



Annual Water Outlook

Urban & Rural

November 2023

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Acknowledgement of Country

We respectfully acknowledge Aboriginal and Torres Strait Islander peoples as the Traditional Owners and custodians of the land and water on which all Australians rely. We pay our respects to Djaara, Taungurung, Yorta Yorta, Barapa Barapa, their Elders past, present and future, as Traditional Owners and the custodians of the land and water on which we operate and rely.

We acknowledge and respect the continued cultural, social and spiritual connections of all Aboriginal Victorians. We also acknowledge the broader Aboriginal and Torres Strait Islander community and their connections with lands and waters and recognise and value their inherent responsibility to care for and protect them for thousands of generations.

We acknowledge Aboriginal Victorians as Traditional Owners and, in the spirit of reconciliation, we remain committed to working in partnership with Traditional Owners to ensure meaningful, ongoing contributions to the future of land and water management. We commit to empower Aboriginal peoples, wherever our actions impact their lives, by firstly coming to them. We will not form a view until we have heard their view. We will ensure that the aspirations of Aboriginal peoples are embedded in our business. We recognise we have much work to do to make this a reality.

Executive Summary

Our current water resource position is very good with our storages at capacity; but we are preparing for forecast drier conditions to secure future water supplies.

While rainfall has been below average over the past few months, we received good inflows to our reservoirs during June and July that filled them to capacity.

We have received 100% allocation for all our water sources except the Wimmera-Mallee Pipeline (81%), and we carried over unused allocation from 2022/23.

Given the current strong resource position the likelihood of restrictions is rare to very rare over the next 12 months, noting that there are risks such as asset failure or water quality issues that could result in the need to manage demand (Table 1).

Table 1 Water Supply System likelihood of restrictions

Water Supply System	Towns supplied	Primary source of supply	Likelihood of restrictions
Campaspe	Goornong	Campaspe River	Very Rare
Coliban Northern	Bendigo, Axedale, Huntly, Marong, Raywood, Sebastian, Heathcote, Tooborac	Lake Eppalock Coliban River reservoirs	Very Rare
Coliban Southern	Castlemaine, Harcourt, Taradale, Elphinstone, Fryerstown, Chewton, Campbells Creek, Guildford, Newstead, Maldon, Kyneton, Malmesbury, Tylden	Coliban River reservoirs	Very Rare
Elmore	Elmore	Groundwater	Very Rare
Goulburn	Rochester, Lockington, Serpentine, Pyramid Hill, Boort, (Dingee, Mitiamo, Jarklin, Mysia, Macorna)	Waranga Western Channel	Very Rare
Loddon - Wimmera	Bridgewater, Inglewood, Laanecoorie, Tarnagulla, Bealiba, Dunolly, Korong Vale, Wedderburn (Borong, Wychitella)	South West Loddon Pipeline Loddon River	Very Rare
Murray	Echuca, Cohuna, Gunbower, Leitchville	Murray River	Rare
Trentham	Trentham	Spring fed reservoir	Rare

Permanent Water Saving Rules (PWSR) continue to apply in all water supply systems. In the rural systems, we have announced a 100% allocation for 2023/24.

Our Urban Water Strategy 2022 considers the key challenges of climate change and population growth and identifies the best mix of actions to provide water now and into the future. In 2022/23 we continued with programs to reduce demand including digital metering, leak identification and repair and promoting programs such as [Target Your Water Use](#), which is a Victorian Government water efficiency program for regional Victorian householders.

We have progressed key water security actions identified by the Minister including planning to increase Class A recycled water production at Bendigo to 1.5 GL/year, and investigations for a pipeline between our Murray and Goulburn water supply systems. In addition, we have undertaken the following works to improve water security:

- groundwater investigations at Kyneton where potential sites for urban supply have been identified
- purchase of water shares for the Murray and Coliban North water supply systems
- increased treated water storage capacity at Trentham, Echuca and Leitchville
- identified and assessed various options to link Castlemaine with the Coliban Northern System
- commenced the development of a detailed business case for rural modernisation

1 Introduction

1.1 Purpose

This Annual Water Outlook has been prepared, as required under the Statement of Obligations (2015), and in accordance with guidelines issued by the Department of Energy, Environment and Climate Action, to provide information on:

- a) the current water resource position;
- b) a forward outlook for water resources over the coming year under a range of plausible climatic scenarios;
- c) whether agreed levels of service will be met under these climatic scenarios; and
- d) if not, what actions will be undertaken to improve system performance so that these agreed levels of service can be met.

The aim of the Annual Water Outlook is to keep customers, stakeholders and the community informed about the current and projected 12-month status of water supplies, including any contingency plans for responding to potential water shortages.

1.2 Coliban Water

Coliban Water provides water and wastewater services to 49 towns in North-Central Victoria, extending from Cohuna and Echuca in the north to Kyneton and Trentham in the south, and from Boort, Wedderburn, Bealiba and Dunolly in the west to Heathcote and Tooborac in the east (Figure 1). At 30 June 2023 there were 80,865 water connections.

We also supply untreated water to over 1,300 customers on our rural system that are licensed to extract up to 15,742 megalitres (ML).

We manage a number of water supply systems, each defined by their primary water source, namely:

- Campaspe
- Coliban Northern
- Coliban Southern
- Elmore
- Goulburn
- Loddon Wimmera
- Murray
- Trentham

In some cases, there are multiple water sources that supply a system as part of the Victorian water grid, which connects water sources via pipelines, channels and rivers.



Figure 1 Coliban Water region

2 Water Resource Position

2.1. Rainfall

Rainfall received at Malmsbury Reservoir is representative of rainfall trends in the Coliban catchment that result in inflows to our major storages on the Coliban River. Rainfall received at Malmsbury Reservoir for 2022/23 was 1,089 mm, which is significantly greater than the post-1975 climate reference period median of 711 mm (Figure 2).

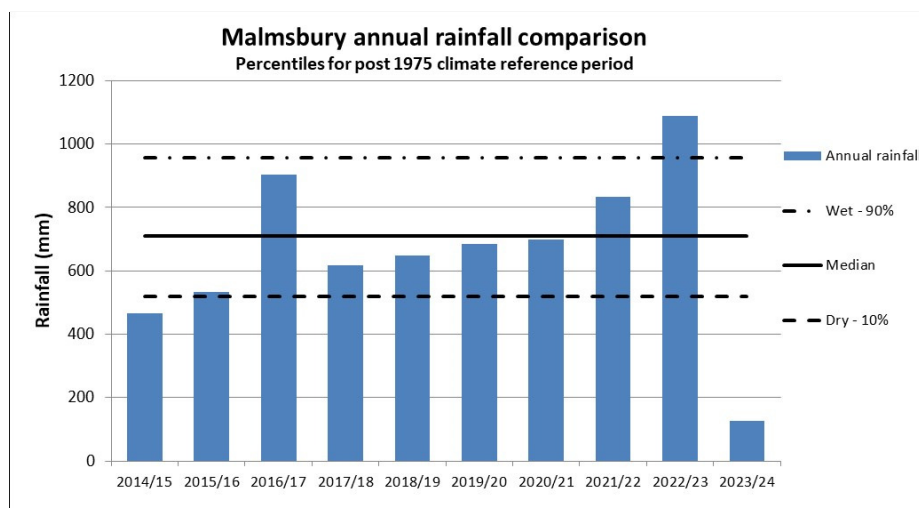


Figure 2 Annual Rainfall received at Malmsbury Reservoir compared to post-1975 climate reference period

In comparison we have received 127 mm of rainfall at Malmsbury Reservoir to date in 2023/24, which is below average (Figure 3). Winter and spring rainfall can provide good inflows to our reservoirs, and summer and autumn rainfall can dampen demand.

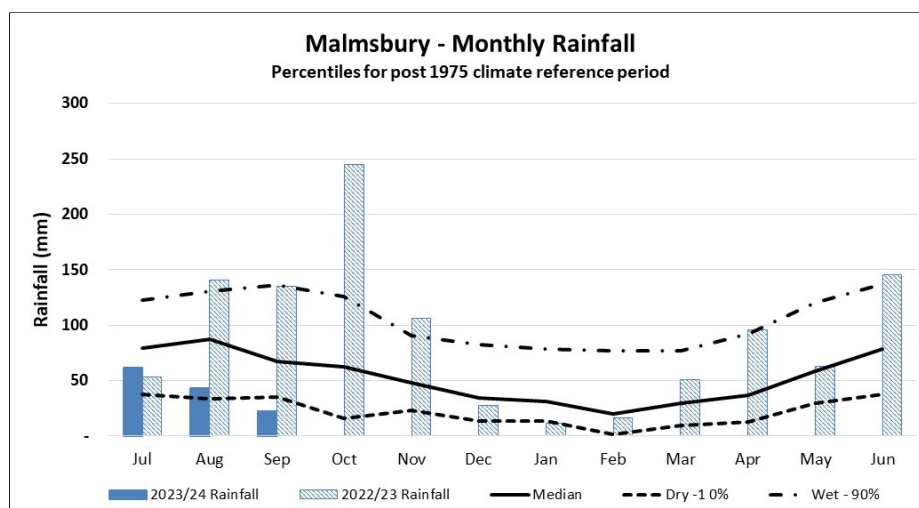


Figure 3 Monthly rainfall at Malmsbury Reservoir compared to average monthly rainfall for post-1975 historic climate reference period

2.2. Storage inflows

Inflows to the Coliban Headwork Storages (comprising the Upper Coliban, Lauriston and Malmsbury Reservoirs) during 2022/23 was 138,535 ML. This is well above the median inflow (48,026 ML) for the post-1975 historic climate reference period (Figure 4).

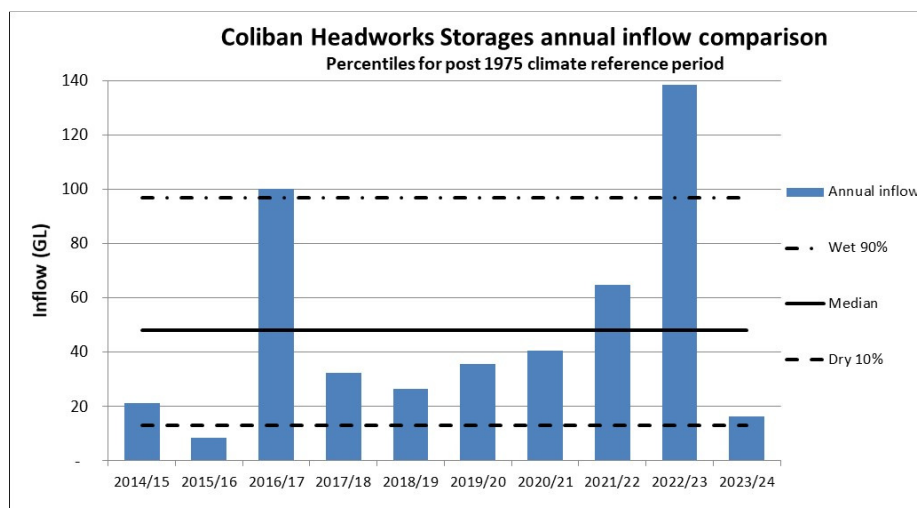


Figure 4 Annual inflows to the Coliban Headwork Storages compared to post-1975 historic climatic reference period

We have already had over 16 GL of inflow to the Coliban Headwork Storages to date in 2023/24, with good inflows received in July following high rainfall in late 2022/23 (Figure 5). Most inflows are typically received between July and October.

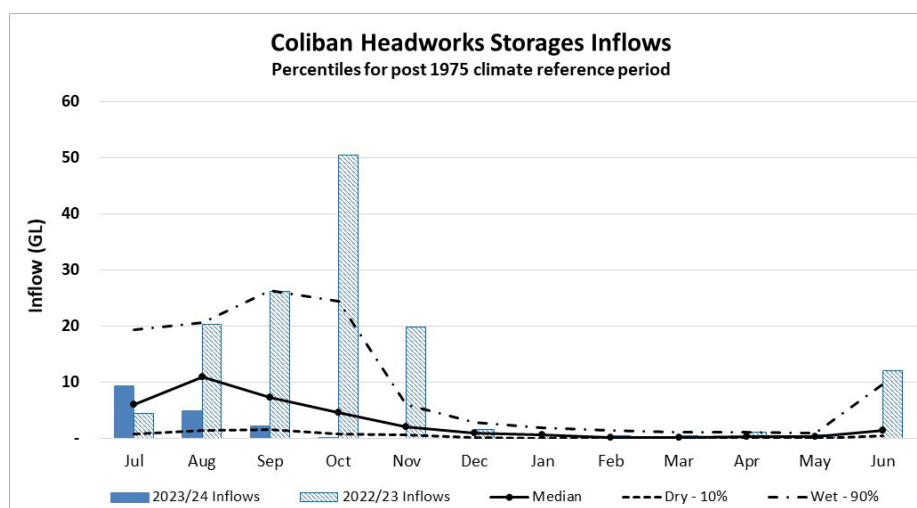


Figure 5 Monthly inflows to the Coliban Headwork Storages compared to the post-1975 historic climatic reference period

2.3. Storage volume

The Coliban Headwork Storages (comprising the Upper Coliban, Lauriston and Malmsbury Reservoirs) and Coliban Water's share of Lake Eppalock filled to capacity in spring 2022. The Coliban Headwork Storages were drawn down to 79% of capacity (55 GL); and the Coliban Water's share of Lake Eppalock was drawn down to 93% of capacity (51 GL) during 2022/23 (Figure 6). Good inflows received to date in 2023/24 have again filled the reservoirs to capacity.

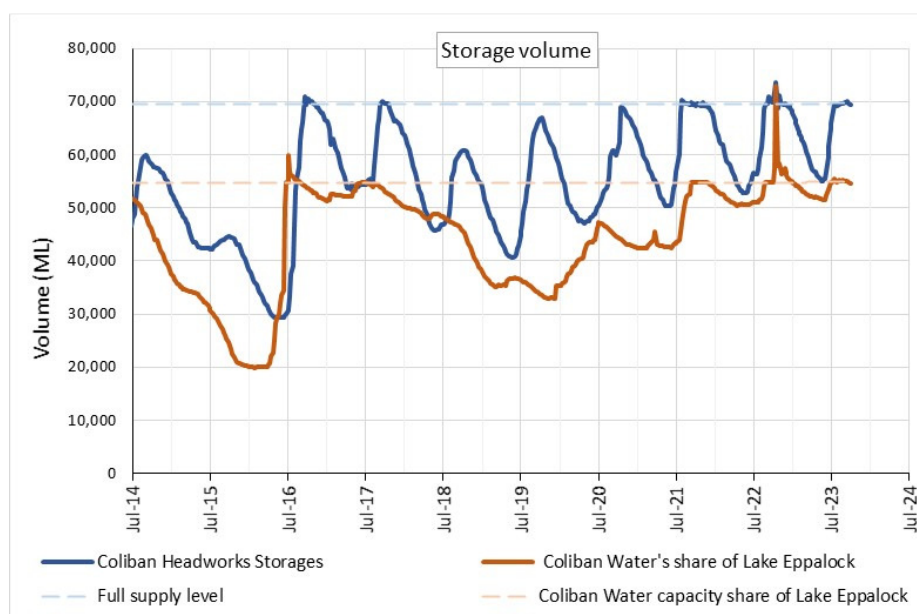


Figure 6 Combined storage volume in the Coliban Headwork Storages and Coliban Water Share of Lake Eppalock

The total volume held in storage on 1 October 2023 was 129,743 ML, which is near capacity (Table 2). Reservoir level information can be found at: <https://coliban.com.au/about-us/our-reservoirs>

Table 2 Coliban Water storage volume

Storage	Capacity (ML)	1 October 2023 (ML)	% Capacity
Upper Coliban	37,770 ML	37,811	100%
Lauriston	19,790 ML	19,610	99%
Malmsbury	12,034 ML	11,971	100%
Sub-total	69,594 ML	69,392	100%
Lake Eppalock	54,837 ML	54,568	100%
Barkers Creek	1,690 ML	1,650	98%
McCay	1,360 ML	996	73%
Caledonia	214 ML	145	68%
Sandhurst	2,590 ML	1,417	55%
Spring Gully	1,680 ML	1,485	88%
Trentham 1 & 2	90 ML	90	100%
Total	132,055 ML	129,743	98%

2.4. Water entitlements

Our water holdings include Bulk Entitlements, High Reliability Water Shares, Low Reliability Water Shares, Water Allowances, and licenses to take and use groundwater. These entitlements can be subject to allocations, carryover, trade and risk of spill. The total supply to all our water supply systems on 1 October 2023 was 165,581 ML (Appendix A).

Allocations

Allocations vary between water sources and the type of entitlement. Allocations can increase progressively throughout the year as the resource position improves. Initial allocations in 2023/24 were relatively high compared to recent years and have improved with inflows over winter and spring. Allocations of 100% have been announced in all systems, except the Wimmera Mallee Pipeline, which has an allocation of 81%. Low reliability water shares in the Campaspe System have also received an allocation of 65% this year.

Carryover and trade

We can carryover in all of our water supply systems except the Coliban Southern and Trentham Systems. We carried over 23,051 ML into 2023/24 to ensure that our reserve rules were satisfied and for trade.

We plan to carryover sufficient volume so that, when combined with allocations and storage volumes, we shall have sufficient reserves to meet demands in the following year.

We have entitlements in a number of different water markets and can trade between water supply systems to secure supply. Where the allocation volumes are in excess of water required to meet our level of service obligations, or there is a water shortage, there is an opportunity to trade externally.

Risk of spill

Where we hold greater than 100% of surface water entitlement due to carryover the volume is quarantined in a spillable water account until the Resource Manager declares a low risk of spill, or the storage spills.

All major storages across northern Victoria are near capacity or being managed to maintain airspace and there will be deductions from spillable water accounts in 2023/24.

3 Climate outlook

3.1 Seasonal rainfall and temperature outlooks

The Bureau of Meteorology climate outlook suggests that it is going to be warmer and drier than average over the coming months (Figure 7 and Figure 8).



Figure 7 Chance of above median maximum temperature for October 2023 to December 2023

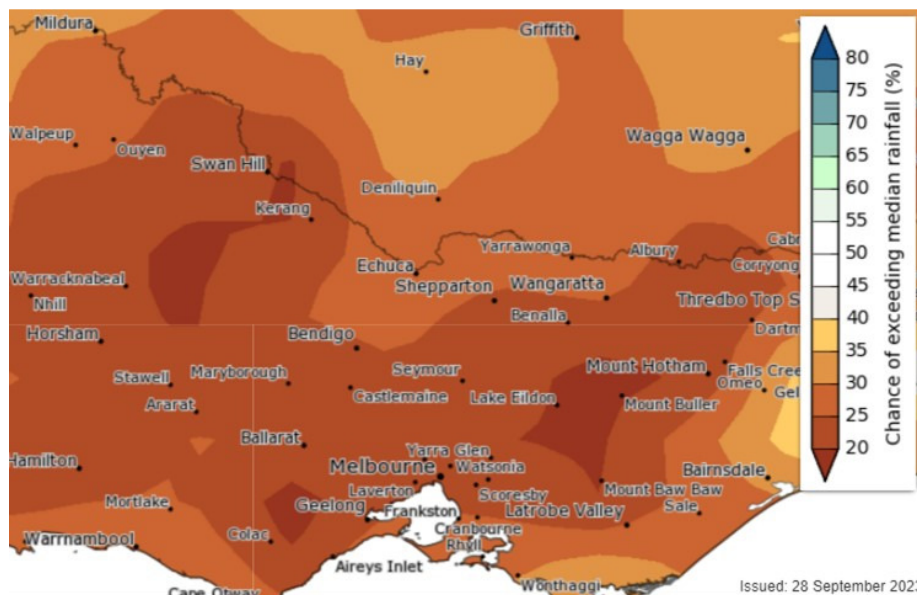


Figure 8 Chance of above median rainfall for October 2023 to December 2023

The [Bureau of Meteorology climate driver update](#) (accessed 2 October 2023) report that:

- the El Niño–Southern Oscillation (ENSO) indicates that an El Niño event is underway, which typically leads to reduced spring and early summer rainfall for eastern Australia.
- a positive Indian Ocean Dipole (IOD) event is underway and will persist to at least the end of spring. A positive IOD typically leads to reduced spring rainfall for central and south-east Australia.

- when a positive IOD and El Niño occur together, their drying effect is typically stronger and more widespread across Australia.

3.2 Victorian climate and streamflow in the longer-term context

Victoria's climate and streamflow is highly variable, but within this variability we have experienced a warming and drying trend over recent decades.

Over recent decades we have experienced trends toward:

- higher temperatures and more hot days;
- reductions in rainfall during the cooler months;
- in some locations, increases in extreme, short-duration rainfall events; and
- in some catchments, particularly in western Victoria, a shift in the streamflow response to rainfall with typically less streamflow generated for a given amount of rain.

Some of the rainfall declines in the cooler months can be attributed to increases in greenhouse gas concentrations in the atmosphere. During the cooler months, we have been getting less rainfall from low-pressure and frontal systems.

Over future decades we can expect:

- the rainfall reductions during the cooler months to persist;
- increases in extreme rainfall events;
- increases in potential evapotranspiration due to higher temperature and lower relative humidity;
- reductions in streamflow because of less rainfall and higher potential evapotranspiration; and
- the streamflow response to rainfall to no longer remain the same, and generally decline.

Victoria's climate will continue to be variable with wet years and dry years, against a background drying trend. With a warmer future and projections of declining water availability, we can expect more frequent and severe droughts in coming decades and increases in extreme rainfall events.

The Victorian Government is investing in further research to better understand how Victoria's climate is changing and the water resource implications, through the Victorian Water and Climate Initiative. More information on the observed changes and longer-term future climate and water projections can be found at:

<https://www.water.vic.gov.au/climate-change>

4 Water supply outlook

4.1 Forecasts

The likelihood of restrictions over the next 12 months is informed by the current resource position, the climate outlook, forecast supply (i.e., future inflows, allocations) and demands and other risks (i.e., water quality or asset failure). It is assessed as being either very rare, rare, unlikely, possible, likely or almost certain.

The current water resource position is very strong. Our storages are at capacity, and we have received 100% allocations in all systems except the Wimmera-Mallee Pipeline (81%) (Appendix A). Further, major storages in the regulated Campaspe (Lake Eppalock), Murray (Dartmouth and Hume) and Goulburn (Lake Eildon) Systems are above 90% capacity.

Forecast inflows are based on average (50th percentile), dry (10th percentile) and worst annual inflow on record for the Coliban Headwork Storages, Lake Eppalock and Trentham Reservoirs (Table 3).

Table 3 Inflows

Reservoirs	Average inflow (ML)	Dry inflow (ML)	Worst inflow (ML)
Coliban Headwork Storages (1975-2022)	48,026	13,180	3,672 in 2006/07
Lake Eppalock (1999-2022)	9,898	2,526	588 in 2006/07
Trentham (calculated)	120	96	72

Forecast allocations are provided by the [Northern Victorian Resource Manager](#) for the Campaspe, Goulburn, Loddon, and Murray regulated systems; and the [Grampians Wimmera Mallee Water Storage Manager](#) for the Wimmera-Mallee Pipeline in the current water year. Forecast allocations for 2024/25 are not available until February 2024. In the absence of this information allocations are assumed based on the current water resource position, reservoir levels, and information provided by the resource manager (Table 4).

Given the resource position, for average conditions we can expect high allocations in 2024/25. For dry conditions, reduced allocations have been assumed in each system representing a shift from a wet to a dry year. The lowest allocation on record has been adopted to represent the worst case.

Table 4 Forecast allocations

Source	2023/24 forecast allocation 2023		2024/25 estimated allocation		Worst case
	Average	Dry	Average	Dry	
Campaspe	100%	100%	100%	30%	0% in 2006/07
Goulburn & Loddon	100%	100%	100%	70%	29% in 2006/07
Murray	100%	100%	100%	90%	35% in 2008/09
Wimmera-Mallee Pipeline	100%	86%	50%	30%	16% in 2015/16
Lower Campaspe Valley	100%	100%	75%	50%	50%
Central Victorian Mineral Springs	100%	100%	100%	100%	100%

Demand is estimated as the 3-year average demand. For dry and worst-case scenarios, demand is estimated to increase by around 20%.

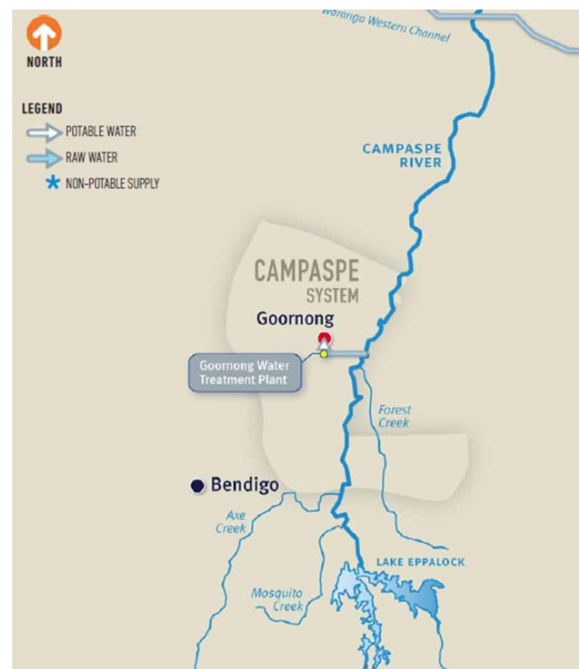
The water supply outlook and likelihood of restrictions is assessed for each water supply system in the following sections.

4.2 Campaspe System

Towns supplied:	Goornong
Water connections:	198
Approx. Population:	650
Water Sources:	Campaspe River

Flows in the Campaspe River are managed by Goulbourn-Murray Water with releases from Lake Eppalock.

We receive a minimum 50% allocation under our bulk entitlement, which is sufficient to meet system demands.

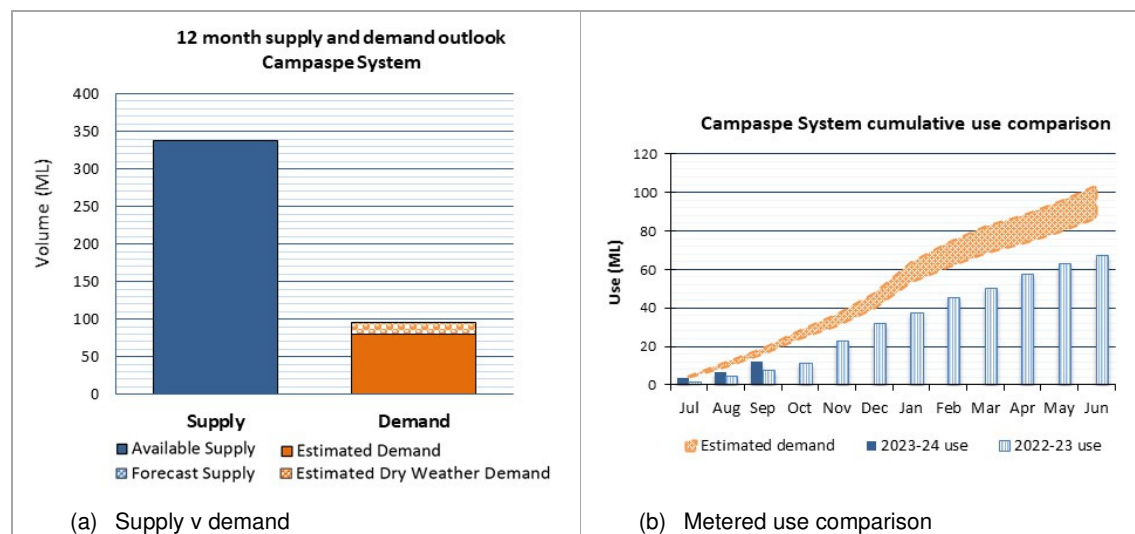


Water resource position 1 October 2023

Available water	Forecast supply	Average annual demand	Available supply	Current water restrictions
337 ML	337 ML	74	>12 months	Permanent water saving rules apply

Refer to Appendix A for detailed information on entitlements and allocations. Forecast supply is the available water plus anticipated further allocations. We aim to maintain 12 months' supply in the Campaspe System before restrictions may be triggered.

Each month, we post a [water summary](#) on our website to provide an update on the water resource position.



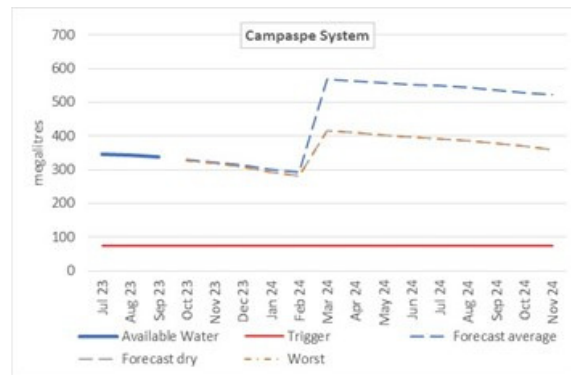
Water outlook

Our current water resource position is very strong with allocations of 100% of entitlement.

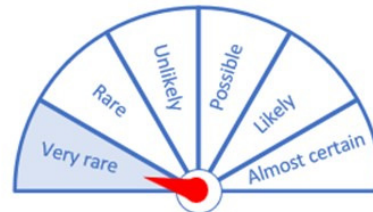
The Bureau of Meteorology climate outlook and long-range forecasts suggest that conditions are going to be drier than average over the coming months.

Our water supply outlook suggests that, even under worst conditions, we will have greater than 12 months' supply over the coming year.

Water Supply Outlook



The likelihood of restrictions is assessed as very rare. It is noted that there are risks such as asset failure or water quality issues that could result in the need to manage demand.



Likelihood of Restrictions

Action Plan

Progress against water resource actions outlined in our [Urban Water Strategy 2022](#):

Action	Progress	Status
Investigate groundwater as a source for Goornong	We undertook a desktop hydrogeological investigation and a groundwater sampling program to identify the best sites for drilling. We installed a bore and identified a high yielding aquifer, but the water salinity was marginal. No further work is proposed at this time.	Complete Nov 2022
Investigate demand initiatives such as water efficiency measures and leak detection to reduce non-revenue water	We continued with programs to reduce demand including digital metering, leak identification and repair and promoting programs such as Target Your Water Use initiative, which is a Victorian Government water efficiency program for regional Victorian householders. It offers advice and activities to encourage the efficient use of water.	Ongoing

4.3 Coliban Northern System

Towns supplied:	Bendigo, Axedale, Huntly, Raywood, Sebastian, Heathcote, Tooborac
Water connections:	50,614
Approx. Population:	124,000
Rural customers:	683
Rural licence volume:	5,462 ML
Water Sources:	Coliban Headwork Storages Lake Eppalock Waranga Western Channel



Heathcote and Tooborac are typically supplied from Lake Eppalock. We take water from Malsbury Reservoir via the Coliban Main Channel to supply Bendigo and surrounding towns when there is sufficient supply. We change the source of supply to Lake Eppalock when necessary to maintain reserves in the Coliban River reservoirs for the Coliban Southern System. We may also source water from the Waranga Western Channel, which is managed by Goulburn-Murray Water, via the Goldfields Superpipe if necessary.

Water resource position 1 October 2023

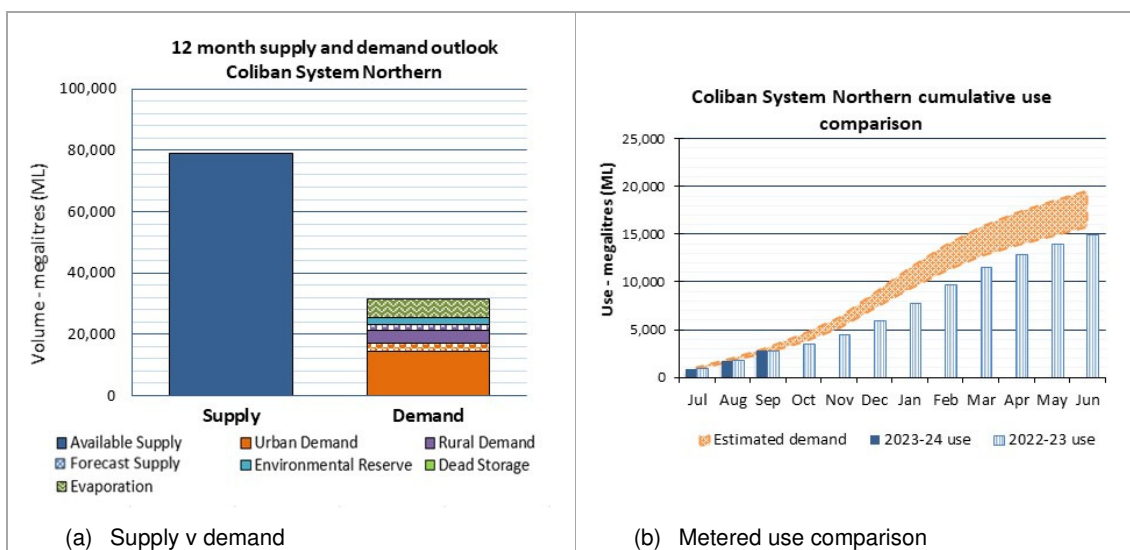
Available water	Forecast supply	Average annual demand	Available supply	Current water restrictions
70,194 ML	70,194 ML	25,039	>12 months	Permanent water saving rules apply

Forecast supply is the available water plus anticipated further inflows (within reservoir capacity limits) and allocations. Refer to Appendix A for detailed information on entitlements and allocations.

The average annual total demand is 25,039 ML which includes system losses (i.e. evaporation and delivery), passing flows, rural and urban use. We aim to maintain 12 months' supply in the Coliban Northern System before restrictions may be triggered.

Our rural customers have access to 100% of their licence volume in 2023/24.

Each month, we post a [water summary](#) on our website to provide an update on the water resource position.



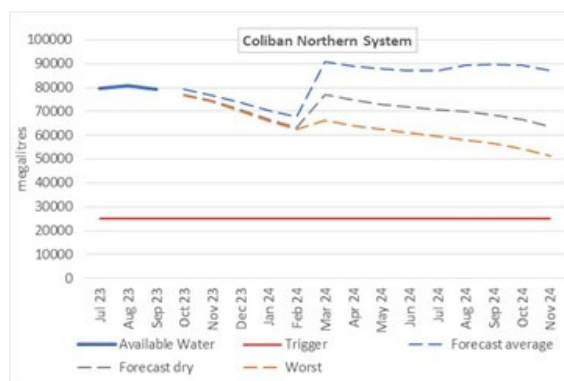
Water outlook

Our current water resource position is very strong with allocations of 100% of entitlement and our share of Lake Eppalock at capacity.

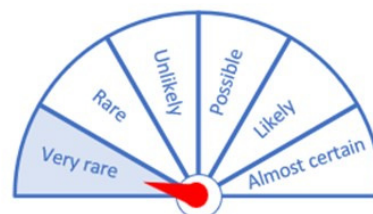
The Bureau of Meteorology climate outlook and long-range forecasts suggest that conditions are going to be drier than average over the coming months.

Our water supply outlook suggests that, even under worst conditions, we will have greater than 12 months' supply over the coming year.

Water Supply Outlook



The probability of restrictions is assessed as very rare. It is noted that there are risks such as asset failure or water quality issues that could result in the need to manage demand.



Likelihood of Restrictions

Action Plan

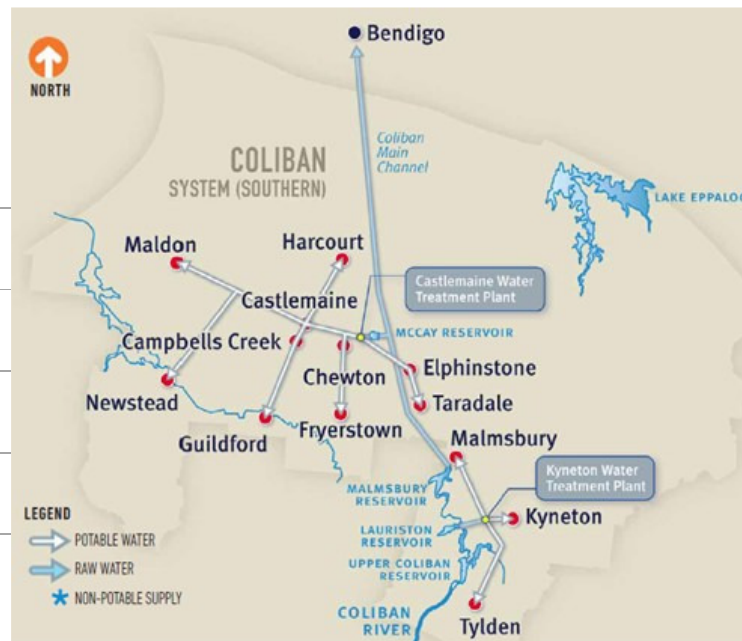
Progress against water resource actions outlined in our [Urban Water Strategy 2022](#):

Action	Progress	Status
Investigate options to address future water demand / supply imbalance	Continued to seek funding to develop a business case for managed aquifer recharge through the Coliban Integrated Water Management Forum Purchased high reliability water shares in the regulated Goulburn System	Ongoing
	Repaired channel leaks	Ongoing

Investigate further modernisation of the rural channel network to reduce water losses	Rural modernisation project to develop a detailed business case to explore water saving options	In progress
Increase Class A recycled water production to 1.5 GL/yr in Bendigo	Planning undertaken as part of upgrades to the Bendigo Water Reclamation Plan	In progress
Fit digital loggers to customers meters to assist in determining leaks in customers' homes	Digital metering program to install of data loggers to existing customer meters	In progress
Review process of determining rural allocation	Modelling undertaken to assess options	Complete May 2023

4.4 Coliban Southern Water Supply System

Towns supplied:	Castlemaine, Elphinstone, Harcourt, Kyneton, Maldon, Malmsbury, Newstead, Taradale and Tylden
Water connections:	11,695
Approx. Population:	21,000
Rural customers:	668
Rural licence volume:	10,280 ML
Water Sources:	Coliban Headwork Storages



Water is sourced from Lauriston Reservoir for the Kyneton potable system; and from Malmsbury Reservoir via the Coliban Main Channel for the Castlemaine potable system. We may also supply the Coliban Northern System from the Coliban Headwork Storages when there is sufficient supply (i.e., greater than 50,000 megalitres).

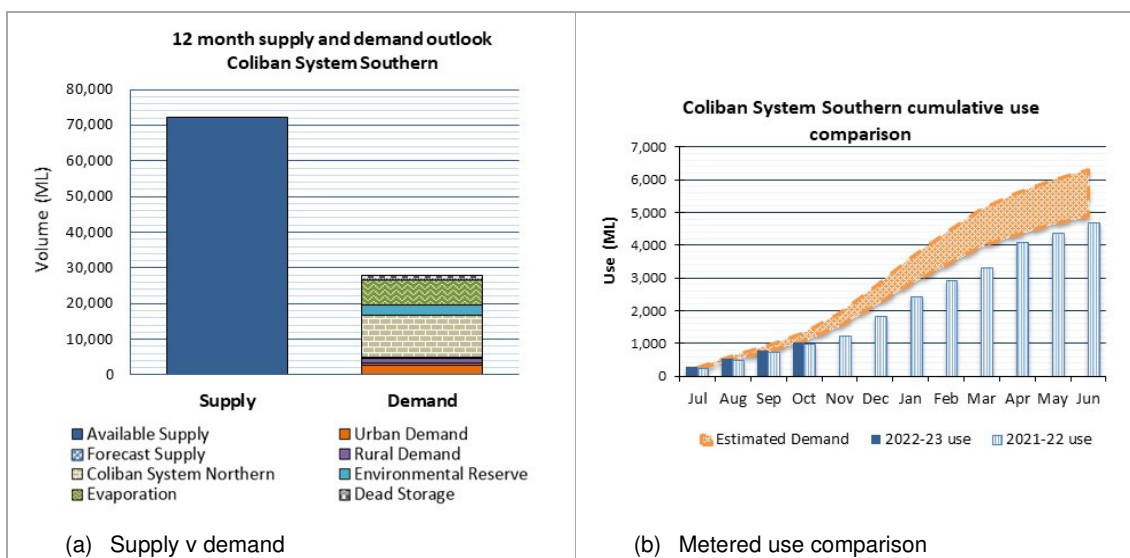
Water resource position 1 October 2023

Available water	Forecast supply	Average annual demand	Available supply	Current water restrictions
72,102 ML	72,102 ML	15,001	>24 months	Permanent water saving rules apply

Forecast supply is the available water plus anticipated further inflows (within reservoir capacity limits). The average annual total demand is 15,001 ML which includes system losses (i.e., evaporation and delivery), passing flows, rural and urban use. We aim to maintain 24 months' supply in the Coliban Southern System (30,002 ML) before restrictions may be triggered.

Our rural customers have access to 100% of their licence volume in 2023/24.

Each month, we post a [water summary](#) on our website to provide an update on the water resource position.

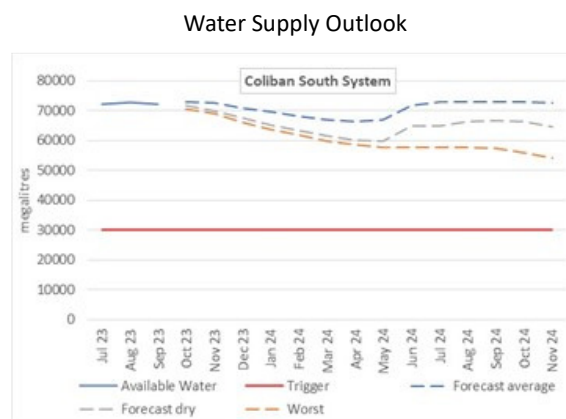


Water outlook

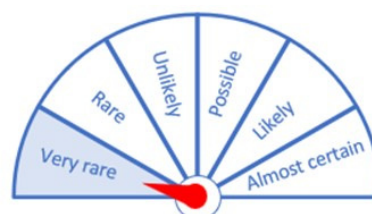
Our current water resource position is strong with the Coliban Headwork Storages filled to capacity.

The Bureau of Meteorology climate outlook and long-range forecasts suggest that conditions are going to be drier than average over the coming months.

Our water supply outlook suggests that, even under worst conditions, we will have greater than 24 months' supply over the coming year.



The probability of restrictions is assessed as very rare. It is noted that there are risks such as asset failure or water quality issues that could result in the need to manage demand.



Action Plan

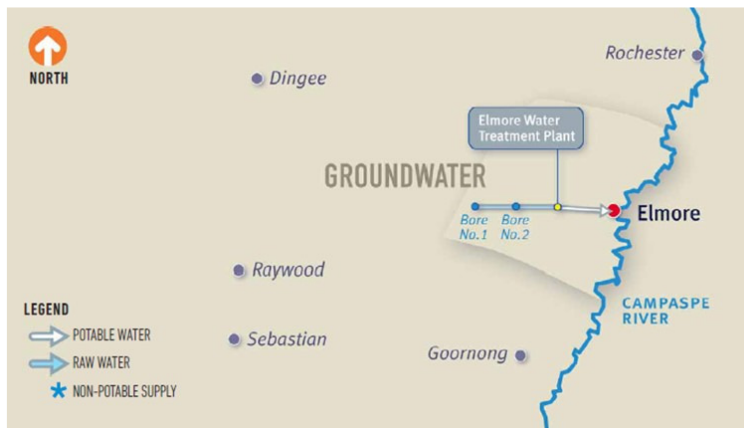
Progress against water resource actions outlined in our [Urban Water Strategy 2022](#):

Action	Progress	Status
Investigate potential for a groundwater as an alternative supply for Kyneton	Kyneton groundwater project has identified sites at Carlsruhe and Tylden for further investigation for urban supply	In progress
Investigate connecting Castlemaine to the Coliban Northern System so that it may be supplied from Lake Eppalock or the Waranga Western Channel	Investigations to identify and assess various options to link Castlemaine with the Coliban Northern System	Complete Jan 2023

Investigate further modernisation of the rural channel network to reduce water losses	Repaired channel leaks	Ongoing
	Rural modernisation project to develop a detailed business case to explore water savings options	In progress
Continue to implement Healthy Coliban Catchment Project	We continue to work with the North Central Catchment Management Authority and Traditional Owners the Dja Dja Wurrung to implement Healthy Coliban Catchment Project	Ongoing

4.5 Elmore Water Supply System

Towns supplied:	Elmore
Water connections:	472
Approx. Population:	770
Water Sources:	Groundwater



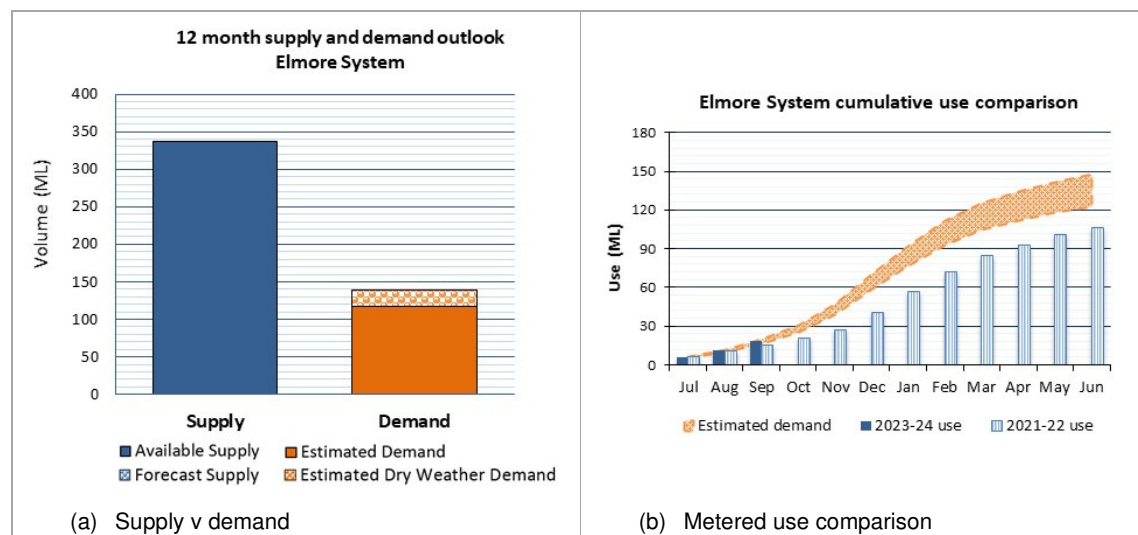
Groundwater is sourced from two bores. Groundwater Resources are managed by Goulburn-Murray Water under the [Lower Campaspe Valley Water Supply Protection Area Groundwater Management Plan](#).

Water resource position 1 October 2023

Available water	Forecast supply	Average annual demand	Available supply	Current water restrictions
337 ML	337 ML	116	>12 months	Permanent water saving rules apply

Refer to Appendix A for detailed information on entitlements and allocations. Forecast supply is the available water plus anticipated further allocations. We aim to maintain 12 months' supply in the Elmore System before restrictions may be triggered.

Each month, we post a [water summary](#) on our website to provide an update on the water resource position.



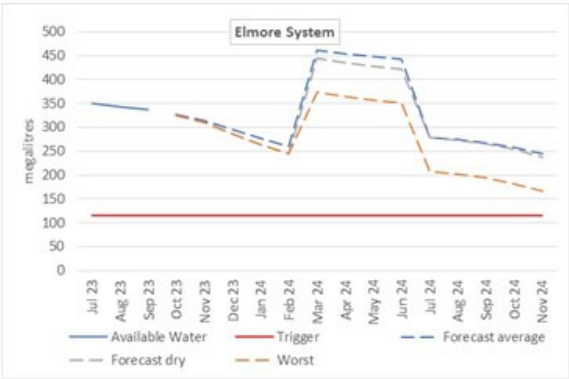
Water outlook

Our current water resource position is strong with allocations of 100% of entitlement.

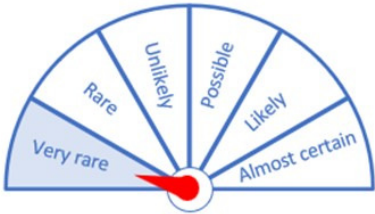
The Bureau of Meteorology climate outlook and long-range forecasts suggest that conditions are going to be drier than average over the coming months.

Our water supply outlook suggests that, even under worst conditions, we will have greater than 12 months' supply over the coming year.

Water Supply Outlook



The probability of restrictions is assessed as very rare. It is noted that there are risks such as asset failure or water quality issues that could result in the need to manage demand.



Likelihood of Restrictions

Action Plan

Progress against water resource actions outlined in our [Urban Water Strategy 2022](#):

Action	Progress	Status
Further investigate options available to contribute to water security	Elmore water tower rectification works include increasing water storage capacity	In progress

4.6 Goulburn Water Supply System

Towns supplied: Boort, Dingee, Jarklin, Lockington, Pyramid Hill, Macorna, Mitiamo, Mysia, Rochester, Serpentine

Water connections: 2,774

Approx. Population: 6,000

Water Sources: Waranga Western Channel



Mitiamo is supplied via the Mitiamo Pipeline. Rochester may also be supplied from the Campaspe River. Serpentine and Jarklin have a water allowance from the East Loddon Pipeline and may also be supplied from the Loddon River.

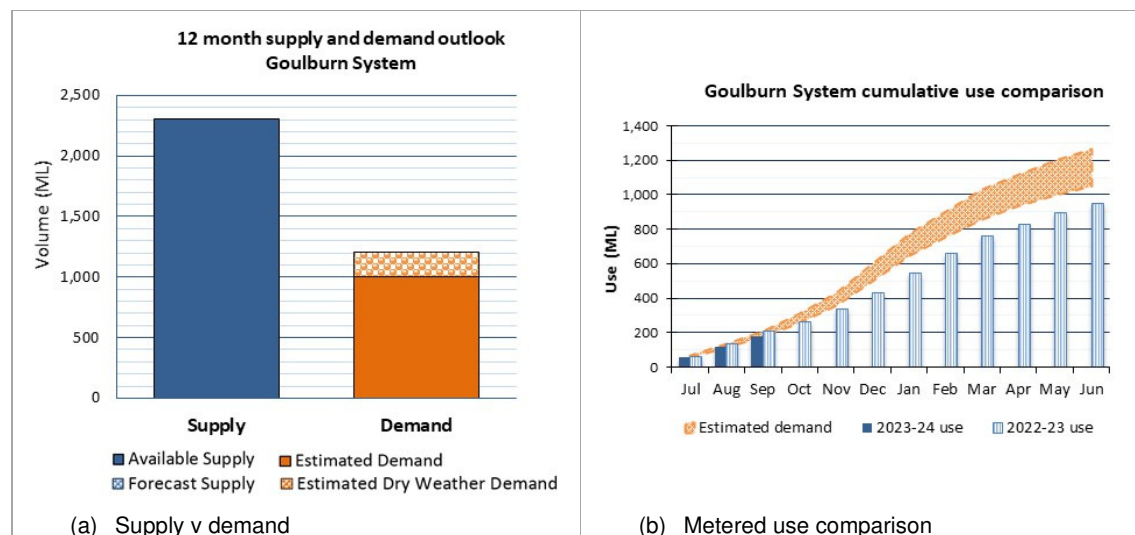
We have a very high reliability of supply under the bulk entitlement for the Goulburn Channel System and receive 100% allocation in most years. The Water Allowance is subject to allocations for the regulated Goulburn System as announced by the Northern Victorian Resource Manager.

Water resource position 1 October 2023

Available water	Forecast supply	Average annual demand	Available supply	Current water restrictions
2,305 ML	2,305 ML	997	>12 months	Permanent water saving rules apply

Refer to Appendix A for detailed information on entitlements and allocations. Forecast supply is the available water plus anticipated further allocations. We aim to maintain 12 months' supply in the Goulburn System before restrictions may be triggered.

Each month, we post a [water summary](#) on our website to provide an update on the water resource position.



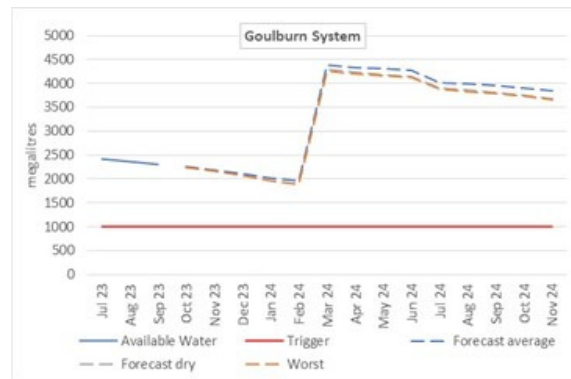
Water outlook

Our current water resource position is strong with allocations of 100% of entitlement.

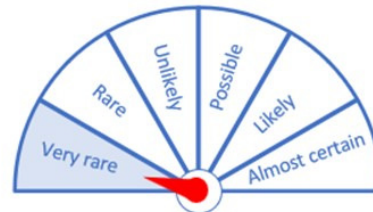
The Bureau of Meteorology climate outlook and long-range forecasts suggest that conditions are going to be drier than average over the coming months.

Our water supply outlook suggests that, even under worst conditions, we will have greater than 12 months' supply over the coming year.

Water Supply Outlook



The probability of restrictions is assessed as very rare. It is noted that there are risks such as asset failure or water quality issues that could result in the need to manage demand.



Likelihood of Restrictions

Action Plan

Progress against water resource actions outlined in our [Urban Water Strategy 2022](#):

Action	Progress	Status
Install tanks at the Mitiamo basin to store water	Planning undertaken	In progress

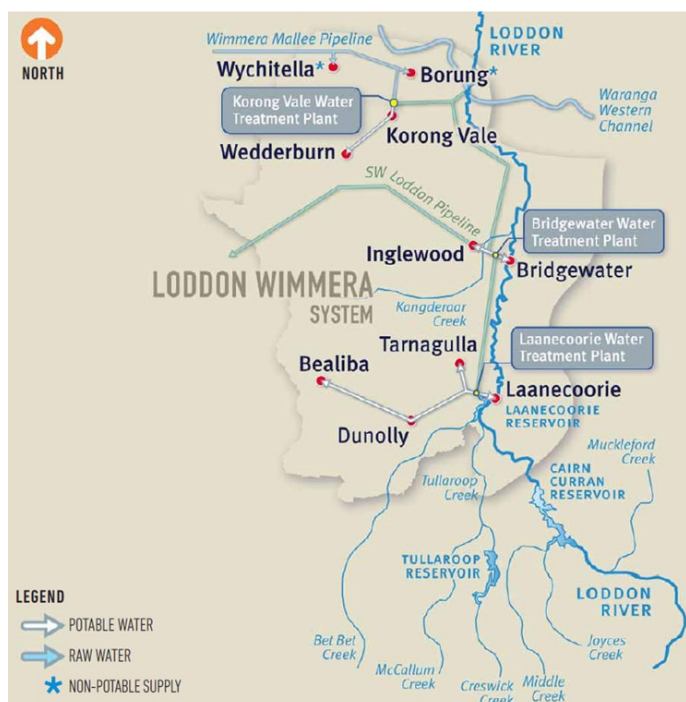
4.7 Loddon Wimmera Water Supply System

Towns supplied: Bealiba, Borung, Bridgewater, Dunolly, Inglewood, Korong Vale, Laanecoorie, Tarnagulla, Wedderburn, Wychitella

Water connections: 2,082

Approx. Population: 3,700

Water Sources: Wimmera-Mallee Pipeline
South West Loddon Pipeline
Loddon River



Water for Borung and Wychitella is sourced from the Wimmera-Mallee Pipeline. Bridgewater, Inglewood, Korong Vale and Wedderburn, and are supplied from the South West Loddon Pipeline, which sources water from either the Wimmera-Mallee Pipeline or the Waranga Western Channel. Bridgewater and Inglewood may also be supplied from the Loddon River. Laanecoorie, Tarnagulla, Dunolly, Bealiba are currently supplied from the Loddon River.

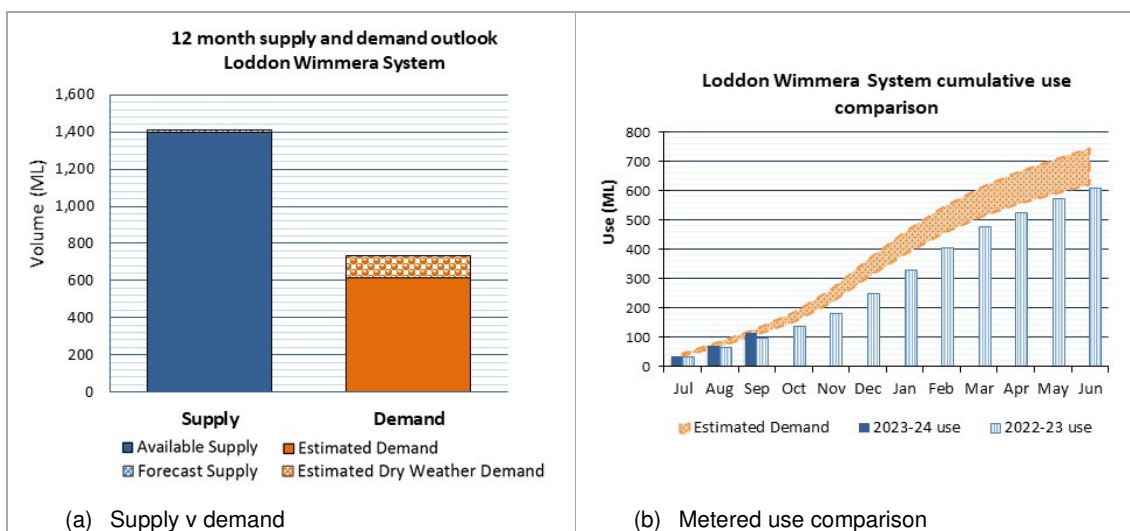
We receive a minimum 50% allocation under our Loddon bulk entitlement and can only hold a maximum of 100% allocation inclusive of carryover. We transfer allocation from the Loddon System to Grampians Wimmera-Mallee Water under a Supply by Agreement to credit our allowance from the South West Loddon Pipeline.

Water resource position 1 October 2023

Available water	Forecast supply	Average annual demand	Available supply	Current water restrictions
1,292 ML	1,307 ML	606	>12 months	Permanent water saving rules apply

Refer to Appendix A for detailed information on entitlements and allocations. Forecast supply is the available water plus anticipated further allocations. We aim to maintain 12 months' supply in the Loddon Wimmera System before restrictions may be triggered.

Each month, we post a [water summary](#) on our website to provide an update on the water resource position.



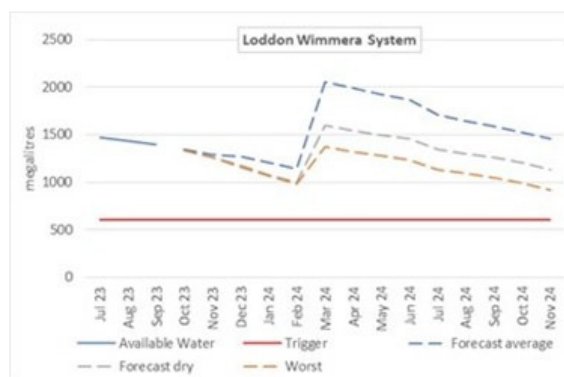
Water outlook

Our current water resource position is strong with allocations of 100% of entitlement in the Loddon River; and 81% from the Wimmera Mallee Pipeline with a forecast to increase to 86%.

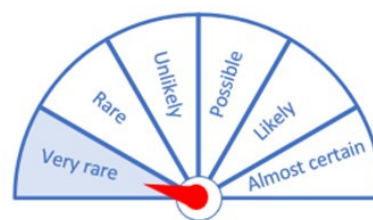
The Bureau of Meteorology climate outlook and long-range forecasts suggest that conditions are going to be drier than average over the coming months.

Our water supply outlook suggests that, even under worst conditions, we will have greater than 12 months' supply over the coming year.

Water Supply Outlook



The probability of restrictions is assessed as very rare. It is noted that there are risks such as asset failure or water quality issues that could result in the need to manage demand.



Likelihood of Restrictions

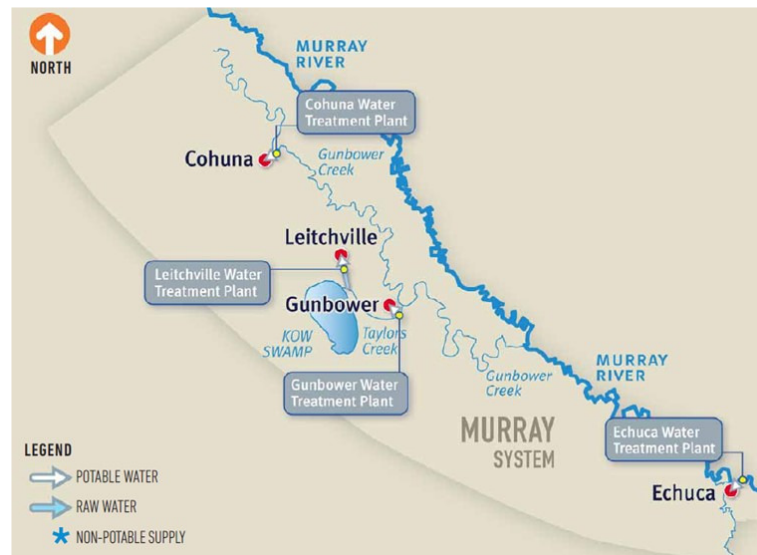
Action Plan

Progress against water resource actions outlined in our [Urban Water Strategy 2022](#):

Action	Progress	Status
Construct a raw water storage at Laanecoorie and connect to the South West Loddon Pipeline	Planning undertaken	In progress
Investigate demand initiatives such as water efficient measures and leak detection to reduce high amount water lost within the system	We continued with programs to reduce demand including digital metering, leak identification and repair and promoting programs such as Target Your Water Use initiative, which is a Victorian Government water efficiency program for regional Victorian householders.	Ongoing

4.8 Murray Water Supply System

Towns supplied:	Cohuna, Echuca, Gunbower, Leitchville
Water connections:	9,472
Approx. Population:	17,000
Water Sources:	Murray River



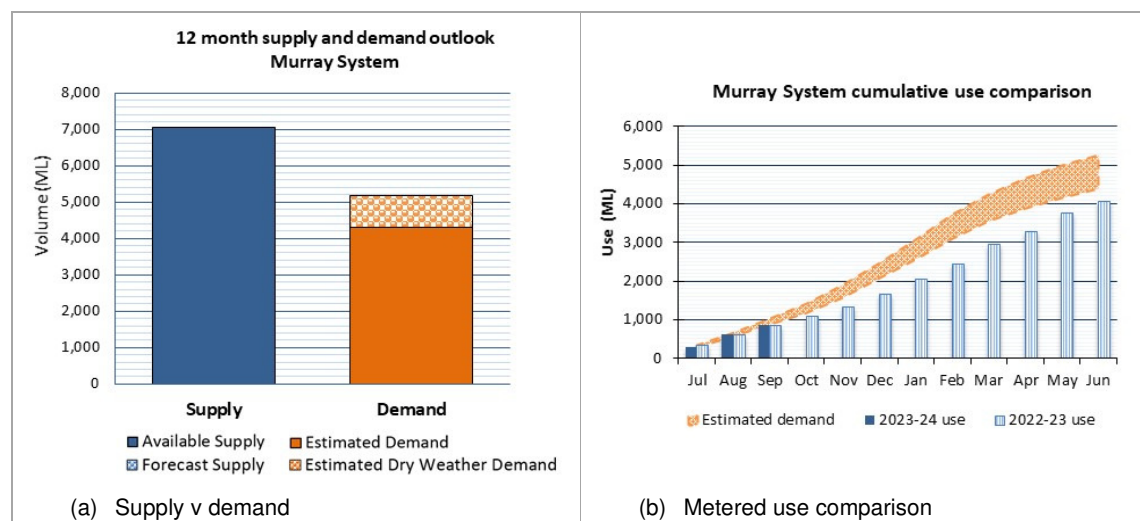
Water is sourced from the Murray River for Echuca; Gunbower Creek for Cohuna; Taylors Creek for Gunbower; and the Cohuna Channel and Gunbower Creek for Leitchville.

Water resource position 1 October 2023

Available water	Forecast supply	Average annual demand	Available supply	Current water restrictions
7,063 ML	7,063 ML	4,329	>12 months	Permanent water saving rules apply

Refer to Appendix A for detailed information on entitlements and allocations. Forecast supply is the available water plus anticipated further allocations. We aim to maintain 12 months' supply in the Murray System before restrictions may be triggered.

Each month, we post a [water summary](#) on our website to provide an update on the water resource position.



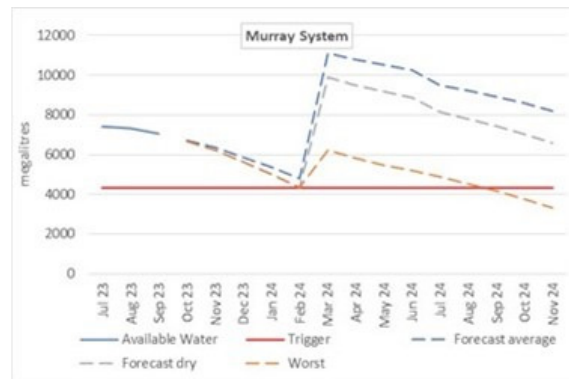
Water outlook

Our current water resource position is strong with allocations of 100% of entitlement.

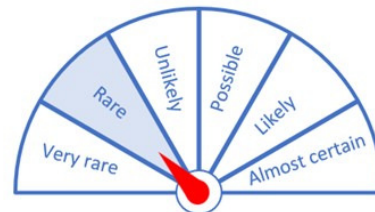
The Bureau of Meteorology climate outlook and long-range forecasts suggest that conditions are going to be drier than average over the coming months.

Our water supply outlook suggests that, even under dry conditions, we will have greater than 12 months' supply over the coming year. While a worst-case scenario suggests that the trigger may be reached next spring, this is unlikely as we expect better than worst allocations next year given current storage levels.

Water Supply Outlook



The probability of restrictions is assessed as rare. It is noted that there are risks such as asset failure or water quality issues that could result in the need to manage demand.



Likelihood of Restrictions

Action Plan

Progress against water resource actions outlined in our [Urban Water Strategy 2022](#):

Action	Progress	Status
Purchase additional water shares	We have purchased high and low reliability water shares in the regulated Murray System	Ongoing
Investigate the feasibility of supplying recycled water to Echuca West in partnership with Campaspe Shire Council	We are currently working with the Campaspe Shire through the Coliban Integrated Water Management Forum to assess the feasibility of supplying recycled water to Echuca West	In progress
Investigate options available to contribute to water supply security	We are undertaking a detailed evaluation of options to improve future water security in the Murray System. This includes the potential for a pipeline from the Goulburn System to provide a second source of supply.	Ongoing
	Echuca Water Treatment Plant upgrade including the Installation of two 3.3 megalitre treated water storage tanks Leitchville Water Treatment Plan upgrade including increased treated water storage	Complete

4.9 Trentham Water Supply System

Towns supplied:	Trentham
Water connections:	753
Approx. Population:	1,180
Water Sources:	Spring fed reservoir Groundwater bore



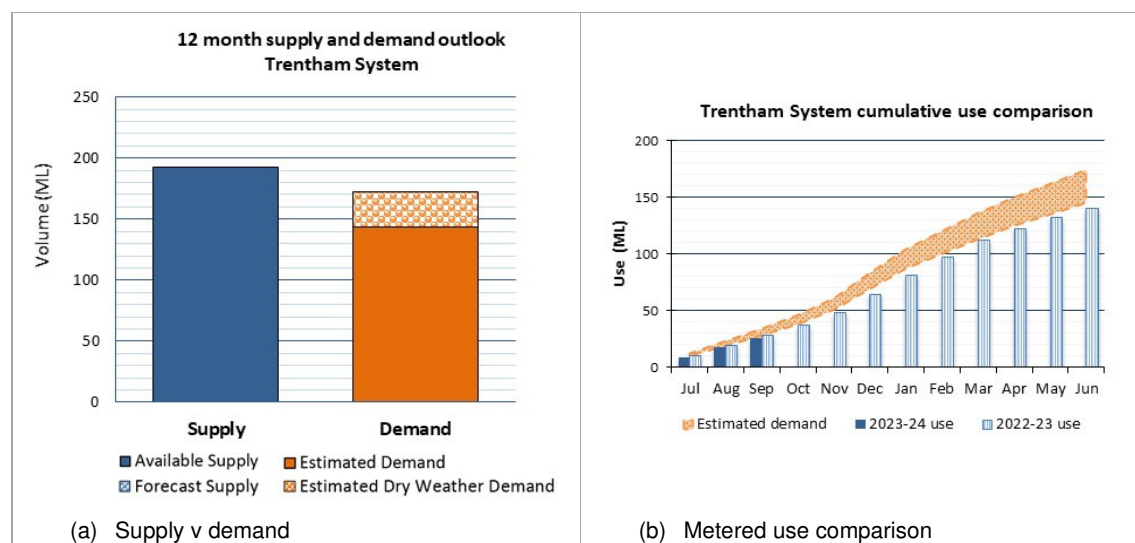
Water is sourced from two spring fed reservoirs which have a combined capacity of 91 ML. We can take an average of 120 ML per year from the reservoirs over a three-year period. Supply is supplemented by pumping from groundwater bores to the reservoirs. Groundwater resources are managed by Goulburn-Murray Water under the [Central Victorian Mineral Springs Groundwater Management Area Local Management Plan](#).

Water resource position 1 October 2023

Available water	Forecast supply	Average annual demand	Available supply	Current water restrictions
192 ML	192 ML	144	>12 months	Permanent water saving rules apply

Refer to Appendix A for detailed information on entitlements and allocations. Forecast supply is the available water plus anticipated additional further inflow (within storage capacity limits) and allocations.

Each month, we post a [water summary](#) on our website to provide an update on the water resource position.



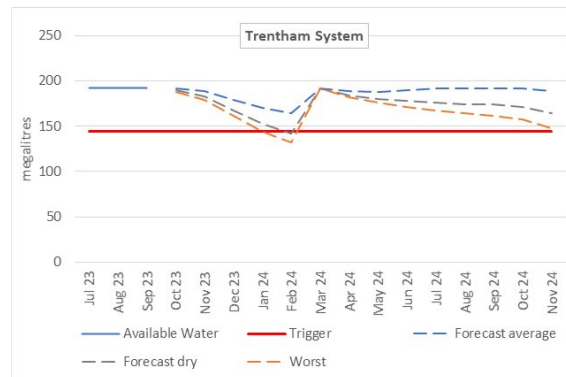
Water outlook

Our current water resource position is strong with allocations of 100% of entitlement and the reservoirs filled to capacity.

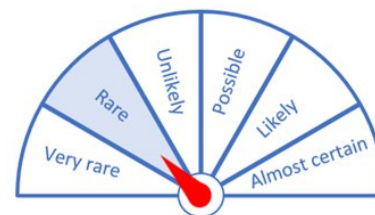
The Bureau of Meteorology climate outlook and long-range forecasts suggest that conditions are going to be drier than average over the coming months.

Our water supply outlook suggests that, even under dry conditions, we will have greater than 12 months' supply over the coming year. While a worst-case scenario suggests that the trigger may be reached in summer, this is unlikely as we anticipate good discharge to the reservoirs given the wet conditions experienced in recent years.

Water Supply Outlook



The probability of restrictions is assessed as rare. It is noted that there are risks such as asset failure or water quality issues that could result in the need to manage demand.



Likelihood of Restrictions

Action Plan

Progress against water resource actions outlined in our [Urban Water Strategy 2022](#):

Action	Progress	Status
Continue to explore for additional groundwater in Trentham	We have installed urban supply bores and applied to Goulburn-Murray Water to amend our existing licence to include new bores and increase the licence volume by 62 ML/yr. We are currently undertaking monitoring at the request of Goulburn-Murray Water to progress the application	In progress
Investigate connecting Trentham to the Coliban Southern System	We are considering a suitable pipeline alignment	In progress
Install additional treated water storage at the Trentham water treatment plant	At the Trentham water treatment plant we are constructing a 1.2 ML treated water storage tank	In progress

Appendix A

	Water entitlements				As at 1/10/2023				
Supply		Entitlement		Allocation		Carryover ML	Spillable ML	Available ML	Av. demand ML
System	Source	Type	ML	%	ML				
Campaspe	Campaspe	Bulk Entitlement	349	100%	349	3	3	349	
	sub-total		349		349	3	3	349	74
Coliban Northern	Goulburn	HRWS	22,790	100%	22,790	18,044	15,285	25,549	
	Goulburn	LRWS	2,861	0%	0				
	Lake Eppalock	Bulk Entitlement	17,440	N/A	N/A	N/A	N/A	54,568	
	Campaspe	HRWS	2,591	100%	2,591	784	558	3,237	
	Campaspe	LRWS	646	65%	420				
	sub-total		46,327		25,801	18,828	15,843	83,354	25,039
Coliban Southern	Coliban Storages	Bulk Entitlement	32,820	N/A	N/A	N/A	N/A	69,465	
	sub-total		32,820		N/A	N/A	N/A	69,465	15,001
Elmore	Groundwater	SS1 licence	284	100%	284	71	N/A	355	
	sub-total		284		213	71	N/A	355	121
Goulburn	Goulburn	Bulk Entitlement	2,420	100%	2,420	1,678	1,678	2,420	
	Goulburn	Water Allocation	60	100%	60	N/A	N/A	60	
	sub-total		2,480		2,480	1,678	1,678	2,480	910
Loddon Wimmera	Loddon	Bulk Entitlement	820	100%	816	4	N/A	820	
	Wimmera	Bulk Entitlement	300	81%	243	340	0	583	
	Rural Pipeline	Water Allocation	110	100%	110	N/A	N/A	110	
	sub-total		1,230		1,169	344	0	1,513	601
Murray	Murray	Bulk Entitlement	6,285	100%	6,285	1,020	1,020	6,285	
	Murray	HRWS	454	100%	454	1,107	4	1,557	
	Murray	LRWS	1,107	0%	0				
	sub-total		7,062		6,739	2,127	1,024	7,842	4,261
Trentham	Spring	Bulk Entitlement	120	N/A	120	N/A	N/A	120	
	Groundwater	Licence	103	100%	103	N/A	N/A	103	
	sub-total		223		223	N/A	N/A	223	144
TOTAL			90,775		36,974	23,051	18,548	165,581	46,151