

# Submission Questionnaire

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Draft Lachlan Regional Water Strategy - Submission Form



## Regional Water Strategies Public Exhibition Submission Questionnaire

*The NSW Government is taking action to improve the security, reliability, quality and resilience of the state's water resources. The Lachlan Regional Water Strategy will deliver healthy and resilient water resources for a liveable and prosperous regional NSW.*

This draft strategy is being developed by the Department of Planning, Industry and Environment and provides an opportunity to re-shape what we are doing in regional water management and chart a path forward.

We have been working with local water utilities, councils, communities, Aboriginal people and other stakeholders to ensure local and traditional knowledge informs the draft Lachlan Regional Water Strategy and that it serves the regional community, including Aboriginal people, the environment and industry.

### Your Voice is important

We have prepared this draft strategy to continue our discussions with you. We would like to hear your views on the draft strategy as a whole including the process we used to develop the strategy and the evidence that supports it. We are also seeking your feedback on the options presented in the draft strategy and whether you have any further information that could help us to assess the benefits and disadvantages of any of the options.

Please provide your feedback in the submission form below and email your completed submission to [regionalwater.strategies@dpie.nsw.gov.au](mailto:regionalwater.strategies@dpie.nsw.gov.au) or post to Regional Water Strategies, Department of Planning, Industry and Environment, Locked Bag 5022, Parramatta NSW 2124 by **13 November, 2020**.

The questionnaire includes general questions about the regional water strategy including objectives, vision, modelling, opportunities and challenges. It also includes questions regarding the draft options along with personal information questions.

The questionnaire will take approximately 15 minutes to complete and your response can remain anonymous if you wish (see question 1).

Questions marked with an asterisk (\*) require an answer.

If you have any questions about the questionnaire, please email:  
[regionalwater.strategies@dpie.nsw.gov.au](mailto:regionalwater.strategies@dpie.nsw.gov.au)

## Making your submission public

We collect information about you, which may include personal information, to assess submissions in response to the department's dealings and activities, and perform other functions required to complete the project. This information must be supplied. If you choose not to provide the requested information we may not be able to assess your submission.

To promote transparency and open government, we intend to make all submissions publicly available on our website, or in reports. Your name or your organisation's name may appear in these reports with your feedback attributed.

**If you would like your submission and/or feedback to be kept confidential, please let us know when making your submission.** You will be asked for your confidentiality preference at question 1.

If you request your submission be kept confidential, it will not be published on our website or included in any relevant reports, however it will still be subject to the *Government Information Public Access Act 2009*.

Your submission will be stored securely consistent with the department's Records Management Policy and you have the right to request access to, and correction of, your personal information held by the department.

Further details can be found in our privacy statement available on our website.  
<https://www.industry.nsw.gov.au/privacy>

*Information from this form is collected for the purpose of receiving your feedback on the draft regional water strategy. The supply of this information is voluntary. Your details will be stored in NSW Department of Planning, Industry and Environment records. Information will be stored and managed in accordance with provisions under the Privacy and Personal Information Protection Act 1998. It will not be used for any other purpose and will not be given to any other third party except where required by law. To access or correct your personal information, contact us using the information at [dpie.nsw.gov.au/contact](https://www.dpie.nsw.gov.au/contact)*

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### 1. Information on confidentiality and privacy \*

I give my permission for my submission to be publicly available on the NSW Department of Planning, Industry and Environment website.

Yes                  No

I would like my personal details to be kept confidential.

Yes                  No

## 2. Your details

Email address \*

Name \*

Address \*

Contact phone number \*

Do you identify as an Aboriginal person?

Yes

No

Are you an individual or representing an organisation?

Individual

Organisation

## 3. Organisation or business details

Who do you represent?

**Government:**

Commonwealth

New South Wales

State other

Local

**Local Water Utility**

**Peak representative organisation:**

Environment

Industry

Business group or business chamber

Community organisation

**Other**

## 4. Draft regional water strategy objectives and vision

The draft Lachlan Regional Water Strategy is one of 13 strategies (12 regional water strategies and a Greater Sydney Water Strategy) being developed by the department. All regional water strategies are being developed in line with the following objectives.

- **Deliver and manage water for local communities**
  - Improve water security, water quality and flood management for regional towns and communities.
- **Enable economic prosperity**
  - Improve water access reliability for regional industries.
- **Recognise and protect Aboriginal water rights, interests and access to water**
  - Including Aboriginal heritage assets.
- **Protect and enhance the environment**
  - Improve the health and integrity of environmental systems and assets, including by improving water quality.
- **Affordability**
  - Identify least cost policy and infrastructure options.

All draft regional water strategy options need to address at least one of the above objectives. Our vision for this strategy is to have healthy and resilient water resources (that withstand extreme events and adapt to these changes) for a liveable and prosperous Lachlan region.

To achieve this, we need to position the region so there is the right amount of water of the right quality, delivered in the right way to meet the future needs of Aboriginal people, towns, communities, industries and the environment.

**Do you support this vision for the Lachlan Regional Water Strategy?**

Yes

No

**If no, please outline your vision for the long term management of water resources in this region?**

## **5. Information and modelling used to develop the Lachlan Regional Water Strategy**

The draft Lachlan Regional Water Strategy packages the most up to date information and evidence with all the tools we have – policy, planning, behavioural, regulatory, technology and infrastructure solutions.

We have used the following information to develop the draft Lachlan Regional Water Strategy.

- **New climate data:**
  - Observed historical climate data - recorded rainfall, temperature and evaporation data.
  - Paleoclimate data - scientific reconstructed data using sources such as tree rings.
  - Climate drivers – key drivers of wet and dry periods.
- **Review of existing studies**
  - to identify drivers and risks for water resource management.
- **Community engagement:**
  - Local councils and joint council organisations.
  - Aboriginal peak bodies and Aboriginal community groups.
  - Review of previous water management consultations.

**A) Do you have any comments about the information used to develop this strategy?**

**B) Please provide details if there is additional information you think we should consider?**

## 6. Stochastic modelling method

We used a stochastic modelling method (based on the statistical characteristics of the new climate data) in order to get a dataset covering up to 10,000 years. This enables us to quantify the natural variability and extremes in the region with greater certainty.

**A) Do you have any comments about the modelling method used to develop this strategy?**

**B) Is there any additional information that you believe could help us assess the benefits and disadvantages of draft options?**

## 7. Opportunities and challenges for water management in the Lachlan region

During the Lachlan Regional Water Strategy drafting stage, the following opportunities, risks and challenges were identified.

- **Climate conditions place considerable stress on towns, communities, industries and ecosystems:**
  - Region has a naturally variable climate and modelling suggests periods between droughts could shorten.
  - Low inflows to Wyangala Dam.
  - Cowra and Forbes at a low risk of experiencing supply shortfalls.
  - Water security for towns and villages with single supply sources will be more challenging.
  - General security users could experience a decrease in average water availability.
  - Delivering water along the entire length of the Lachlan River will remain a challenge.
- **Review how we manage, use and deliver water to meet future challenges:**
  - Use new climate modelling to review water allocations and river operations.
  - Expansion in horticulture and mining developments is changing water use and demand patterns.
  - Growth is expected in the region's major centres.
  - Water reliability is critical to attract business and jobs.
- **Water is essential for Aboriginal people's health, wellbeing and connection to Country:**
  - Health of waterways impacts the wellbeing of the Traditional Owners and Custodians.
  - Provisions for accessing water for cultural purposes.
  - Improve Aboriginal people's involvement in water management.

- **Protecting critical environmental assets:**
  - Healthy water sources support the region’s environment.
  - The Lachlan catchment has significant wetlands and environmental assets.
  - The fish community is in poor health and some species are under threat.
  - Coordinated action and planning across the region should support environmental outcomes.
- **Better management of groundwater:**
  - Groundwater sources are critical for towns industries and ecosystems.
  - Groundwater levels in areas of concentrated use are in decline.
  - Sustainable access to groundwater resources by all water users.
  - More knowledge is needed about groundwater recharge rates.

**A) Do you have any comments on the opportunities, risks and challenges identified?**

**B) Are there any additional opportunities, risks and challenges that we should consider and what options could address these?**

## **8. Draft Lachlan Regional Water Strategy options**

We have developed a long list of options that could be included in the final Lachlan Regional Water Strategy. The options consider the opportunities and challenges facing the region and meet at least one regional water strategy objective.

The 48 options are grouped in different categories, being:

- Maintaining and diversifying water supplies.
- Protecting and enhancing natural ecosystems.
- Supporting water use efficiency and conservation.
- Strengthening community preparedness for climate extremes.
- Improving recognition of Aboriginal people’s water rights, interests and access to water.

Only feasible options will be progressed to the final strategy stage – following a rigorous assessment process. We are seeking your feedback to inform the options assessment process.

Draft options for the Lachlan Regional Water Strategy are outlined below.

### **Maintaining and diversifying water supplies**

1. Water transfer pipeline between Lake Rowlands and Carcoar Dam	6. Inter-regional connections project investigation
2. Wyangala Dam raising project	7. Water quality treatment works
3. Lake Rowlands augmentation	8. Managed aquifer recharge investigations and policy
4. Expansion to the piped town water supply system	9. Reuse, recycle and stormwater projects
5. Replacement and upgrade of existing pipelines	10. Reliable access to groundwater by towns

### **Protecting and enhancing natural ecosystems**

11. Cold water pollution mitigation measures	19. River Ranger Program
12. Environmental restoration works	20. Secure flows for water-dependent cultural sites
13. Improved management of wetlands on private land	21. Improved understanding of groundwater processes
14. NSW Fish Passage Strategy	22. Sustainable access to groundwater
15. Active management of flows	23. Improved clarity in managing groundwater resources sustainably
16. Water quality restoration works	
17. Floodplain management works	
18. Diversion screens to prevent fish extraction at pump offtakes	

### **Supporting water use and delivery efficiency**

24. Water efficiency projects (towns and industries)	28. Review of water trade in the Lachlan region
25. Lower Lachlan efficiency measures	29. Water pricing pilot study
26. Mid-Lachlan efficiency measures	30. Urban water restriction policy
27. Improvements to the storage effectiveness of Lake Cargelligo	31. The 'Sheet of Water' storage

### **Strengthening community preparedness for climate extremes**

32. Efficiency for drought security program	37. Training and information sharing programs: - new climate data / modelling - managing groundwater resources sustainably
33. Drought operation rules	
34. Review of water accounting and allocation process	38. Investigation to maintain amenity for regional towns during drought
35. Investigation of licence conversions	39. In-stream storage for the lower Lachlan
36. Improved data collection and storage	40. Land use change impact on water resources

## Improving recognition of Aboriginal people's water rights, interests and access to water

41. Culturally appropriate water knowledge program	45. Water portfolio project for Aboriginal communities
42. Water-dependent cultural practices and site identification project	46. Co-management investigation of Travelling Stock Reserves
43. Shared benefit project (environment and cultural outcomes)	47. Regional Aboriginal Water Advisory Committee
44. Aboriginal cultural water access licence review	48. Regional Cultural Water Officer employment program

### A) Which five (5) options do you think are ***most*** important?

Please list the option numbers in order of importance with the first option being most important

Option Number

Option Number

Option Number

Option Number

Option Number

### B) Please comment on why you think these options are most important?

### C) Which five (5) options do you think are ***least*** important (if any)?

Please list the option numbers in order of least importance with the first option being least important

Option Number

Option Number

Option Number

Option Number

Option Number

### D) Please comment on why you think these options are least important?

### E) Do you have any comments on the draft options?

## **9. Option combinations**

The option list provided in the draft strategy also identifies potential combinations of options. These combinations recognise that most options require associated works, further assessments and/or legislative, policy and planning changes to ensure they address the risks and challenges identified in the Lachlan region and do not have unintended impacts.

**A) Do you have any thoughts on how the options could be combined with other options?**

**B) Are there additional options that we should consider?**

## **10. Other comments**

**Do you have any other comments about the Lachlan Regional Water Strategy?**

## **11. How did you hear about the public exhibition of this strategy?**

We are interested to know how you heard about the opportunity to make a submission. Please indicate the communication methods below:

Newspaper

Radio

Department of Planning, Industry and Environment website

Direct email

Social media

Have your say NSW Government website

Communication from peak body

Other

## **12. Additional Information and submission process**

If you would like to provide any supporting documents to help us understand your view, please either, email these from the same email you provided in this form, or attach supporting documents to this form if you are returning your submission by mail.

All submissions on the draft Lachlan Regional Water Strategy will be reviewed following the public exhibition period. Further targeted engagement will be undertaken along with the final phase of stakeholder engagement later in the year to review the final documents.



**Please email your completed submission and supporting documents to [regionalwater.strategies@dpi.nsw.gov.au](mailto:regionalwater.strategies@dpi.nsw.gov.au)**



**or post to Regional Water Strategies, Department of Planning, Industry and Environment, Locked Bag 5022, Parramatta NSW 2124 by 13 November, 2020.**



Further details on all regional water strategies can be found on our website <https://www.dpie.nsw.gov.au/regional-water-strategies>

**Thank you for your submission.**

## **Extracted answers from fillable form above:**

### Question 7B.

There is an opportunity with the increase in capture volume of Wyangla Dam longer term to assess the ratio or percentage of General Security / High Security / Town Water entitlements based on the increased security of the system. The higher proportion of available High Security entitlements will assist with driving a higher value output from available water while driving water efficiency based on a higher value placed upon water.

There is an opportunity to explore aquifer storage as a means of offsetting the long-term reduced groundwater recharge due to additional capture of large events by the new dam capacity.

### Question 8B.

To support regional prosperity and growth, access to a diversified, efficient and resilient water portfolio is required by towns in the Valley. As such options 2 and 4 support this through additional capture and long-term security improvement based upon Wyangla Dam upgrade and the efficiency of use of both surface and groundwater supplies will be enhanced by expanding the town supply raw water trunk main networks to from localised grids supplying water variously between towns depending on the current conditions. Sustainable access to groundwater is required to support towns during long-term restriction of surface water (22) and licence conversion is the obvious response to increased security of supply offered by the Wyangla Dam upgrade (35)



**Parkes Shire Council**

# **Project Brief for the Lachlan Pipeline Duplication Project**

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# 1. Background

Current supply constraints exist between the Lachlan River surface water extraction location, Lachlan River borefield (PSC and NPM) and the users of the raw water, namely the Parkes Water Treatment Plant (Parkes and Peak Hill townships) and Church St Reservoir / High Street Pump Station (Northparkes Mine). The current infrastructure used to facilitate the transfer of raw water includes a 375mm Mild Steel Concrete Lined pipe (MSCL) constructed in 1967 and a 375mm Ductile Iron Concrete Lined pipe (DACL) constructed in 1993. Associated infrastructure includes key pump stations at Eugowra Rd and Back Yamma Rd with associated mechanical and electrical infrastructure, the construction dates of these vary from 1967 through to 2005, 8 bores variously owned by Parkes Shire Council and Northparkes Mine and a recently constructed (2017) River intake structure with associated mechanical and electrical infrastructure.

Historically, the pipelines were designed to meet an average 70 L/s (6 ML/d) demand for the mine and the residual (160 L/s, 14 ML/d) for the Parkes and Peak Hill water supply. With the expected 21 year mine life, the additional 70 L/s available when the mine was to cease operation would be available to meet additional demand for the growth of Parkes. Variably, the mine has used up to 120 L/s and an average of 95 L/s most of its operational life. As new deposits have been variously found and developed by the mine, the current end of mine life is 2030. Northparkes Mine have indicated that due to lowering ore grades and other factors, an increase of production is required over the next 10 years, requiring an average of 120 L/s (10 ML/d) with a peak consumption of up to 150 L/s (13 ML/d). Adding to this demand will be the additional water needs of the new Parkes Special Activation Precinct, projected to require 200 L/s (17 ML/d) by the year 2040, as well as additional water for the expected growth of Parkes due to both of these projects.

# 2. Project documentation

Work commenced on the development of a new strategic project/s for the increase of water supply to Parkes from both the Lachlan River and Lachlan Borefield in 2018. The new Parkes Water Treatment Plant (WTP) was commissioned early in 2018 (capacity 180 L/s or 16ML/d) following the commissioning of the new Lachlan River Intake (2017) and construction of Northparkes Mine owned Bore 8. The capacity of the WTP was designed based on the future demand for water from the Parkes and Peak Hill users, however, demand in the first year of operation far exceeded expectations due to worsening drought conditions.

During the 2017/18 year, the NSW Department of Planning, Industry and Environment (Water) announced a new funding program for water and sewer projects for NSW Local Water Utilities (LWU) known as the Safe and Secure Program. This program set aside \$1B for water quality and water security related projects. In order to be eligible for funding, the LWU must undertake an INSW (Infrastructure NSW) Business Case for the project, undertaking engineering investigation and design activities, development of P90 budget estimates, undertake environmental assessment and approvals and an economic appraisal of the costs and benefits of the project. Parkes Shire Council (PSC) was successful in gaining funding of \$1M through an EOI process, which it matched with an additional \$1M to undertake a \$2M Business Case for further funding. The EOI economic assessment and project appreciation are included in **Appendix A**. Documents variously developed for the EOI submission and previously undertaken which underscore the project development include:

- IWCMB Briefing Paper (Reid Environmental);
- IWCMB Issues Paper (Reid Environmental);
- Water Supply Scheme Strategy Paper (Cardno);
- Water Balance Memo (GHD);



- Hydrology & Hydrogeological Report (GHD);
- RWRM Water Balance Assessment July 2018 (GHD);
- Raw Water Quality results for Bores, River and Dam supplies 2017/2018 (PSC);
- Parkes Water Treatment Plant Preliminary Design Report August 2015 (Hunter H2O);
- Strategic Business Plan for Water Supply and Sewerage February 2014 (PSC);
- Climate Change Risk Assessment February 2017 (AECOM);
- PSC Remote Outstations Mechanical, Instrumentation and Control Review Church Street Reservoir/High Street Pump Station March 2017 (Hunter H2O);
- Prioritisation of Raw Water Main Renewals (Borefields and Dams Pipelines): Stage 1 Report - June 2015 (Collaborative Planning and Engineering Associates);
- Drawings, P&ID's, Aerial Photography, Locality & Topography Maps, Telemetry schematics (PSC);
- Parkes-Peak Hill Raw Water Supply Scheme Operations Strategy Report November 2018 (CARAS);
- Parkes Town Water Security Program – Environment and Planning Approvals Roadmap November 2018 (TEF)

Engineering project development and options assessment reports have subsequently been undertaken to determine the “right-size” and included sub-components of the project in order to meet the expected outcomes for Parkes, Northparkes Mine and the Special Activation Precinct. Additional documents are currently being prepared that are required for input into the final Business Case including the economical assessment (Benefit Cost Analysis), hydrological modelling to demonstrate the sustainability of the borefield and hydraulic and bulk water modelling to demonstrate the efficacy of the option and meet the modelling requirements and statistical improvements in water security required by the funding body. These documents include:

- Northparkes Mines - Parkes water supply system Hydraulic model and options assessment February 2020 (GHD on behalf of CMOC Mining Pty Ltd);
- Lachlan River Pre-Treatment Scoping Study June 2020 (HH2O);
- Parkes Town Water Security Program July 2020 (GHD);
- Lachlan Pipeline Duplication Engineering Design Constraints memo November 2020 (GHD);
- Eugowra Road Pump Station to Parkes WTP upgrade draft design plans November 2020 (GHD);

### 3. Project Description

The project will involve the duplication of the existing DN375 DICL pipeline (c. 1993) with a DN450 pipeline of varying material type, including HDPE PN100 and DICL, due to the combination of design pipe pressures, required thrust block designs and poor capacity of the surrounding soil in some locations. Pump stations at Eugowra Road and Akuna Road will be required to lift water to the target locations, including all required electrical upgrades and communication equipment, a pre-treatment facility at the Lachlan River Pump Station (LRPS) and a duplication of the screened intake on the LRPS. A new raw water dam at the Parkes WTP will provide system storage to optimise pumped times through the scheme and take advantage of installed and future installed solar generation as well as off-peak energy pricing.

#### Lachlan River Pump Station Augmentation

The LRPS was commissioned in 2017 and was designed with a flow rate of 140 L/s, boosted to 180 L/s, to extract surface water from the Lachlan River for Parkes Shire Council and Northparkes Mine use, variously under separately owned extraction licenses. The LRPS was designed with the ability to duplicate the screen and intake into the wet well with capacity for additional pumps for future. In order to access the



volumes of water required from the river with the new pipeline, this augmentation is proposed to occur in line with the larger project at an estimated cost of **\$1.265M**. The benefit of this component of the project is to provide the ability to preferentially extract higher volumes of river water when available to meet total demand, allowing the borefield to be rested during times of draw down.

### **LRPS Pre-Treatment Facility**

Records indicate the Lachlan River surface water has a turbidity of above 80 Ntu for more than 30% of the time. When water is this dirty, Northparkes Mine have indicated that the treatment plant used to treat water on site to a potable standard can't achieve the required turbidity reduction to make chlorination of the water effective. As such, during these periods, bore water is extracted as the only available source. Installation of a pre-treatment facility post-extraction from the river, will allow river water to be utilised at rate exceeding 90%. The value of this component of the project is **\$3.665M**.

### **Eugowra Road Pump Station and trunk main**

The existing system utilises a pump station building on the Eugowra Road adjacent to the Lachlan borefield. Initial assessments indicate that the capacity of this building is not sufficient to house the additional pump/s, pipework and electrical infrastructure required for the duplicate trunk main. A new location adjacent to the LRPS and pre-treatment facility has been chosen, approximately 400m from the existing pump station site. The new trunk main will commence at this pump station, will traverse across to the older pump station site and follow the route of the existing DN375 pipe. The length of this section of trunk main will be approximately 29km. The combined cost of the pump station, balance tank, pipe and associated fittings and thrust blocks will be **\$31.11M**

### **Akuna Road Pump Station and trunk main**

An interstage lift station is required due to the total static lift of the water, in order to keep pipe pressures at a manageable level. The optimum location for the pump station after various options were considered, is on PSC owned land adjacent to the existing PSC Wastewater Treatment facility on Akuna Road on the southern side of the Parkes urban area. This will assist in consolidating operations for a decrease operational cost, as well as utilise electrical upgrades and installed solar constructed at the new Wastewater site. The new pump station, balance tank, pipe and associated fittings and thrust blocks will be **\$11.205M**.

### **Parkes WTP Raw Water Dam**

Operation of the WTP has been optimised through installation of solar and automation equipment to produce water at the lowest cost. The raw water transfer system was originally designed to be optimised to produce water during off-peak tariff periods to produce the lowest cost water. These two operational approaches are at odds with each other such that optimisation of the entire system is not achievable. The installation of the raw water dam will provide a storage point within the raw water network such that the pumping of raw water can be optimised to the lowest cost and water can then be stored and extracted by the plant as required during the day-time period, when energy is cheapest due to the large amount of installed solar.

The additional benefit of this component is that water stored in the dam will gravitate to Northparkes via the Goonumbla Booster Pump. No further analysis of this has been undertaken, however, it will be pursued as there could be an operational benefit to both PSC and Northparkes including the decommissioning of the current Church Street reservoir and High Street Pump Station which are located centrally in the town. The cost of this component is estimated to be **\$2.47M**.



The various pipeline routes that were assessed are shown in Figure 1 below.



Figure 1. Pipeline options for the Lachlan Pipeline duplicate route

The draft concept drawings are shown extracted in **Appendix B** for further detail.

## 4. Project Estimates

In order to determine the current estimates, figures from previous Parkes Shire Council projects have been utilised as well as from both the Department of Planning, Industry and Environment's annually indexed Reference Rates and Construction Rates for NSW LWU's as well as Rawlinson's 2020 Construction Cost Guide. These rates have been further refined through engagement with the major pipe supply companies and with a number of Tier 2 specialised civil pipe construction companies. This has been undertaken via an industry RFI process such that each company has presented to PSC their construction methodologies, case studies from recently completed projects and financials from these projects.

The estimates for the final Business Case submission are required to be a P90 estimate and based on the Commonwealth Department of Infrastructure, Regional Development and Cities's Guidance Note 3A Probabilistic Contingency Estimation. The current budget estimates have been run through the @Risk software tool such that the Broad-Brush Risk Assessment undertaken for the project has been linked to the work breakdown structure and contingency items. The Monte Carlo analysis required for the contingency estimation and P90 estimate is currently being undertaken by a third party.

The current estimate for the works is as follows:



<b>Component</b>	<b>Item</b>	<b>Amount</b>
Lachlan River Pump Station Augmentation	Additional inlet screen + pump	\$687,500
	Pipeline augmentation to Eugowra Road Pump Station	\$408,100
	Pipe fittings and valving	\$40,810
	Flow meter	\$41,250
	SCADA / Control / Telemetry	\$88,325
	<b>Total</b>	<b>\$1,265,985</b>
Lachlan River Pump Station Pre-treatment Plant	Pre-treatment process infrastructure	\$3,599,375
	SCADA / Control / Telemetry	\$65,000
	<b>Total</b>	<b>\$3,664,375</b>
Eugowra Road Pump Station	Reservoir (1ML capacity)	\$2,112,902
	Pump Station	\$1,064,238
	Pipeline augmentation to Akuna Road Pump Station	\$24,891,062
	Pipe fittings and valving	\$2,489,106
	SCADA / Control / Telemetry	\$551,825
	<b>Total</b>	<b>\$31,109,133</b>
Akuna Road Pump Station	Reservoir (1ML capacity)	\$2,112,902
	Pump Station	\$1,064,238
	PV augmentation	\$1,218,250
	Pipeline augmentation to Akuna Road Pump Station	\$6,008,187
	Pipe fittings and valving	\$600,818
	SCADA / Control / Telemetry	\$198,725
	<b>Total</b>	<b>\$11,203,120</b>
Parkes WTP Raw Water Dam	Raw Water Dam	\$2,422,656
	SCADA / Control / Telemetry	\$43,750.00
	<b>Total</b>	<b>\$2,466,406</b>
	<b>Total Direct Cost</b>	<b>\$49,709,022</b>
	<b>EPCM</b>	<b>\$4,970,902</b>
	<b>TOTAL</b>	<b>\$54,679,924</b>

