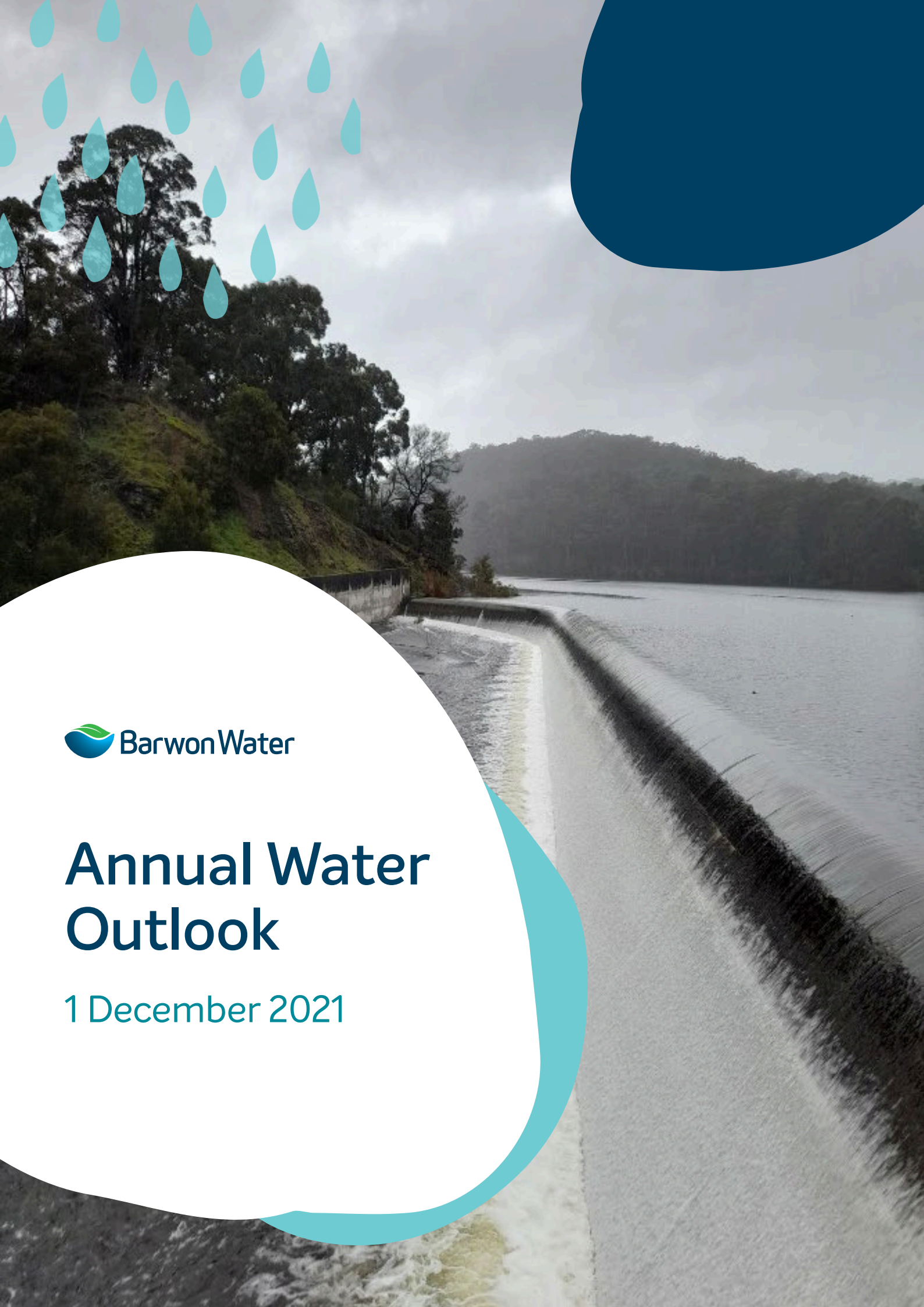


Barwon Water

Annual Water Outlook

1 December 2021

We proudly acknowledge the Traditional Custodians of the land on which we work and live, and on the water on which we rely. We pay our respects to their Elders, past, present and future.

We recognise Aboriginal and Torres Strait Islander peoples as the First Peoples of this Nation. We value their continuing cultures and contributions to our community, and their ongoing connection to the land and water over tens of thousands of years.

We want to support our Traditional Owners in the development and implementation of their Country Plans and in their journey for self-determination.

Through our partnerships with Wadawurrung and Eastern Maar, and our Reconciliation Action Plan, we commit to identifying and realising tangible opportunities to contribute to Healthy Country.

We also want to be guided by our Traditional Owners in our decisions about sourcing and moving water on Country, with a strong collaboration to further integrate their cultural values and goals under the framework of their Country Plans into the work we do.

Barwon Water service region and key infrastructure

Summary

Every year all Victorian water corporations produce an Annual Water Outlook to inform customers, stakeholders and the community about their respective water supplies.

Our outlook projects how each of our water supply systems will track under different climate scenarios for the next two years considering rainfall, storage levels, population growth and how water is used.

Snapshot of current water supplies

Above average rainfall for the past 12 months has boosted local storage levels, ensuring our water supply systems are secure in the short-term. Although storages are healthy for now, long-term trends still point to a hotter, drier climate where less rainfall is predicted to fall in our catchments and reservoirs.

Rainfall in 2020/21 was above average, with eight of the 12 months having higher rainfall than the ten year average. West Barwon Reservoir, home to the region's main catchment located in the Otways, spilled for the first time in just under seven years, releasing an additional 21 GL[1] to the environment. Lal Lal Reservoir, in the Moorabool catchment also started spilling for a second year in a row, in August 2021.

With plentiful rainfall during the winter and spring harvesting season, minimal top-up of water has been required from Melbourne via the Melbourne-Geelong Pipeline, and no groundwater pumping has occurred from the Anglesea borefield in the past 12 months. The likelihood of triggering water restrictions for the Geelong, Golden Plains, Bellarine and Surf Coast system is very rare, given the ability to activate other sources should storage levels drop significantly.

Our coastal systems of Lorne and Apollo Bay are also secure in the short-term, with water restrictions in the next 12 months rated as rare. Actions for both systems are being initiated as part of the *Water for our Future* Strategy, to secure supply for the long-term.

Whilst it is true we have received good rainfall in 2021 and our storages are looking healthy, we cannot guarantee this will be the case every year into the future.

We continue to plan our long-term response to the challenge of a hotter, drier climate and a growing region through the *Water for our Future* program. We released a draft *Water for our Future* Strategy for community feedback in October 2021, and will finalise this strategy by March 2022.

Three-month climate outlook

The Bureau of Meteorology forecast (issued on 25 November 2021) indicates that rainfall in our region is expected to be above average, with higher-than-average maximum temperatures for the next three months.

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/research/vicwaci

[1]As of 29 November 2021.

Two year outlook for our systems

Restrictions likelihood explained

Each sheet in the following section outlines the outlook for each of our water supply systems.

The scale of likely water restrictions is included, and the full scale runs from very rare to almost certain, as shown here.

Geelong, Golden Plains, Bellarine and Surf Coast system

This system services more than 90% of our customers, whose drinking water is sourced from catchments on the upper Barwon and Moorabool rivers, groundwater from the Anglesea borefield and an entitlement to take water from Melbourne's Yarra Thomson catchment via the Melbourne to Geelong Pipeline. We also operate two Class A recycled water plants – the Northern Water Plant and the Black Rock Recycled Water Plant – and supply recycled water for non-drinking purposes such as garden watering, commercial, industry and agriculture.

Current storage

96.9%
92 GL / 95 GL

Population

323,539
as at July 2021

Water demand

32,400
million litres
2020-2021

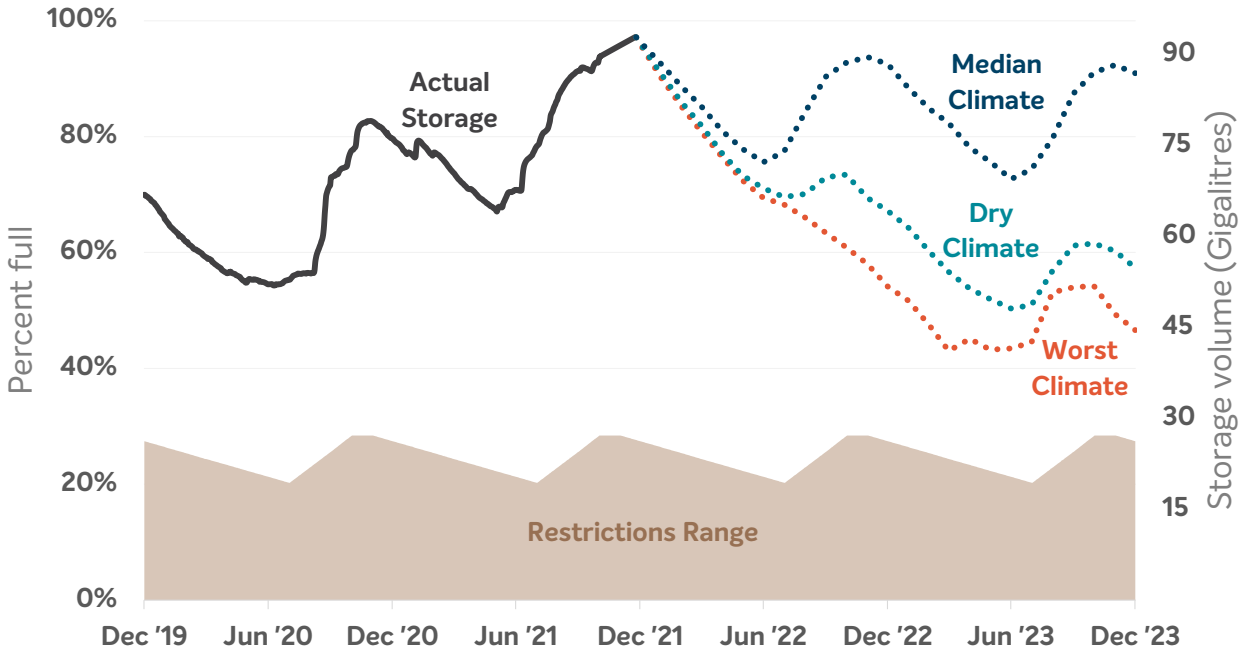
Restrictions likelihood

VERY RARE

As of 29 November 2021

Storage outlook

The short-term storage outlook shows that even under the worst climatic conditions, water restrictions will not be necessary for the next two years, to December 2023.



Short-term actions

Action	Status
We will improve how water moves through our system by **reviewing operating rules** and triggers to increase the efficiency of our water supplies.	On track
In March 2022, we will finalise our ***Water for our Future* Strategy** that outlines our 50-year plan to manage demand for, and ensure sufficient supplies of, drinking water.	On track
We will continue to engage and communicate with our community to promote the **Permanent Water Saving Rules** and to help them save drinking water through a range of Sustainable Water Use programs.	In operation

Colac system

Colac's water supply is sourced from the West Gellibrand and Olangolah reservoirs, which are located on the Gellibrand River in the Otway Ranges. During dry periods, Colac can draw on water from the Geelong, Golden Plains, Bellarine and Surf Coast system via a pipeline connection.

Current storage

98.6%
2.6 GL / 2.6 GL

Population

14,051
as at July 2021

Water demand

2,710
million litres
2020–2021

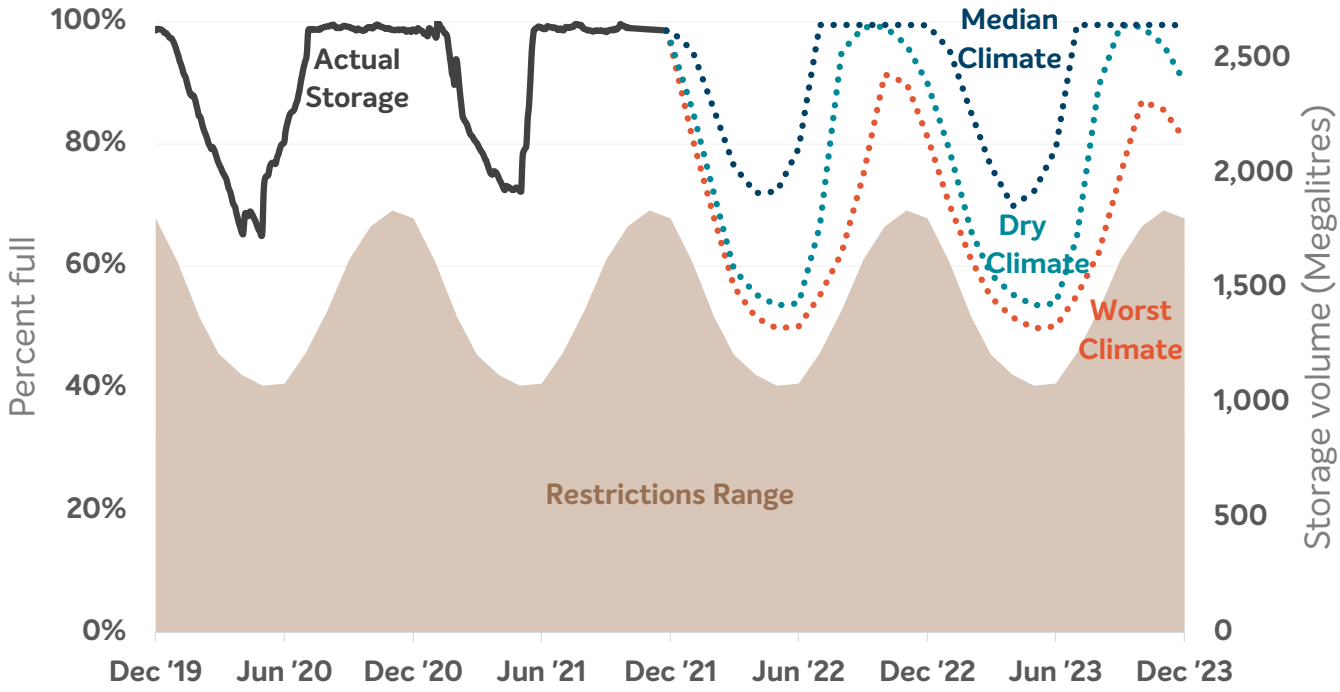
Restrictions likelihood

VERY RARE

As of 29 November 2021

Storage outlook

The short-term storage outlook shows that even under the worst climatic conditions, water restrictions will not be necessary for the next two years, to December 2023.



Short-term actions

Action	Status
We will continue to engage and communicate with our community to promote the **Permanent Water Saving Rules** and to help them save drinking water through a range of Sustainable Water Use programs.	In operation
In March 2022, we will finalise our ***Water for our Future* Strategy** that outlines our 50-year plan to manage demand for, and ensure sufficient supplies of, drinking water.	On track

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/ 215 ML

Population

1,525
as at July 2021

Water demand

330
million litres
2020-2021

Restrictions likelihood

RARE

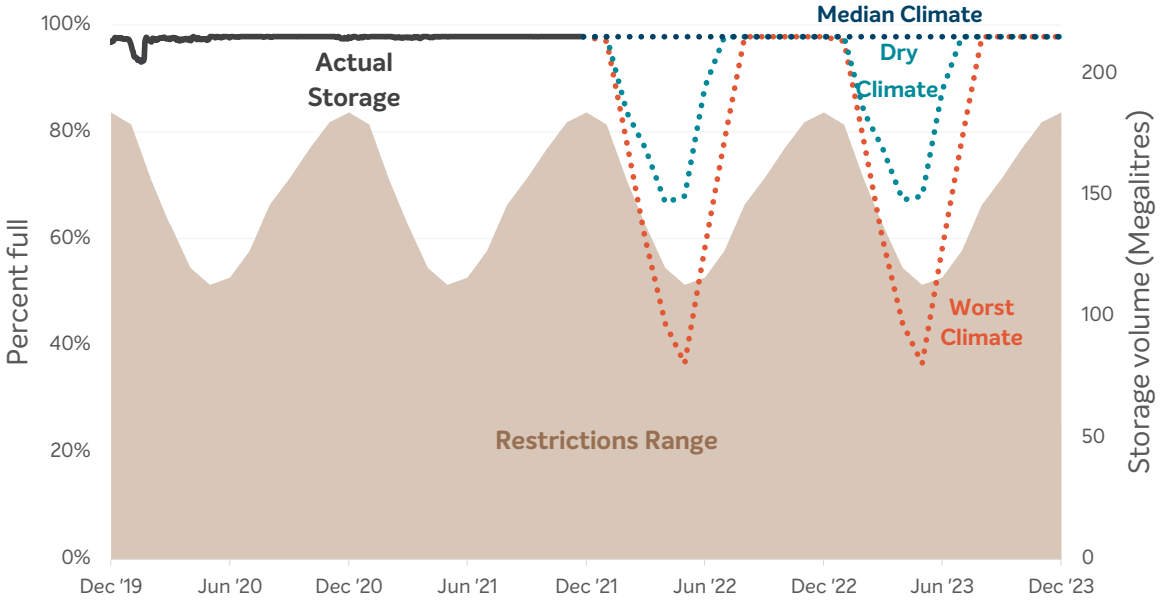
As of 29 November 2021

Storage outlook

The Allen Reservoir typically fills over the winter period due to good rainfall and streamflow. However over the summer period, the water supplies can be vulnerable to conditions outside a 'normal' climate range.

Water restrictions may be required if we experience low rainfall, or if demand is much greater than expected. While rated as 'rare', under a worst-case climate scenario, water restrictions may be required over the summer period when the town experiences an influx of visitors, temporarily seeing the population raise from approximately 1,500 to nearly 21,000.

While the existing Lorne system can continue to meet service levels in coming years, we will need to act within the next decade to maintain a reliable supply of water over the long-term.



Short-term actions

Action	Status
We will work with customers in Lorne to help them **use water smarter**, through promotion of the Permanent Water Saving Rules (particularly over summer) and to help them save drinking water supplies, through our range of Sustainable Water Use programs.	In operation
In March 2022, we will finalise our ***Water for our Future* Strategy** that outlines our 50-year plan to manage demand for, and ensure sufficient supplies of, drinking water.	On track

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 in the winter and spring are stored in two basins – Marengo Basin (125ML) and Apollo Bay Basin (250ML) before being treated and supplied to customers. Water harvesting is limited during summer to preference water for environmental flows.

Current storage

97.6%
366 ML/ 375 ML

Population

2,224
as at July 2021

Water demand

344
million litres
2020–2021

Restrictions likelihood

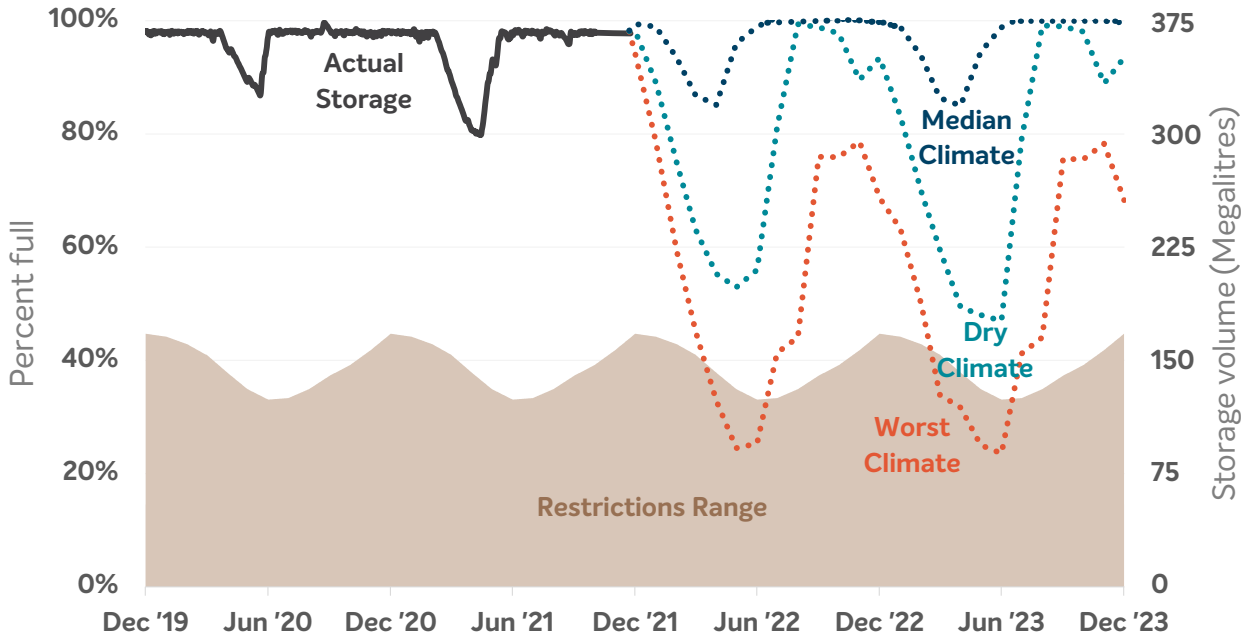
RARE

As of 29 November 2021

Storage outlook

Apollo Bay storages typically fill over the winter period, due to good rainfall and streamflow. However, over the summer period, the water supplies can be vulnerable to conditions outside a 'normal' climate range. Water restrictions may be required if we experience low rainfall, or if demand is much greater than expected.

While rated as 'rare', under a worst-case climate scenario, water restrictions may be required over the summer period when the town experiences an influx of visitors, temporarily swelling the population ten-fold to around 20,000. While the existing Apollo Bay system can continue to meet service levels in coming years, we will need to act within the next decade to maintain a reliable supply of water over the long-term.



Short-term actions

Action	Status
We will work with customers in Apollo Bay to help them **use water smarter,** through installing digital meters to target leakage reduction, promotion of the Permanent Water Saving Rules (particularly over summer) and help them save drinking water through Sustainable Water Use programs.	In operation
In March 2022, we will finalise our ***Water for our Future* Strategy** that outlines our 50-year plan to manage demand for, and ensure sufficient supplies of, drinking water.	On track

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

60 ML

Population

71
as at July 2021

Water demand

18
million litres
2020–2021

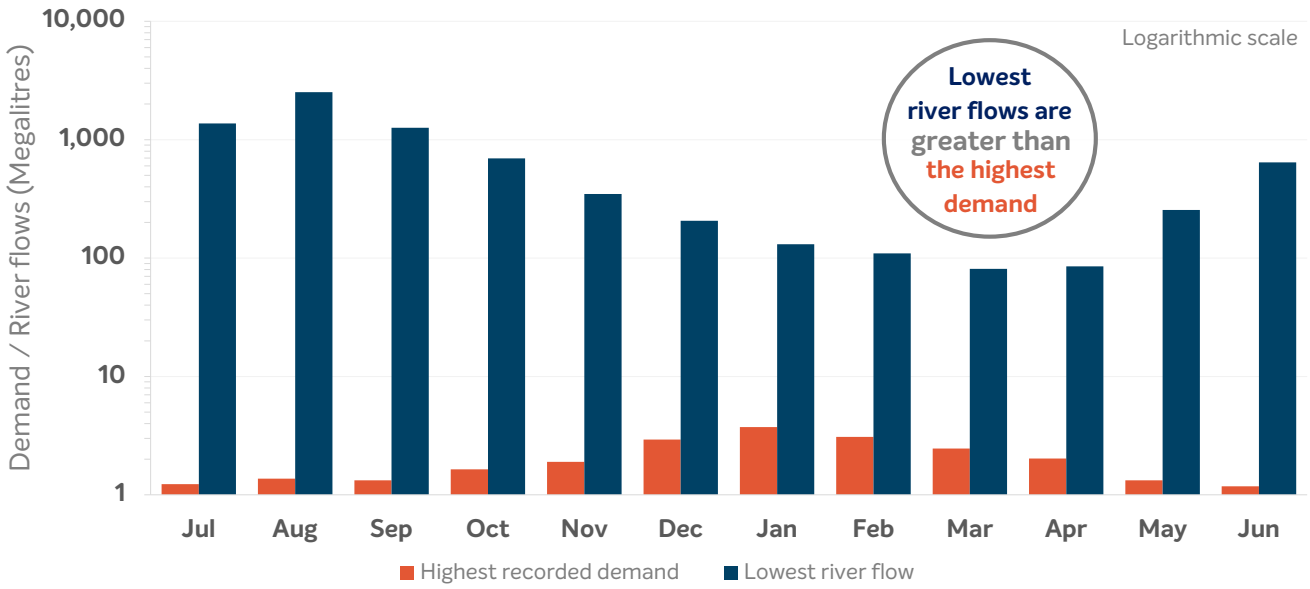
Restrictions likelihood

VERY RARE

As of 29 November 2021

Supply outlook

The short-term supply outlook shows that even under the worst climatic conditions, water restrictions will not be necessary in the next two years, to December 2023.



Short-term actions

Action	Timing	Status
We will continue to engage and communicate with our community to promote the **Permanent Water Saving Rules** and to help them save drinking water through a range of Sustainable Water Use programs.		In operation
In March 2022, we will finalise our ***Water for our Future* Strategy** that outlines our 50-year plan to manage demand for, and ensure sufficient supplies of, drinking water.		On track

Our long-term response

With less rain and a hotter climate, we know it's time to think differently about how we use water and where it comes from. That's why we're partnering with our community, stakeholders and regional leaders to design a new water future for our region.

Although our water supply systems are secure in the short term, we recognise the immediate need to work on our long-term response.

Our water supply systems currently rely on a variable source – rainfall. Our modelling shows we need to find or save up to 5 billion litres of water – over and above the 35 billion litres our region currently uses – every five years for the next 50 years.

A hotter drier climate means our reservoirs are already receiving much less water from rainfall in our catchments. Although in the past 12 months we have experienced above average rainfall, history shows that since the Millennium Drought (1996–2010), we have seen a 30 to 60 per cent reduction in average annual inflows to our major water storages since 1997.

Over the past two years, through our *Water for our Future* program, we have been working with our community to co-design a water future that meets all of our needs. Our research tells us that our customers and community want us to protect the environment and support the health and cultural values of our rivers. This means we will need to gradually shift to sources of water that are more climate resilient.

Good planning involves considering a wide range of options and future scenarios, which has been the philosophy of the *Water for our Future* program. We undertook significant technical analysis to build our understanding of the many ideas we heard, and the respective contribution they might make to responding to our challenge.

Our draft *Water for our Future* Strategy responds to the challenges that we face to achieve a secure water future for our region by setting out a clear plan of action for the next five years, as we begin to deliver our community's vision for our water future for the next 50 years. Our adaptive plan identifies the key actions we will take for each of our systems to balance all the needs for water in our region by finding smarter ways to use the water we already have and transitioning from climate dependent to climate independent sources of water.

Have your say

We are currently seeking community feedback on our draft *Water for our Future* Strategy.

For more information, and to provide your feedback, please visit:

https://www.waterfuture.barwonwater.vic.gov.au/

Integrated water management

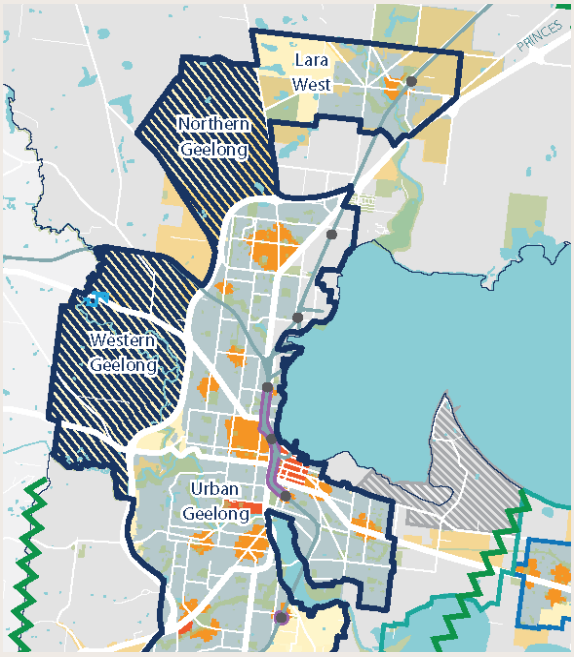
We are adopting an integrated water management approach when planning all future urban growth, in partnership with the City of Greater Geelong, Golden Plains Shire, Surf Coast Shire, Borough of Queenscliffe and Colac Otway Shire councils.

Case Study: Integrated water management plan for the new Northern and Western Geelong Growth Areas

New growth areas in the north and west of Geelong, which will become home to over 110,000 new residents and a variety of new business and industry over the next 50 years, will be planned and delivered using an integrated water management approach.

These growth areas will constitute over a third of the total expected population growth within Greater Geelong, yet a clever and creative approach to urban design and place-making will generate a green, liveable city and build regional water resource resilience.

We are investing now to help facilitate this growth in a sustainable way over the next 50 years. Whilst benefits will take time to realise, the plan aims to deliver the following benefits, in partnership with other stakeholders:



- Class A recycled water will be delivered via a “purple pipe” network to homes, local industry and open spaces to reduce the future demand for potable water supplies by 3,400 million litres/year. Pending further investigation, this could also enable the provision of recycled water for environmental flows in the Moorabool River as pumped groundwater contributions from the Batesford Quarry decline or support irrigated agriculture, horticulture and viticulture in the Moorabool Valley. Construction of this “purple pipe” network will commence in 2024 as development of the area begins, with the first houses expected to be occupied by 2025.

- Passively irrigated street trees, swales and enhanced infiltration billabongs will retain 4,400 million litres/year of water in the landscape and support enhanced tree canopy of an additional 85 hectares to create an enriched local identity and landscape character.

- Local waterways will be naturalised and rehabilitated, including vegetation enhancement of the Barwon, Cowies and Moorabool Rivers to create high value green corridors and enhance biodiversity.

- Provision for the long-term capture and transfer of treated stormwater from wetlands within the development to supplement potable water supplies by over 5,000 million litres over a 30-50 year timeframe, subject to ongoing investigations.

Recycled water

Residential use of recycled water for garden watering, car washing and toilet flushing will increase over the next five years with demand on our potable water supplies around 300 million litres/year less than it would have been otherwise, due to this productive use of recycled water.

We will also support existing agricultural and industrial customers to increase their productive use of recycled water, and explore new opportunities for agricultural or industrial use of Class A recycled water our growth areas. Together, we expect we will be able to put an extra 1,000 million litres of recycled water to productive use. Most of this recycled water will be sourced from, and in turn benefit, the Greater Geelong, Golden Plains, Bellarine and Surf Coast system.

Case study: Recycled water at Deakin University

Deakin University is implementing a $7.8M IWM (Integrated Water Management) plan for its Waurn Ponds campus, which involves an extension of Barwon Water's Class A recycled water network to irrigate spots fields and campus grounds, reducing potable water use by 75 million litres/year.

Water efficiency

We currently supply about 35,000 million litres of water across our region annually. Geelong's population is growing fastest out of Australia's largest 20 cities, experiencing the highest five-year and one-year growth rates in both 2019-20 and 2020-21 [1].

Through our sustainable water use program, we will continue to work with customers to encourage water efficient behaviour and help them make use of alternative water sources that can save our precious drinking water.

Case study: Expanding our use of smart technology

We teamed up with the Birregurra Community Group to explore opportunities to save water using smart technology. We introduced 400 digital meters in residences and businesses across Birregurra, monitoring hourly water use, to support water efficient behaviour change, detect, and repair leaks. Around 10% of the residential customers participated in a 12-week behaviour change pilot program, harnessing data from the digital meter technology.

Those participating ending up using 27% less water. Much of this success was attributed to making it fun, competition between groups, and building on the strong local connections that regional communities enjoy. Participants were able to view water use data online through their own personalised dashboard and received weekly reports.

The digital metering technology helped identify 36 leaks at residential, business and agricultural properties in the first 6 months. So far the project has contributed to 11 million litres in water savings, the equivalent of about six Olympic-sized swimming pools.

[1] Source: https://blog.id.com.au/2021/population/population-trends/the-50-largest-cities-in-australia-2021-update/ and https://blog.id.com.au/2020/population/population-trends/the-50-largest-cities-and-towns-in-australia-by-population-2020-update/

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