wannonWATER

Annual Water Outlook

2025

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Contents

1 Introduction

This Annual Water Outlook has been prepared as required by Part 4-2 of the Statement of Obligations (General) 2015. It informs our customers, stakeholders and the community on:

- Our current water resource position
- The outlook for our water resources for the coming year under a range of potential climate scenarios
- Our ability to meet agreed levels of service
- Actions to improve system performance, if required, to meet agreed levels of service.

2 Region overview

The regional map (Figure 1) displays our customer service areas and the services provided. It includes the major centres of Warrnambool, Portland and Hamilton.

Figure 1 - Wannon Water region

2.1 Water security context and current storage

We supply drinking water to an estimated population of 89,000 people, across 34 drinking water localities and various non-drinking water areas. Our water supply comes from a diverse range of water sources, including surface water catchments, and deep geothermal and shallow groundwater aquifers. A breakdown of water sources for each locality is represented in Table 1.

Table 1 - Water supply systems and towns supplied

Water system	Supply sources	Towns supplied	Likelihood of restrictions for 2025	Current Storage level (%) As of Nov 2024	Supply (transfer) measures planned for dry scenario (to December 2025)
Otways	• Arkins Creek catchment • Gellibrand River catchment • Supplemented by groundwater and roof water.	• Allansford • Camperdown • Cobden • Derrinallum • Glenormiston • Koroit • Lismore • Mortlake • Noorat • Purnim • Simpson • Terang • Warrnambool	Unlikely	87 %	None
Grampians	• Little Tea Tree Creek and Glenelg River tributaries (Grampians National Park) • Rocklands Reservoir	• Balmoral • Cavendish • Dunkeld • Hamilton • Tarrington	Unlikely	69% (not inclusive of Rocklands)	Water to be pumped from Rocklands Reservoir
Glenthompson	• Yuppekiar Creek • Mt William Creek system (GWM water)	• Glenthompson	Possible (within 12 months)	61%	One-off transfer from nearby Railway Reservoir Continued collaboration with GWM Water to understand transfer possibilities through the Willaura system Water Carting

Groundwater systems	• Otway lower aquifers • Bridgewater formation aquifer • Newer volcanic aquifers	• Portland • Port Fairy • Heywood • Dartmoor • Macarthur • Port Campbell • Peterborough • Timboon • Casterton • Coleraine • Sandford • Merino • Penshurst • Caramut • Darlington	Unlikely	N/A	None
Konong-wootong	• Den Hills Creek	• None (rural customers only)	N/A	N/A	None

2.2 Summary of recent climate conditions in our region

South West Victoria has faced some very dry climate conditions over the past 12 months. The map below shows how the total rainfall experienced over the past 12 months compares to historical climate data recorded by the Bureau of Meteorology (BoM) since the 1900s. Some areas along the coast are experiencing the lowest total rainfall on record while the rest of our service region is well below average.

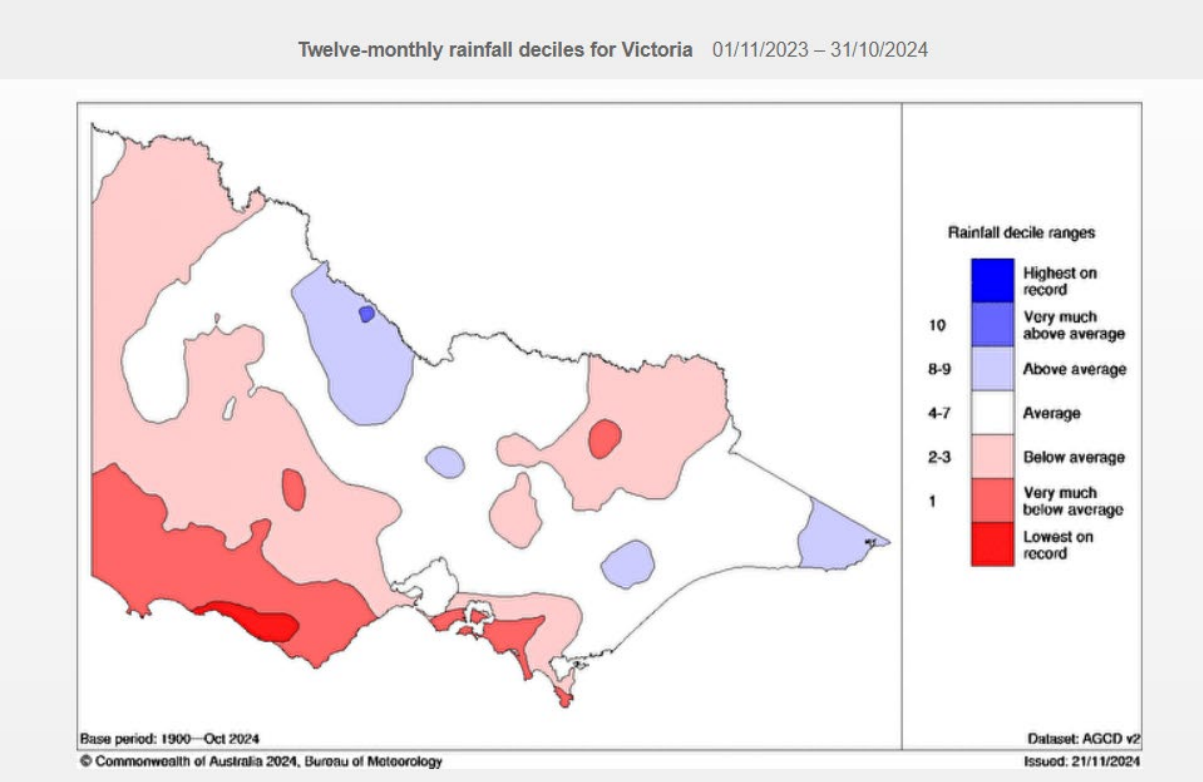

Figure 2 - 12-month rainfall deciles for Victoria - October 2023 through to September 2024 - taken from: http://www.bom.gov.au/climate/maps/rainfall/?variable=rainfall&map=decile&period=12month&region=vc&year=2024&month=09&day=30

2.3 Water consumption trends

Our customers' water usage in 2023/24 was 10,179 megalitres, which is broken down in figure 3, to demand type by percentage. Residential customers made up 46% of the water consumed in this period.

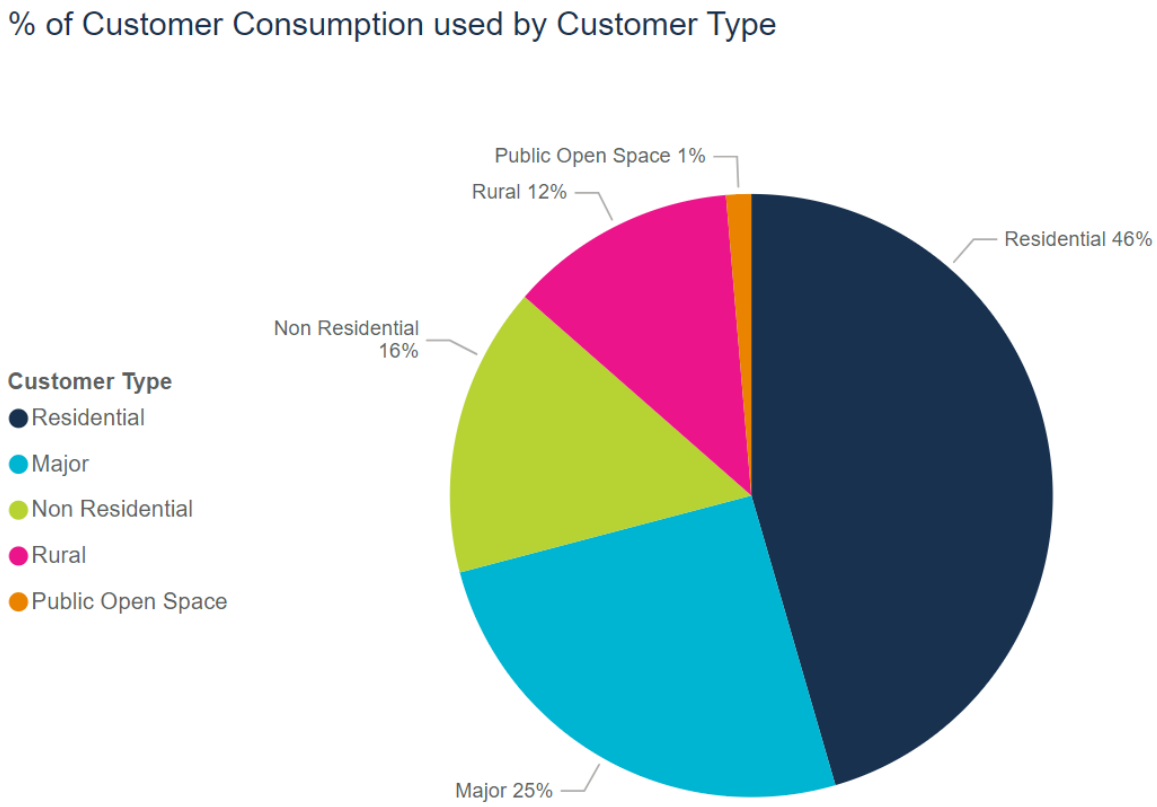

Figure 3 - Water consumption by customer type (%) 2023/24

Figure 4 shows the total customer water consumption for our region and total non-revenue water (NRW) volumes in recent years.

Water consumption is the total volume of water passing through customer meters. NRW is water lost through leaks, bursts and water theft. When added together we get the total amount of water that we supply from our Water Treatment Plants (WTPs).

In 2024, there has been an increase in both customer consumption and NRW compared to the previous year.

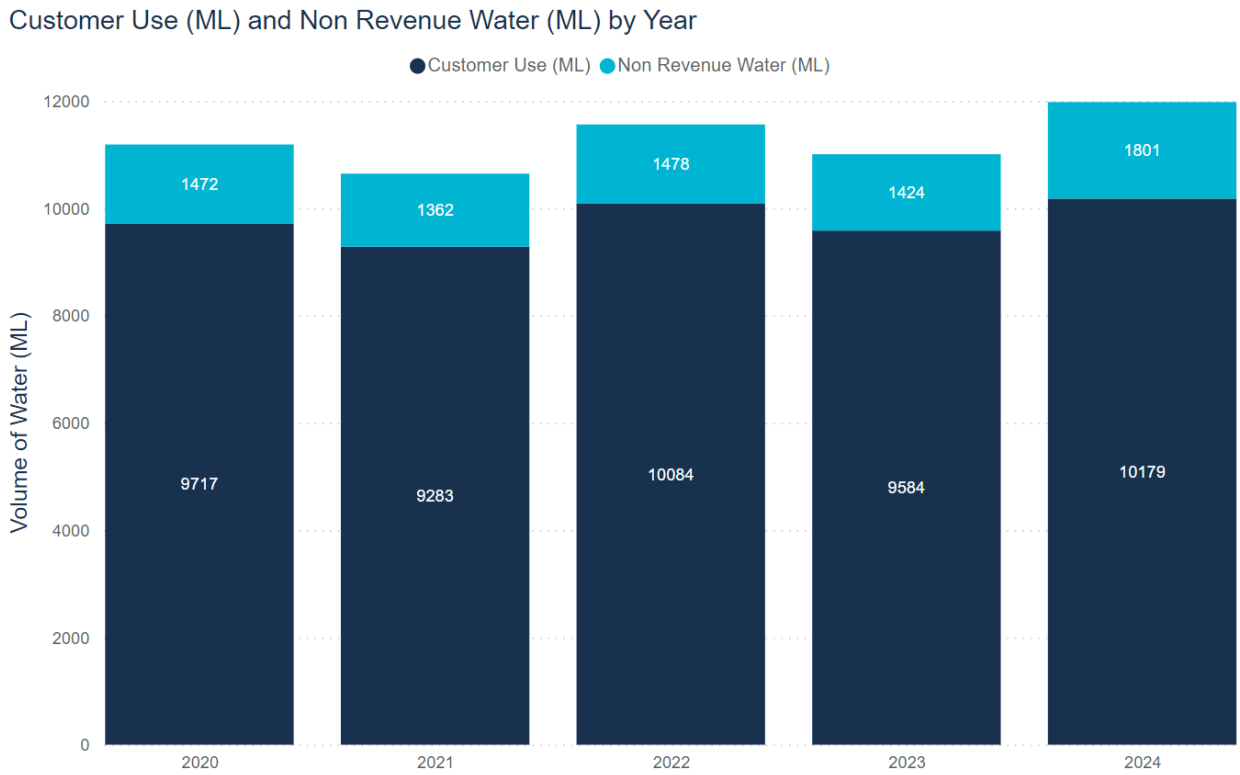

Figure 4 - Water customer consumption and NRW breakdown (ML)

Why has NRW increased so much this year?

Between July 2023 and June 2024, South West Victoria experienced its driest 12 months on record. Within this period we recorded a wet summer followed by an extremely dry autumn. This sudden expansion and then rapid drying of soils meant that many of the pipes within our network were disturbed by ground movements. This resulted in more bursts and leaks compared to a normal year. Our maintenance teams have responded to repair the pipes as a priority to prevent lengthy outages and water losses

We're now increasing some of the leak detection programs within our towns to help reduce this NRW volume in the future and to ensure we haven't missed any large leaks in our systems.

3 Regional climate outlook

3.1 Seasonal outlook – Summer 2024/25

The latest BoM rainfall outlook (issued on 26 November 2024) indicates that our region is expected to have a 50% - 75% chance of exceeding median rainfall between December 2024 and February 2025. This means we will likely experience average to above average rainfall conditions across our region for summer.

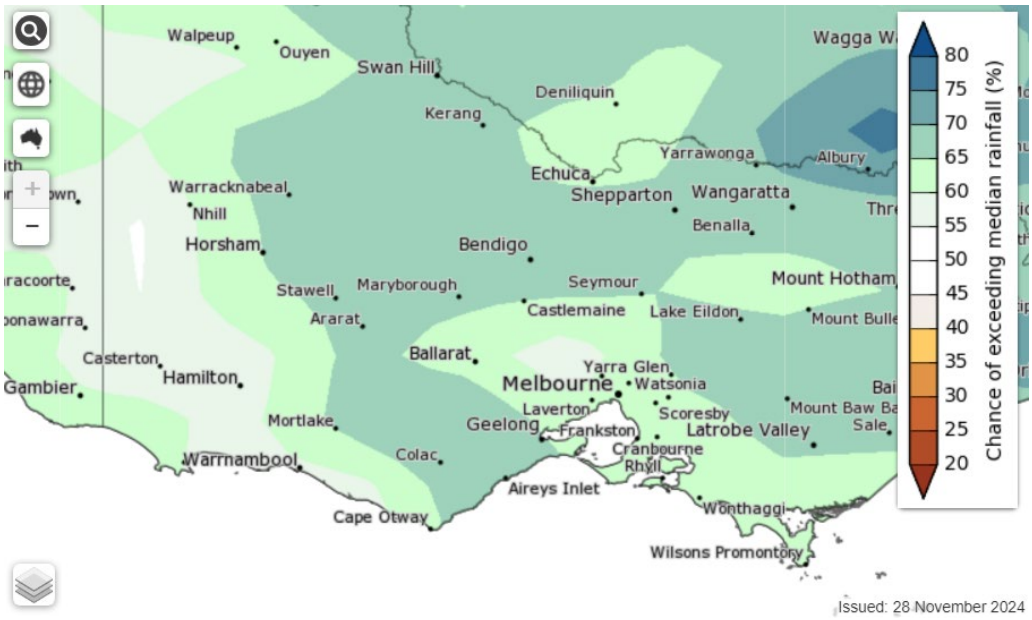

Figure 5 - Bureau of Meteorology rainfall outlook, December 2024 – February 2025

3.2 Seasonal temperature outlook – summer 2024/25

The temperature outlook issued in November 2024 by the BoM indicates there is more than an 80% chance of our region exceeding median maximum temperatures for over December to February. This means we are expecting a warmer than average summer.

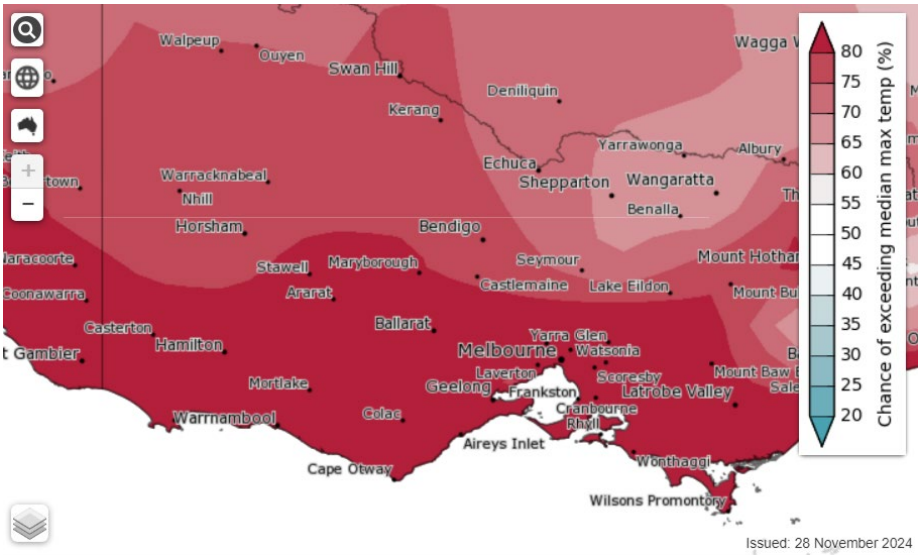

Figure 6- Bureau of Meteorology temperature outlook, December 2020 – February 2023

3.2.1 How much more above average is the temperature likely to be?

Additional modelling by the BoM shows that there is a 50-60% chance of areas of our region experiencing maximum temperatures in the highest 20% of the historical range between December and February. This means that the average maximum temperature across the next three months is expected to be well above average.

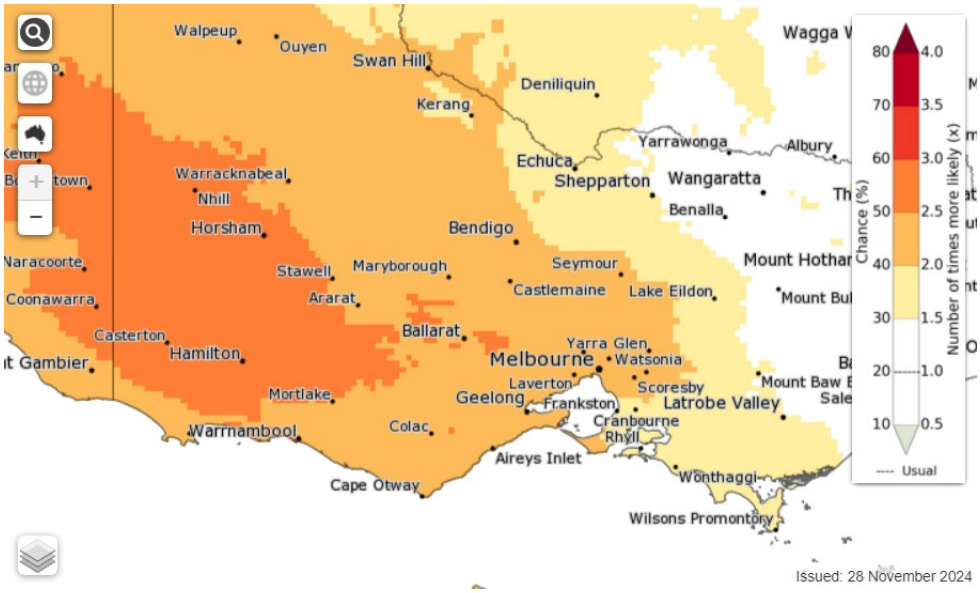

Figure 7- Bureau of Meteorology temperature outlook, chance of extremes, December 2020 – February 2023

3.3 Victoria's climate and streamflow in the longer-term context

Note: The DEECA Hydrology and Climate Science Team has worked with researchers from the Victorian Water and Climate Initiative to provide this Victorian climate and streamflow summary that can be used in Annual Water Outlooks. The blue sections are a suggested short version.

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.

- 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.
- 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/our-programs/climate-change-and-victorias-water-sector/hydrology-and-climate-science-research/victorian-water-and-climate-initiative

4 Water supply system outlooks

4.1 Otway system

4.1.1 System summary

The Otway system is the largest water supply system within our service area, supplying water to just over 26,000 customers. The system sources water from:

- Two locations on the Gellibrand River in the Otway Ranges.
- Three tributaries in Arkins Creek catchment within the Great Otway National Park.
- Two groundwater bores at Carlisle River.
- Two groundwater bores to supplement Mortlake's water supply.
- Three groundwater bores to supplement Warrnambool's supply.
- An emergency bore located near Curdievale which is to be used under drought conditions.
- Warrnambool's roof water harvesting project collects rainwater from new housing developments which accounts for up to 1% of Warrnambool's water supply.

Figure 8 - Otway system supply schematic

Figure 9 - Otway system supply summary

4.1.2 Managing supply and demand for a sustainable future

Every five years, we review climate and population data for each of our systems. This data feeds into the Urban Water Strategy (UWS) which is a key planning document that outlines what actions are required in order to maintain adequate levels of service for the community.

Figure 10 below shows how raw water demand is tracking against what was predicted for the Otway system in our 2022 UWS. In 2024 we have seen an increase in the demand from our Otway system sources compared to previous years. This means we are now tracking against our high raw demand forecast.

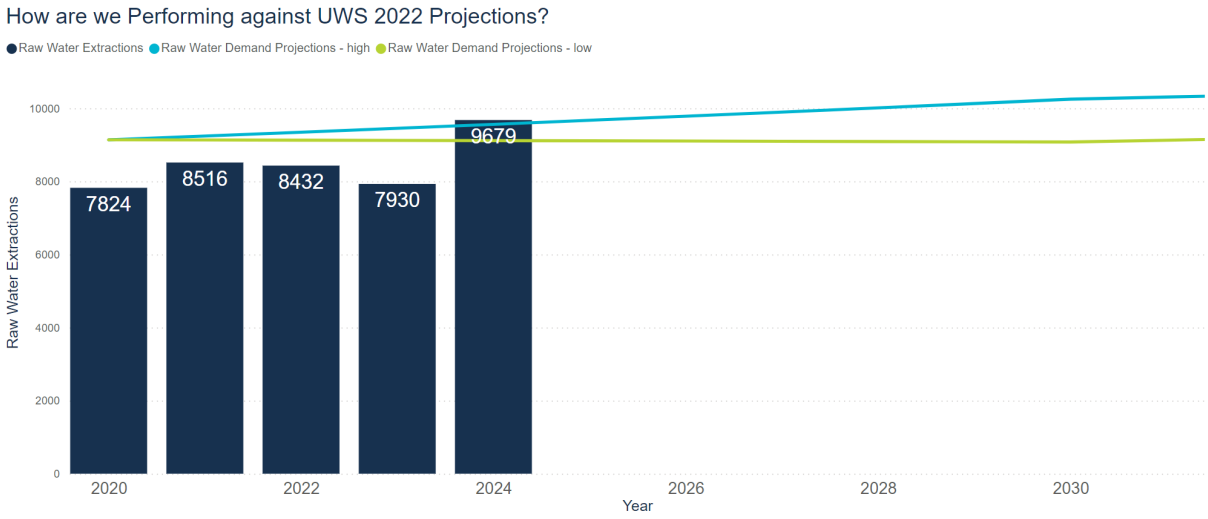

Figure 10 - Otway system bulk water usage versus 2022 UWS demand projections

Why has demand on the Otway system increased by so much this year?

Demands on the Otway system have been consistently increasing as a result of rising population over the years.

Drier weather conditions this year have resulted in a large number of bursts and leaks within Otway system township networks, significantly impacting the demand on this system. We have been proactively responding to ensure leaks are fixed as soon as possible and have increased our monitoring of the system.

We will also be expanding specific leak detection programs within many of these towns to reduce our NRW volumes in 2025. We plan to monitor our larger transfer mains over the summer period to ensure we are as reactive as possible across the drier months.

4.1.3 Storage levels and 2025 outlook

The Otway system has reliably supplied water to meet its required demands for more than 40 years with a consistent streamflow pattern. Our storage forecast in Figure 11 below has been calculated by considering the effects of climate, customer demand, and operational factors that will impact storage levels.

A dry scenario projection hasn't been depicted for the Otway system as it comprises a run of river systems with multiple balancing storages that increase the security of supply. The Otway system hasn't experienced restrictions since mandatory statewide restrictions were put in place by the government in the early 1980s. During this time, the system was still performing with consistent and secure supply.

We're currently sitting in the general awareness zone and filling our storages to prepare ahead of the summer months. We're on track to reach the storage target within the November/December period.

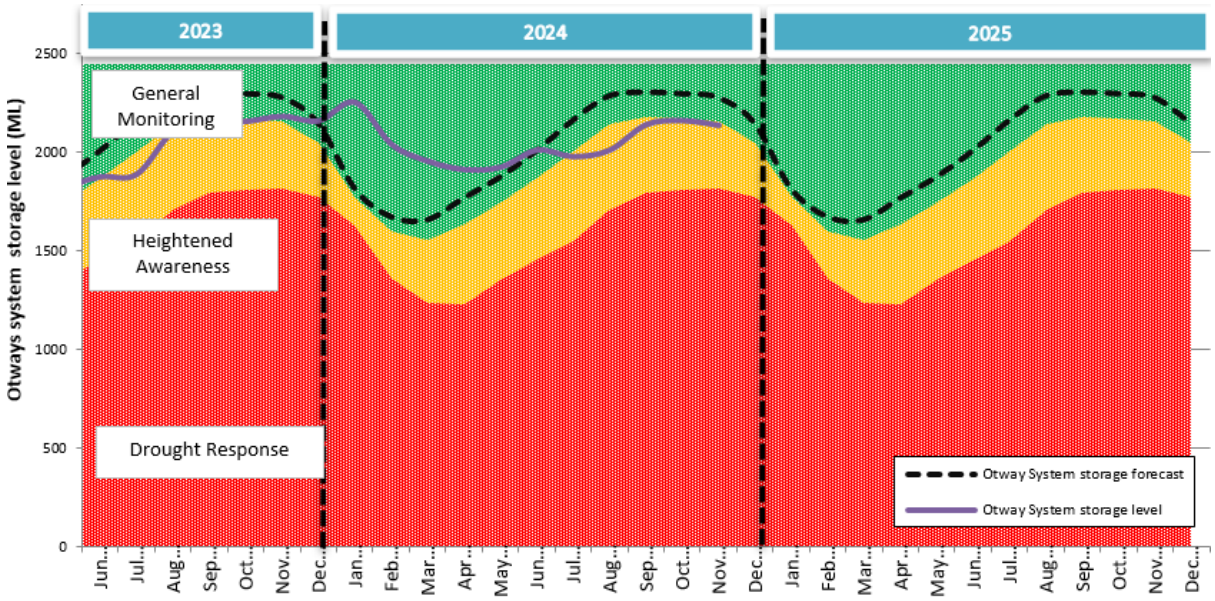

Figure 71 - Otway system storage level outlook

4.2 Grampians system

4.2.1 System summary

Water for the Grampians system is harvested from various streams and groundwater bores located in the Grampians National Park. The water is piped and stored in three major basins located to the north of Hamilton. The three reservoirs are Hayes Reservoir, Cruckoor Reservoir and Harwich's Reservoir.

The water supplied to Hamilton and district is treated at the Hamilton Water Treatment Plant (WTP). Following treatment at Hamilton, water is also piped to Tarrington (nine kilometres) and Dunkeld (30 kilometres). Upstream of the Hamilton WTP, the water is diverted to the Cavendish system where it is disinfected prior to delivery to customers in Cavendish.

Our Grampians system also includes a pump station that harvests water from Rocklands Reservoir. This supplies the township of Balmoral and is used to supplement the supply for Hamilton, Tarrington and Dunkeld in dry years.

Figure 12 - Grampians system supply schematic

Figure 13 - Grampians system summary

4.2.2 Supply and demand

Every five years, we review climate and population data for each of our systems. This data feeds into the Urban Water Strategy (UWS) which is a key planning document that outlines what actions are required in order to maintain adequate levels of service for the community.

Figure 14 below shows how our raw water demand is tracking against what was predicted for the Grampians system in the 2022 UWS. We're tracking below the projected demands of the 2022 UWS this year, largely due to reduced streamflow in our Grampians catchment resulting in less volume being harvested.

The difference in demand on the catchment and demand from our customers has been supplied by an excess volume held in storage from the previous year's harvesting.

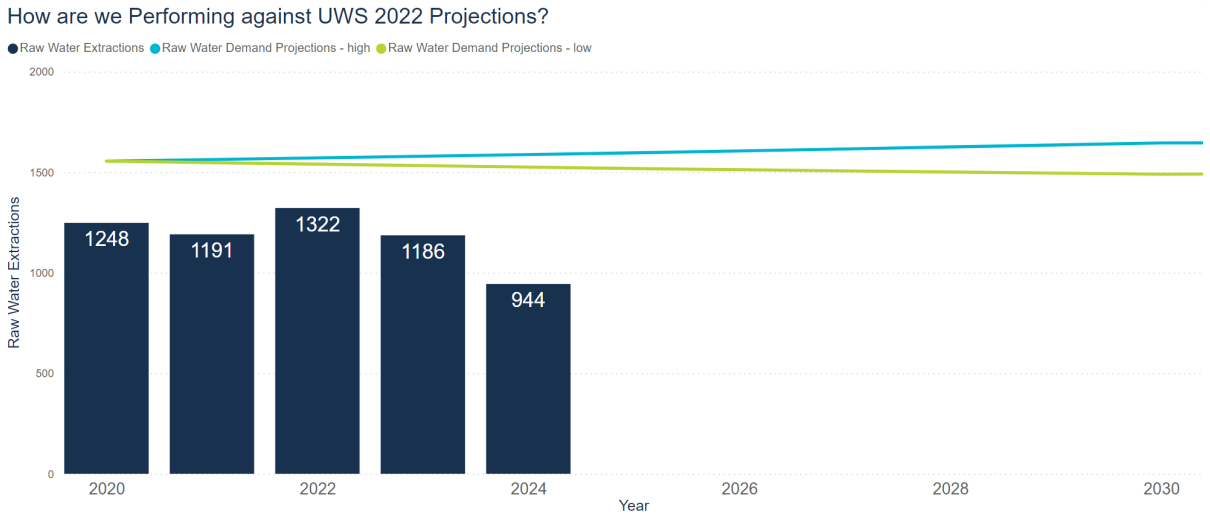

Figure 14 - Grampians System Raw water Usage versus 2022 UWS Projected Demands

4.2.3 Storage levels and 2025 outlook

The Grampians system has many different supply options with spare capacity, providing a high level of supply security. However, due to the dry conditions and less streamflow from our Grampians catchment, our storage position has dropped from sitting close to capacity in November 2023 to currently sitting at 69% full.

We have been monitoring this system on a monthly basis since July to understand what our water resource requirements will be over summer and beyond into 2025. Our storage outlook for 2025 shows that we will need to extract water using our Rocklands Reservoir entitlement to maintain storage levels in the general monitoring zone and avoid implementing drought response restrictions.

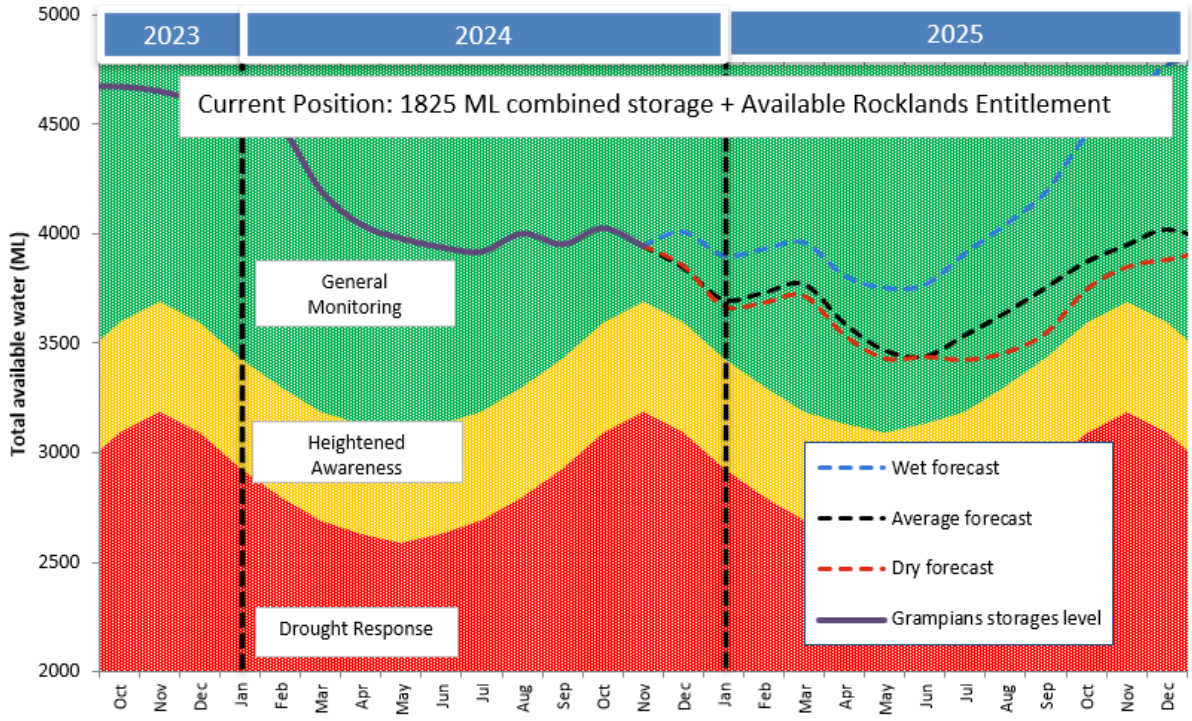

Figure 15 - Grampian system storage levels and outlook

The amount of water from Rocklands Reservoir under a dry, average and wet scenario is summarised in table 2.

Modelled climate scenario	Volume from Grampians catchment (ML)	Volume from Rocklands (ML)
Dry	621	990
Average	1,253	449
Wet	1,963	57

Table 2 - Grampians Supply Breakdown

4.2.4 How does our Rocklands entitlement work?

We hold a 2,120 ML licence that allows us to extract water from Rocklands Reservoir. Each month, a storage manager group led by Grampians Wimmera Mallee Water (GWM) meets to assess the water resource position of the lakes and reservoirs of the Grampians region. GWM do extensive modelling to advise us how much water is available under our licence.

At the end of each financial year, the water that has been allocated to us, but not used, is placed into a carryover account which we can than access at a later date when it is needed.

4.2.5 The Rocklands Pipeline – A brief history

The 52-kilometre-long Rocklands pipeline was commissioned in 2010. It connects Rocklands Reservoir to the Hamilton WTP and enables water to be transferred at 8 ML/day.

Planning for the pipeline began in 2007 when customers on our Grampians system had experienced several periods of water restrictions due to the Millenium Drought. Following commissioning, these restrictions were lifted.

The region has since returned to more average and wet climate conditions, and we haven't needed to use the pipeline or our Rocklands' entitlement. Instead, we've been able to meet our customer demands with streamflow from our West Grampians catchment. We favour water from this catchment as it is a gravity-based system that doesn't require pumping, reducing our electricity use and carbon emissions.

The Rocklands pipeline has been maintained over this time as a drought-proofing measure with long-term water resource planning and modelling showing it will be needed in dry years.

4.2.6 Using the Rocklands Pipeline in 2025

We have been closely monitoring our water resource outlook for this system, flagging in March 2023 that the Rocklands pipeline may need to be used in the near future. We expect to begin operating the pipeline in January 2025 to improve our water resource position over summer and stay within general monitoring conditions across 2025. Once operational, we will continue to frequently monitor conditions and storage levels.

4.3 Glenthompson system

4.3.1 System summary

Water is harvested from two farmland catchment areas located to the south of the Glenthompson township and is stored in the Glenthompson Reservoir. This reservoir is on Yuppeckiar Creek which is characterised by low inflows into the system. The water supply is therefore supplemented through a pipeline connection to the Willaura system, which is managed by Grampians Wimmera Mallee Water and sources water from Mt William Creek and bores in the Grampians National Park.

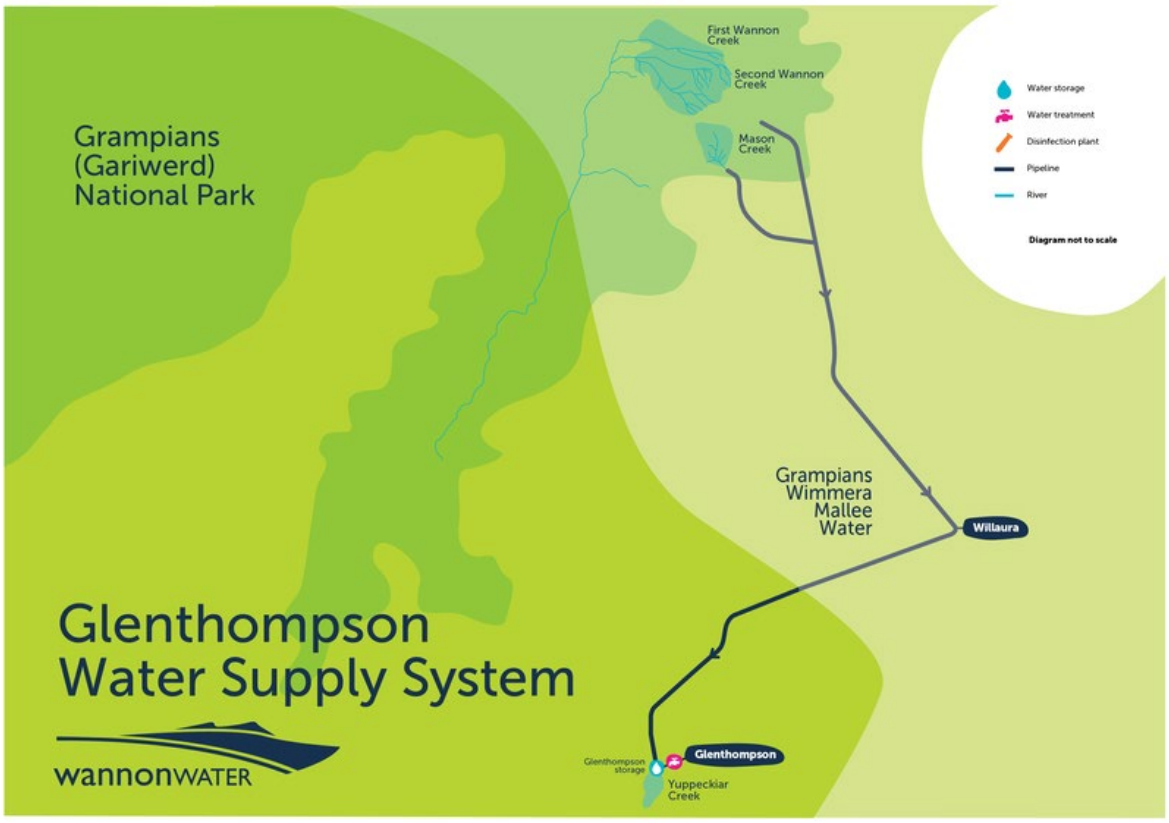

Figure 16 - Glenthompson water supply schematic

Figure 17 - Glenthompson system summary

4.3.2 Supply and demand

Every five years we review climate and population data for each of our systems. This data feeds into the Urban Water Strategy (UWS) which is a key planning document that outlines what actions are required in order to maintain adequate levels of service for the community. Figure 17 below shows how customer demand is tracking against what was predicted for the Glenthompson system in our 2022 UWS. We are tracking along the low demand forecast line.

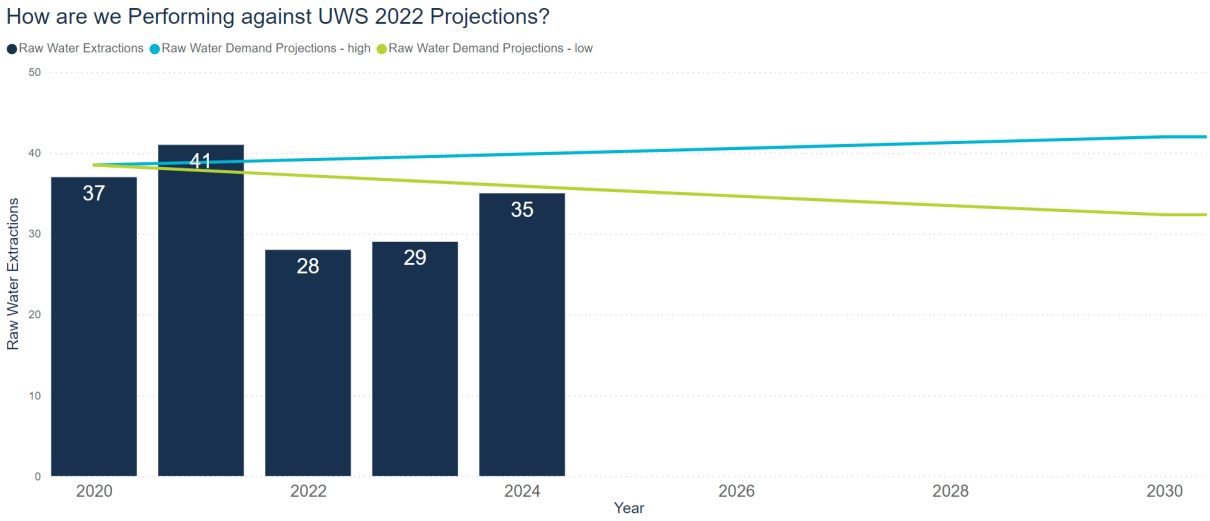

Figure 18 - Glenthompson system demand versus 2022 UWS forecasted demands

4.3.3 Storage levels and 2025 outlook

Recent dry conditions have led to high evaporation rates for the Glenthompson Reservoir. These high evaporation rates, and low inflow conditions, mean that our reservoir has dropped in storage level. Wannon Water have been monitoring the storage levels within the reservoir on a weekly basis since August and undertaken proactive planning to increase the security of Glenthompson's water supply.

We were able to secure a small volume transfer from our Willaura system entitlement in August, which saw our water security position marginally improve. Ongoing communication with GWM Water revealed that their system was also under resource stress, and we were unable to continue transferring through the Willaura pipeline. We are continuing to collaborate with GWM and work together to make sure we can cater to both our systems' demands. We are also working together to understand how we can secure our entitlement in 2025 and in future years.

We've since been proactively planning to bolster our supply ahead of the 2024/25 summer. In the coming weeks, we will be transferring some water to the Glenthompson Reservoir from an alternative source. This transfer will mean the town should remain in the heightened awareness zone for the coming summer and avoid restrictions under dry and average conditions. Figure 18 below includes the transferred volumes and the impact of a dry, average and wet forecast.

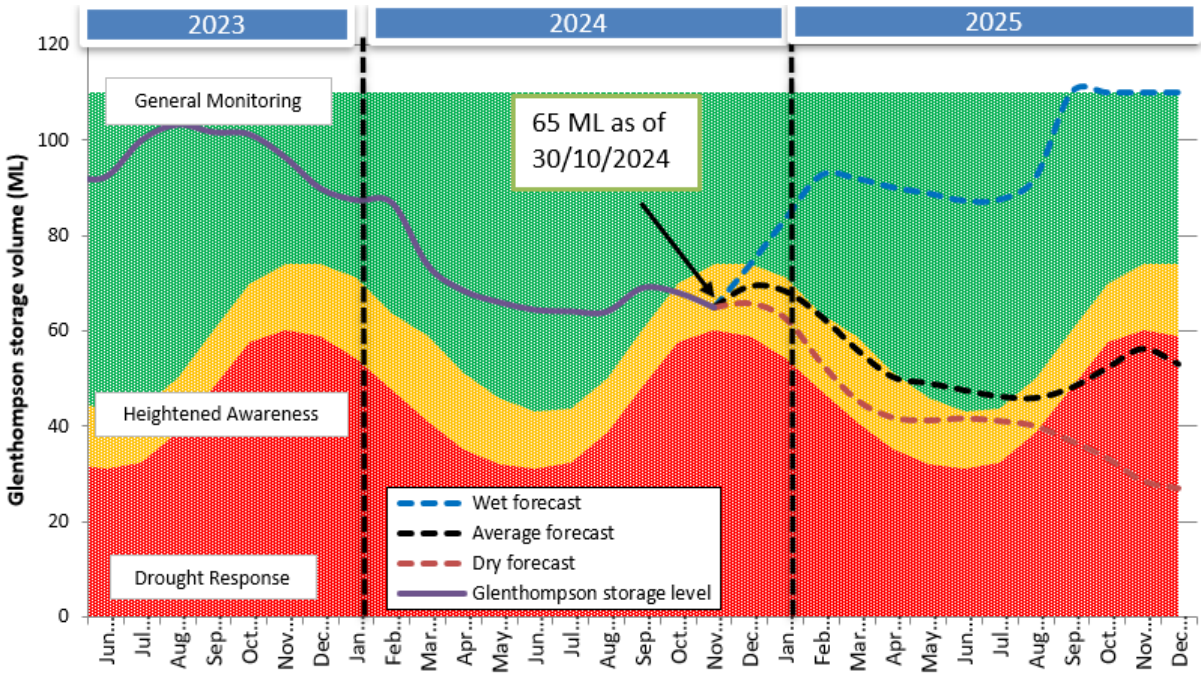

Figure 89 - Glenthompson storage levels and outlook

We will continue to monitor the climate outlook and storage conditions on a weekly basis. Early planning for water resourcing of this system will start around June to prepare for the spring months of 2025 if our current dry conditions continue. In June we will be assessing whether we can transfer water through the Willaura pipeline or source water through water carting or alternative transfers.

4.4 Groundwater systems

4.4.1 System summary

We have 10 groundwater supply systems which were secure through the Millennium Drought and are expected to remain secure into the future. Water restrictions are not normally part of the management of these systems.

Figure 20 - Groundwater Systems Likelihood of Restrictions

4.4.2 Security of groundwater supply

For each of our groundwater systems, we have a groundwater licence which dictates the amount of water we can extract. Figure 21 represents how our extractions are performing against the capacity of our licences. The section in navy represents the volume extracted from the previous year and the light blue is spare capacity. There is plenty of capacity within our groundwater systems heading into 2025.

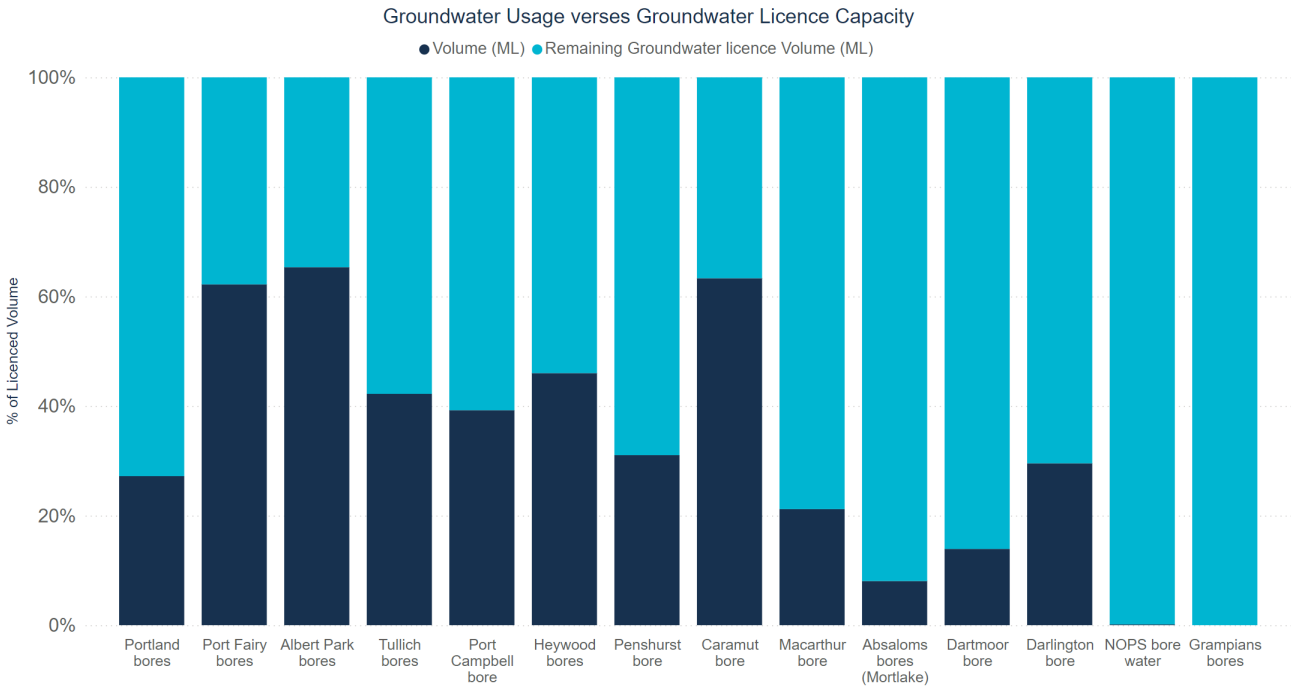

Figure 21 - Groundwater usage versus capacity (2023/24))

Note:

- *Tullich supplies to Casterton, Coleraine, Sandford and Merino townships*
- *Carlisle, Curdievale, Mortlake and Albert Park bores are a part of the Otway system.*
- *Port Campbell supplies to Port Campbell, Timboon and Peterborough*

5 What we achieved in 2024

We've worked through multiple projects for our water and sewer services this year. Some key highlights include:

Key

A general action that improves our water and sewer services

A key Urban Water Strategy action identified as important by the Minister for demand reduction, capacity building or supply augmentation

6 What we're working on in 2025

Projects and initiatives

- Continued involvement in the Victorian WaterSmart program for non-residential customers.
- Collaborating with councils on WaterSmart water efficiency audits and funding available for Otway system sporting grounds.
- Launching a WaterSmart town program in Koroit.
- Implementing a Gellibrand Summer Flows education campaign through the Sustainable Water Use Working Group.
- Completing options and timing analysis of the Otway system augmentation plan.
- Commissioning the Warrnambool Sewage Treatment Plant Upgrade Project.
- Continuing to connect new roofs to the Albert Park Roof Water Harvesting Project.
- Advocating for the implementation of roof water harvesting for the Hamilton indoor swimming pool.
- Building a system losses data monitoring dashboard to better track leaks and bursts across our larger transfer systems.
- Reviewing and updating our Drought Response Plan for each of our systems.
- Monitoring our water resource position for each of our systems.
- Undertaking targeted leak detection programs in towns where there are high levels of Non Revenue Water.
- Continuing to advocate for a South West Sustainable Water Strategy.
- Ongoing planning for the Quality Water for Wannon Project in Port Fairy, Portland and Heywood.
- Monitoring the operational performance of the Rocklands pipeline for the Grampians system.
- Monitoring the water resource position of Glenthompson and continuing to work with GWM Water to improve access to our Willaura system entitlement.