reliability, improved control, plant resilience in poor raw water quality events. Improved efficiency – remote control rather than the need to be at plant to control.

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Table 2 Summary (continued)

Project description	Scheduled start date	Scheduled completion date	Expected/actual start date	Expected/actual completion date	Status	Water corporation comments
Lower Murray Water (continued)						
WTP water quality improvements	2013-14	2016-17	2011-12	2018-19	Delayed	<p>This is a program of works across several water treatment plants, which began in 2011-12 and has been undertaken progressively over the 2013–18 pricing period. Robinvale WTP was completed in 2011-12. Mildura 7th Street WTP was completed in June 2015. Swan Hill WTP was completed in 2016. Murrabit WTP was completed in 2018. Koondrook WTP was completed in 2018. Kerang WTP works are in progress and due for completion in February 2019. The completed projects have been completed on budget whilst Kerang is tracking to budget.</p> <p>Outcomes – reliability, improved control, plant resilience in poor raw water quality events. Improved efficiency – remote control rather than the need to be at plant to control.</p>
WTP PLC replacement	2013-14	2016-17	2011-12	2018-19	Delayed	<p>This is a program of works to be conducted in parallel with the WTP water quality improvements project, following the same timeline as described above.</p> <p>Outcomes – as above.</p>
Mildura emergency sewer overflow storages	2012-13	2013-14	2012-13	2013-14	Completed on time	<p>Project works were completed on schedule and on budget in March 2014, providing improved ability to manage sewer pump station outages with reduced risk of sewer overflow.</p>
Merbein sewage diversion to Koorlong WWTP	2016-17	2017-18	2018-19	2018-19	Deferred	<p>A revised Wastewater Management Plan has identified the operational need to proceed with this project, and it has been deferred into the 2018–23 regulatory pricing period and is currently underway.</p>

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Table 2 Summary (continued)

Project description	Scheduled start date	Scheduled completion date	Expected/actual start date	Expected/actual completion date	Status	Water corporation comments
North East Water						
Yackandandah reclaimed water management	2013-14	2016-17	2018-19	2019-20	Deferred	The EPA has approved a change in the discharge licence, and North East Water will now seek an alternative solution. This project has been rescheduled for the 2018–26 regulatory period, with expected completion by June 2020.
Bright off-river storage	2013-14	2013-14	2010-11	2014-15	Completed late	This project was put on hold in January 2011, following the Minister's request for a review of the site selection process. North East Water issued a report in February 2011 and the Minister decided in late September 2011 to allow the project to progress through to the planning stage. Transfer main and off-stream storage projects were awarded in June 2013 and September 2013 respectively. The transfer main was completed early 2014 and the storage dam in November 2014 after experiencing wet weather construction delays.
Servicing unserviced communities (small towns) — Moyhu sewerage system	2013-14	2014-15	2013-14	2016-17	Completed late	This is an innovative STED (septic tank effluent drainage system) treatment and reuse project. This project was completed in June 2017.
Wangaratta wastewater treatment stage 1 upgrade	2014-15	2017-18	2014-15	2019-20	Delayed	This project has been delayed because some works must be conducted over summer periods. It is now in progress with the inlet structure under construction. Remaining lagoons will be desludged early 2019 and the new HDPE liner installed afterwards. Stage 1 completion is now expected in September 2019.
Bright water treatment plant	2013-14	2017-18	2013-14	2016-17	Completed on time	This project was completed in November 2016.

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Table 2 Summary (continued)

Project description	Scheduled start date	Scheduled completion date	Expected/actual start date	Expected/actual completion date	Status	Water corporation comments
North East Water (continued)						
Beechworth clearwater storage tank ***NEW PROJECT***	Beyond 2017-18	Beyond 2017-18	2014-15	2017-18	Completed on time	This project was brought forward into the 2013–18 period to ensure the township of Beechworth had sufficient safe drinking water storage to meet peak daily demand. It was completed ahead of schedule, coming into operation in December 2017.
Goorambat Security of Supply ***NEW PROJECT***	2017-18	2018-19	2016-17	2017-18	Completed on time	This project addressed safe drinking water for the township of Goorambat. Pipeline completed and operational in October 2017.
South Gippsland Water						
Leongatha wastewater treatment plant – refurbish decommissioned sludge digestion system	2013-14	2013-14	2013-14	2014-15	Completed late	The project was commissioned in September 2014.
Poowong/Loch/Nyora sewerage scheme	2013-14	2017-18	2014-15	2015-16	Completed on time	This project was completed in June 2016 in collaboration with South East Water.
Foster wastewater treatment plant — rising main pipeline and storage	2017-18	2017-18	2023-24	2023-24	Deferred	A reuse scheme has been completed and a minor treatment plant upgrade is currently underway and will be completed in 2019. This work has allowed the original project to be deferred to 2023-24.
Northern towns supply connection works — Lance Creek to Korumburra	2015-16	2017-18	2016-17	2018-19	Delayed	This project received funding in the 2016-17 State Budget and construction started in November 2017. Construction is well advanced and the project will be completed in 2018-19 consistent with the revised schedule.

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Table 2 Summary (continued)

Project description	Scheduled start date	Scheduled completion date	Expected/actual start date	Expected/actual completion date	Status	Water corporation comments
South Gippsland Water (continued)						
Northern towns supply connection works — Korumburra to Poowong	2016-17	2017-18	2016-17	2018-19	Delayed	This project received funding in the 2016-17 State Budget and construction started in November 2017. Construction is well advanced and the project will be completed in 2018-19 consistent with the revised schedule.
Wonthaggi sewer system upgrades ***NEW PROJECT***	2013-14	2017-18	2013-14	2017-18	Completed on time	These upgrades aimed to increase the sewerage system capacity to accommodate growth of the town. The program of works was completed to maintain service standards. Further works are planned for the 2018–23 period to expand the Wonthaggi sewerage system capacity in line with customer growth in the town.
Wannon Water						
Curdie Vale bore construction	2013-14	2013-14	2013-14	2014-15	Completed late	The project was completed on budget in 2015. It provides an additional source of water to service future growth and increase security of supply.
Construct new bore at Wyatt St Portland	2014-15	2014-15	2014-15	2016-17	Completed late	Bore was completed in 2016-17, and although the project was delivered later than planned, it was on budget. It provides an additional source of water to service future growth and increase security of supply.
Casterton water treatment plant clarifier	2014-15	2015-16	2014-15	2016-17	Completed late	Clarifier was completed on budget in 2016-17 financial year. It provides improved water quality to customers.

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Table 2 Summary (continued)

Project description	Scheduled start date	Scheduled completion date	Expected/actual start date	Expected/actual completion date	Status	Water corporation comments
Wannon Water (continued)						
Water tower and pump station in Wollaston Road Warrnambool	2014-15	2015-16	2016-17	2018-19	Deferred	This project was deferred for three years because demand growth had softened due to slower than predicted residential development. A temporary water supply was implemented, which satisfied the short term requirements. Deferring this work has no impact to existing customers.
Water tower and pump station in Wangoom Road Warrnambool	2014-15	2016-17	2016-17	2018-19	Deferred	This project was deferred for two years as demand growth had softened due to slower than predicted residential development. Deferring this work has no impact to existing customers.
Heywood and Hamilton water reclamation plant irrigation works	2015-16	2016-17	2013-14	2017-18	Completed late	Works at Heywood are now complete, with additional infrastructure constructed at the treatment plant in 2015-16, and an amended discharge licence to the adjacent watercourse now in place. Investigations into lower cost options at Hamilton have determined that additional works are not required. This has prevented the need for significant expenditure on additional winter storages.
Cobden and Casterton water reclamation plant irrigation works	2014-15	2017-18	2014-15	2017-18	Delayed	An amended discharge licence has been received for Cobden WRP, and no further works are required. Investigations relating to amending the Casterton WRP licence conditions continue, which would prevent the need for significant expenditure on additional winter storages.
Portland reclamation plant wind energy project ***NEW PROJECT***	2014-15	2015-16	2014-15	2018-19	Delayed	This is a new major project (not initially included in the pricing submission). It is expected to deliver a significant reduction in energy costs at the site. Power connection and contractual terms associated with the purchase of the wind turbine are now complete. Ancillary works on site were due to commence construction in October 2018, with the aim of erecting and commissioning the wind turbine mid-2019.

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Table 2 Summary (continued)

Project description	Scheduled start date	Scheduled completion date	Expected/actual start date	Expected/actual completion date	Status	Water corporation comments
Western Water						
Rockbank outfall sewer (rising main)	2013-14	2014-15	2013-14	2017-18	Completed late	Completion of design and subsequent construction was initially deferred due to Fair Water Bills and slower growth. The recent substantial growth in Rockbank has required the delivery of this project, which is now completed.
Surbiton Park RWP upgrade (digester)	2013-14	2014-15	2013-14	2018-19	Delayed	Progression to tender and construction was deferred due to Fair Water Bills and slower growth. Contract awarded in September 2016. Construction works are nearing completion with commissioning expected by the end of 2018.
Melton Class A RWP upgrade	2015-16	2016-17	Not required	Not required	Cancelled	The project was deferred to the next regulatory pricing period due to Fair Water Bills and slower growth. The extent of the uptake of Class A water in new developments will determine the need for this investment.
Sunbury additional water storage — Bald Hill tank	2013-14	2016-17	2013-14	2021-22	Deferred	Land acquisition and construction was deferred due to Fair Water Bills and slower growth. The owner of the preferred site had unrealistic price expectations which could not be negotiated. Compulsory acquisition of an alternative site is proceeding, and construction will commence once the acquisition is finalised.
Sunbury recycled water plant (RWP) upgrade	2013-14	2016-17	2015-16	2018-19	Delayed	This project was delayed in the planning phase, firstly due to a longer than expected time to obtain business case approval from Treasury and then an additional delay when awarding the contract in late 2015, as a result of the change in board members. The Design-Build-Operate contract was awarded in December 2015, with Stage 1 of the upgrade completed in March 2018. Stage 2 is due to be completed by March 2019.
Bacchus Marsh RWP winter storage lagoon	2016-17	2017-18	Not required	Not required	Cancelled	Progression of related projects and recent planning work has determined this investment is not required in the next 10 years.

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Table 2 Summary (continued)

Project description	Scheduled start date	Scheduled completion date	Expected/actual start date	Expected/actual completion date	Status	Water corporation comments
Western Water (continued)						
Bacchus Marsh rising main	2017-18	2017-18	2018-19	2020-21	Deferred	This project is to provide some redundancy and capacity increase of a critical asset. In 2013-14, the project was deferred to the next pricing period because other projects reduced the catchment, and testing found the existing main was in better condition than expected. Air valves were installed on the existing main to address air entrainment issues which caused the historical inefficiencies.
Bacchus Marsh sewer rising main Geelong Road	2016-17	2017-18	2016-17	2019-20	Delayed	This Project forms part of the wider Bacchus Marsh sewage servicing strategy to cater for the growth in Maddingley, south west of Bacchus Marsh. The detailed design is completed and a Cultural Heritage Management Plan (CHMP) of the rising main is currently with the Registered Aboriginal Party (RAP) for review/approval. The project will proceed to tender in late 2018 with construction expected to be awarded in early 2019. Due to the extensive project delays encountered as part of the CHMP approval process, construction funds were reallocated to 2019-20.

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Table 2 Summary (continued)

Project description	Scheduled start date	Scheduled completion date	Expected/actual start date	Expected/actual completion date	Status	Water corporation comments
Westernport Water						
Candowie upgrade project	2013-14	2013-14	2013-14	2013-14	Completed on time	The project was completed in July 2013 on time and within budget. The reservoir capacity was doubled to 4,463 megalitres, and provided the following benefits for Westernport Water and its customers: ability to choose and store from alternative water supply sources; ability to optimise the use of all available local water supply sources; and additional storage capacity for water supply security.
Cowes wastewater reticulation — upgrade pump stations	2014-15	2014-15	2014-15	2015-16	Completed late	This project comprises two sewer pump station upgrades. The Church Street sewer pump station upgrade was completed in 2014-15. The Chapel Street sewer pump station upgrade was completed in 2015-16. This project increased sewer pump station capacity to accommodate long term growth for wastewater services in Cowes East and West. This project was delivered under budget.
Ian Bartlett water purification plant tertiary treatment	2015-16	2015-16	2015-16	2017-18	Completed late	The concept design was completed in 2014-15. The design and construction of Ian Bartlett Water Purification Plant UV Treatment Facility was completed in February 2018. This project reduced risks associated with water quality and increased Westernport Water's ability to treat different water sources. This project was delivered on budget.
Cowes wastewater reticulation — new rising mains	2016-17	2017-18	2016-17	2017-18	Completed on time	This project comprises two rising main upgrades from the Church Street and Chapel Street sewer pump stations. A 2015-16 review of the implementation schedule determined that the Chapel Street rising main could be deferred to the 2023–28 pricing period. The project increases capacity to cater for future growth in Cowes East and West. This project was delivered under budget.

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Table 2 Summary (continued)

Project description	Scheduled start date	Scheduled completion date	Expected/actual start date	Expected/actual completion date	Status	Water corporation comments
Westernport Water (continued)						
San Remo basin cover replacement	2016-17	2017-18	2020-21	2022-23	Deferred	San Remo Basin liner and cover replacement was initially programmed for 2016-17 to align with the end of the manufacturer's warranty period. However, after completing an engineering investigation and condition assessment the storage upgrade has now been rescheduled in the 2018–23 regulatory period. Capital was reallocated to other renewals, such as the Ian Bartlett Water Purification Plant, Desalination Pipeline Cross Connection, Building Asset Management Plan and Diversity Inclusion Facility Improvement Project.
Cowes wastewater treatment plant upgrade	2013-14	2017-18	2013-14	2015-16	Completed on time	This project commenced late 2013-14, and testing and commissioning of the new works was completed in 2015-16 slightly over budget due to increased scope. The post implementation review highlights that stage 1 of the Cowes WWTP upgrade has proved successful with the plant achieving process stability and greater capacity to handle wet weather. The plant has met all EPA licence limits and achieved increased nitrogen removal (approximately 75% removal). This project delivered environmental benefits by reducing the nitrogen loads in effluent discharge, and increased wastewater treatment capacity to cater for future sewerage treatment requirements on Phillip Island.

