South Gippsland Water

2022 Water Security Outlooks

Annual Water Outlook

Final

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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 2022 to the end of October 2023. The forecast period for run-of-river systems is 3 months from the start of November 2022 to the end of January 2023, 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 average climate conditions across the region:

- Restrictions are not considered likely or certain for any supply systems;
- For Fish Creek, restrictions are possible, but are not anticipated unless conditions were to become considerably drier than indicated by the Bureau of Meteorology's climate forecast and recent climate conditions.
- For Leongatha and Toora, the likelihood of restrictions is assessed as rare, with restrictions projected to only occur if conditions were to become considerably 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 Leongatha storages. This potential risk is managed at Lance Creek Reservoir through the use of seasonal supply from the Greater Yarra System – Thomson River Pool (Melbourne Water Supply System) and can be managed at Leongatha through the use of the supplementary groundwater supply. 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.

One of South Gippsland Water's major industrial customers is planning to increase demand from the Lance Creek supply system over the coming 12 months to support higher production. Year to date demands in this supply system have been 26% above average, however this is partly due to short-term maintenance works at two of the clear water storages in this supply system. This supply system has large volumes in storage locally, and has access to large volumes of carryover in the Melbourne Water Supply System, so will readily be able to meet this higher demand over the outlook period.

Table 1 Outlook Summary

Supply Sources	Towns Supplied	Outlook Period	Likelihood of Restrictions[1]
Ruby Creek Reservoirs	Leongatha, Koonwarra	1 Nov 2022 to 31 Oct 2023 (12 months)	Rare
Lance Creek Reservoir and the Melbourne Water Supply System	Wonthaggi, Cape Paterson, Inverloch, Korumburra, Poowong, Loch, Nyora	1 Nov 2022 to 31 Oct 2023 (12 months)	Very Rare
Tarwin River East Branch	Dumbalk	1 Nov 2022 to 31 Jan 2023 (3 months)	Very Rare (to start Feb 2023)
Tarwin River	Meeniyan	1 Nov 2022 to 31 Jan 2023 (3 months)	Very Rare (to start Feb 2023)
Deep Creek Reservoir and Foster Dam	Foster	1 Nov 2022 to 31 Oct 2023 (12 months)	Very Rare
Battery Creek Reservoir	Fish Creek	1 Nov 2022 to 31 Oct 2023 (12 months)	Possible
Cook's Dam (Agnes River)	Toora, Welshpool, Port Welshpool, Port Franklin, Barry Beach	1 Nov 2022 to 31 Oct 2023 (12 months)	Rare
Tarra River and groundwater	Yarram, Alberton, Port Albert, Devon North	1 Nov 2022 to 31 Jan 2023 (3 months)	Very Rare (to start Feb 2023)

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

Contents

1. Introduction 1

1.1 Climate Summary 4

1.1.1 Victoria's climate and streamflow in the longer-term context 4

1.1.2 Recent Climatic Conditions in South Gippsland 5

1.1.3 Recent Streamflow Conditions in South Gippsland 6

2. Current Water Resource Position 8

3. Climate Outlook 14

4. Forward Outlook 17

5. Short Term Action Plan 23

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, Port Franklin and Barry Beach 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 recently prepared an update to its Urban Water Strategy (UWS). 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.

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 streamflow is 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, and in the northern part of Victoria more rainfall during the warmer months from thunderstorms.

The cause of the reduction in streamflow response to a given amount of rainfall is not yet fully known and is the subject of continuing research.

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

- the rainfall reductions in winter to persist;
- possible increases in summer rainfall and 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.

Even if there is an increase in summer rainfall, it is unlikely to offset the streamflow impact from rainfall reductions in winter because most of the runoff in Victorian catchments occurs over winter and spring. In the warmer months, catchments are drier and more rainfall soaks into the ground, is used by vegetation or evaporates.

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.

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/research/vicwaci.

1.1.2 Recent Climatic Conditions in South Gippsland

Over the past 12 months, rainfall across the South Gippsland Region has been close to the long-term average conditions, as shown in Figure 2. The northern and eastern towns (Korumburra, Poowong, Loch, Nyora, Yarram, Port Albert, Alberton, Devon North) were slightly wetter than the southern and central towns (Wonthaggi, Inverloch, Cape Paterson, Meeniyan, Dumbalk, Foster, Fish Creek and Toora, Welshpool, Port Welshpool, Port Franklin, and Barry Beach Port). On average, rainfall conditions in the northern and eastern towns have been 100-125% of the Bureau of Meteorology's long-term average (from 1961-1990), and between 80-100% of the long-term average for the central and southern towns.

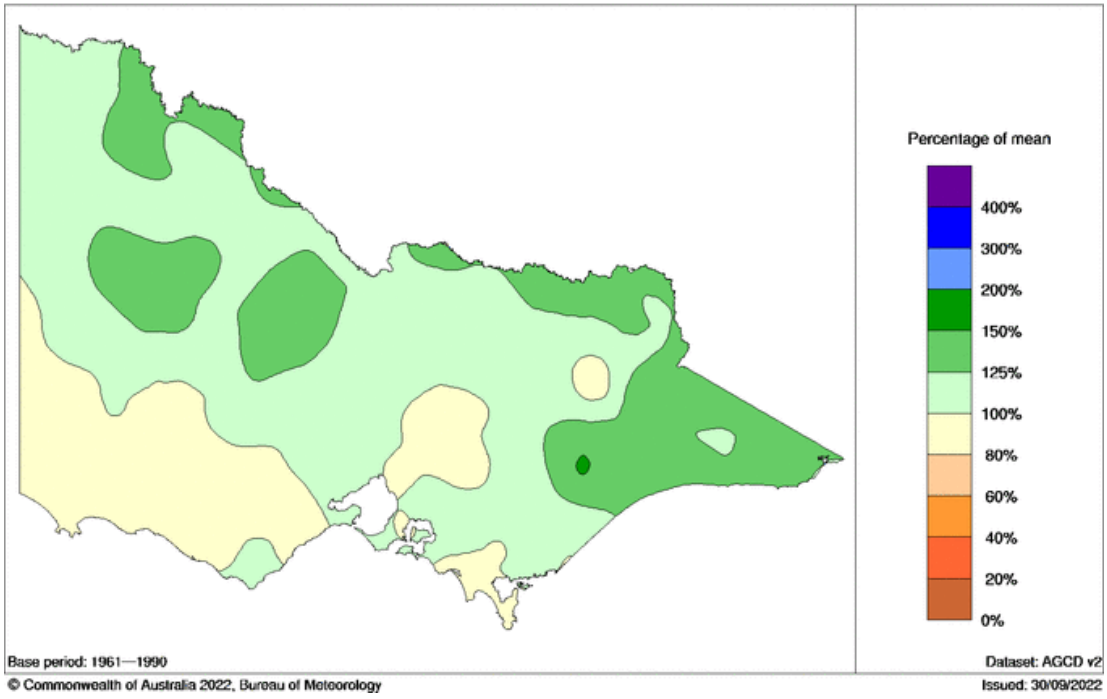

Figure 2 Rainfall percentages relative to mean over the period 1 October 2021 to 30 September 2022 (http://www.bom.gov.au/climate/maps/rainfall)

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 a relatively wet winter in 2022 at Korumburra. The rainfall observations for the most recent months show that rainfall was near or above average in both locations from June to September 2022.

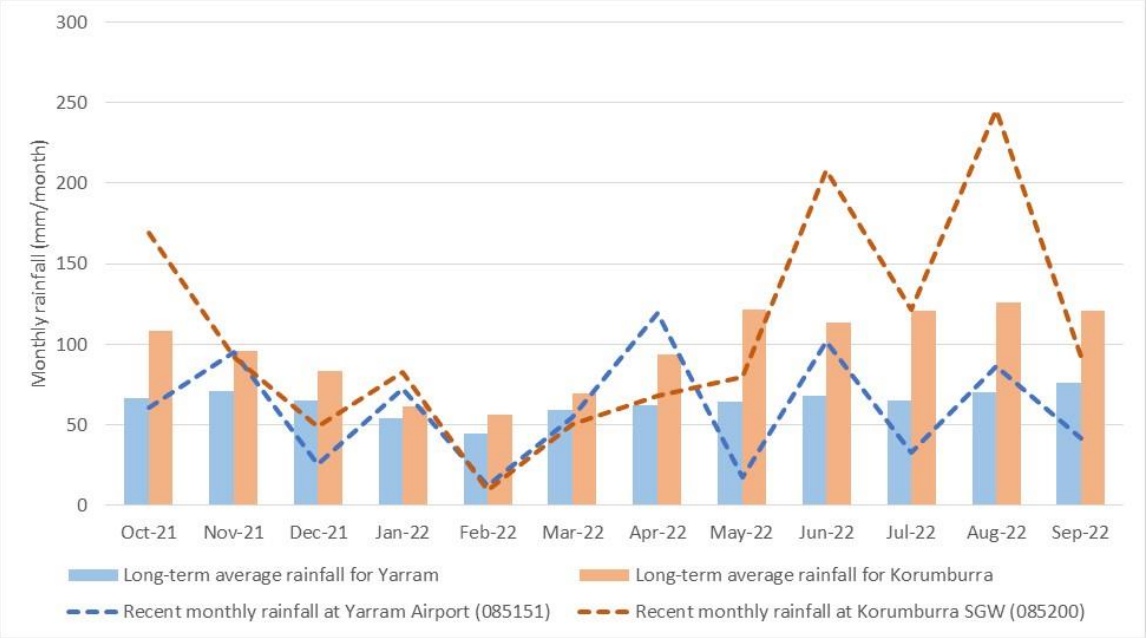

Figure 3 Recent and long-term average monthly rainfall in Korumburra and Yarram

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 14% higher than that experienced historically at Korumburra since 1975, whilst at Yarram the rainfall over the last twelve months has been 3% lower than that experienced since 1975.

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

Location	Last 12 months' rainfall October 2021 to September 2022 (mm)	Last 12 months' rainfall relative to…		
		Average July 1975 to date	Average July 1997 to date	Lowest on record
Korumburra	1,270	14% higher	17% higher	54% higher
Yarram	720	3% lower	No difference	44% 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 to or above the long-term average at both of these sites for long periods over the last 12 months, including above average streamflows for most of winter/spring in 2022. This is broadly consistent with recent rainfall observations.

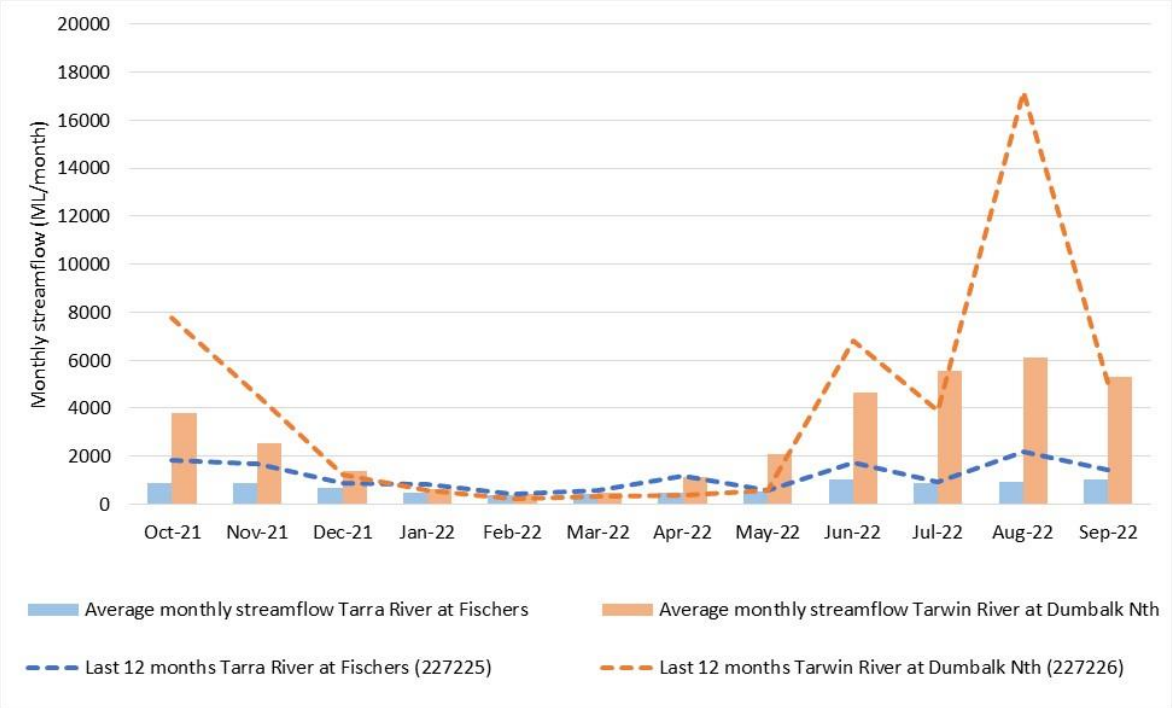

Figure 4 Recent and long-term average monthly streamflow for example sites on the Tarra River and Tarwin River

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 2022.

For the Lance Creek Water Supply System, in the year to date South Gippsland Water has been allocated 62% of its entitlement from the Greater Yarra System – Thomson River Pool (Melbourne Water Supply System), which equates to 620 ML. Based on projections by Melbourne Water, this year's allocation is expected to increase over the coming months under the forecast average climate conditions (see Section 3) over the outlook period. South Gippsland Water has also carried over 2,010 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. A small volume (108 ML) of this carryover has spilled from Melbourne Water Supply System in the year to date, with the potential for more spills to occur because the Melbourne Water Supply System storages are currently at or near capacity.

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 2022-23 YTD (ML)	Volume remaining 2022-23 (ML)	Annual entitlement (ML)	Volume extracted 2022-23 YTD (ML)
Ruby Creek	Leongatha, Koonwarra	3,436	Saputo Dairy Australia	2,476	363	2,113	Share of 715.3 ML from groundwater	0
Lance Creek	Wonthaggi, Cape Paterson, Inverloch, Korumburra, Poowong, Loch, Nyora	14,404	Burra Foods Australia, Tabro Meat, and GBP Australia (Poowong Abattoir)	3,800 ML from Lance Creek Reservoir	628 ML from Lance Ck	3,172 ML from Lance Creek	1,000 ML from Melbourne Water Supply System: 62% year to date seasonal allocation (620 ML) plus 1,902 ML (net) carried over from previous year	78 ML from Melbourne Water Supply System
Tarwin River East Branch	Dumbalk	109		100	4	96		
Tarwin River	Meeniyan	278		200	10	190		
Deep Creek / Foster Dam	Foster	953		326	47	279		
Battery Creek	Fish Creek	209		251	22	229		
Agnes River	Toora, Welshpool, Port Welshpool, Port Franklin, Barry Beach Port	1,133	Esso, ViPlus	1,617	105	1,512		
Tarra River	Yarram, Alberton, Port Albert, Devon North	1,883		853	101	752	214.2 ML from groundwater	0

The volume in storage across the SGW systems is summarised in Table 5. All storages are currently full.

Table 5 Current Water Resource Position

Supply System	Storage	Storage capacity (ML)	Current storage volume (ML) at end October 2022	% 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	19	19	100%
Lance Creek	Lance Creek Reservoir	4200	4200	100%
Fish Creek	Battery Creek Reservoir	119	119	100%
Foster	Deep Creek Reservoir	5	5	100%
	Foster Dam	233	233	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. Lance Creek is the only supply system where water consumption has consistently been above average in the year to date. This was partly due to higher than average demand by major industrial customers, whose water use can often fluctuate significantly, and maintenance works at the Wonthaggi and Inverloch clear water storages. It is expected that the demand will be closer to the historical average for the remainder of the year as maintenance works are completed. South Gippsland Water will continue to closely monitor water use in this supply system. Water consumption at Yarram was higher than average in September 2022 due to a leak on the trunk main pipeline which was difficult to access, but has since been repaired. 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.

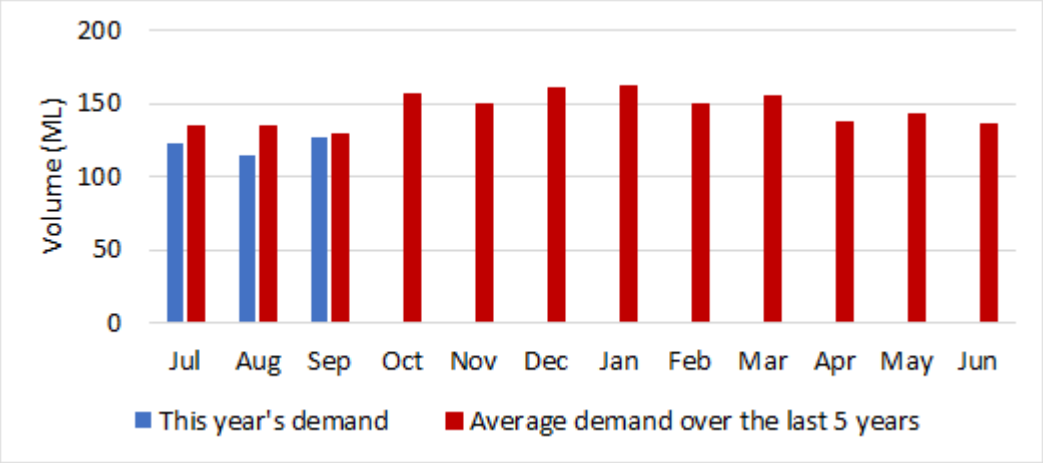

Figure 5 Water consumption in Leongatha

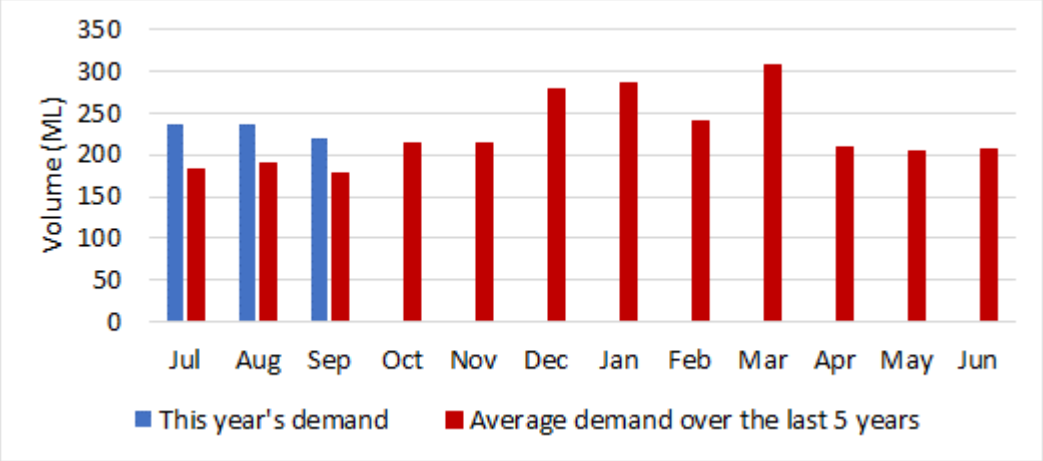

Figure 6 Water consumption in the Lance creek system

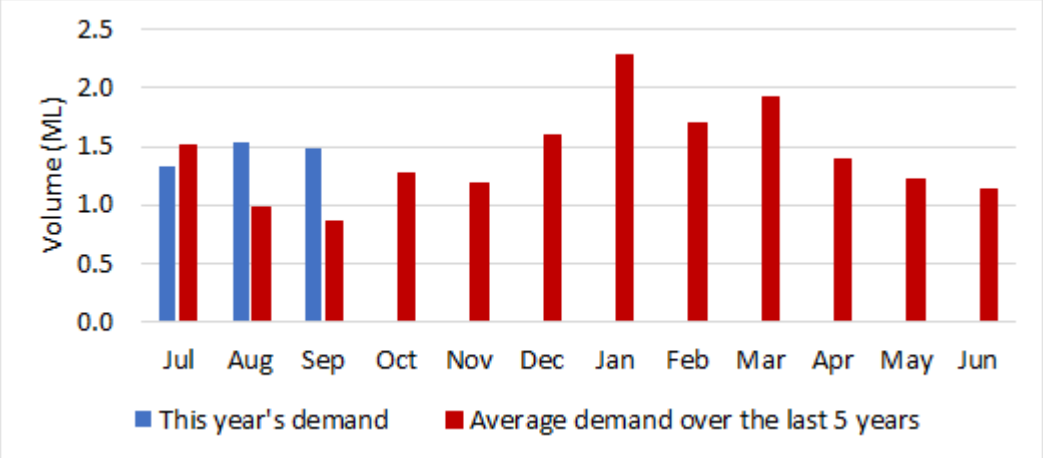

Figure 7 Water consumption in Dumbalk

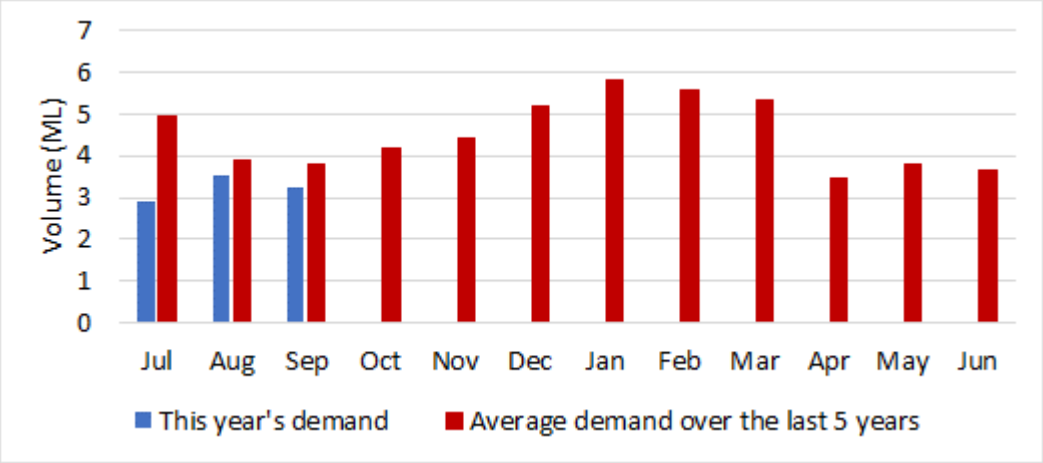

Figure 8 Water consumption in Meeniyan

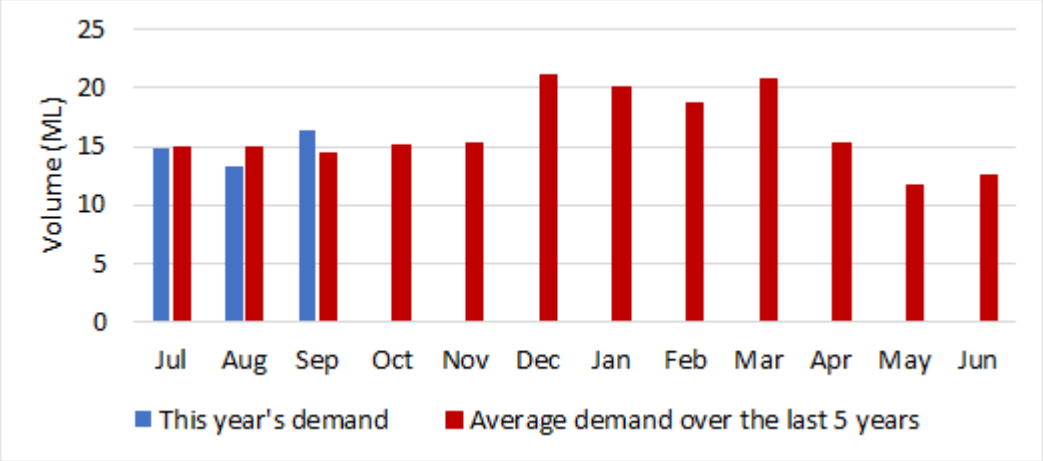

Figure 9 Water consumption in Foster

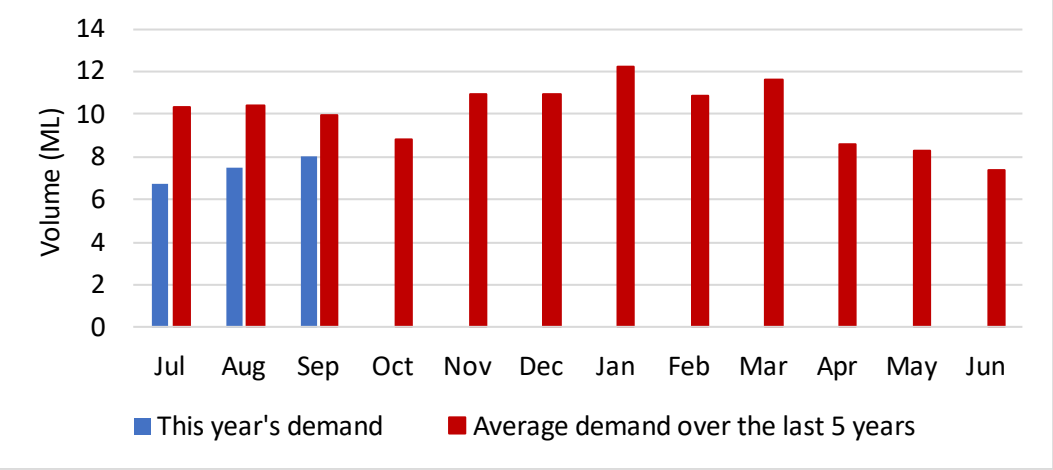

Figure 10 Water consumption in Fish Creek

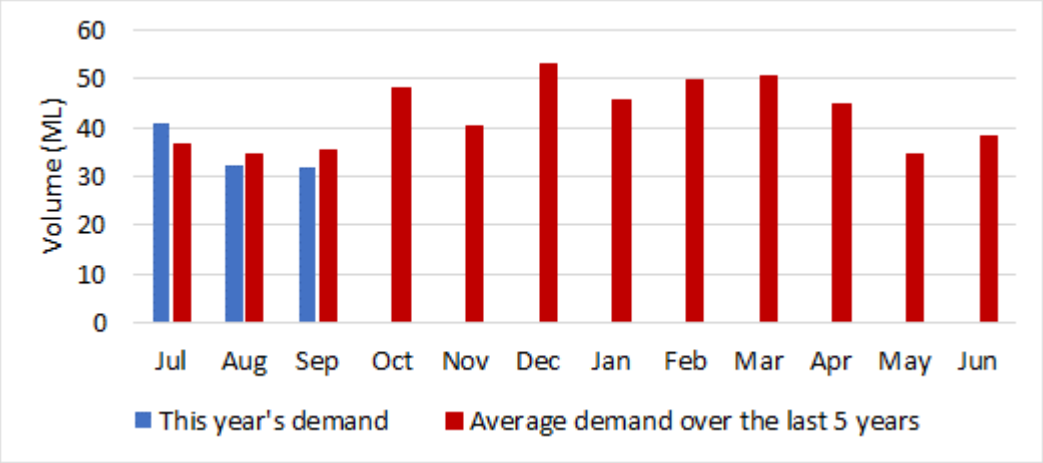

Figure 11 Water consumption in Toora

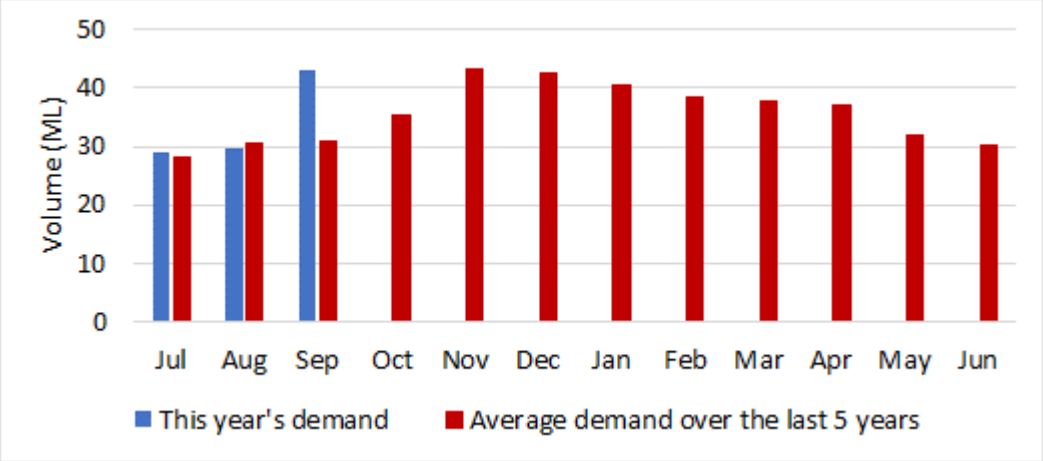

Figure 12 Water consumption in Yarram

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 higher than usual, with a forecast 60-65% chance of exceeding median rainfall conditions during December to February (as shown in Figure 13), and a less than 10% chance of unusually dry conditions.

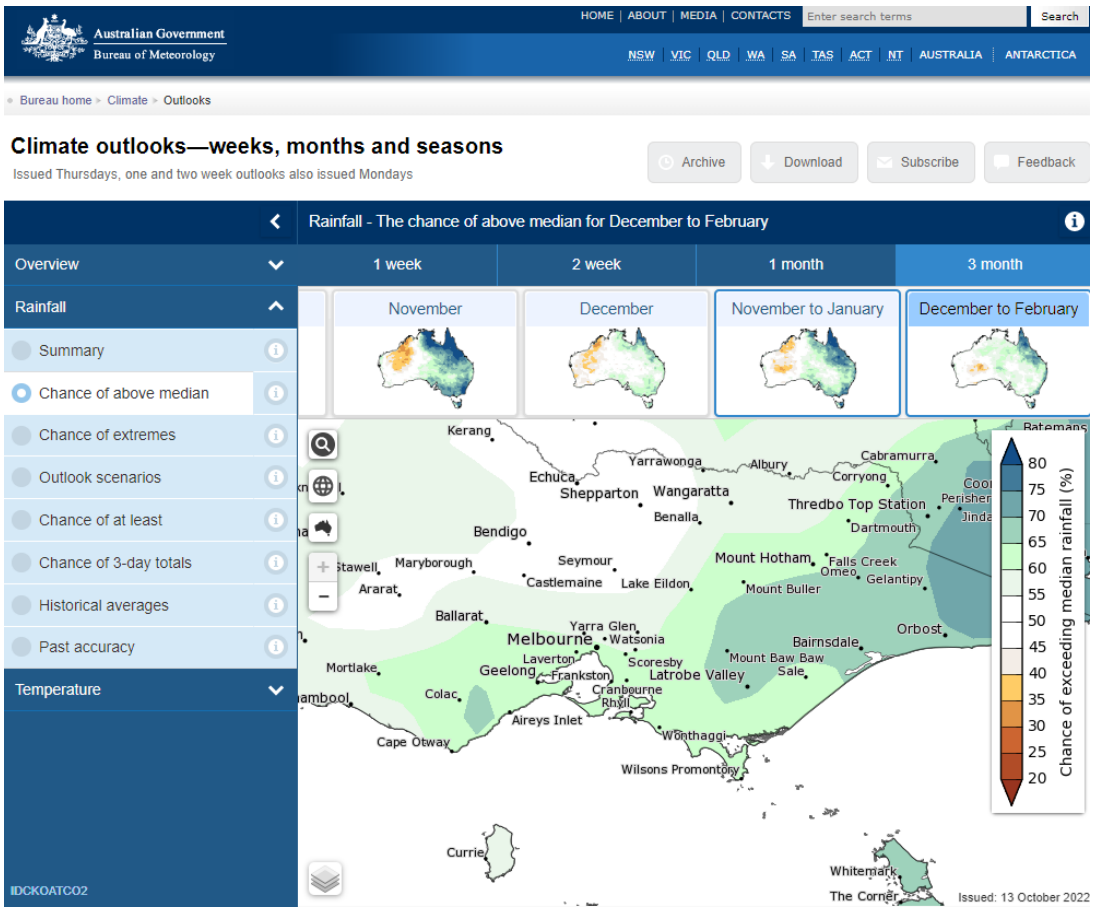

Figure 13 Chance of above median rainfall for December to February (http://www.bom.gov.au/climate/ahead/) issued 13 October 2022

The maximum daytime temperature across the region is forecast to be hotter than usual from December to February, as indicated in Figure 14. The likelihood of above median temperatures is higher for towns closer to the coast, with a 75-85% likelihood in South Gippsland Water's southern towns, but only a 55-70% chance in the northern towns.

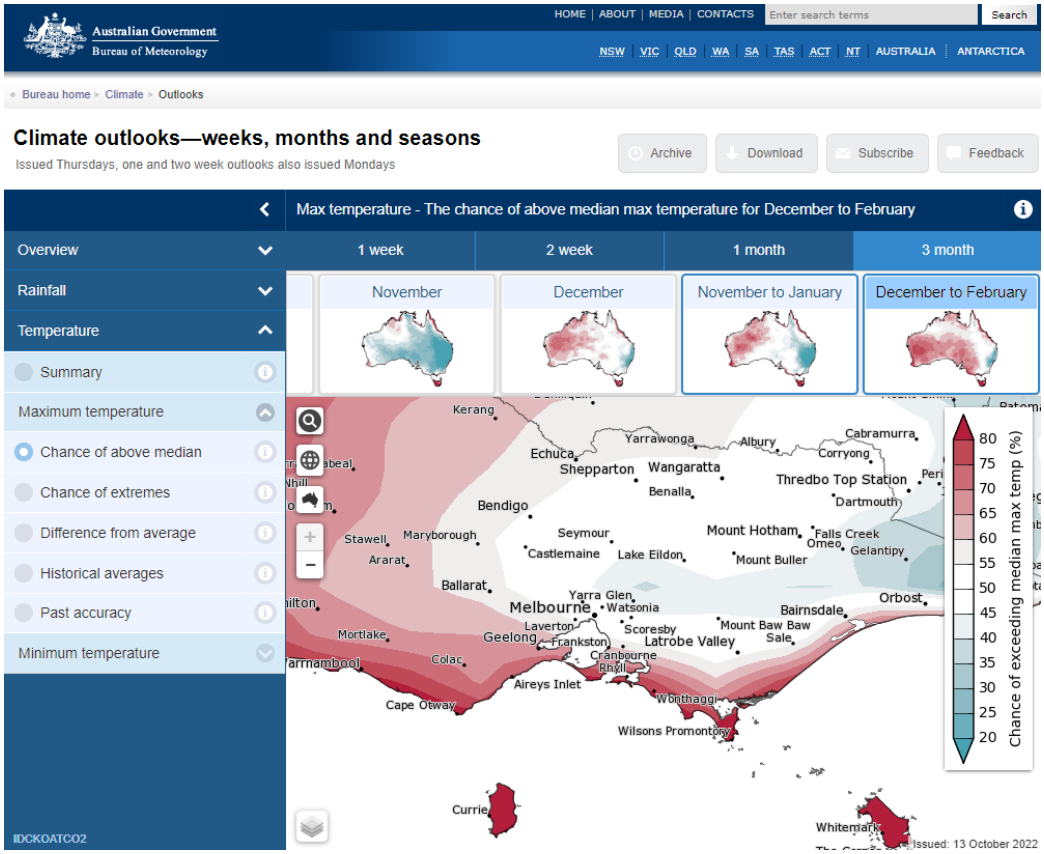

Figure 14 Chance of above median maximum temperature for December to February (http://www.bom.gov.au/climate/ahead/) issued 13 October 2022

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 La Nina event, which is likely to persist into early 2023, which typically increases the chance of above average rainfall for eastern Australia during spring and summer.
- A negative Indian Ocean Dipole event, which is likely to persist until late spring. This typically increases the chance of above average spring rainfall for most of eastern Australia.
- When La Nina and negative Indian Ocean Dipole events combine, the chance of above average rainfall over eastern Australia further increases.

- A Southern Annular Mode in its positive phase, which is expected to continue throughout spring and into early summer. This increases the chance of above average rainfall for eastern Victoria.
- The Bureau incorporates these events into forecast models and outlooks.

Table 6 Climate outlook across SGW systems

Supply System	Towns supplied	Bureau of Meteorology Forecast (Nov-Jan)		Winter and spring rainfall for 2022 year to date	Likely Outlook Scenario
		Chance of exceeding median rainfall	Chance of exceeding median maximum temperature		
Ruby Creek	Leongatha, Koonwarra	65-70%	Greater than 80%	100-125% of average	Average
Lance Creek	Wonthaggi, Cape Paterson, Inverloch, Korumburra, Poowong, Loch, Nyora	65-70%	70-80% across most towns	100-125% of average	Average
Tarwin River East Branch	Dumbalk	65-70%	65-70%	100-125% of average	Average
Tarwin River	Meeniyan	65-70%	65-70%	100-125% of average	Average
Deep Creek / Foster Dam	Foster	65-70%	70-75%	100-125% of average	Average
Battery Creek	Fish Creek	65-70%	75-80%	100-125% of average	Average
Agnes River	Toora, Welshpool, Port Welshpool, Port Franklin, Barry Beach Port	65-70%	70-75%	100-125% of average	Average
Tarra River	Yarram, Alberton, Port Albert, Devon North	65-70%	70-75%	100-125% of average	Average

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, but are not anticipated unless conditions were to become considerably drier than indicated by the Bureau of Meteorology's climate forecast and recent climate conditions.
- For Leongatha and Toora, the likelihood of restrictions is assessed as rare, with restrictions projected to only occur if conditions were to become considerably 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.

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.

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 seasonal supply from the Melbourne Water Supply System, and can be managed at Leongatha through the use of the supplementary groundwater supply. 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.

One of South Gippsland Water's major industrial customers is planning to increase demand from the Lance Creek supply system over the coming 12 months to support higher production. Year to date demands in this supply system have been 26% above average, however this is partly due to short-term maintenance works at two of the clear water storages in this supply system. This supply system has large volumes in storage locally, and has access to large volumes of carryover in the Melbourne Water Supply System, so will readily be able to meet this higher demand over the outlook period.

Table 7 Risk Assessment Likelihood rating for water restrictions over the 2022/23 Outlook period

Supply Sources	Towns Supplied	Outlook Period	Likelihood of Restrictions
Ruby Creek Reservoirs	Leongatha, Koonwarra	1 Nov 2022 to 31 Oct 2023 (12 months)	Rare
Lance Creek Reservoir and the Melbourne Water Supply System	Wonthaggi, Cape Paterson, Inverloch, Korumburra, Poowong, Loch, Nyora	1 Nov 2022 to 31 Oct 2023 (12 months)	Very Rare
Tarwin River East Branch	Dumbalk	1 Nov 2022 to 31 Jan 2023 (3 months)	Very Rare (to end Jan 2021)
Tarwin River	Meeniyan	1 Nov 2022 to 31 Jan 2023 (3 months)	Very Rare (to end Jan 2021)
Deep Creek Reservoir and Foster Dam	Foster	1 Nov 2022 to 31 Oct 2023 (12 months)	Very Rare
Battery Creek Reservoir	Fish Creek	1 Nov 2022 to 31 Oct 2023 (12 months)	Possible
Cook's Dam (Agnes River)	Toora, Welshpool, Port Welshpool, Port Franklin, Barry Beach	1 Nov 2022 to 31 Oct 2023 (12 months)	Rare
Tarra River and groundwater	Yarram, Alberton, Port Albert	1 Nov 2022 to 31 Jan 2023 (3 months)	Very Rare (to end Jan 2021)

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

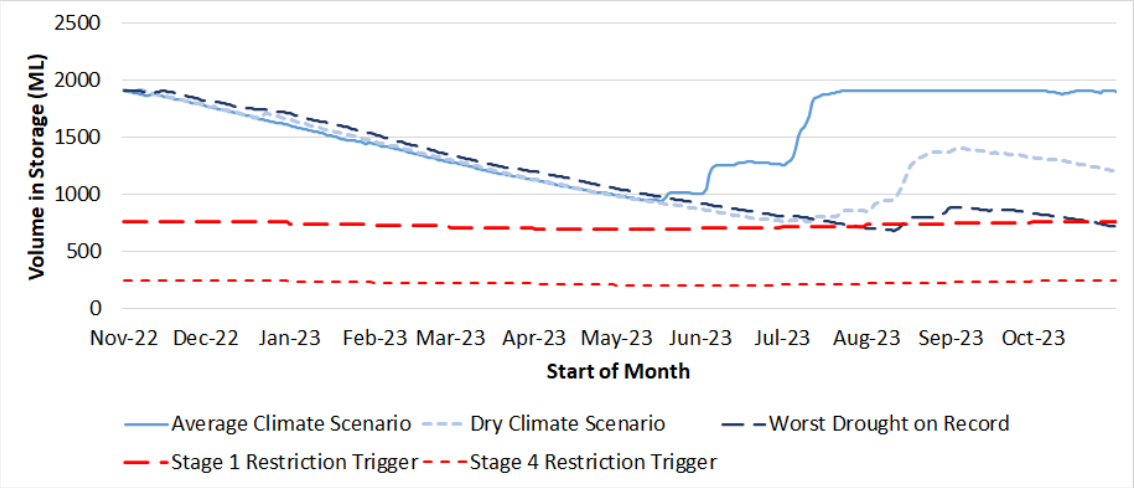

Figure 15 Urban water restrictions outlook for Leongatha

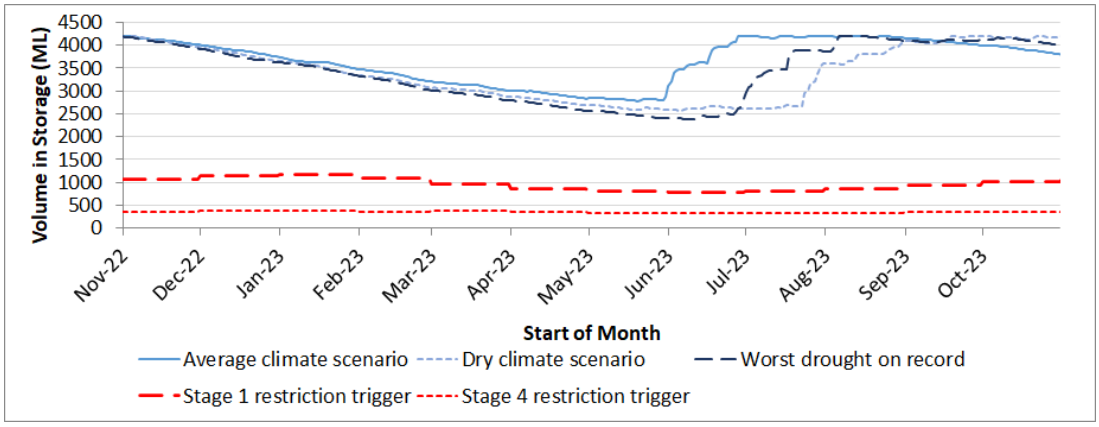

Figure 16 Urban water restrictions outlook for the Lance Creek system

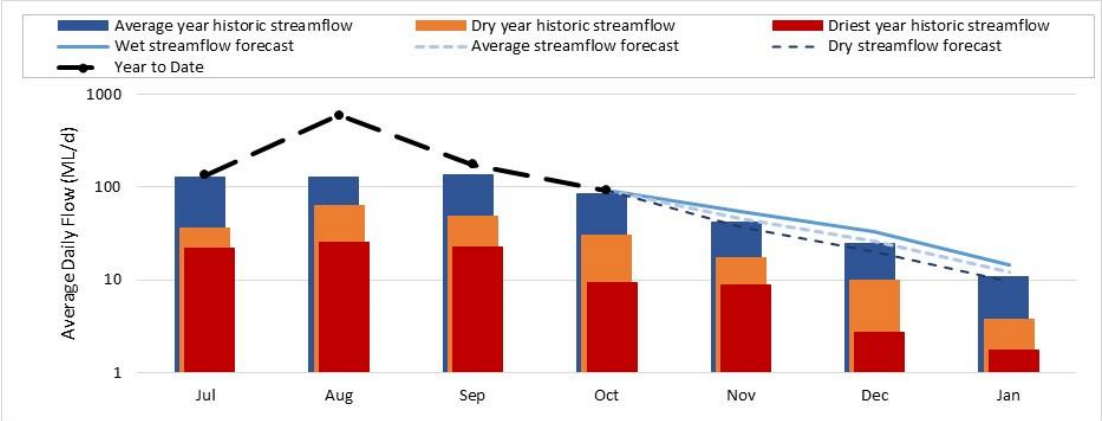

Figure 17 Streamflow outlook for Dumbalk

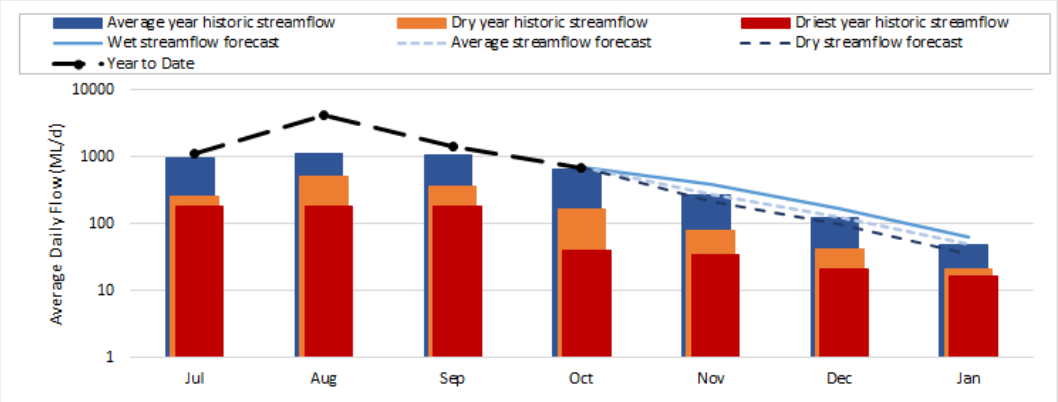

Figure 18 Streamflow outlook for Meeniyan

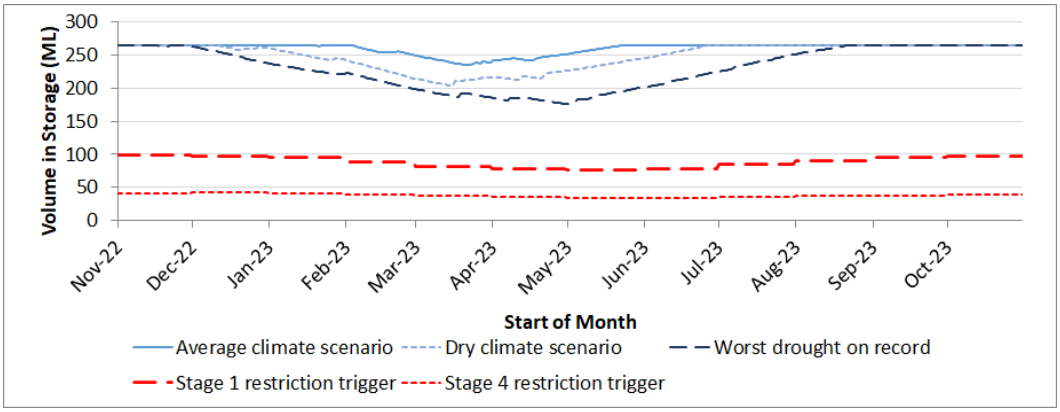

Figure 19 Urban water restrictions outlook for Foster

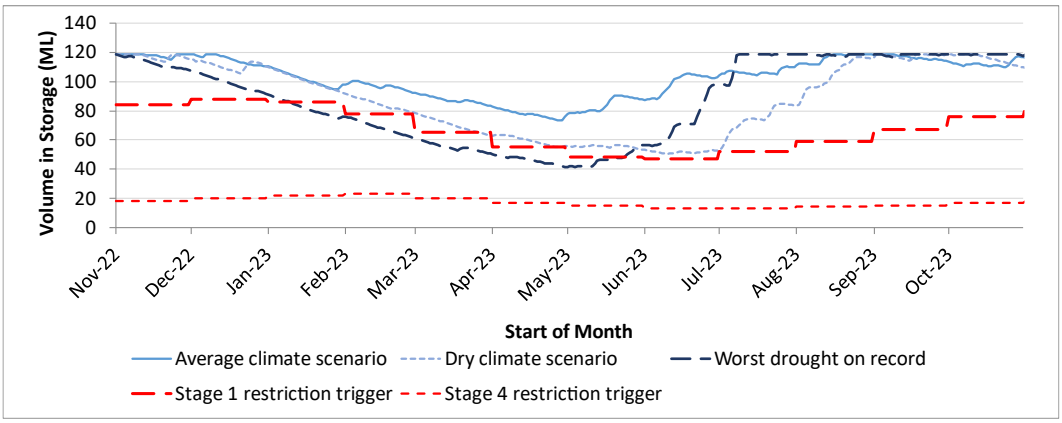

Figure 20 Urban water restrictions outlook for Fish Creek

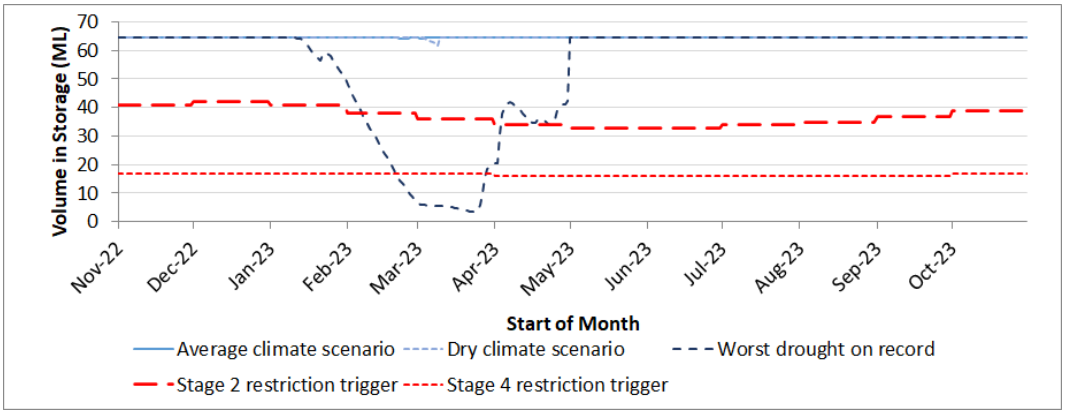

Figure 21 Urban water restrictions outlook for Toora

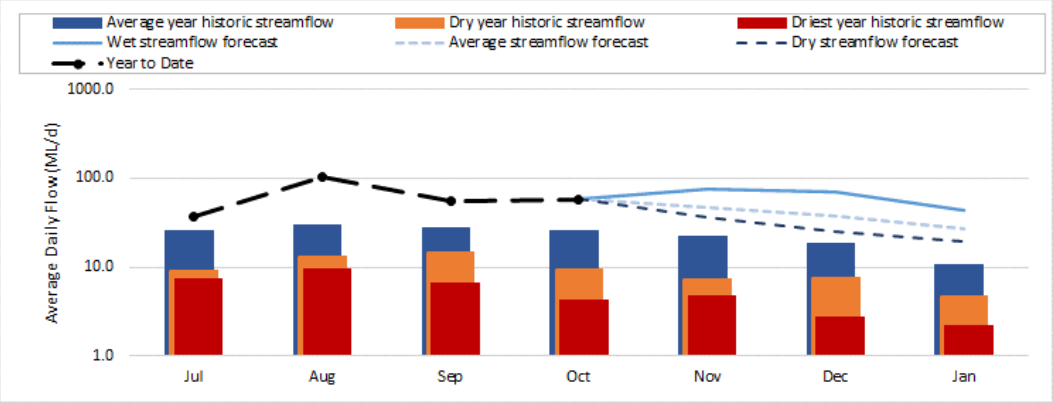

Figure 22 Streamflow outlook for Yarram

5. Short Term Action Plan

A list of priority actions for each of SGW's supply systems, prior to 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. Actions at Leongatha include investigating expanded use of groundwater and investigating the interconnection of disused reservoirs to improve reliability of supply at Leongatha. Since completing the Urban Water Strategy, South Gippsland Water has completed further investigations to assess the scope and costs of bringing some existing groundwater bores back into service, for comparison against other options.

Table 9 Action Plan

System	Action	Timing
All	Water awareness and efficiency programs	Ongoing
	Leak reduction	Ongoing
	Reuse opportunities	Ongoing
	Update water security outlooks	Every November
Leongatha	Immediate options investigation and action required to secure Leongatha and surrounds	2022-2027
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	2023/24

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.