



Annual Water Outlook



1 December 2024



Acknowledgement of Country

We recognise Aboriginal and Torres Strait Islander peoples as the First People of this nation. We proudly acknowledge the Traditional Custodians of the land on which we work and live and pay respect to their Elders past and present.

Barwon Water acknowledges that the lands and waters of Eastern Maar and Wadawurrung were never ceded. We are committed to strong relationships with Traditional Custodians and First Nations' organisations, businesses and networks within our region and appreciate walking together.

We commit to a future of healing and reconciliation that requires Truth Telling and authenticity. Water is fundamental to life, and we continue to learn much from Traditional Custodians, who have sustainably managed Country for tens of thousands of years. We recognise the importance of walking together to embed Eastern Maar, Wadawurrung and broader First Nations' ways of Being, Knowing and Doing across all we do.

Barwon Water service & key infrastructure



Planning for the future

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The Annual Water Outlook (AWO) provides our customers, community and stakeholders with a two-year forward look at how our water supply systems may respond under different climate conditions. This will help us track actions outlined in the 2022 Urban Water Strategy: Water for our Future and will help us to progress towards our vision of customer and community vision where our food is grown rivers flow, and impact is low.

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Summary

Current snapshot

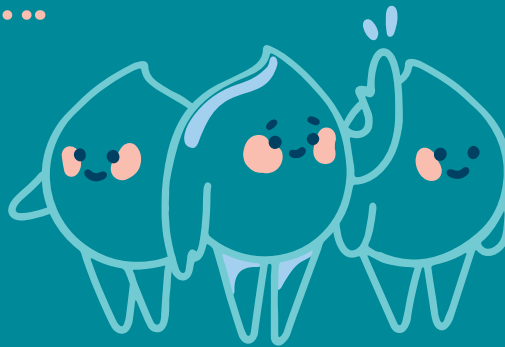
Geelong storage
60%

Over
90%
Colac, Lorne & Apollo Bay



Increasing demand

Our population increased by
+ 9,000



585,000
people will be calling
our region home by
2051

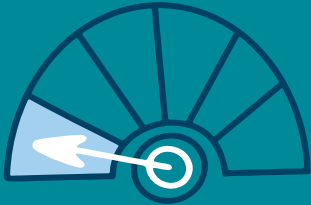
How we're planning for the future

Access to
22,000_{ML}
through Melbourne
> Geelong pipeline
by 2025

Saving
1,000_{ML}
over 5 years through
**Sustainable Water
Use Program**

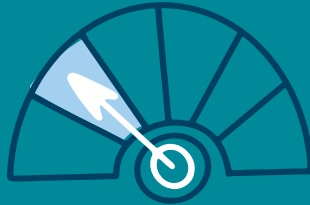
Engaging
with the communities
of Lorne and Apollo Bay
to identify preferred
long-term water
security options

Restrictions likelihood



VERY RARE

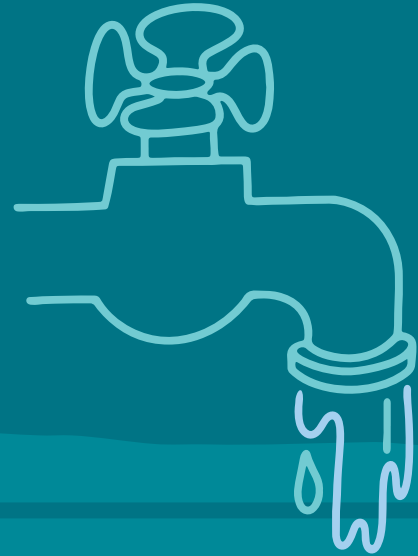
Colac



RARE

Geelong, Lorne & Apollo Bay

Small water saving steps at home can make a big difference.



Less reliable rainfall



Driest year in **79 yrs**



West Barwon Reservoir inflows

26% below average



Our region is growing, and more people need to share our water.

The permanent water saving rules are simple, common-sense rules to make sure we all use water wisely.

While storage levels are currently high, they can drop rapidly. With our growing population and increasingly variable climate, Barwon Water is continuing to plan for new water sources.

2024 in review

Population
+ 9,000

Demand across
service region
41,800ML

Increase of
11%

Over the 2023-24 period, our population also grew by around 9,000, people while total demand across our service region was 41,800 megalitres, an increase of 11 per cent on the previous 12 months.



This increase in demand coincided with our Geelong, Golden Plains, Bellarine and Surf Coast system and our Colac system experiencing a dry climate, with our catchments recording below average rainfall.

Local water storages for the Geelong system were 80 per cent full at the start of 2024, steadily declining to 60 per cent (at 19 November 2024) due to below average rainfall in winter and spring.

Across our Geelong system, we have continued to experience below average rainfall. This year, our West Barwon catchment is currently 30% below average, with some months experiencing up to 80% below average rainfall.

Throughout 2023-24 we have accessed 2,500 megalitres of water from the Greater Melbourne Yarra-Thomson system through the Melbourne to Geelong Pipeline (MGP) to supplement local water storages.

While Lorne and Apollo Bay water storages are close to full, they have still experienced below average rainfall compared to previous years.

We recognise the need to support Traditional Owner access to water for their self-determined use.

In early 2024, Wadawurrung Traditional Owners Aboriginal Corporation, in partnership with Barwon Water, Central Highlands Water, Corangamite Catchment Management Authority and the Department of Energy, Environment and Climate Action returned water on Country as part of a trial to inform future watering plans.

Wadawurrung Traditional Owners Aboriginal Corporation returned water to three locations on Wadawurrung Country, the east and west branches of the Moorabool Yaluk (river) and the Durdidwarrah wetland.

Barwon Water provided

200ML

to support the release of water on Country



Demand for water is increasing

Our region is one of the fastest growing areas in Australia.

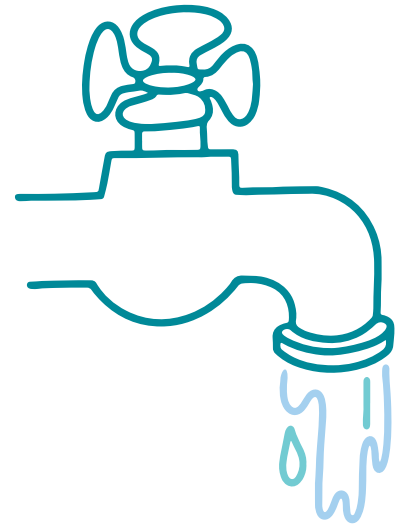
Currently, we supply approximately 380,000 people across our service region year-round. This increases to over 579,000 people, including visitors, during peak periods. Over the past year, Geelong's demand for water has increased by 3,700 ML, which is underpinned by below average rainfall across the region, in addition to Geelong's population growing by around 8,650.

This was driven by a preceding hot, dry summer followed by some of the driest months we have seen on record throughout winter.

The Victorian Government recently released ambitious housing targets, with our region anticipated to experience the greatest growth of all regional areas in Victoria with an additional 140,000 new homes constructed by 2051.

We expect as many as 585,000 people will be calling our region home by 2051. With such a fast-growing population, our water usage is set to increase. In 2023/24 Geelong's residential demand accounted for 73 per cent of all water use. It will be more important than ever that we continue to use water responsibly.

We are also making investments in smart networks and alternative water sources.

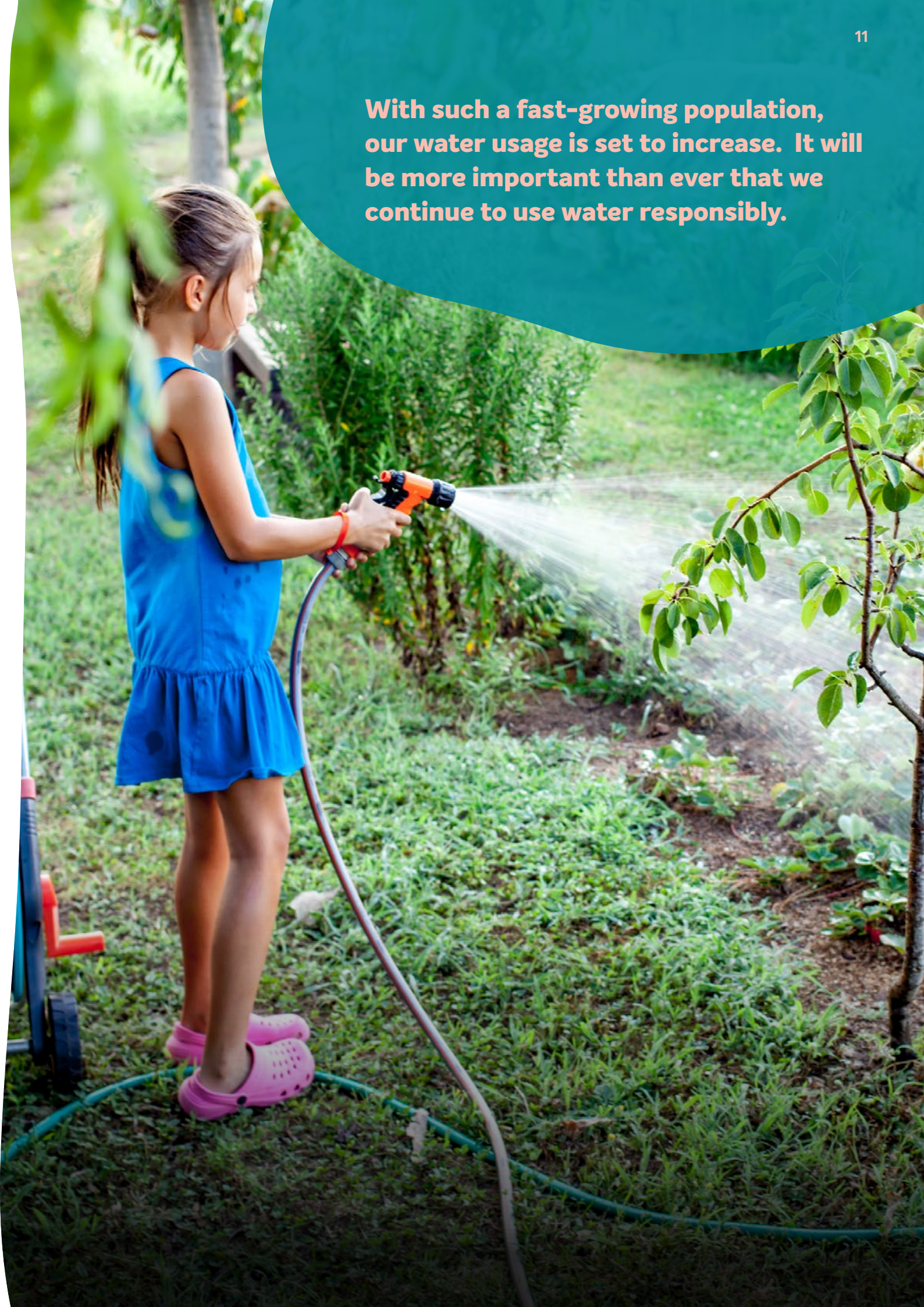


Geelong's demand for water increased **+3,700_{ML}**

585,000 people will be calling our region home by 2051

Residential demand accounted for **73%** of all water use

With such a fast-growing population, our water usage is set to increase. It will be more important than ever that we continue to use water responsibly.



Rainfall is becoming less reliable

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2023–24 has been the driest year at our West Barwon Reservoir in 79 years

– SILO Rainfall data.



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

We know that future rainfall may become less reliable, affecting not only our region's rivers but also the wildlife dependent on them. Consequently, traditional rainfall-dependent water sources such as rivers are likely to produce less water.

The West Barwon Reservoir in the Otway Ranges has experienced a 26 per cent reduction in annual inflows since 1997, equivalent to supplying a quarter of the Greater Geelong region's annual water use.

At the same time, the demand for water from both human and environmental needs is set to rise, increasing the urgency to adapt and plan for these changes.

Our changing climate is also expected to bring more extreme weather events such as bushfires, droughts, floods, and heatwaves.

Victoria's climate will continue to be variable, with wet years and dry years, but these will be set against a background drying trend. A warmer future and with projections of declining water availability, we can expect more frequent and severe droughts in the coming decades; as well as an increase in extreme rainfall events. As such, Barwon Water understands that our water future involves shifting towards manufactured water, such as desalinated water.

More information on the observed changes and longer-term future climate and water projections can be found [here](#).

The West Barwon Reservoir has experienced

-26%

reduction in annual inflows since 1997



The year ahead

The Bureau of Meteorology's (BoM) El Nino-Southern Oscillation (ENSO) outlook is currently neutral, but a 'La Nina Watch' remains in place, with slightly above median rainfall projected for our region over the coming three months.

Geelong's local storages are at 60 per cent (at 19 November 2024) following a poor winter and spring harvesting season. In response, we have increased transfer of water from the Greater Melbourne Yarra-Thomson system. The Melbourne to Geelong Pipeline (MGP) will likely continue to supply water into 2025, or until local storages increase to a healthy level.

We expect water restrictions to be very rare (<1 per cent) for the Colac and Gellibrand systems over the next two years, even under worst climatic conditions.

Our Geelong, Golden Plains, Bellarine and Surf Coast, Lorne and Apollo Bay systems are also secure, with water restrictions predicted to be rare (<4 per cent).

How we're planning for the future

Our 2022 Urban Water Strategy:

Water for our Future sets out how we will respond to the many challenges facing our water supplies, both now and in coming decades.

The strategy has a 50-year outlook and is updated every five years, enabling us to adapt our planning to whatever conditions emerge.

Progress updates on the effectiveness of these actions can be found in the following system outlooks.

For further information, our Urban Water Strategy can be found at barwonwater.vic.gov.au/water-and-waste/water-for-our-future

The strategy has a

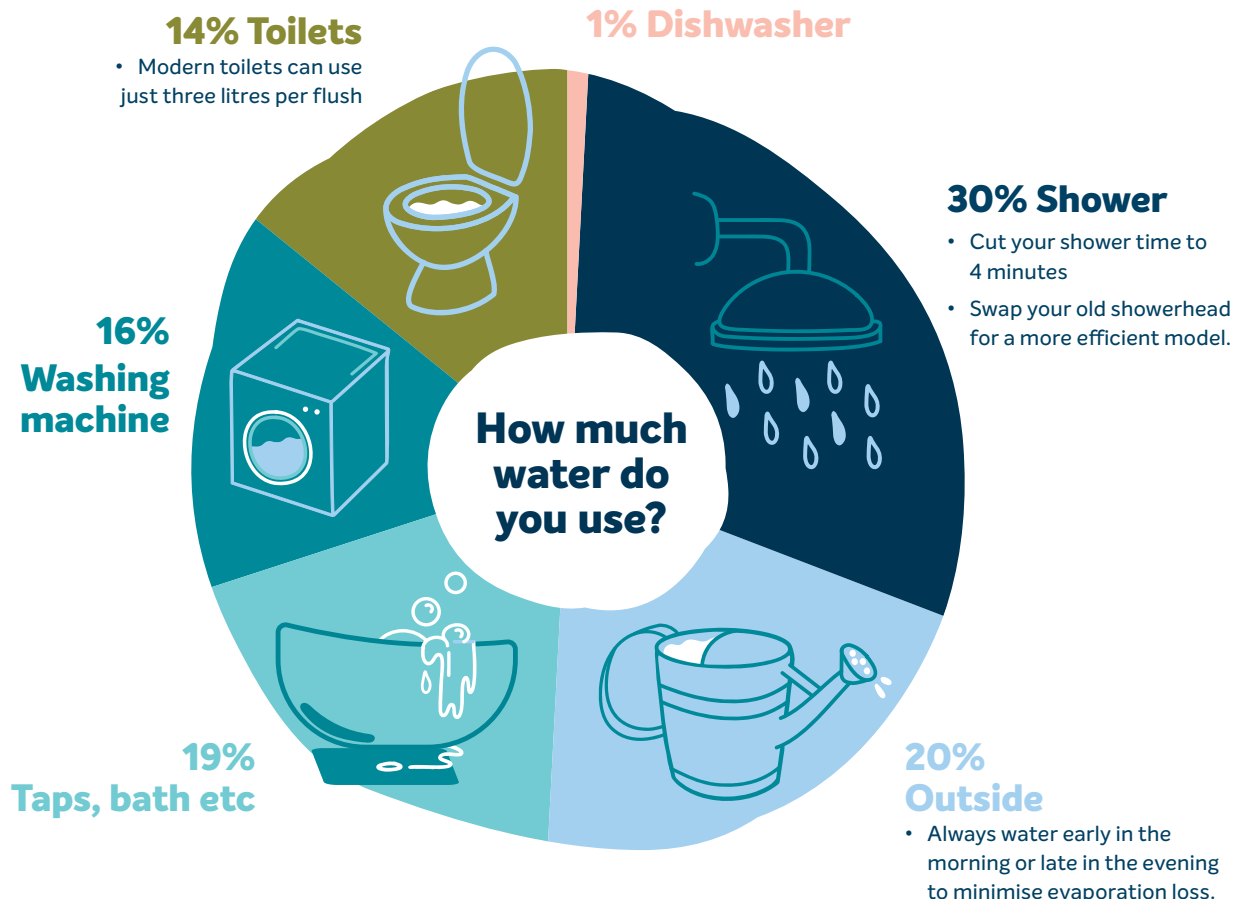
50 year outlook

and is updated every five years

Water Matters

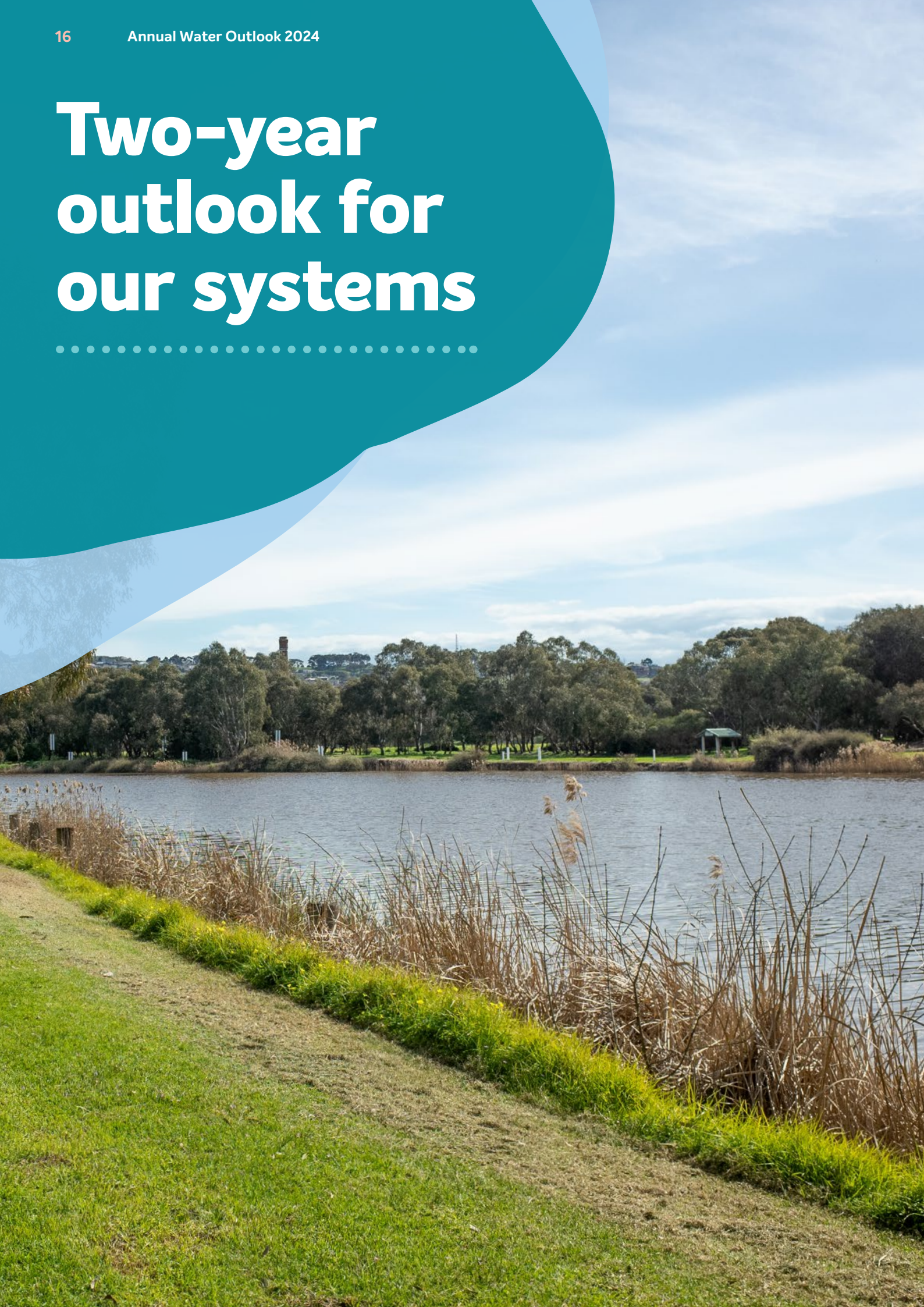
Our region is growing, and more people need to share our water. Our community recognises water is a precious resource and shouldn't be wasted. The permanent water saving rules (PWSR) are a set of simple, common-sense rules to make sure we all use water wisely.

Small water saving steps at home can make a big difference.



Two-year outlook for our systems

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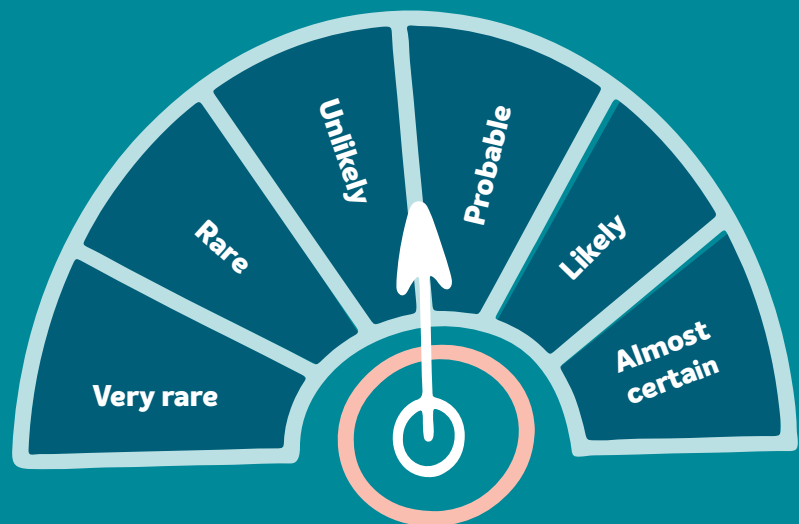


Restrictions likelihood explained



The outlook for each of our water supply systems indicates the likelihood of water restrictions being applied within the next two years.

The scale of likely water restrictions ranges from very rare to almost certain, as shown here.



Very rare <1%

Rare 1-4%

Unlikely 5-19%

Probable 20-49%

Likely 50-79%

Almost certain 80-100%

Geelong, Golden Plains, Bellarine & Surf Coast system



The Geelong, Golden Plains, Bellarine and Surf Coast system services more than 90 per cent of our customers.

Drinking water is sourced from catchments on the upper Barwon and Moorabool rivers and an entitlement to take water from Melbourne’s Yarra-Thomson catchment, via the Melbourne-to-Geelong Pipeline. While the system is also able to draw groundwater from the Anglesea Borefield, this is only required when local storages are low.

We also operate two Class A recycled water plants – the Northern Water Plant and the Black Rock Recycled Water Plant. Recycled water is used for non-drinking purposes, such as garden watering, and commercial, industry and agriculture uses.

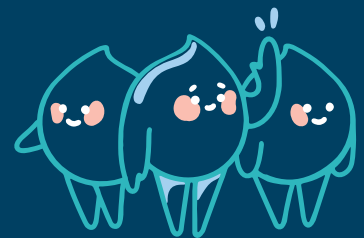
Current storage



60%

57,232 ML of 95,338 ML at 19 Nov. 2024

Population



359,699

at July 2024

Water demand



37,524

million litres

2023–24

Restrictions likelihood



RARE



Storage outlook



The short-term storage outlook for the Geelong, Golden Plains, Bellarine and Surf Coast system shows that, under worst climatic conditions, the likelihood of water restrictions are rare in the next two years (to December 2026).

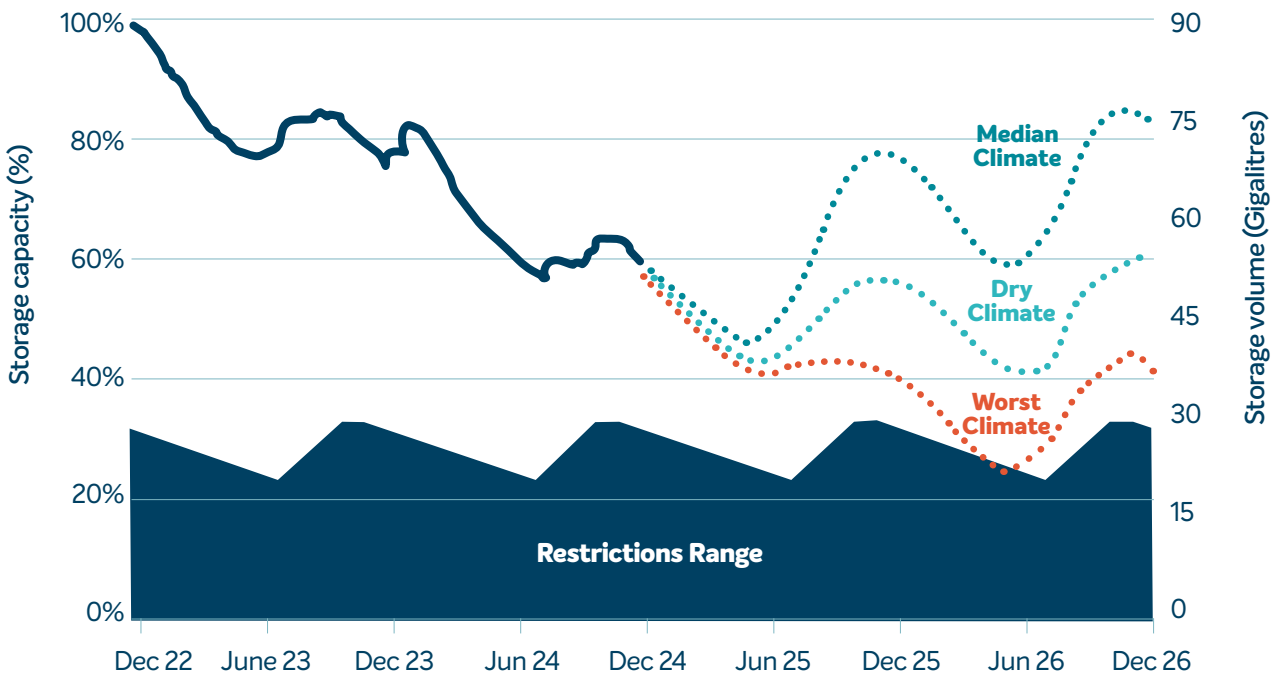


Figure 1: Projected two-year water supply for the Geelong, Golden Plains and Surf Coast system.

Short-term actions



Action	Status
GG1 Extend the reach of the Melbourne–Geelong Pipeline so that it can supply growing demand for residential, business, industry and agriculture in Geelong, Bellarine and the Surf Coast, and allow for water to be returned to the Moorabool River for Traditional Owner cultural values and environmental needs. On track to be operational by summer of 2025/26 to enable 22GL/year transfer capacity from the water grid.	On track
GG2 Put more recycled water to productive use.	On track
GG3 Continue to investigate and increase our readiness to implement long-term actions, to help inform our 2027 Urban Water Strategy. Barwon Water continues to support State Government initiatives to increase future water security.	On track
GG4 Work with customers to save water through our sustainable water use program. Barwon Water is committed to saving 1,000 ML over 5 years. This year, we have saved 202ML through the Sustainable Water Use Program, cumulatively reaching 40 per cent of our 5-year target.	Ongoing
GG5 Expand our use of smart technology to help reduce costs and save water across our networks and in our homes and businesses. 289 smart meters installed across the Geelong system, with 27,000 to be installed in total by Barwon Water by 2027.	On track
GG6 Maintain efforts to continually optimise our system, so that we can make best use of available water resources and entitlements. For example: This includes investigations to inform a review of the Anglesea groundwater bulk entitlement to be submitted to the Minister by 01 November 2024.	Ongoing
GG7 Start delivery of the integrated water management plan for the new Northern and Western Geelong Growth Areas, including construction of a ‘purple pipe’ network to supply Class A recycled water. Ongoing engagement with the City of Greater Geelong to advocate for the objectives of the Growth Areas Integrated Water Management Plan. Concept design for dual pipe infrastructure underway, however likely to be supplied with potable water until the Advanced Water Recycled Facility is constructed in the mid-2030s.	On track
GG8 Work with the City of Greater Geelong, Golden Plains Shire, Surf Coast Shire and Borough of Queenscliffe to progress localised integrated water management opportunities.	Ongoing
GG9 Support improved flows and waterway health on the Barwon River by undertaking complementary river rehabilitation works.	Ongoing
GG10 Investigate the feasibility of a large-scale alternative water grid to distribute recycled water and stormwater for beneficial uses to boost water supply for agriculture and primary industries.	Complete

Colac system



Colac's water supply is sourced from the West Gellibrand and Olangolah Reservoirs, which are located in the Gellibrand River catchment in the Otway Ranges.

During dry periods or unplanned weather events, we can draw water from the Geelong, Golden Plains, Bellarine and Surf Coast system via a pipeline connection.

Current storage



97.7%

2,570 ML of 2,631 ML
at 19 Nov 2024

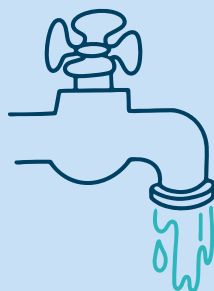
Population



14,922

at July 2024

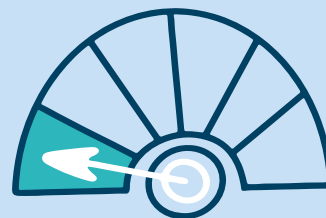
Water demand



3,496
million litres

2023-24

Restrictions likelihood



VERY RARE



Storage outlook

The short-term storage outlook for the Colac system shows that, even under the worst climatic conditions, water restrictions will not be necessary for the next two years (to December 2026).

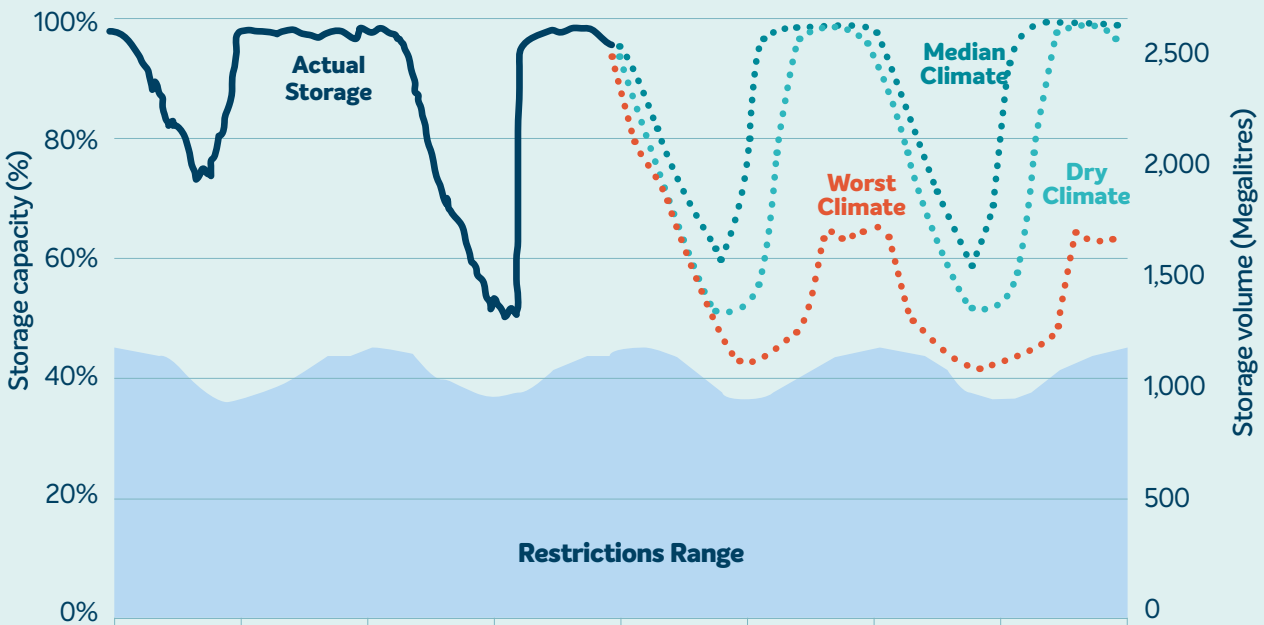


Figure 2: Projected two-year water supply for the Colac system.

Short-term actions

Action	Status
<p>C1 Work with customers to help them use water more efficiently.</p> <p><i>As part of our WaterSmart Business program, we have worked with businesses in Colac to install 26 data loggers to identify things like leaking toilets and cisterns. We have also upgraded showerheads at the Colac recreation reserve and improved water efficiency at the Colac saleyards.</i></p>	Ongoing
<p>C2 Build a new underground pipeline to connect Birregurra to the Colac system.</p> <p><i>Construction of Birregurra pipeline completed September 2024.</i></p>	Complete
<p>C3 Work with Colac Otway Shire to progress localised integrated water management opportunities.</p>	Ongoing



Lorne system



The Lorne water supply system is a standalone system, which means it relies solely on water sourced from the Allen Reservoir (located on the St George River). Water is treated before being supplied to customers.

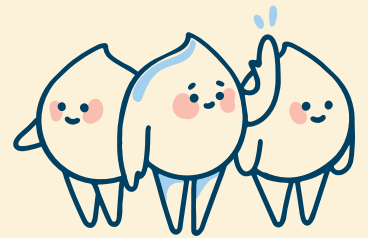
Current storage



100%

215 ML of 215 ML
at 19 Nov 2024

Population



2,004

at July 2024

Water demand

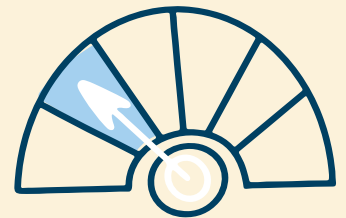


372

million litres

2023–24

Restrictions likelihood



RARE



Storage outlook



The Allen Reservoir typically fills over the winter period due to good rainfall and streamflow.

During the summer period, the system can be vulnerable to conditions outside a 'normal' climate range. Additionally, Lorne experiences an influx of visitors in summer, which temporarily increases the town's population by up to 10 times. As such, water restrictions may be required if rainfall is low, or if demand is much greater than expected.

While the likelihood of water restrictions being applied to the Lorne system has been rated as 'rare', restrictions may be required should worst-case climate or demand scenarios eventuate.

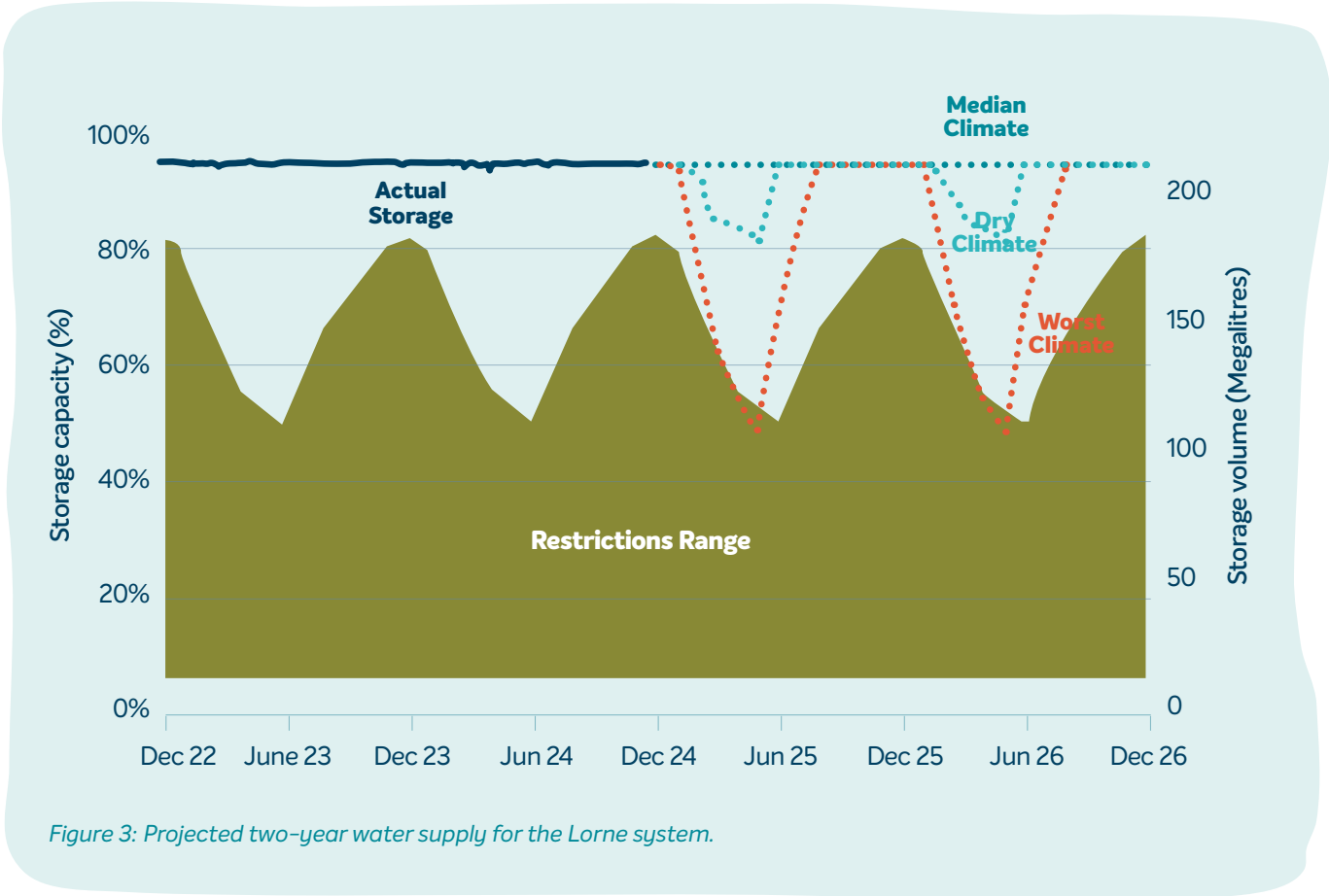


Figure 3: Projected two-year water supply for the Lorne system.

Short-term actions

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While the existing Lorne system will continue to meet demand in the short-term, we will need to act within the next decade to maintain a reliable supply of water over the longer term.

As such, we are working on minor upgrades to make the best use of our current water supply system.

Action	Status
<p>L1 Engage with the Lorne community to help identify a preferred long-term option, so we can continue planning and be ready to implement when required</p> <p><i>Community Working Group established in September 2023, with four meetings held so far. The CWG has developed Values, Principles and an Assessment Criteria through this process.</i></p>	On track
<p>L2 Pursue greater efficiency at our water treatment plant</p>	On track
<p>L3 Explore potential water treatment upgrades to maximise the efficient use of water in storage</p> <p><i>If the full benefit of being able to access 13ML of previously untreatable water through the effective treatment of manganese is realised, an additional three years of water security will be gained. A three-year water quality monitoring program is currently underway at Allen Reservoir to build confidence in management of this issue.</i></p>	On track
<p>L4 Work with customers to help them use water smarter</p> <p>Partnered with Lorne College under the Schools Water Efficiency Program to help save drinking water. This partnership will contribute to our regional goal of saving 100ML by 2028</p>	Ongoing
<p>L5 Work with Surf Coast Shire to progress localised integrated water management opportunities and support uptake of alternative water sources, where efficient</p>	Ongoing

Apollo Bay system



The communities of Apollo Bay, Skenes Creek and Marengo rely solely on the Barham River for water supply. Water harvested from the river during high-flow periods, during winter and spring and is stored in two basins – Marengo Basin (125 ML) and Apollo Bay Basin (276 ML) – before it is treated and supplied to customers.

Current storage



92.5%

364.6 ML of 401 ML
at 19 Nov. 2024



Population

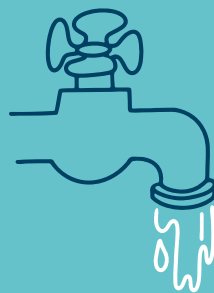


2,530

at July 2024



Water demand



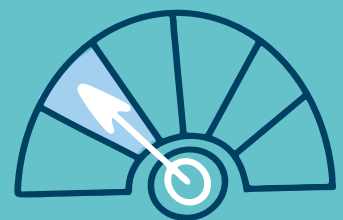
411

million litres

2023–24



Restrictions likelihood



RARE



Storage outlook

Apollo Bay storages typically fill over the winter period, due to good rainfall and streamflow.

However, the system can be vulnerable to conditions outside a 'normal' range during summer, such as low rainfall or greater than expected demand.

While the likelihood of water restrictions being required for the Apollo Bay system has been rated as 'rare', restrictions may be required should worst-case climate or demand scenarios eventuate.

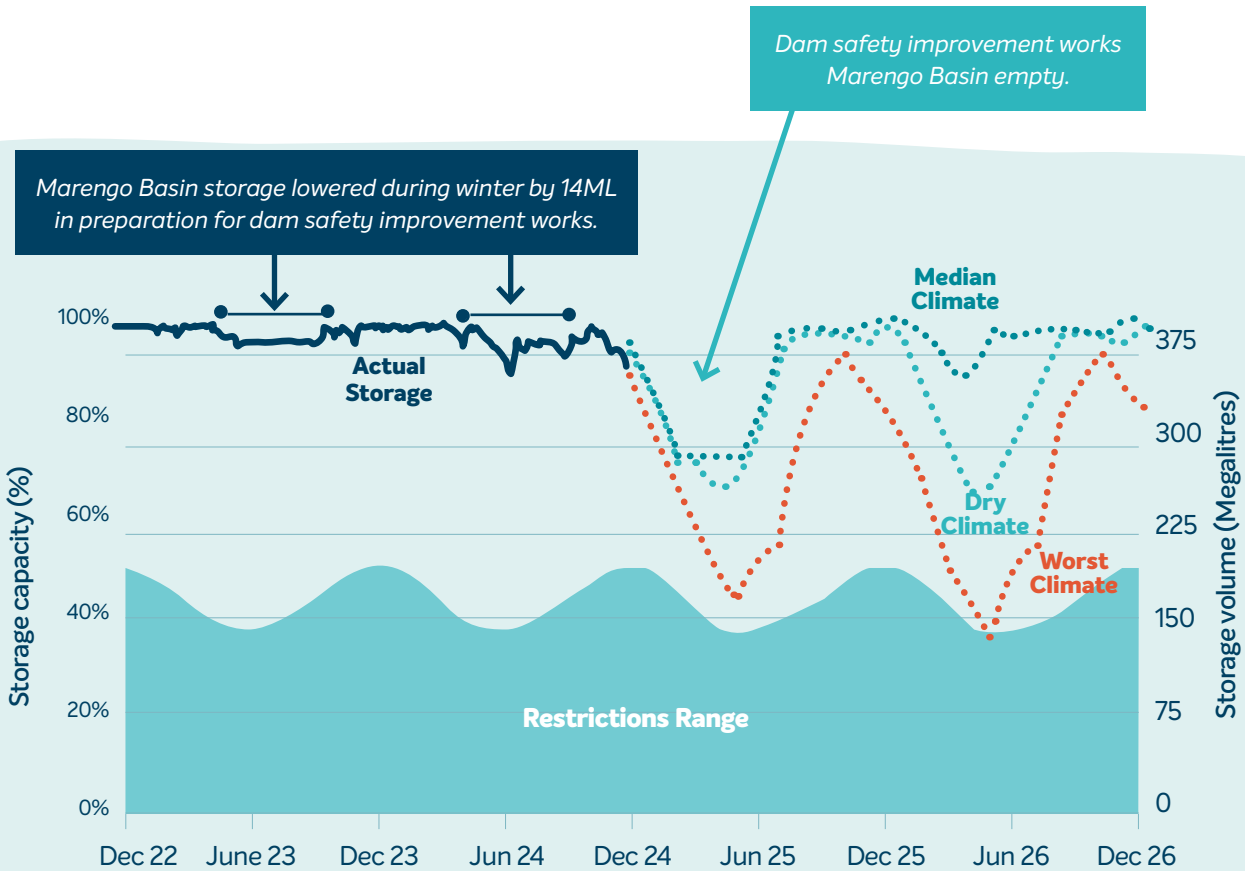


Figure 4: Projected two-year water supply for the Apollo Bay system, noting Marengo Basin undergoing planned maintenance to improve dam safety. During this time, basin capacity will be reduced by 14ML between May and September 2024, until works are completed. Our supply graph reflects the impacts of this temporary change.

Short-term actions

While the existing Apollo Bay system will continue to meet demand in the short-term, we will need to act within the next decade to maintain a reliable supply of water over the longer term.

Action	Status
<p>AB1 Engage with the Apollo Bay community about a preferred long-term option, as part of planning to be ready to implement it when required.</p> <p><i>Improvements to the Apollo Bay water supply system to increase yield were completed in 2022, which deferred the need for water supply augmentation to 2031. As such, we are now seeking to engage the Apollo Bay community in early 2025.</i></p>	Deferred to early 2025
<p>AB2 Upgrade our infrastructure to maximise efficient production and storage of water</p> <p><i>A spillway gate was installed to increase storage capacity of the Apollo Bay Basin by 26ML. This minor upgrade deferred the need for a major water supply augmentation by two years.</i></p>	Complete
<p>AB3 Research use of modular floating covers to reduce evaporation losses</p> <p><i>A research study was completed in 2024 and explored the effectiveness of modular floating covers to minimise water evaporation. The study concluded that while the covers could significantly reduce evaporation, they may introduce water quality risks. Further work is required to determine if this is a suitable option to increase water security in Apollo Bay.</i></p>	Complete
<p>AB4 Work with customers to help them use water smarter, such as digital meters to target leakage reduction, and minimise leakage across our network Integrated water management</p>	On track
<p>AB5 Work with Colac Otway Shire to progress localised integrated water management opportunities and support uptake of alternative water sources, where efficient.</p> <p><i>Barwon Water in partnership with the Apollo Bay Golf Club, constructed a new 1.1km pipeline, pumps and a storage tank to provide up to 10ML/year of recycled water for irrigation, reducing the reliance on precious drinking water. The Victorian Government provided \$450,000 in funding under the Integrated Water Management Grants Program to deliver this project.</i></p>	Ongoing



Gellibrand system



Gellibrand is located approximately 25 kilometres south of Colac and supplies less than 100 properties. Water is harvested from Lardners Creek and then pumped to the Gellibrand Water Treatment Plant prior to being gravity-fed to customers.

Annual Entitlement



60ML



Population

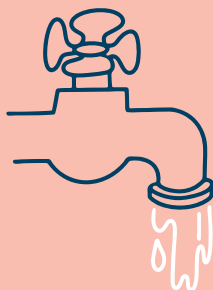


73

at July 2024



Water demand



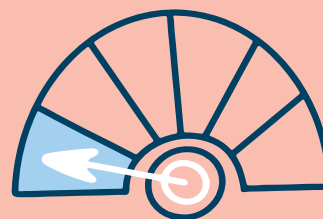
18

million litres

2023-24



Restrictions likelihood



VERY RARE



Storage outlook

The short-term supply outlook shows that, even under the worst climatic conditions, water restrictions for the Gellibrand system will not be necessary in the next two years (to December 2026).

Water is harvested directly from the river to service the Gellibrand township. The graph below shows that river flows are far in excess compared to demand.

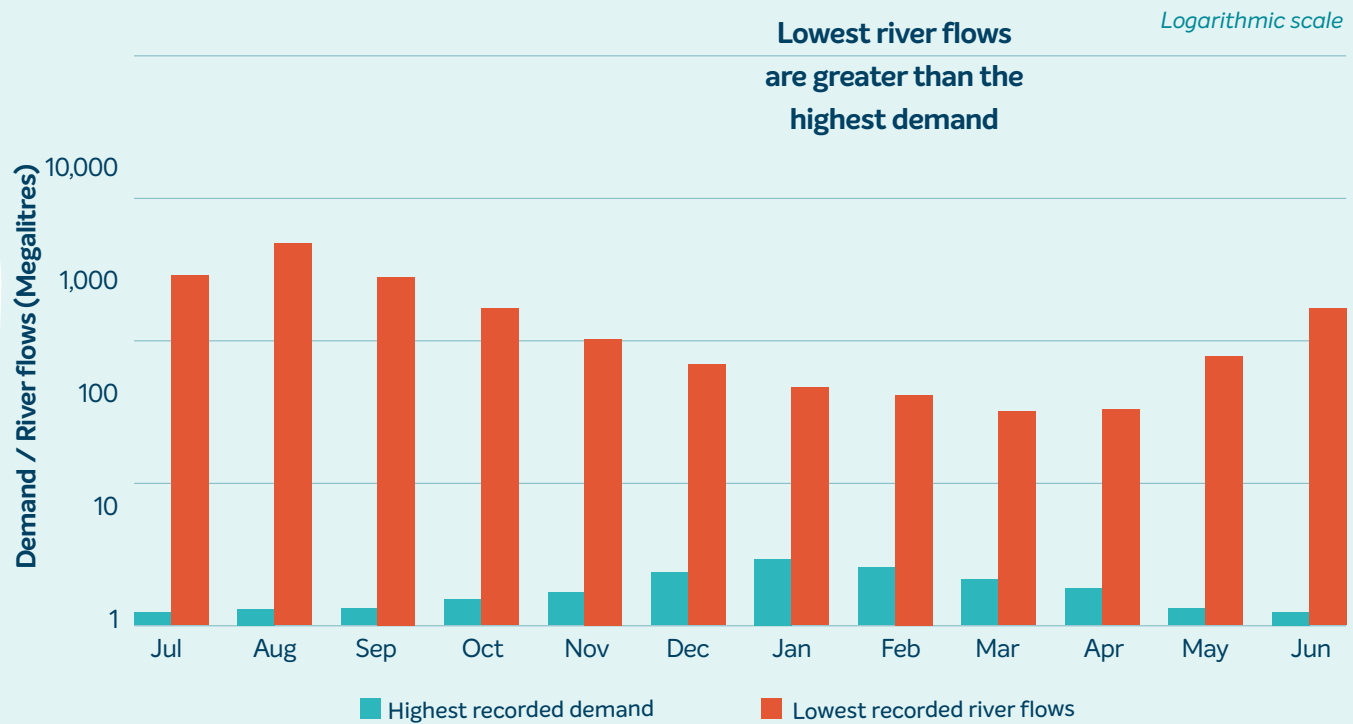
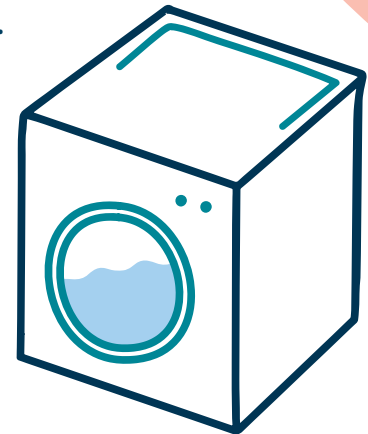


Figure 5: Projected water supply for the Gellibrand system.

Short-term actions

Our ongoing operational processes and monitoring of supply conditions will ensure water restrictions remain very rare for the Gellibrand water supply system.





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