South Gippsland Water

2023 Water Security Outlooks

Annual Water Outlook

23/10/2023

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Executive Summary

South Gippsland Water (SGW) currently manages eight water supply systems that provide water to 22 individual towns and locations. This document describes the expected outlook for these systems over the coming summer season, with the likelihood of restrictions in each system summarised in Table 1. In most instances, the forecasts below reflect the 12-month period from the start of November 2023 to the end of October 2024. The forecast period for run-of-river systems is 3 months from the start of November 2023 to the end of January 2024, reflecting the period over which the forecast has an acceptable level of uncertainty. The Little Bass and Coalition Creek supply systems that previously supplied Korumburra, Poowong, Loch and Nyora are not currently being used, other than to supply very small volumes of non-residential water, and therefore have not been listed in Table 1.

The following general statements can be made about the SGW systems over the outlook period under the forecast dry climate conditions across the region:

- Restrictions are not considered likely or certain for any supply systems;
- For Fish Creek, restrictions are possible given the Bureau of Meteorology's climate forecast and recent climate conditions. Fish Creek (Battery Creek Storage) is a small system and can change quickly, both in response to rainfall, and in the event of sustained dry conditions for only a few months.
- For Leongatha and Toora, the likelihood of restrictions is assessed as rare, with restrictions projected to only occur if conditions were to become drier than indicated by the Bureau of Meteorology's climate forecast and recent climate conditions.
- The systems with low storage capacity relative to demands (Dumbalk, Meeniyan and Yarram) have been assigned a restriction likelihood of very rare, as the recent streamflow conditions, as well as the forecast climate conditions, suggest streamflows will remain near average and well above South Gippsland Water's restriction triggers.

Additional supply risks for South Gippsland Water's supply systems include water quality risks (blue-green algae risk) in Lance Creek Reservoir and the Foster Dam. This potential risk is managed at Lance Creek Reservoir through the use of supplementary supply from the Greater Yarra System – Thomson River Pool (Melbourne Water Supply System) and can be managed at Foster through taking water directly from Deep Creek and bypassing Foster Dam. Extreme events or emergencies such as bushfires in our catchments, major loss of power supply or water contamination could require the implementation of restrictions to manage water demands. Bushfire risks are low across most of South Gippsland Water's supply catchments due to low vegetation cover (less than ~30%) in these catchments, except for the catchments supplying Yarram, Toora and Foster.

Table 1 Outlook Summary

Supply Sources	Towns Supplied	Outlook Period	Likelihood of Restrictions[1]
Ruby Creek Reservoirs	Leongatha, Koonwarra	1 Nov 2023 to 31 Oct 2024 (12 months)	Rare
Lance Creek Reservoir and the Melbourne Water Supply System	Wonthaggi, Cape Paterson, Inverloch, Korumburra, Poowong, Loch, Nyora	1 Nov 2023 to 31 Oct 2024 (12 months)	Very Rare
Tarwin River East Branch	Dumbalk	1 Nov 2023 to 31 Jan 2024 (3 months)	Very Rare (to start Feb 2024)
Tarwin River	Meeniyan	1 Nov 2023 to 31 Jan 2024 (3 months)	Very Rare (to start Feb 2024)
Deep Creek Reservoir and Foster Dam	Foster	1 Nov 2023 to 31 Oct 2024 (12 months)	Very Rare
Battery Creek Reservoir	Fish Creek	1 Nov 2023 to 31 Oct 2024 (12 months)	Possible
Cook's Dam (Agnes River)	Toora, Welshpool, Port Welshpool, Port Franklin, Barry Beach	1 Nov 2023 to 31 Oct 2024 (12 months)	Rare
Tarra River and groundwater	Yarram, Alberton, Port Albert, Devon North	1 Nov 2023 to 31 Jan 2024 (3 months)	Very Rare (to start Feb 2024)

[1] Explanation of the likelihood classification is available in Table 8

Contents

1. Introduction

South Gippsland Water (SGW) currently manages eight water supply systems that provide water to 22 individual towns and locations, listed in Table 1. A locality map of the towns supplied by SGW is shown in Figure 1. The Little Bass and Coalition Creek supply systems that previously supplied Korumburra, Poowong, Loch and Nyora are not currently being used, other than to supply small volumes of non-residential water, and are therefore not considered further in this outlook.

Current raw water demand is presented in Table 2 to indicate the relative size of each supply system. The towns of Poowong, Loch, Nyora, Korumburra, Leongatha and Koonwarra are referred to collectively as SGW's "northern towns" and Wonthaggi, Cape Paterson and Inverloch are referred to as SGW's "southern towns". Dumbalk, Meeniyan, Foster, Fish Creek, Toora, Welshpool, Port Welshpool and Port Franklin are referred to as SGW's "central towns", whilst Yarram, Alberton, Port Albert and Devon North are referred to as SGW's "eastern towns".

Table 2 Water Supply Systems managed by SGW

Supply System	Towns Supplied	Current average raw water demand (ML/year) [1]
Northern Towns		
Ruby Creek	Leongatha, Koonwarra	1,670
Southern Towns and connected Northern Towns		
Lance Creek	Wonthaggi, Cape Paterson, Inverloch	1,630
	Poowong, Loch, Nyora	280
	Korumburra	790
Central Towns		
Tarwin River East Branch	Dumbalk	17
Tarwin River	Meeniyan	51
Deep Creek/Foster Dam	Foster	170
Battery Creek	Fish Creek	110
Agnes River	Toora, Welshpool, Port Welshpool, Port Franklin, Barry Beach Port	520
Eastern Towns		
Tarra River	Yarram, Alberton, Port Albert, Devon North	440
TOTAL		5,700

[1] Taken from the SGW's Urban Water Strategy (2022), average annual raw water demand estimated at current level of population and industrial development over a long-term climate sequence (50 years) to account for differences in water demand in wet, average and dry years.

SGW prepared an update to its Urban Water Strategy (UWS) in 2022. This document, published on SGW's website, outlines SGW's long term plan to balance the supply of water to meet the region's residential, business, industry and community water needs. The UWS identifies systems where future water supplies may need to be enhanced in order to meet the growing demands and be resilient to climate change. The UWS is complemented by a Drought Preparedness Plan (DPP) which provides SGW with a ready reference for operational guidance

in times of drought. The DPP details the actions SGW will take in order to prepare for and to respond to periods of water scarcity. This Water Security Outlook is one such action.

The 2022 UWS includes 27 actions to improve water security. Of these two have been completed and a further three will be completed by the end of the 2023-24 financial year. A further 12 actions are in progress. Achievements since the 2022 UWS include:

- The completion of an investigation into reinstatement of groundwater bores that supplement the Leongatha system
- A review and update of water resource modelling for the Leongatha system, based on forecast changes in the demand of major customers
- Progress planning the purchase of additional water from the Greater Yarra – Thomson River Pool

Section 5 provides more detail on key actions.

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Figure 1 Locality map of SGW's supply systems

1.1 Climate Summary

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

Victoria's climate and streamflows are highly variable, but alongside this variability we have experienced a warming and drying trend over recent decades.

In comparison to historical conditions, we are already experiencing trends toward:

- Higher temperatures and more hot days;
- Reductions in rainfall during the cooler months;
- In some locations, increases in rainfall during the warmer months and during extreme, short-duration rainfall events; and,
- In many catchments, a shift in the streamflow response to rainfall, with typically less streamflow generated for a given amount of rain.

Some of the rainfall decline 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 systems and frontal systems.

In the future, over the longer term we can expect:

- the rainfall reductions during the cooler months to persist;
- possible 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

1.1.2 Recent Climatic Conditions in South Gippsland

Over the past 12 months, rainfall across most of the South Gippsland region has been at or below the long-term average, as shown in Figure 2. Rainfall in most towns has been 80-100% of the Bureau of Meteorology's long-term average (from 1961-1990). The only exceptions to this

have been at Poowong, Loch, Nyora, and Korrumburra which experienced rainfall slightly above the long-term average over the last 12 months.

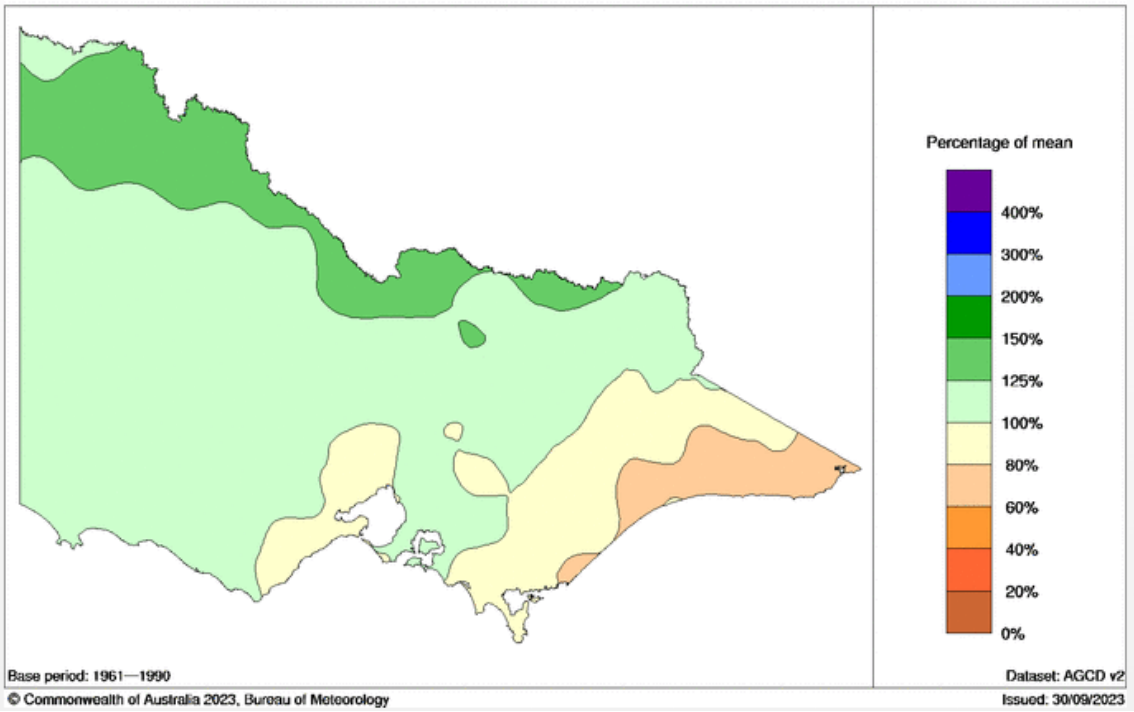

Figure 2 Rainfall percentages relative to mean over the period 1 October 2022 to 30 September 2023 (http://www.bom.gov.au/climate/maps/rainfall)

Seasonal rainfall conditions over the past year at two representative rainfall sites in South Gippsland are shown in Figure 3 for Korumburra and Yarram. This chart compares the recent rainfall to the long term monthly average rainfall and confirms the observations made for the region above. Over the past 12 months, rainfall has been close to average conditions, but with relatively dry conditions for much of this year's winter and spring. These two sites were illustrative of rainfall across the whole of the South Gippsland region from June to September 2023, which was only 60-80% of the long-term average for this time of year, noting however that rainfall in October, at the time of preparing the outlook, was well above (up to 50% higher than) the long-term average for October.

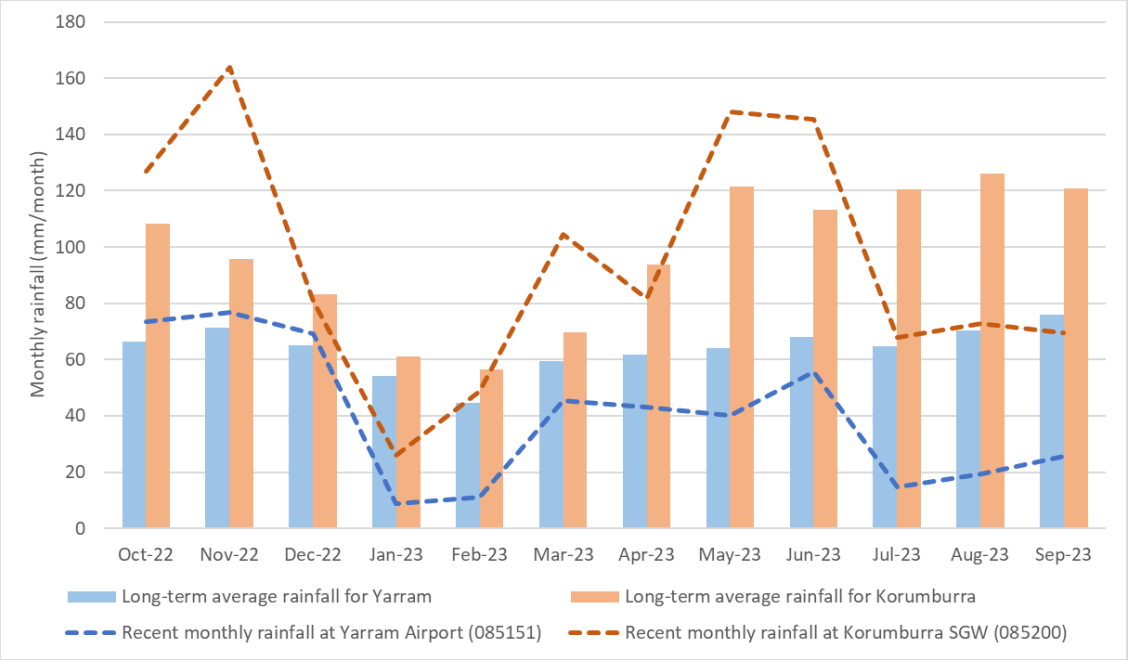

Figure 3 Recent and long-term average monthly rainfall in Korumburra and Yarram

A comparison of rainfall over the last 12 months relative to average annual rainfall over different climate reference periods is shown in Table 3. Average rainfall over the period July 1975 to date is regarded by the State Government as being broadly representative of current climate averages, with the period July 1997 to date offered by the State Government as an alternative, drier representation of current climate averages.

Rainfall over the last twelve months has been 3% higher than that experienced on average at Korumburra since 1975, whilst at Yarram the rainfall over the last twelve months has been 34% lower than that experienced on average since 1975.

Table 3 Recent rainfall relative to average rainfall conditions over different historical periods

Location	Last 12 months' rainfall October 2022 to September 2023 (mm)	Last 12 months' rainfall relative to…		
		Average July 1975 to date	Average July 1997 to date	Lowest on record
Korumburra	1,140	3% higher	5% higher	38% higher
Yarram	480	34% lower	25% lower	10% higher

1.1.3 Recent Streamflow Conditions in South Gippsland

Streamflow conditions across South Gippsland are illustrated in Figure 4 using two representative streamflow sites on the Tarwin River East Branch at Dumbalk North and on the Tarra River at Fischers. This chart compares the recent streamflow observations with their long-term average monthly streamflow characteristics, and demonstrates that flow conditions have been generally near the long-term average at both of these sites for long periods over the last 12 months, with the exception of lower streamflow during the winter months of 2023 for the Tarra River at Fischers and higher streamflow in the Tarwin River in response to higher rainfall in some months. This is broadly consistent with recent rainfall observations.

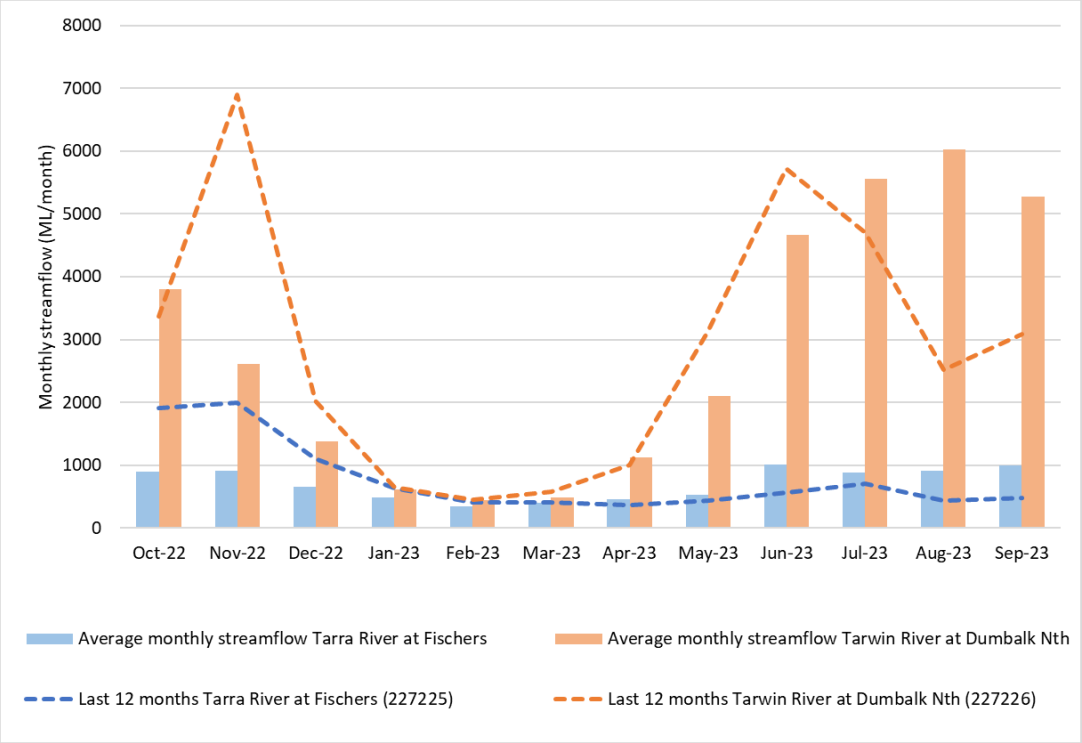

Figure 4 Recent and long-term average monthly streamflow for example sites on the Tarra River and Tarwin River

2. Current Water Resource Position

This section provides a summary of the current position of SGW's water supply systems. Table 4 summarises each of SGW's systems, with information on the major customers and water sources. For completeness, this table also provides a comprehensive list of all legal entitlements, however it should be noted that not all of these water sources are actively used. Some are entitlements that require significant infrastructure upgrades for them to be used. The year-to-date extraction volumes listed in Table 4 cover the period from the beginning of July until the end of September 2023.

For the Lance Creek Water Supply System, in the year to date South Gippsland Water has been allocated 32% of its entitlement from the Greater Yarra System – Thomson River Pool (Melbourne Water Supply System), which equates to 316 ML. Based on projections by Melbourne Water, this year's allocation is expected to increase over the coming months, even under the forecast dry climate conditions (see Section 3) over the outlook period. South Gippsland Water has also carried over 1,906 ML of unused allocations from previous years to the current year, providing a significant supply buffer in this supply system if conditions were to become drier than expected.

In the year to date no water has been extracted from supplementary groundwater sources at Leongatha and Yarram. These supply sources remain in reserve and can be drawn upon if required.

Table 4 System Summary – Water Supply Connections, Major Customers and Available Entitlements

Supply System	Towns Supplied	Number of connections	Major customers	Primary Bulk Entitlement			Supplementary water sources	
				Annual entitlement (ML)	Volume extracted 2023-24 YTD (ML)	Volume remaining 2023-24 (ML)	Annual entitlement (ML)	Volume extracted 2023-24 YTD (ML)
Ruby Creek	Leongatha, Koonwarra	3373	Saputo Dairy Australia	2,476	348 ML	2,128 ML	Share of 715.3 ML from groundwater	0
Lance Creek	Wonthaggi, Cape Paterson, Inverloch, Korumburra, Poowong, Loch, Nyora	14297	Burra Foods Australia, Tabro Meats, and GBP Australia (Poowong Abattoir)	3,800 ML from Lance Creek Reservoir	624 ML from Lance Ck	3,176 ML from Lance Creek	1,000 ML from Melbourne Water Supply System: 32% year to date seasonal allocation (316 ML) plus 1,906 ML (net) carried over from previous year	23 ML from Melbourne Water Supply System
Tarwin River East Branch	Dumbalk	100		100	3 ML	97 ML		
Tarwin River	Meeniyan	278		200	10 ML	190 ML		
Deep Creek / Foster Dam	Foster	912		326	42 ML	284 ML		
Battery Creek	Fish Creek	201		251	20 ML	231 ML		
Agnes River	Toora, Welshpool, Port Welshpool, Port Franklin, Barry Beach Port	1,111	Esso, ViPlus	1,617	136 ML	1,481 ML		
Tarra River	Yarram, Alberton, Port Albert, Devon North	1,832		853	104 ML	749 ML	214.2 ML from groundwater	0

The volume in storage across the SGW systems is summarised in Table 5. All storages are currently full, except for Foster Dam.

Table 5 Current Water Resource Position

Supply System	Storage	Storage capacity (ML)	Current storage volume (ML) at end October 2023	% of Full Supply Volume
Little Bass	Little Bass Reservoir [1]	218	N/A	N/A
Korumburra	Coalition Creek Reservoir [1]	143	N/A	N/A
	Ness Gully Reservoir [1]	73	N/A	N/A
	Bellview Creek Reservoir [1]	359	N/A	N/A
Leongatha	Western Reservoir	1137	1137	100%
	Hyland Reservoir	671	671	100%
	No.2 Reservoir	84	84	100%
	No.1 Reservoir	11	11	100%
Lance Creek	Lance Creek Reservoir	4200	4200	100%
Fish Creek	Battery Creek Reservoir	119	119	100%
Foster	Deep Creek Reservoir	6	6	100%
	Foster Dam	201	201	100%
	Raw Water Basin	27	27	100%
Agnes River	Cook's Dam	59	59	100%
Tarra River	Yarram Basin	30	30	100%

[1] storage not in use, other than for minor supply to non-urban customers. These storages are currently maintained at target operational water levels below full supply volume.
N/A = not applicable.

The volume of water consumed over the year to date is compared to the average demand over the past five years for each system in Figure 5 to Figure 12. Toora and Yarram are the only supply systems where water consumption has consistently been above average in the year to date. In line with the forecast average climate conditions, consumption for all other supply systems is expected to be close to the long-term average for the remainder of the year.

The Urban Water Strategy provides further information on the expected growth in residential, stock and domestic, major industrial and other non-residential demands over a long-term (50 year) planning horizon for a range of possible future climate scenarios. South Gippsland Water tracks water use on an ongoing basis to monitor for growth.

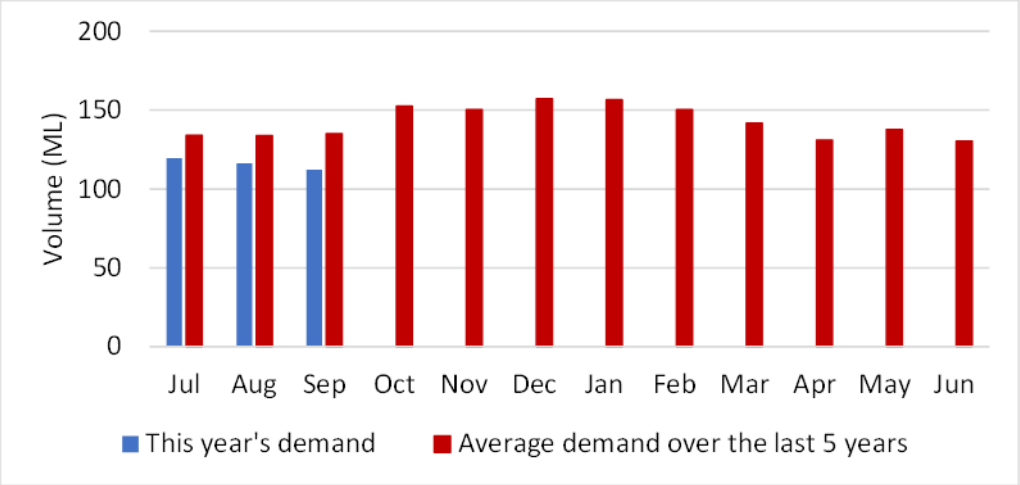

Figure 5 Water consumption in Leongatha

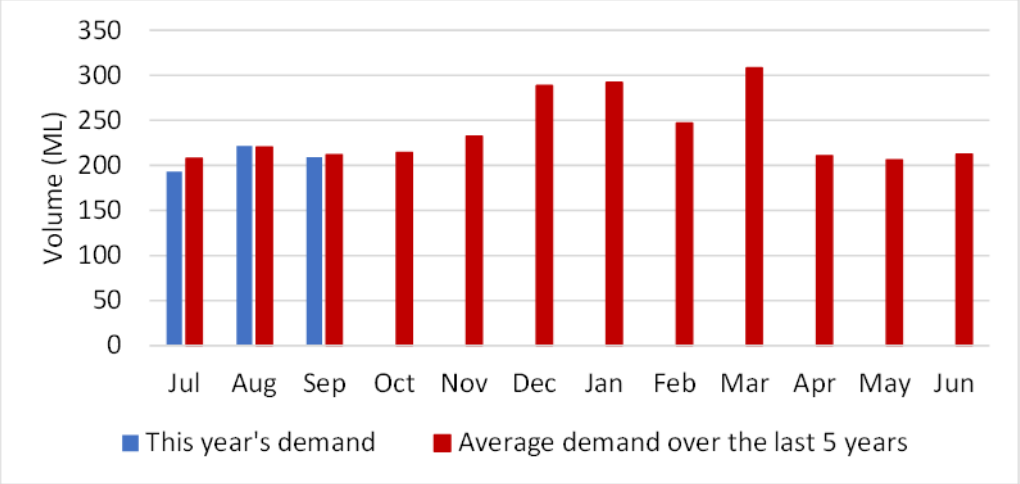

Figure 6 Water consumption in the Lance creek system

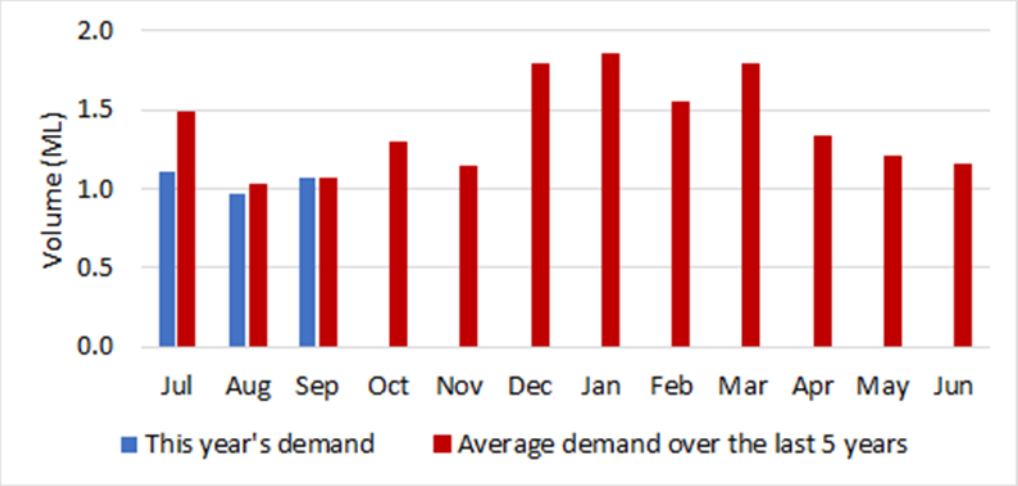

Figure 7 Water consumption in Dumbalk

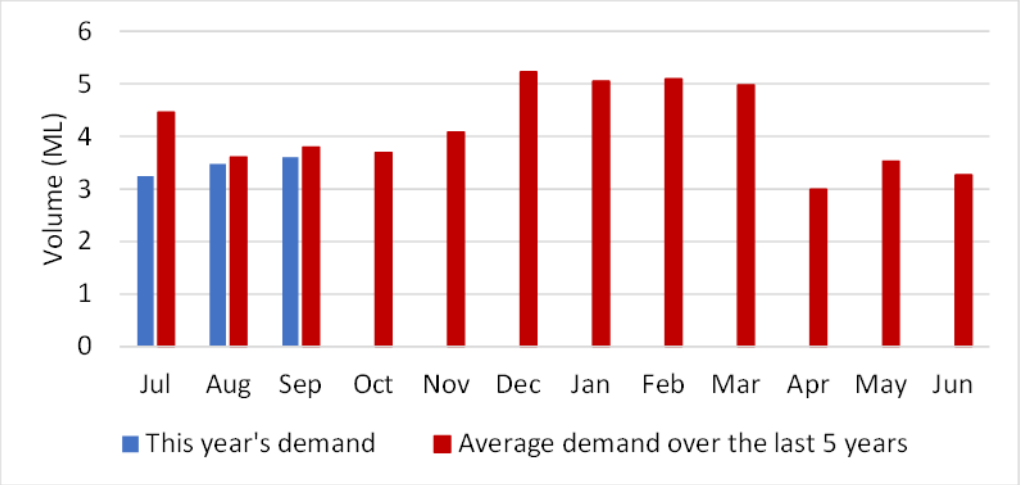

Figure 8 Water consumption in Meeniyan

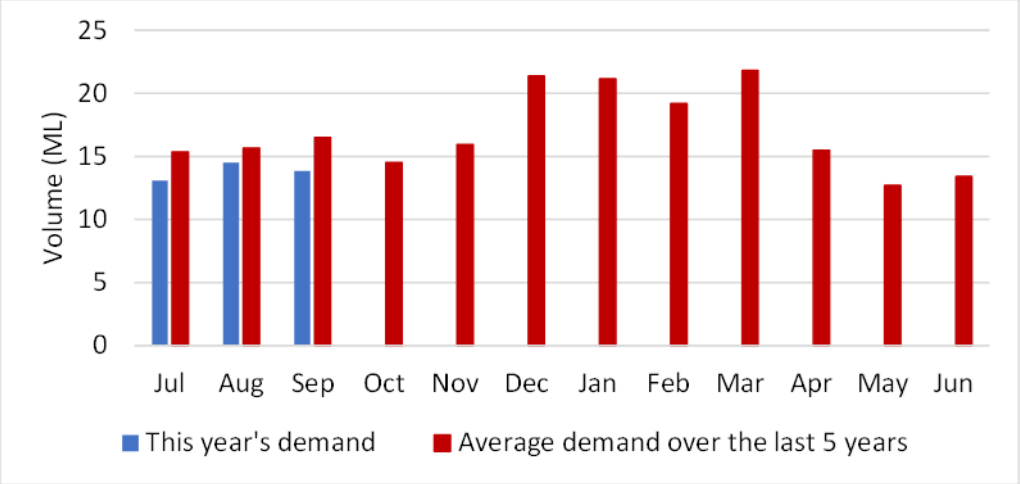

Figure 9 Water consumption in Foster

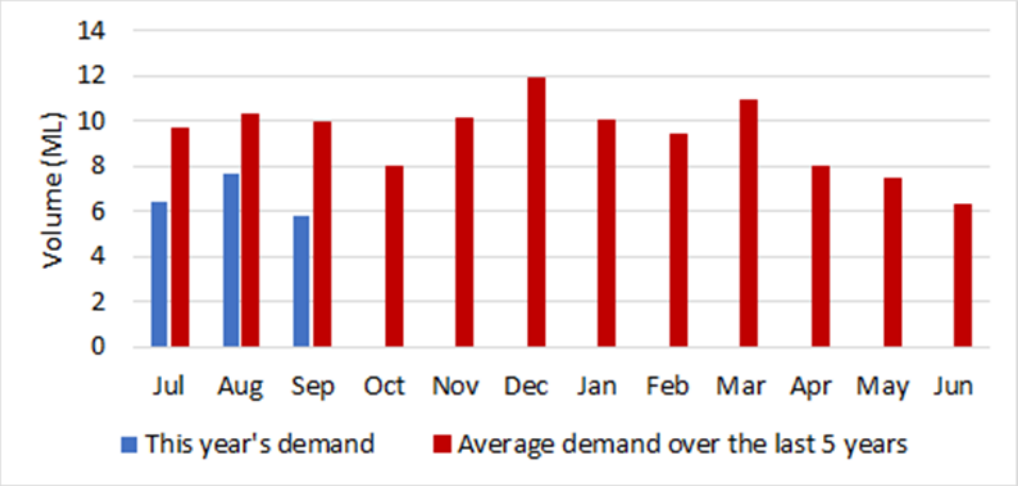

Figure 10 Water consumption in Fish Creek

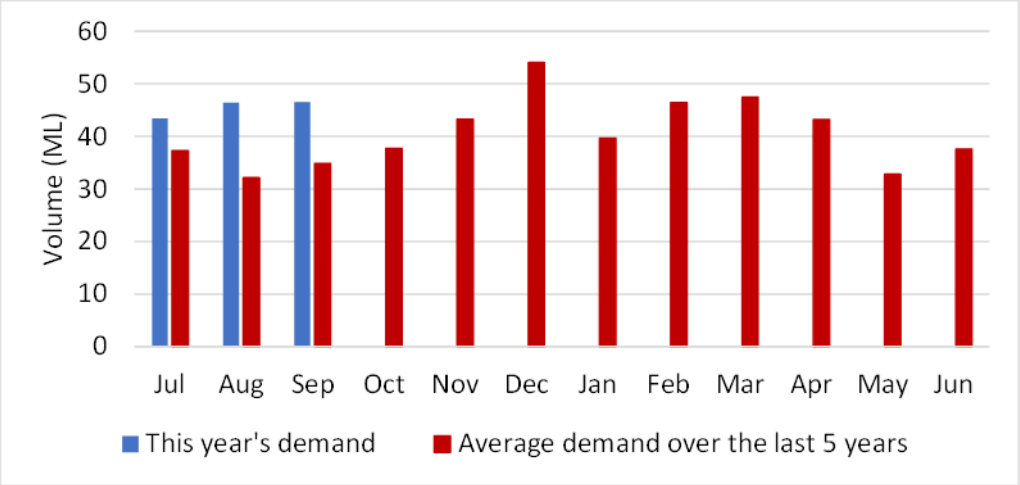

Figure 11 Water consumption in Toora

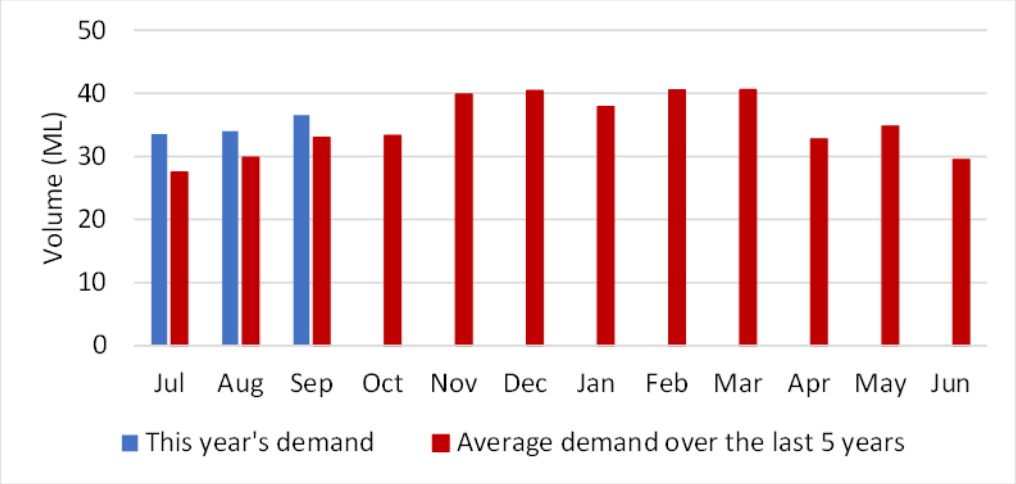

Figure 12 Water consumption in Yarram

3. Climate Outlook

The Bureau of Meteorology's seasonal climate forecasts have been obtained for the December to February three-month period.

Across the region, rainfall is anticipated to be slightly drier than usual, with a forecast 40-45% chance of exceeding median rainfall conditions during December to February (as shown in Figure 13).

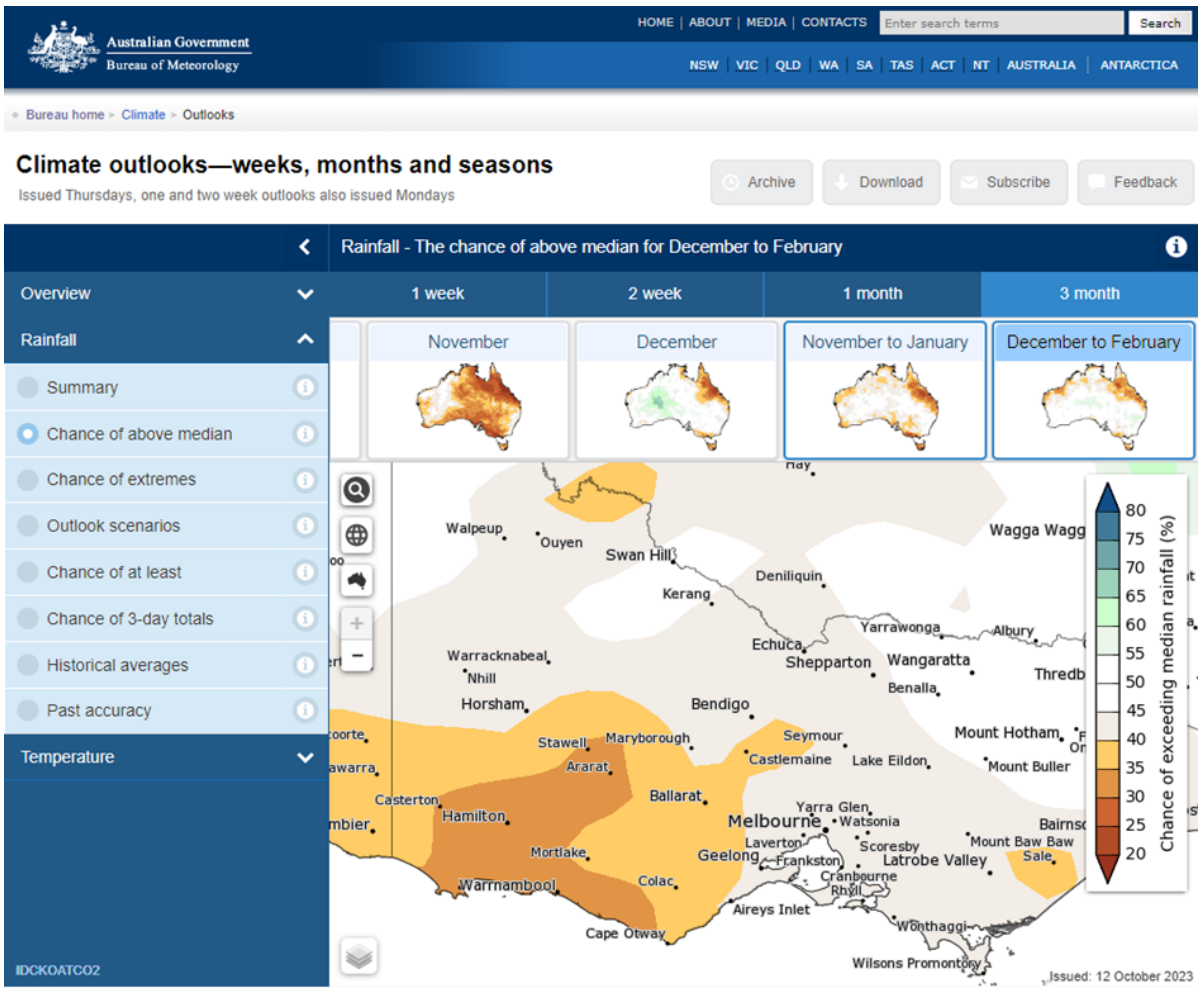

Figure 13 Chance of above median rainfall for December to February (http://www.bom.gov.au/climate/ahead/) issued 13 October 2023

The maximum daytime temperature across the region is forecast to be hotter than usual from December to February, as indicated in Figure 14. The there is an 80% likelihood of above median temperatures across all of South Gippsland.

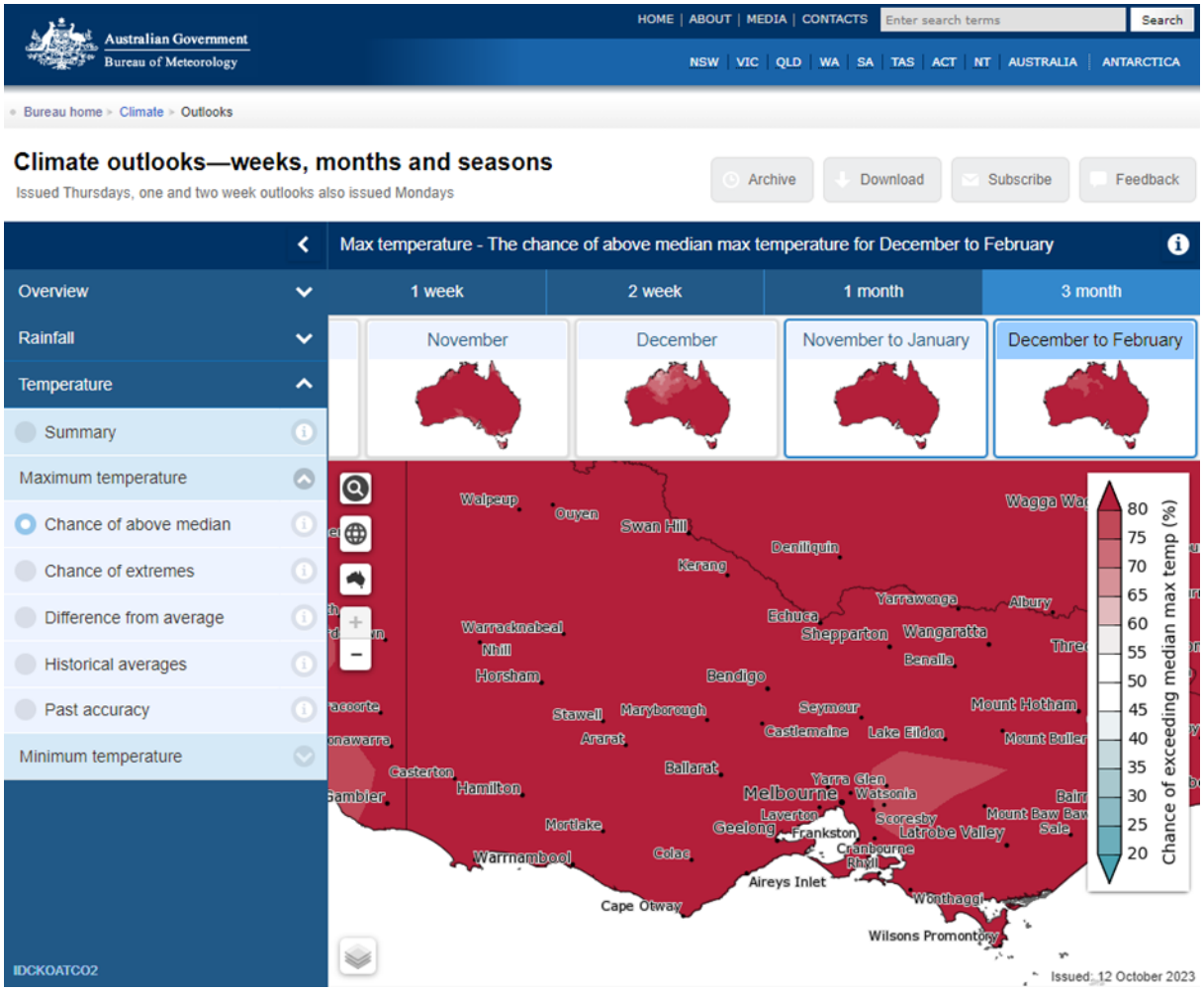

Figure 14 Chance of above median maximum temperature for December to February (http://www.bom.gov.au/climate/ahead/) issued 13 October 2023

The forecast climate conditions for South Gippsland have been developed based on the Bureau's forecast for the region and the local climate conditions in the year to date. Table 6 summarises the climate outlook across SGW's systems and specifies the scenario assumed for the Annual Water Outlook for each system, based on the assumption that:

- Wet conditions have >80% chance of exceeding median rainfall
- Average conditions have >40% to <80% chance of exceeding median rainfall
- Dry conditions have <40% chance of exceeding median rainfall

Climate influences on south-eastern Australia this year:

- A declared El Nino event, which is likely to persist into early 2023, which typically increases the chance of above average rainfall for eastern Australia during spring and early summer.
- A positive Indian Ocean Dipole event, which is likely to persist this year until at least December. This typically leads to reduced spring rainfall for most of south-east Australia.

- When El Nino and positive Indian Ocean Dipole events combine, the chance of below average rainfall over eastern Australia further increases.
- The Bureau incorporates these events into forecast models and outlooks.

Whilst a 40-45% chance of exceeding median rainfall conditions would normally result in SGW adopting an “average” climate outlook, given the declared El Nino and positive Indian Ocean Dipole events currently occurring, several dry months in this year’s winter and spring, and forecast higher temperatures that could increase demand and water losses, SGW has adopted a “dry” climate outlook this year for all supply systems.

Table 6 Climate outlook across SGW systems

Supply System	Towns supplied	Bureau of Meteorology Forecast (Nov-Jan)		Winter and spring rainfall for 2023 year to date*	Likely Outlook Scenario
		Chance of exceeding median rainfall	Chance of exceeding median maximum temperature		
Ruby Creek	Leongatha, Koonwarra	40-45%	Greater than 80%	60-80% of average	Dry
Lance Creek	Wonthaggi, Cape Paterson, Inverloch, Korumburra, Poowong, Loch, Nyora	40-45%	Greater than 80%	60-80% of average	Dry
Tarwin River East Branch	Dumbalk	40-45%	Greater than 80%	60-80% of average	Dry
Tarwin River	Meeniyan	40-45%	Greater than 80%	60-80% of average	Dry
Deep Creek / Foster Dam	Foster	40-45%	Greater than 80%	60-80% of average	Dry
Battery Creek	Fish Creek	40-45%	Greater than 80%	60-80% of average	Dry
Agnes River	Toora, Welshpool, Port Welshpool, Port Franklin, Barry Beach Port	40-45%	Greater than 80%	60-80% of average	Dry
Tarra River	Yarram, Alberton, Port Albert, Devon North	40-45%	Greater than 80%	60-80% of average	Dry

*excludes October 2023, which has been wetter than average across South Gippsland in the weeks to date in October, at the time of preparing this outlook. This is expected to bring year to date winter/spring rainfall close to the long-term average by the end of October.

4. Forward Outlook

The urban water restrictions outlook for SGW's supply systems are based on consideration of the information presented in each of the previous sections, in combination with an assessment of the projected storage behaviour over the coming year based on modelled information. For run-of-river systems, streamflow is projected for the coming three months.

Table 7 summarises SGW's assessment of the likelihood of water restrictions for each of its supply systems over the outlook period specified in the Annual Water Outlook. For systems with no storage, the outlook period is 3 months, and for systems with available storage, the outlook period is 12 months. Forecasts for supply systems with low storage capacity relative to demands (i.e. the run-of-river systems) have a greater level of uncertainty than the forecasts for supply systems with considerable storage. Therefore, the likelihood of restrictions for Dumbalk, Meeniyan and Yarram will be reviewed throughout the year. The assessment presented in Table 7 utilises the rating system (Table 8) provided in the State Government's *2022 Annual Water Outlook Guidelines for Urban Water Corporations*.

The following general statements can be made about the SGW systems, as informed by the supply system forecasts in Figure 15 to Figure 22. These figures illustrate projected storage or streamflow behaviour over the outlook period under the forecast average climate conditions:

- Restrictions are not considered likely or certain for any supply systems;
- For Fish Creek, restrictions are possible given the Bureau of Meteorology's climate forecast and recent climate conditions. Fish Creek (Battery Creek Storage) is a small system and can change quickly, both in response to rainfall, and in the event of sustained dry conditions for only a few months.
- For Leongatha and Toora, the likelihood of restrictions is assessed as rare, with restrictions projected to only occur if conditions were to become drier than indicated by the Bureau of Meteorology's climate forecast and recent climate conditions.
- The systems with low storage capacity relative to demands (Dumbalk, Meeniyan and Yarram) have been assigned a restriction likelihood of very rare, as the recent streamflow conditions, as well as the forecast climate conditions, suggest streamflows will remain above South Gippsland Water's restriction triggers.

Figure 15 to Figure 22 also show how storages and streamflows could behave if conditions were to become considerably drier than forecast. The average, dry and worst drought on record scenarios in these figures for the storage projections are assigned based on the minimum storage volume estimated to be reached over the 12 month outlook period. For the streamflow outlooks the dry, average and wet streamflow forecasts are assigned based on streamflows with a likelihood 10% lower, the same or 10% higher than the observed likelihood of streamflows in the year to date. Note that due to the very high October streamflow, the wet streamflow forecasts for Dumbalk and Meeniyan were outside of the range of historical observations and could not be reliably presented.

Additional supply risks for South Gippsland Water's supply systems include water quality risks (blue-green algae risk) in Lance Creek Reservoir and the Leongatha storages. This potential

risk is managed at Lance Creek Reservoir through the use of supplementary supply from the Greater Yarra System – Thomson River Pool (Melbourne Water Supply System) and can be managed at Foster through taking water directly from Deep Creek and bypassing Foster Dam. Extreme events or emergencies such as bushfires in our catchments, major loss of power supply or water contamination could require the implementation of restrictions to manage water demands. Bushfire risks are low across most of South Gippsland Water's supply catchments due to low vegetation cover (less than ~30%) in these catchments, except for the catchments supplying Yarram, Toora and Foster.

Table 7 Risk Assessment Likelihood rating for water restrictions over the 2023/24 Outlook period

Supply Sources	Towns Supplied	Outlook Period	Likelihood of Restrictions
Ruby Creek Reservoirs	Leongatha, Koonwarra	1 Nov 2023 to 31 Oct 2024 (12 months)	Rare
Lance Creek Reservoir and the Melbourne Water Supply System	Wonthaggi, Cape Paterson, Inverloch, Korumburra, Poowong, Loch, Nyora	1 Nov 2023 to 31 Oct 2024 (12 months)	Very Rare
Tarwin River East Branch	Dumbalk	1 Nov 2023 to 31 Jan 2024 (3 months)	Very Rare (to end Jan 2024)
Tarwin River	Meeniyan	1 Nov 2023 to 31 Jan 2024 (3 months)	Very Rare (to end Jan 2024)
Deep Creek Reservoir and Foster Dam	Foster	1 Nov 2023 to 31 Oct 2024 (12 months)	Very Rare
Battery Creek Reservoir	Fish Creek	1 Nov 2023 to 31 Oct 2024 (12 months)	Possible
Cook's Dam (Agnes River)	Toora, Welshpool, Port Welshpool, Port Franklin, Barry Beach	1 Nov 2023 to 31 Oct 2024 (12 months)	Rare
Tarra River and groundwater	Yarram, Alberton, Port Albert	1 Nov 2023 to 31 Jan 2024 (3 months)	Very Rare (to end Jan 2024)

Table 8 Risk Assessment Likelihood Rating (Source: Victorian State Government, Department of Environment, Land, Water and Planning)

Likelihood Rating	%	Description
1 Very Rare	< 1	Event may occur only in extraordinary circumstances
2 Rare	1-4	Event may occur only in exceptional circumstances
3 Unlikely	5-19	Event could occur at some time There is little opportunity, reason or means to occur
4 Possible	20-49	Event might occur There is some opportunity, reason or means to occur
5 Likely	50-79	The event is likely to occur in most circumstances There is considerable opportunity, reason or means for the event to occur
6 Almost Certain	80-100	Event is expected to occur in most circumstances There is great opportunity, reason or means to occur

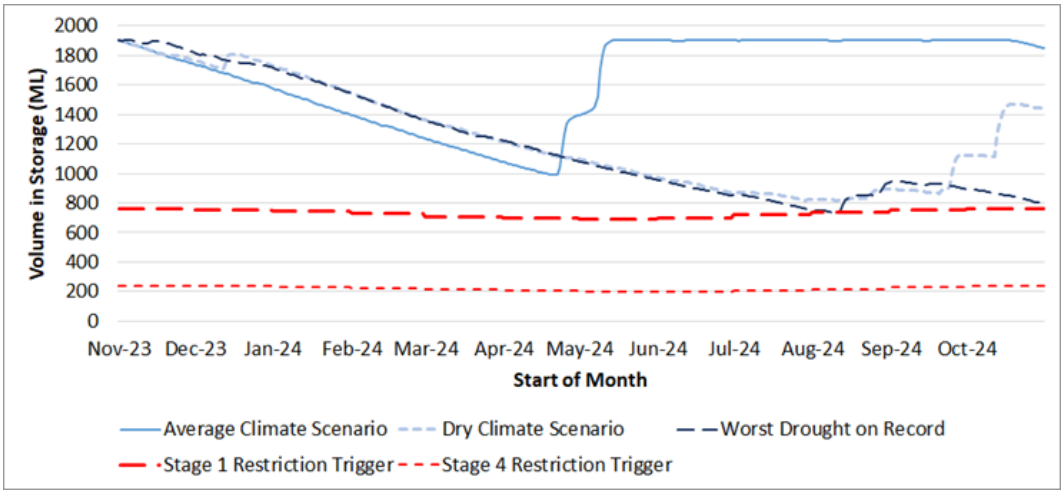

Figure 15 Urban water restrictions outlook for Leongatha

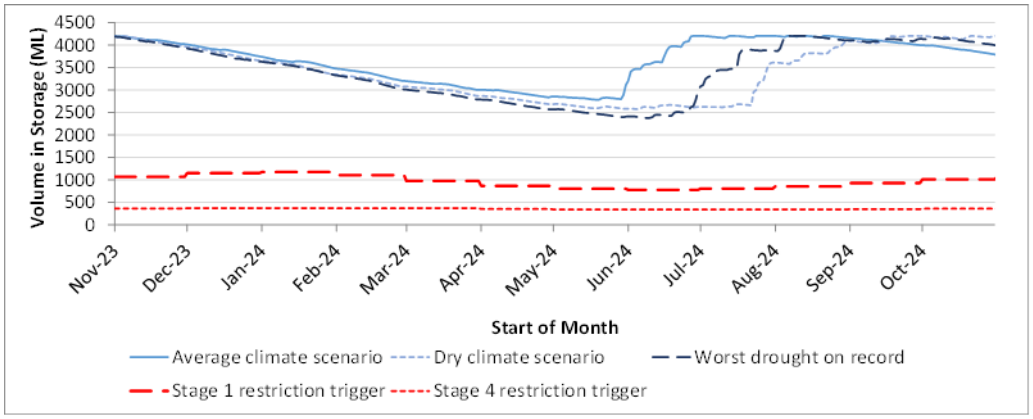

Figure 16 Urban water restrictions outlook for the Lance Creek system

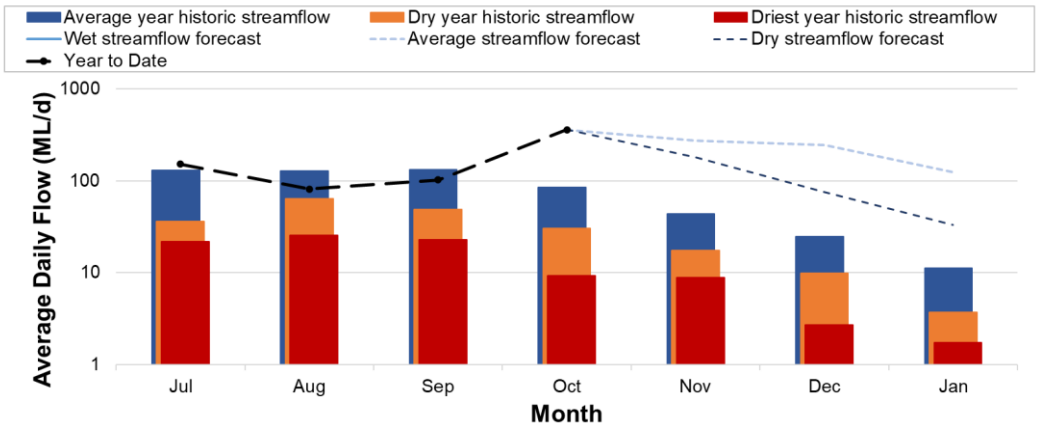

Figure 17 Streamflow outlook for Dumbalk

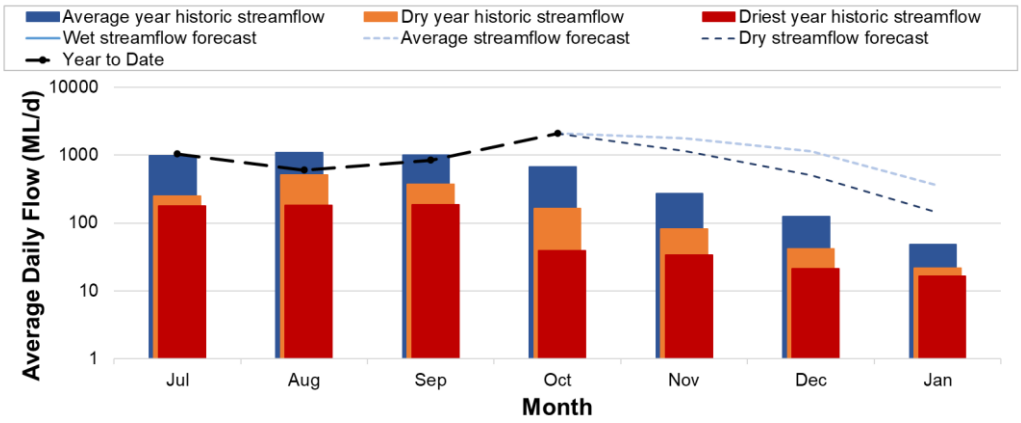

Figure 18 Streamflow outlook for Meeniyan

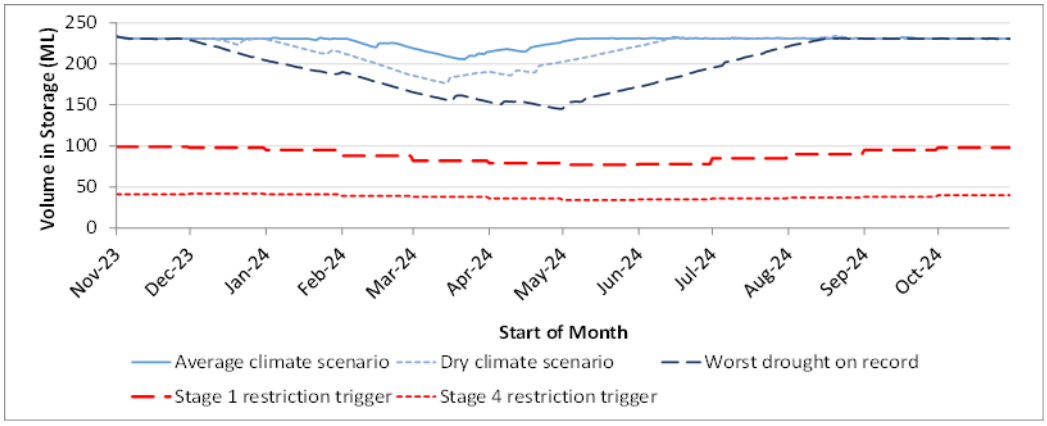

Figure 19 Urban water restrictions outlook for Foster

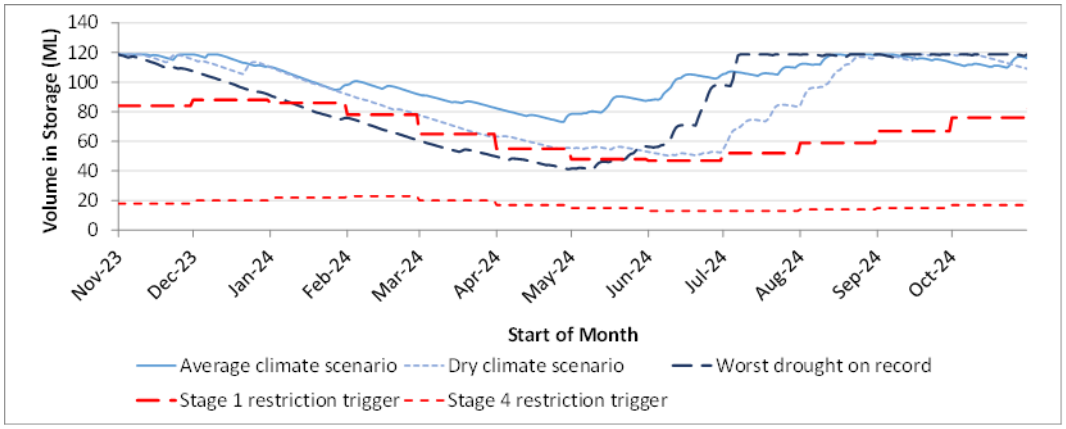

Figure 20 Urban water restrictions outlook for Fish Creek

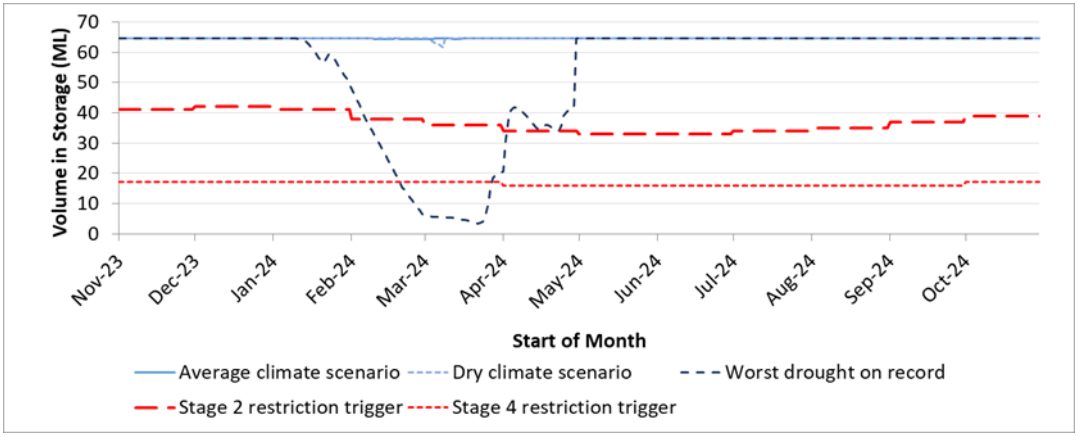

Figure 21 Urban water restrictions outlook for Toora

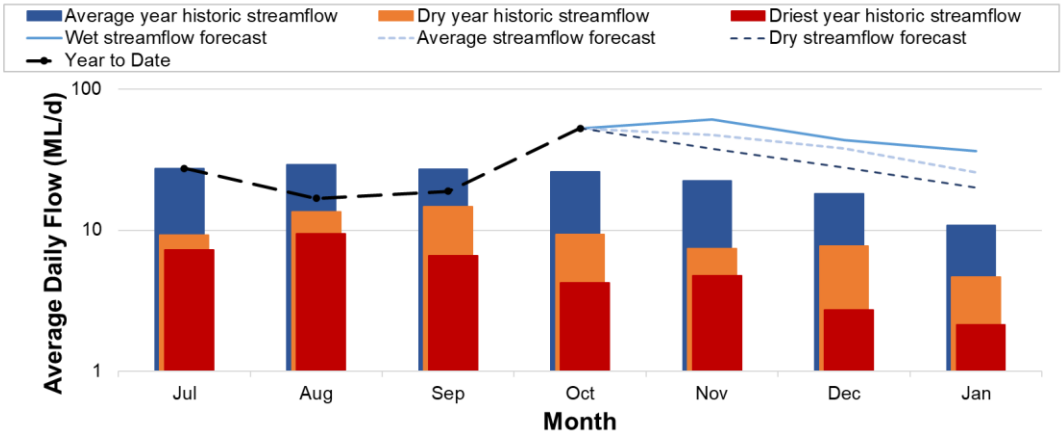

Figure 22 Streamflow outlook for Yarram

5. Action Plan

A list of key actions for each of SGW's supply systems due for completion before the next update of the Urban Water Strategy in 2027, is provided in Table 9. Further information on actions can be found in the 2022 Urban Water Strategy and SGW's Price Submission 2020-2023 publication on our website.

Table 9 Key Actions

System	Action	Timing
All	Water awareness and efficiency programs - Review and compare consumption data for accuracy and trends - Review long-term trends in water use independent of climate variability - Monitor major industry demand, keep informed of usage including water efficiency programs - Water efficiency via community programs, grants and education	Ongoing
	Leak reduction - Continue system leakage reduction and unmetered connection programs	Ongoing
	Reuse opportunities - Support larger residential and commercial properties assess rainwater and reuse systems	Ongoing
	Update water security outlooks	Every November
Leongatha	Immediate options investigation and action required to secure Leongatha and surrounds - Confirm water demand estimates for major customers - Investigate future use of existing groundwater bores - Investigate reuse of water treatment plant backwash water - Investigate interconnection of disused dams to the Leongatha system - Investigate interconnection with the Lance Creek system	 On-going Complete 2025 2027 2027
Lance Creek	This system is secure today, however South Gippsland Water is planning for tomorrow using the security of the State water grid. Planned purchase of additional bulk entitlement from the Melbourne Water Supply System in 2023/24 will be used to add to the system security	2024

Victoria's permanent water savings rules are always in place in South Gippsland, saving water on an ongoing basis. For additional tips about how to save water see our smart water advice.