

1. Our reality



Image: Eagle Point Boat Ramp,
Gunaikurnai Country



Sustainable water strategies set directions and outline actions to meet current and emerging water challenges for all users in Victoria’s regions. They take a long-term view – the next 50 years – to describe the water challenges and set out actions to meet these challenges for communities, healthy rivers and wetlands, Traditional Owners, farmers, industries and tourism.

1.1 About the Strategy

The Central and Gippsland Region Sustainable Water Strategy (the Strategy) sets the direction and outlines actions for securing the region’s long-term water supplies to protect the jobs, farms, ecosystems, communities and Traditional Owners that rely on them.

VISION:

The region will work together to ensure our waterways and aquifers can support a healthy environment and regional prosperity for current and future generations, the water needs of our cities, towns and regional communities are met and drinking water quality and public health are protected— even as the climate becomes drier and more variable — where agricultural, industrial and recreational activities can thrive and where Traditional Owners ongoing connection to water is recognised, respected and reinstated.

THE STRATEGY'S OBJECTIVES ARE TO:

- ✓ Secure the region's urban water future and safe drinking water supplies by using water more wisely and efficiently and increasing the use of manufactured water sources
- ✓ Return water to Traditional Owners across the region and strengthen Traditional Owners' role in water resource planning and management
- ✓ Maintain and improve waterway health for environmental and healthy Country outcomes
- ✓ Build the resilience of agriculture to a drying and variable climate
- ✓ Provide for social and recreational uses and values of waterways

The Strategy also embeds public health outcomes by providing for secure drinking water supplies and improved water quality.

1.2 The Central and Gippsland Region

The Central and Gippsland Region covers the waterways and catchments relied on by Victorians south of the Great Dividing Range, right down to the coast, and from the Otway Ranges in the west to Mallacoota in the east. This region is essential to the state's liveability, sustainability and prosperity, as more than 6 million Victorians currently depend on its rivers, wetlands and lakes to live, work and play. As well as providing habitat for native wildlife, the region accounts for almost a third of Victoria's agricultural production including approximately 33 per cent of Victoria's milk products, 70 per cent of Victoria's eggs and poultry, and 70 per cent of the state's vegetables. The Registered Aboriginal Parties (RAPs) and original custodians of the land and waters across this region are the Bunurong, Eastern Maar, Gunaikurnai, Wadawurrung and Wurundjeri Woi-wurrung peoples ([Figure 1.1](#)).

This Strategy replaces the former *Central Region Sustainable Water Strategy* (DSE 2006) and *Gippsland Region Sustainable Water Strategy*

(DSE 2011a). A decision was made to combine the strategies to reflect the growing connections between the Melbourne supply system and cities and towns across the region including Geelong, Korumburra, Cowes and Wonthaggi.

The other two sustainable water strategies are the *Northern Region Sustainable Water Strategy* which was published in 2009 (DSE 2009) and the *Western Region Sustainable Water Strategy* (DSE 2011b) which was published in 2011.

Revocation of the Central Region Sustainable Water Strategy and the Gippsland Region Sustainable Water Strategy

The Minister for Water gives notice that under section 22G(3) of the Water Act 1989 she has revoked the Central Region Sustainable Water Strategy (DSE 2006) and the Gippsland Region Sustainable Water Strategy (DSE 2011a).

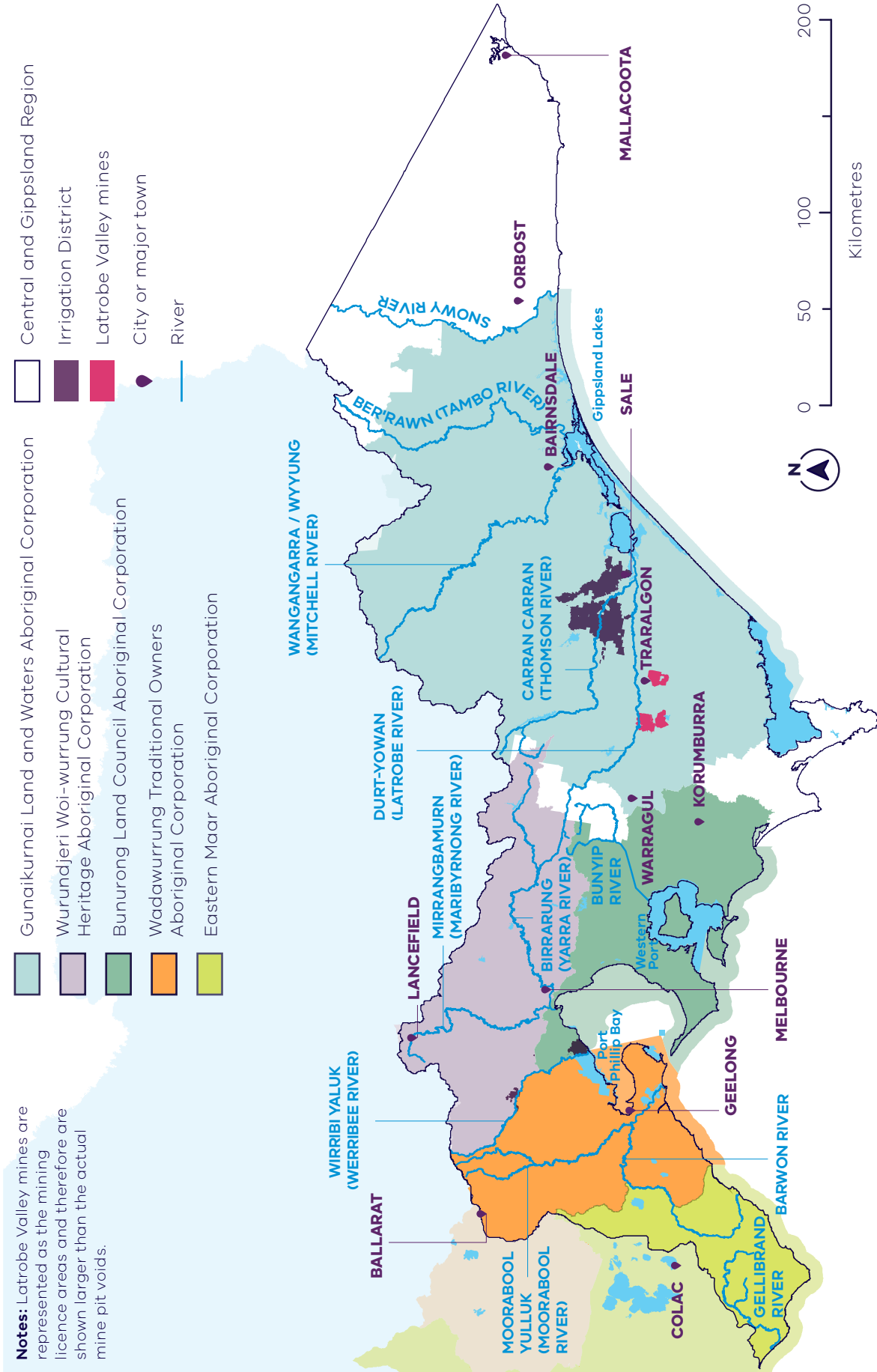


Figure 1.1: The Central and Gippsland Region and major waterways covered by this Strategy and the RAPs in the region. The RAP boundaries are current at June 2022

Water in the region

Water is essential for life and prosperity in the Central and Gippsland Region. We all rely on safe and affordable water for drinking and everyday use, to grow our food and power our industries and to keep our waterways healthy. The importance of water and sanitation for protecting human health has been highlighted during the COVID-19 pandemic. Water has a cultural and spiritual importance to Traditional Owners and supports community wellbeing by providing places for recreation and by keeping our suburbs and parks green and cool.

Figure 1.2 describes how the region uses a mix of water sources to meet different needs and demands.

Sources of water

River water is the main source of water for people in urban areas, industry and farms in the region, providing around 84 per cent of our water needs. River water is also essential for the environment to Traditional Owners and to support recreation and tourism. **Appendix A** shows the volumes of river water available across the region and its use.

Groundwater is used mostly for irrigating crops and dairy farms and for town water supplies where river water is unavailable or unreliable.

Victorian Desalination Project can supply up to 150 billion litres of water per year to Greater Melbourne and connected towns, which is about one-third of Melbourne's annual water use.

Recycled water is used for agriculture, industry and other non-drinking purposes including watering sporting fields, trees and parks, and for residential or commercial uses (via purple pipe schemes).

Treated stormwater is used for a range of non-drinking uses including watering parks and gardens.

Rainwater tanks and **small catchment dams** are the main source of water for people in rural areas and the primary source of water for dryland agriculture. In urban areas, rainwater captured in tanks is used in homes and businesses to supplement or reduce the use of mains water. In peri-urban and rural areas, small catchment dams intercept water that is used to meet domestic and stock needs or, when licenced, used for irrigation and other commercial purposes.



Image: Victorian Desalination Plant, Wonthaggi, Bunurong Country

SOURCES OF WATER

RAINWATER (FROM ROOFS)

Rainwater tanks capture rainwater from roofs and are best suited for single lots, such as houses or industry. Large-scale rainwater capture and use is limited.

STORMWATER

Stormwater harvesting and reuse schemes are generally on a smaller scale in built-up areas and found within new and infill developments, supplying water for non-potable purposes.

RECYCLED WATER

Site-specific opportunities exist at a range of scales from smaller scale, such as via sewer mining, to larger scale treatment, use and distribution, via purple pipe networks.

RIVER WATER

Rivers supply water to our reservoirs and this water is fully allocated up to the identified sustainable level for most of the region.

DESALINATED WATER

Although the potential for large volumes exist, opportunities may be limited by the number of suitable sites along the coast and high costs.

GROUNDWATER

Groundwater is fully allocated up to the identified sustainable level for most of the region.

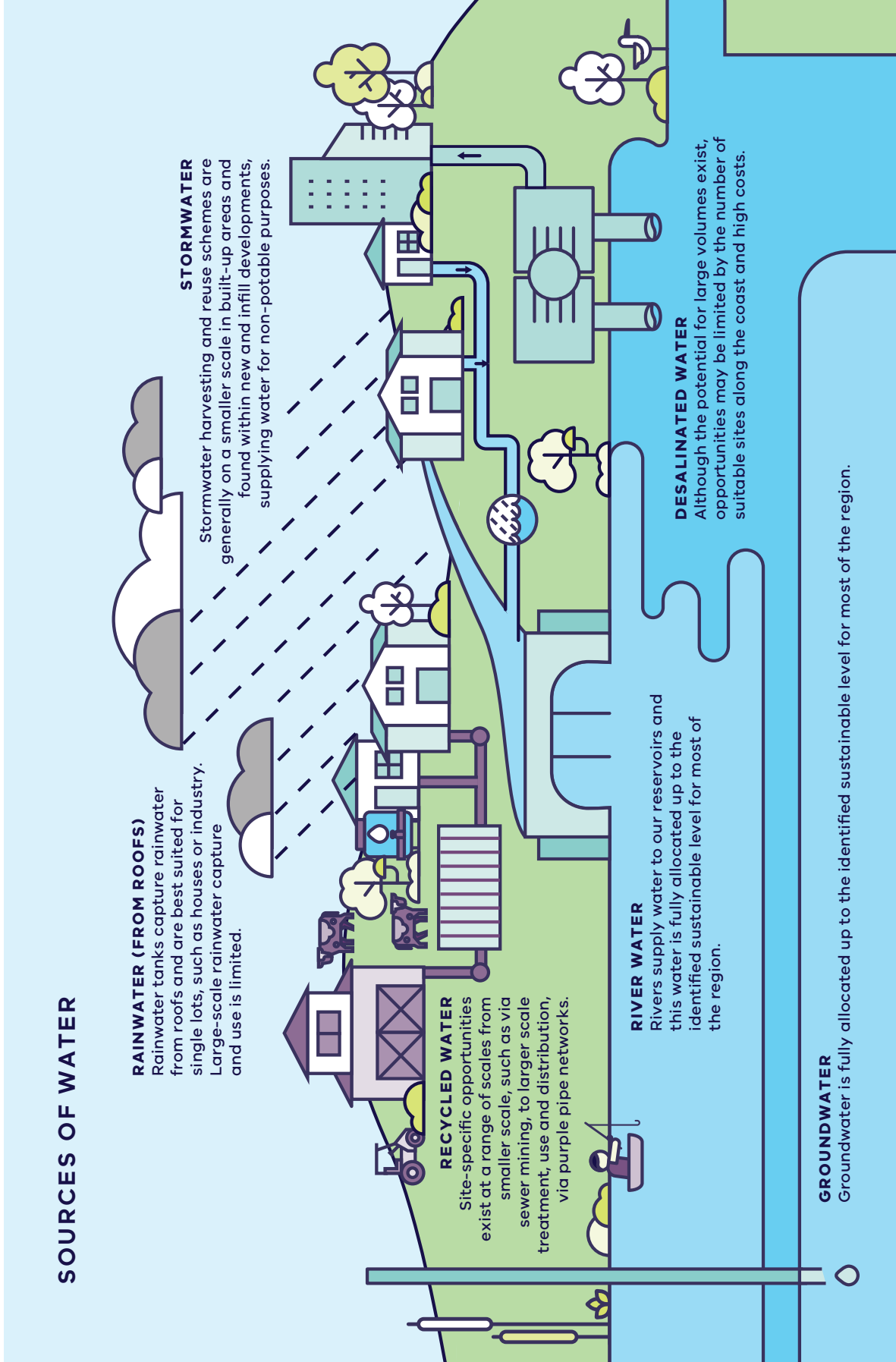


Figure 1.2: Sources of water for different needs, and opportunities for meeting demand

Water uses and values

Water for cities and towns

Cities and towns are the biggest water users, accounting for about half of the region's water entitlements (707 gigalitres per year or 47 per cent). Residential water use accounts for the majority of the water used in cities and towns. Other water uses include non-residential customer use (such as for commercial, industrial or public open spaces) and system losses, mostly leakage (see [Figure 1.3](#) and [Figure 1.4](#)). While only a small percentage of residential water use is for drinking and cooking, delivery of high-quality water is essential for the protection of public health.

Water is supplied to cities and towns through the Victorian water grid (see [Figure 1.5](#)). Much like our road network, dams and reservoirs (which collect and store river water), irrigation districts and the Victorian Desalination Project are connected via infrastructure including pipes, pumps and natural systems such as rivers. The growing demand for urban water is explained further in [Section 1.3](#).

Water for agriculture

Agricultural production accounts for 39 per cent of river water and groundwater entitlements in the region (or 576 gigalitres per year). Water used for agriculture is concentrated in the Macalister, Werribee and Bacchus Marsh irrigation districts. Irrigators in the Werribee Irrigation District also use recycled water to supplement their river water entitlements. Outside major irrigation districts, farmers rely on water provided by natural rainfall on their land in combination with water diverted from waterways or groundwater aquifers to use or store in private licensed dams. See [Chapter 7](#) for further details.

Water for Traditional Owners

Traditional Owners have never ceded rights to water. Traditional Owners in the Central and Gippsland Region own 2 gigalitres⁵. Traditional Owners have cultural, spiritual and economic connections to water, but have been largely excluded from water planning, management and ownership since colonisation. See [Chapter 6](#) for further details.

Water for the environment

Water for the environment is essential for healthy and resilient waterways and for the survival of native fish, platypus populations and other species. Healthy flowing waterways support recreation, tourism, Traditional Owner culture and the liveability of communities, as well as supporting the delivery of consumptive water. Currently, environmental entitlements are about 5 per cent of all water entitlements in the region (or an average of 70 gigalitres per year)⁶.

The environment also benefits from 'above-cap' water, which is water that is left over after limits (or caps) on diversions have been reached, and includes water that spills from storages after high rainfall and inflows. Across the Central and Gippsland Region, the estimated volume of above-cap water is 5,528 gigalitres⁷. The valuable instream benefits this water provides include environment, recreation, domestic and stock use, and improved water quality for all river users. See [Chapter 8](#) for further details.

Power generation and mines

Large volumes of high-reliability water are required for coal-fired electricity generation in the Latrobe Valley. While water will continue to be needed for electricity generation for some time yet, the transition away from coal-fired electricity generation offers the Latrobe Valley the potential for a water transition too. The Latrobe Valley mine operators are considering water-based options to rehabilitate the coal mines into safe, stable and sustainable landforms. The Victorian Government is guiding the rehabilitation of the mines via the Latrobe Valley Regional Rehabilitation Strategy.

5 In 2020, the Victorian Government returned 2 gigalitres of unallocated water in the Wangangarra / WyYung (Mitchell River) to the Gunaikurnai Land and Waters Aboriginal Corporation.

6 Environmental entitlements are held and managed by an independent statutory body, the Victorian Environmental Water Holder.

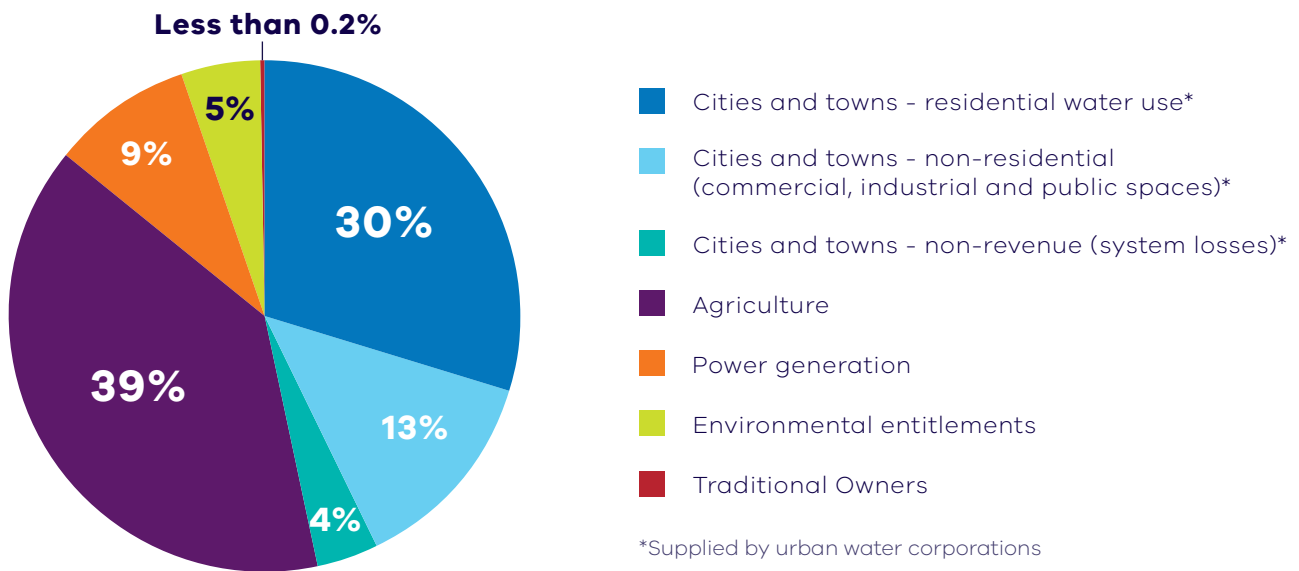
7 5,528 gigalitres is long-term average annual volume of above cap water under historical climate experienced since 1975. Adapted from Figure 42 of the Long-term water resource assessment for southern Victoria (DELWP 2020a)

Domestic and stock use

People can take water from a range of sources for their essential household and stock watering needs. This includes extracting water from a waterway that runs alongside or in their property, by capturing water in a small catchment dam or pumping groundwater. Where water is used for commercial purpose, a licence is required.

Social and recreational uses and values

Waterways and water bodies in the region are highly valued by Victorians for the wide range of recreational activities they offer and their contribution to the health, wellbeing and social fabric of communities. They support tourism and provide important economic benefits to regional Victoria.



Note: River water makes up 84 per cent of entitlements, while groundwater is 16 per cent. This figure excludes desalinated water which can currently supply up to a third of Melbourne’s annual drinking water supplies

Figure 1.3: Approximate distribution of river water (or surface water) and groundwater entitlements across different uses in the Central and Gippsland Region.

Image: Rower on the Mirrangbamurn (Maribyrnong River)



USES OF WATER

CITIES AND TOWNS

90 per cent of Victorians access their water from the region. By 2065 this is projected to be more than 10 million people. Water shortages could begin to emerge this decade for Melbourne and Geelong – under a high population growth, high demand & high climate change scenario.

AGRICULTURE

Agriculture supports \$4.7 billion of diverse dryland and irrigated agricultural production. Irrigators and the broader community are being affected by disruptive events, changes in water availability and commodity prices. Demand in the region may increase.

POWER GENERATION

Power generation requires substantial water resources and water may also be required for mine rehabilitation in future.

INDUSTRY

Water-dependent industries provide jobs and underpin economic activity.

RECREATION

A drying climate and growing population increases the importance of natural and constructed water bodies as valuable recreational assets.

TRADITIONAL OWNERS

Traditional Owners have a cultural responsibility to care for water on Country, but hold less than 0.2 per cent of water entitlements in Victoria, and have virtually no water rights.

ENVIRONMENT

Declining water availability has had more of an impact on the environment than consumptive uses. As a result many rivers and waterways are stressed.

Figure 1.4: Various uses and values of water across the Central and Gippsland Region

CENTRAL AND GIPPSLAND REGION WATER AVAILABILITY

- City or major town
- Irrigation district

- Rivers
- Channel
- Existing piped connection
- Catchment storage
- Operational storage
- Groundwater extraction location
- Desalination plant

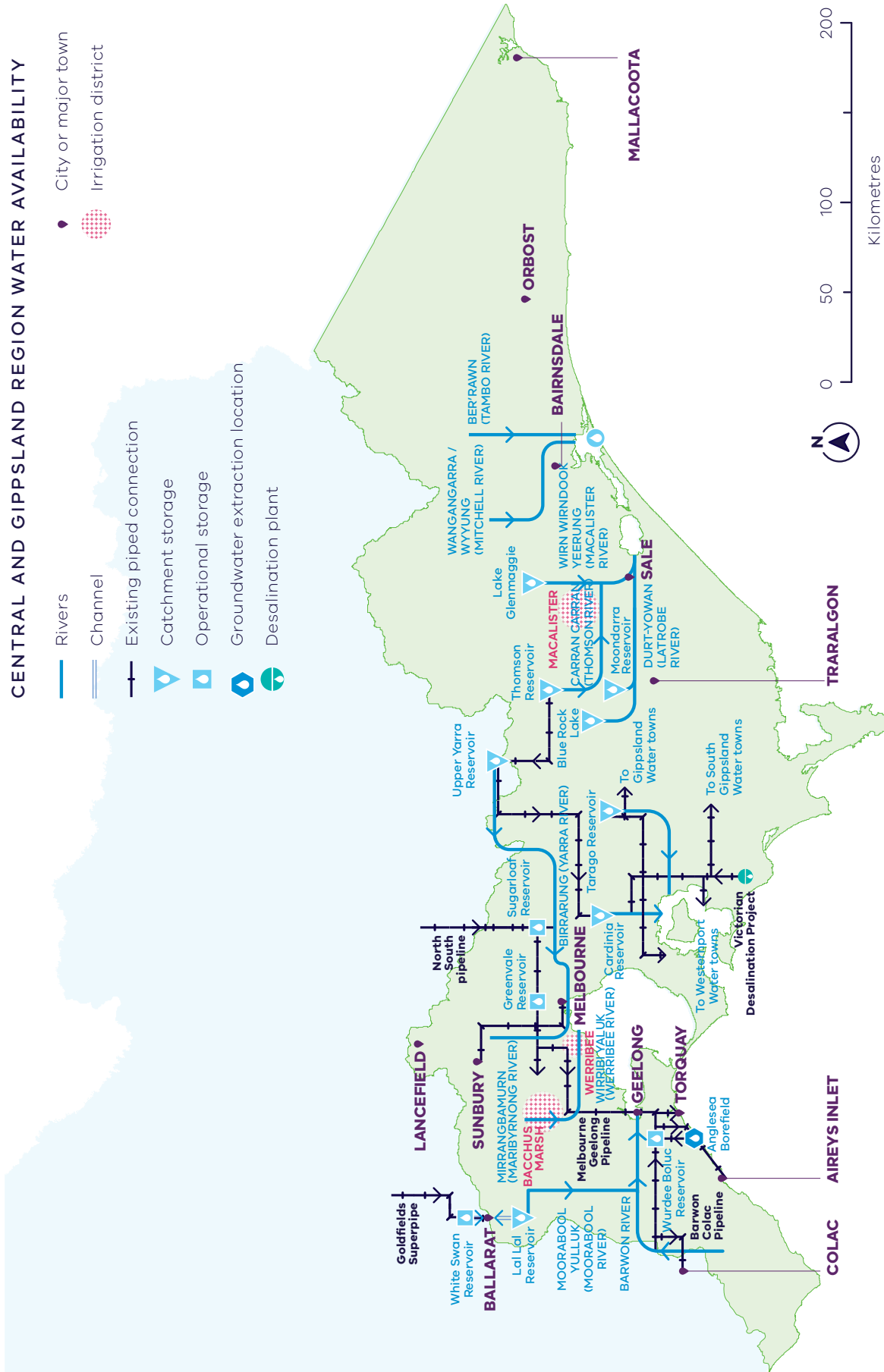


Figure 1.5: Victoria's connected water grid in the Central and Gippsland Region

1.3 Our water challenges

The region's key water challenges:

- Victoria is becoming warmer and drier with less water flowing into our water storages over the longer-term, and more frequent and extreme weather events.
- River water has already declined by as much as 21 per cent and is projected to decline by a further 8 to 22 per cent by 2065 under a medium climate change scenario.
- The demand for water is increasing as the region's population is expected to grow from 6.2 million to over 10 million people by 2056.
- Agriculture and industry are under increasing pressure due to declining water supplies and population growth.
- Rivers need more water to prevent further declines in waterway health, to keep native species alive and to continue to support water uses and values across the region.
- Traditional Owners have a right to water justice.

Even with the current high storage levels, communities and waterways in region could need up to an extra 300 gigalitres of water over the next 10 years. This volume includes up to 85 gigalitres to meet urban water demand, up to 100 gigalitres to improve waterway health by meeting priority environmental water recovery targets, plus additional water for irrigation and a commitment to return water to Traditional Owners as new water supplies are progressed.

Climate change

The wetter-than-average conditions in 2021, annual desalination orders, and ongoing water efficiency measures, have meant that water supplies are secure in the short-term. No water restrictions are expected in any Victorian city or town in 2022 (DELWP 2021g).

While we will continue to experience some years of higher rainfall, climate change will mean that Victoria experiences higher temperatures, more frequent droughts and lower rainfall on average, which will result in less water being available for all uses. The Long-term water resource assessment for southern Victoria showed that streamflow across the region has already declined by up to 21 per cent (since 1975) (DELWP 2020a). Current long-term estimates of water availability are lower than estimates for previous sustainable water strategies⁸. Greater declines have been observed in recent decades (since 1997), but it is uncertain if this reflects a long-term change.

In comparison to historical conditions, Victoria is already experiencing trends towards:

- higher temperatures and more hot days
- reductions in rainfall in late autumn and winter
- increases in rainfall during the warmer months and more frequent extreme rainfall events in some locations
- reductions in runoff and streamflow (DELWP 2021g).

Over the long-term, we can expect:

- persistent reductions in winter rainfall
- possible increases in summer rainfall
- increases in the intensity of short-duration rainfall events
- reductions in streamflow to continue.

Streamflows throughout the region are projected to decline by an additional 8 to 22 per cent under a medium climate change scenario by 2065 (relative to the period since 1975)⁹. Declines in streamflow of up to 40 per cent are predicted under a high climate change scenario in some catchments by 2065 (Potter et al. 2016). It is also possible that rather than undergoing a gradual drying trend, our streamflows have already undergone a step change, in which the drier conditions we have experienced since 1997 are here to stay. We need to prepare now for a range of future climate conditions.

⁸ Current long-term water availability was calculated as the average since 1975. Calculations of long-term water availability for the previous sustainable water strategies used all available historical data (back to the 1890s for some rivers) to calculate the long-term average. The climate of more recent decades is considered to better reflect our current climate than the full historical record.

⁹ High, medium and low climate change scenarios are based on climate projections derived from 42 global climate models. These models are used by scientists to predict the potential effects of different scenarios on the earth's atmosphere, oceans and land including scenarios resulting from greenhouse gas emissions and concentrations over time. The medium climate change scenario represents the median (50th percentile) rainfall response from the 42 global climate models projections, while the low- and high-impact scenarios represent the wetter (10th percentile) and drier (90th percentile) rainfall responses respectively. Further details about how the future climate scenarios were derived are provided in DELWP 2020a.

How are we planning to manage more extreme events due to climate change?

While an overall trend of warmer and drier conditions is expected, the Victorian water sector has developed a plan for climate resilience to address more frequent and extreme weather events, including droughts, storms, floods and bushfires.

Water sector planning for climate change and resilience

The *Climate Change Water Cycle Adaptation Action Plan 2022 – 2026* (DELWP 2022d) is helping the water sector to build resilience to our changing climate in the delivery of water, wastewater, drainage and flooding services.

Guidelines for the development of urban water strategies (DELWP 2021d) highlight uncertainties that water corporations must consider in their long-term water planning. These include climate change and variability as well as the effects of extreme events such as bushfires, major asset failure and poor water quality events. In accordance with these guidelines, urban water corporations must develop an urban water strategy for its supply area every five years.

Bushfires

The 2019-20 Black Summer bushfires were unprecedented in scale and intensity. These fires burnt more than 1.5 million hectares across Victoria and caused significant damage. They caused some water storages to be taken temporarily offline due to contamination from ash and debris, disrupting water supply and treatment for thousands of Victorians. Bushfires in water supply catchments can also cause longer-term impacts to the quality and quantity of water.

The Victorian Government's bushfire recovery program is supporting the long-term recovery of East Gippsland's waterways and catchments. The program is also helping to strengthen

resilience in critical water infrastructure, for example by repairing riparian fencing and off-stream watering systems, replacing and improving water monitoring stations, repairing and upgrading water treatment plants, and installing backup solar power.

Extreme rainfall events, storms and flooding

More intense rainfall and storms will increase flooding, power outages and damage to water infrastructure. This was seen in June 2021, when Gippsland experienced a severe weather event with strong winds, heavy rains and flooding. The Victorian Government is supporting the recovery of Gippsland's waterways and water infrastructure to prevent long-term compound impacts of the event and support communities and waterways to be more resilient in the face of future extreme weather events.

The Victorian Floodplain Management Strategy was developed by the Victorian Government to help communities better prepare for future floods (DELWP 2016a). This includes adapting to climate change to manage flood risk.

Excess stormwater runoff following severe weather events also carries pollution into waterways, disrupts natural flows and causes erosion, while warmer temperatures along with declining water flows could cause more frequent and widespread blue-green algae outbreaks. These outbreaks are a risk to human health and animals and can stop the recreational use of waterways.

Our growing population and increasing demands

Although it makes up just 25 per cent of Victoria’s land area, the Central and Gippsland Region supplies water to more than 90 per cent of the state’s population (over 6 million Victorians). The cities and towns south of the Great Dividing Range,

from Warrnambool¹⁰ in the west to Mallacoota in the east, rely on water from this region. In 2020–21, more than 440 gigalitres of water were supplied to businesses, industries and urban residential customers (DELWP 2022c). The region’s population is expected to grow to over 10 million people by 2061 (Figure 1.6), which will significantly increase water demand.

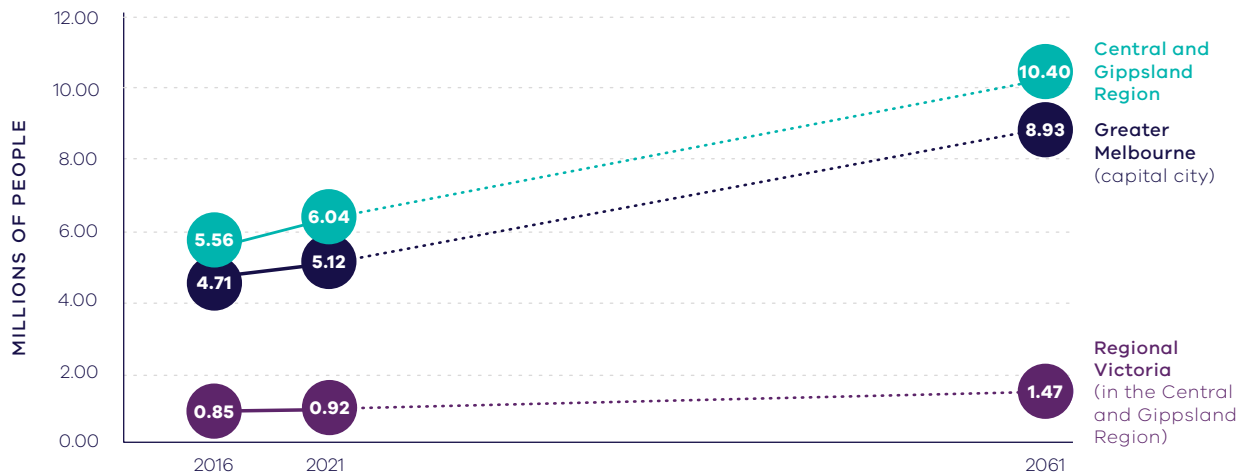


Figure 1.6: Past and projected populations of major Victorian regions 2016 to 2061 (Unpublished Victorian Government projections 2021)

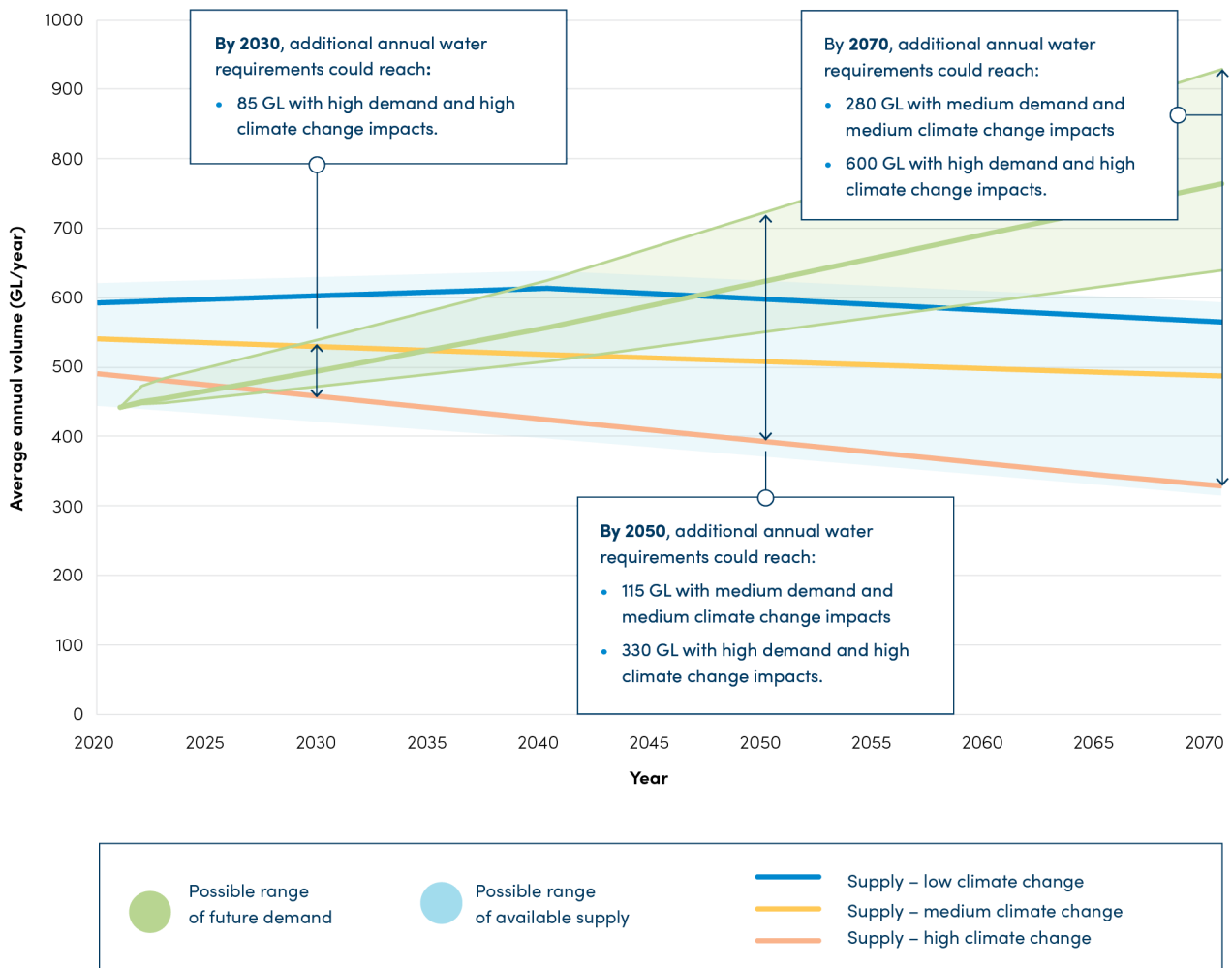
10 Wannon Water extracts water from the Gellibrand River in the Otway Ranges to supply its customers in Warrnambool.



Image: Lillydale Lake Playground, Yarra Ranges, Wurundjeri Woiwurrung Country

Currently Melburnians use 50 to 70 gigalitres more water per year on average than flows into our storages, depending on rainfall, with desalinated water orders currently meeting this gap. Modelling shows that even with the Victorian Desalination Project operating at full capacity, the supply shortfall for Greater Melbourne and the connected systems

could increase to 85 gigalitres per year by 2030 in a worst-case scenario (high climate change and high demand scenario) (Figure 1.7). Parts of Gippsland, such as the growing towns of Warragul and Drouin, are already experiencing supply shortfalls and rely on interim arrangements to supplement local supply.



These projections do not include additional water for Traditional Owners and the environment, the need for which has been identified through engagement with Traditional Owners and the Victorian Government's discussion draft CGRSWS. We are working with Traditional Owners and the Victorian Government on how we can provide for additional water from the existing system and future augmentations of the system.

Figure 1.7: Projected future supply and demand under various climate change scenarios shows an increasing risk of water shortages over the next decade for Greater Melbourne and connected systems (Greater Western Water et al. 2022)

Over the long-term, modelling using different population growth and climate change scenarios shows the range of volumes that may be required. For example, Melbourne, Geelong and towns connected to the Melbourne supply system could need an additional 140 to 600 gigalitres per year over the next 50 years.

As well as water for cities and towns, farmers need new, climate-resilient water supplies to produce food including vegetables, milk, eggs and poultry close to urban centres. Years of drought and bushfires combined with drying conditions mean that farmers are seeking additional, and more reliable, water supplies for both irrigated and dryland enterprises.

Population growth and rapid urbanisation are also increasing stormwater runoff, which adversely affects our waterways unless it is treated and used.

Rivers need more water

Availability of river water in southern Victoria has declined by up to 21 per cent over the past 15 years, and this trend is likely to continue. All water users have been affected and in most rivers the environment now has a smaller share of available water.

Our reliance on rivers and dams to provide most of our water supplies, along with a drying climate, has come at a cost to the environment and Country. This dependence has also affected the recreational use of waterways. There is less water in our rivers and this is adversely impacting the environment, native fish, platypus populations and riparian vegetation. We need to act now to avoid an irreversible decline in river health and ecosystems and to ensure the survival of native species.

An estimated 380 gigalitres of water per year (on average) would be needed to meet the full environmental water requirements for major rivers in the Central and Gippsland Region over the long-term – a volume greater than Melbourne’s total annual residential water usage¹¹. To achieve the most critical environmental outcomes, such as the survival of native fish and platypus populations and help sustain river flows during summer, almost 100 gigalitres of water is needed over the next decade. To achieve this, we need to start reducing our reliance on rivers for urban water supply. We must also improve the delivery of existing environmental water and invest in complementary measures to maximise the benefits of the available environmental water.

Declining water availability also diminishes the recreational use and enjoyment of the region’s rivers, creeks and lakes. Low water flows during dry summers and droughts, and algal blooms, can lead to the closure of waterways for public use or fishing and the cancellation of major water sport events. While the Strategy focuses on how to increase environmental water entitlements in major rivers across the region, the adaptive management of our rivers is considered through the development of regional waterway strategies, taking into consideration community expectations and future environmental conditions.

Traditional Owners have a right to water justice

Traditional Owners have never ceded rights to water across Victoria. Aboriginal people hold less than 0.2 per cent of water rights in this state. This exclusion denies Traditional Owners the right to care for Country – the essence of Aboriginal social, spiritual, economic and physical wellbeing, and the basis of cultural lore. How water is shared and managed in the future needs to redress these historical injustices.

1.4 Meeting future water needs

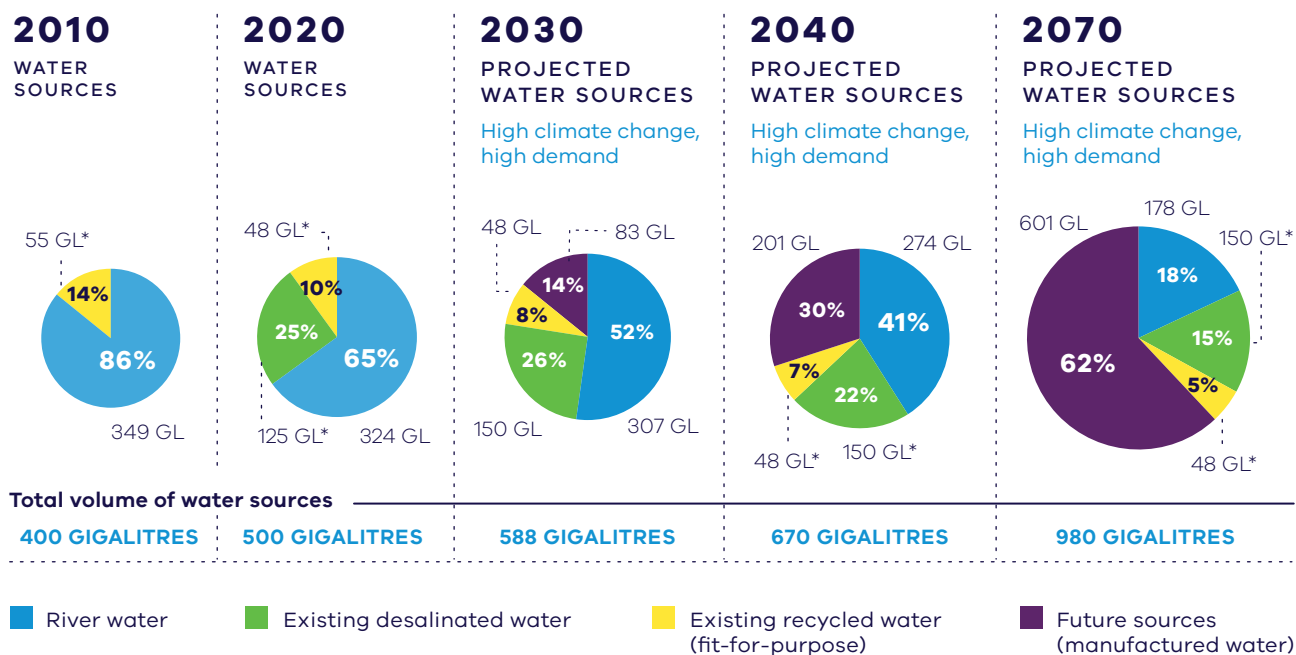
This Strategy sets-out a range of management actions to ensure we have enough water to fully meet future needs for all users over the next 10 years. Some of the proposed actions can and will be implemented now to meet the water challenges of this region. Others will have longer lead-in times and need considerable additional planning and investigation with progressive decision points, such as large-scale manufactured water sources.

While water efficiency measures and other local water management actions help to reduce the demand on our existing water supplies, this alone will not meet all our future water needs. New water supplies will largely come from manufactured water resources – desalinated water, recycled water and treated stormwater – as there are no new largescale opportunities to take water sustainably from rivers or groundwater in the region. By 2050, manufactured water sources could supply up to 65 per cent of Melbourne’s water needs, up from 35 per cent in 2020. This could increase to 80 per cent by 2070 (See [Figure 1.8](#)).

¹¹ Estimated volume, based on analysis that used FLOWS studies for the nine major regulated rivers in the region and historical climate conditions.

Water supply sources in Greater Melbourne: 2010-2070

(Source: Greater Western Water et al. 2022)



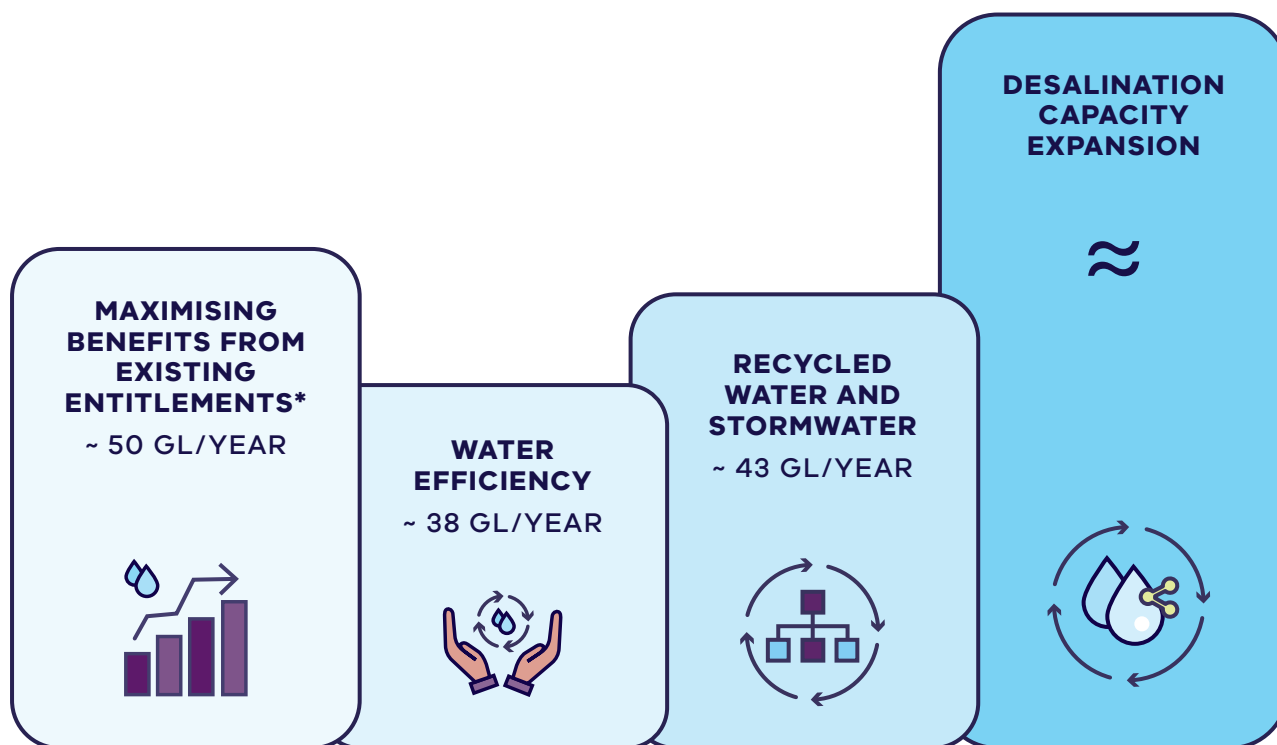
*Existing desalination and recycled water use is not being reduced, the existing desalination and recycled water percentages decrease with each total water sources volume increase

Figure 1.8: Greater Melbourne’s expected transition to using more manufactured water between 2010 and 2070

As the use of manufactured water increases, some river water will be freed up for other uses, such as returning water to Traditional Owners and to the environment, without taking water away from farmers or other water users. Farmers will be supported to adapt and expand their businesses in an increasingly dry climate with advice, incentives and investment in water efficiency. They will also have greater access to water supplies that don’t rely on rainfall, including recycled water and treated stormwater. We will monitor areas of significant water use, for example small catchment dams and plantations, to identify potential risks to the sustainable management of water resources.

Keeping a broad and varied portfolio of new water sources is ideal, so we can respond to range of possible future conditions. However, not all options align with current government policy, and these options, while not modelled or assessed in detail, were considered in the initial analysis of opportunities and deemed to be unviable. The range of options considered to increase water supplies across the region is shown in **Figure 1.9** and **Table 1.1**.

← MANUFACTURED WATER OPTIONS →



* Water will not be taken from farmers and all existing water entitlements provided under the Water Act 1989 (Vic) will be protected

Figure 1.9: Options identified in the Strategy for additional water to be progressed

Table 1.1: Options to increase water supply

Possible Option	Viability	Description	Reference
Water efficiency - cities and towns	Viable (but limited)	The Strategy proposes to yield up to 38 gigalitres of water savings.	Chapter 2
Water recovery – irrigation modernisation	Viable (but limited)	Water is being recovered through modernisation works.	Section 7.3
Underutilised entitlements held by public agencies	Viable (but limited)	Opportunities identified were the Latrobe 3 – 4 Bench bulk entitlement and water entitlements in the Birrarung (Yarra River) previously held by Amcor.	Section 4.3
Non-potable use of recycled water, treated stormwater and rainwater	Viable	The Strategy proposes to use IWM to drive investment and collaboration, which could deliver up to 43 gigalitres per year.	Section 3.3 to 3.5

Possible Option	Viability	Description	Reference
Desalination capacity expansion	Viable	Seawater is a highly abundant resource and possible additional desalination capacity could deliver incremental increases in water supplies as demand for water grows.	Section 3.2
Increased use of river water in unregulated catchments	Limited viability	There is only a small volume of water under local caps which remain available for allocation in unregulated catchments in Gippsland and the Otways.	Section 4.3
Increased use of groundwater	Limited viability	There is only a small volume of water under local caps which remain available for allocation.	Section 4.3
Water savings – on farm savings	Limited viability	Irrigators are responsible for investments that provide private benefits.	Section 7.2
Build more dams	Unviable	No additional potential sites that could provide regionally significant improvements in urban water security, without significant negative consequences for people and the environment.	
Greater use of the north-south pipeline	Unviable	Creates water shortfalls in northern Victoria. Provides a valuable emergency water supply but is not considered an augmentation option that increases supply	
Potable use of recycled water	Unviable	Recycled water is currently not a permitted source of drinking water. Does not have social licence, partly due to concerns about emerging contaminants	
Purchasing or taking back water from farming or placing limits on domestic and stock water rights	Unviable	The Victorian Government does not support purchasing or taking back water from farming due to the socio-economic impacts.	
Water entitlements currently used for power generation	Unviable	May be needed as part of the transition of power generation in the Latrobe valley.	
Restrict supply (severe restrictions / potential shortfall)	Unviable	Water is a human right and shortfalls are not socially/economically acceptable.	

Water efficiency

Water efficiency will continue to be a focus with campaigns, regulations, and incentives to help people and businesses to use water efficiently and save up to 38 gigalitres per year across the Central and Gippsland Region. A new target 150 campaign will encourage Melburnians to reduce their water use to 150 litres per person per day, and similar campaigns will be developed by water corporations for regional areas. While water efficiency measures will help to reduce the demand on our drinking water supplies, this alone will not meet all our future water needs.

Transitioning to manufactured water

To manage the challenges of population growth and climate change, the region will need to reduce its reliance on river water and transition to using more manufactured water. In the near term, manufactured water sources will largely come from additional desalination supplies because, unlike recycled water, desalinated water can be supplied directly into the drinking water system. Desalination has the added advantage of being completely rainfall independent and can operate at its full design capacity immediately after construction. In the medium to longer-term, the region will need to dramatically increase the use of recycled water and treated stormwater for non-drinking purposes to complement desalinated water supplies. Large volumes of recycled water and treated stormwater could be used for agriculture and industry if

available at the right place, quality and time. Smaller, local recycled water and stormwater systems could be used for non-drinking purposes such as irrigating ovals, parks and gardens, helping to support greener, cooler and more liveable communities.

Options identified in this Strategy for new manufactured water supplies (**Figure 1.9**) include:

- using IWM to drive greater use of recycled water and stormwater and improve liveability. This includes investigating large-scale recycled water supply networks in Greater Melbourne and Geelong and smaller recycled water and stormwater reuse projects across the region. This could deliver 43 gigalitres per year in the next decade and 200 gigalitres per year by 2070.
- potential 50 gigalitre expansion of the Victorian Desalination Project at Wonthaggi
- expansion of desalination capacity.

The transition to manufactured water will help meet the strategy's commitment to return water to rivers for priority environmental outcomes plus a commitment to return water entitlements to Traditional Owners. In most major rivers, this will occur as new sources of manufactured water are brought online to supply water to the cities and towns in the region. The scale and timing of the investment in additional manufactured water supplies will determine how quickly we can reduce our reliance on rivers, and by how much.

Maximising benefits from existing entitlements

As well as using water more efficiently, and growing the region's water supplies, the Strategy commits to improving how we use and share water to deliver multiple benefits.

Water will be moved around Victoria's water grid to meet the immediate priorities of some of the region's fastest growing areas such as Geelong, Warragul and Drouin and flow-stressed rivers.

Decisions on how we share and use unallocated water will ensure opportunities to return water to Traditional Owners are progressed and other water uses and values are considered. There is approximately 10 gigalitres of unallocated river water and 9 gigalitres of unallocated groundwater in the region, generally in areas where demand has been low historically.

We will progress opportunities to reallocate water held by public agencies that is no longer needed for its intended purpose, including approximately 16 gigalitres from the Latrobe 3 – 4 Bench entitlement that was originally intended to support the expansion of coal-fired electricity generation and a 1.4 gigalitre water licence to the Birrarung (Yarra River) formally used by the Amcor Paper Mills.

Enabling the water sector

A secure water future for the region relies on action in houses, on farms, at water storages, at the desalination plant and right across the Water Grid. Oversight, planning and implementation of the water management actions is split into two scales – the region, led by the Department of Environment, Land, Water and Planning, and the local level, led by water corporations.

The Strategy considers the broad range of water supply and demands across the region. Meeting the significant needs of our cities and towns is undertaken by urban water corporations and documented in their urban water strategies. Across the region, there are eight urban water strategies, with a single one completed for Melbourne by Greater Western Water, Melbourne Water, South East Water and Yarra Valley Water.

Each urban water strategy is implemented, at the local scale within the water corporation's boundary, consistent with the directions outlined in this Strategy. Each urban water corporation across the region will investigate options for reducing their reliance on river water and greater use of manufactured water. This will enable the Victorian Government to understand how commitments around returning water to the environment and Traditional Owners can best be met, subject to required investment.

This two-scale approach ensures that decisions that can be implemented locally are, but those situations which are better resolved at a regional scale can be facilitated across water corporations' boundaries by the Department of Environment, Land, Water and Planning. **Figure 1.10** shows the role of both sustainable water strategies and urban water strategies.

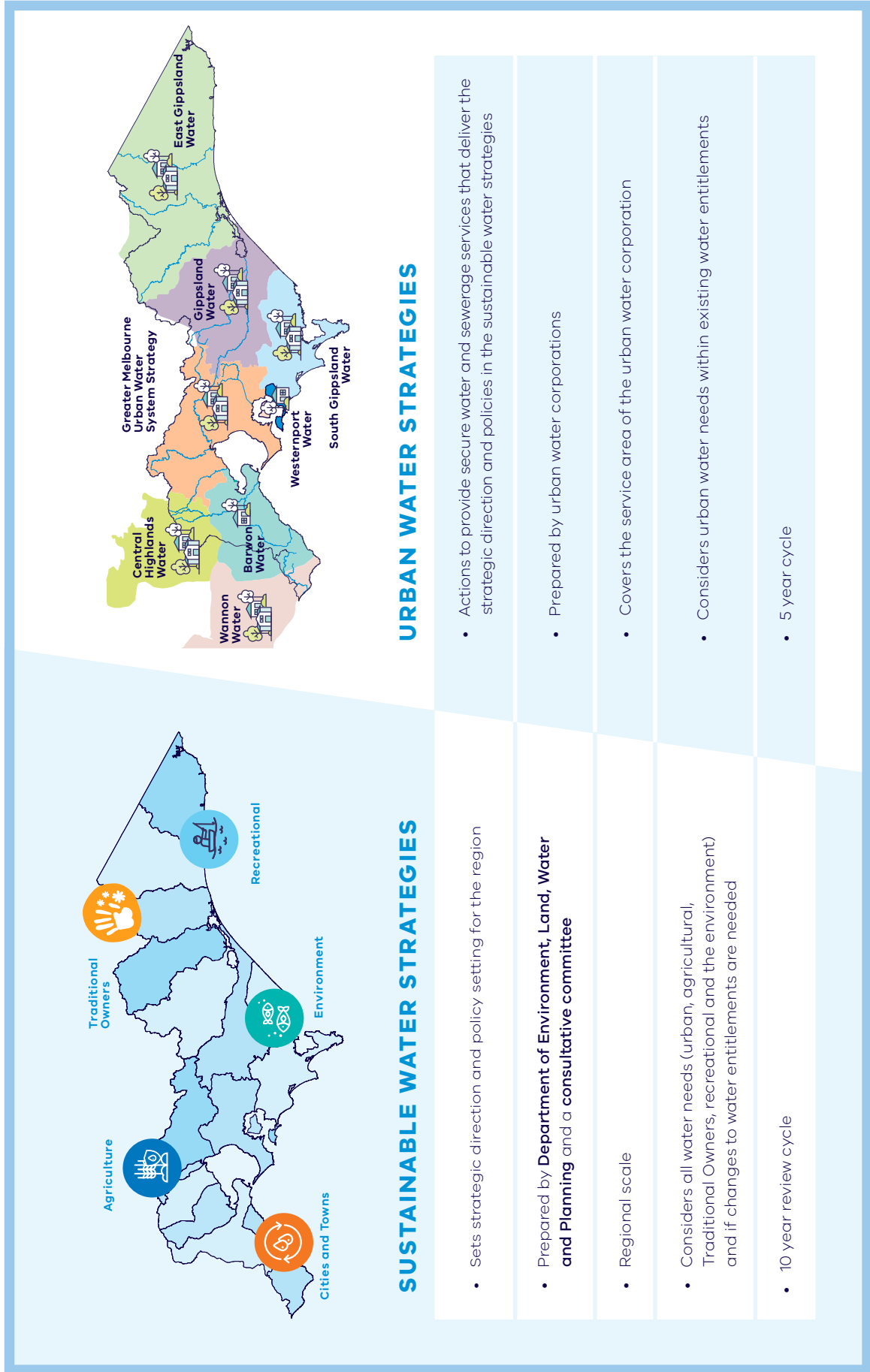


Figure 1.10: Role of the sustainable water strategies versus urban water strategies in the Central and Gippsland Region.

Local options will be considered alongside regionally significant options identified in the Water Grid Plan using a preliminary quadruple-bottom-line assessment by the Department of Environment, Land, Water and Planning. The best value package of projects across the region that will meet the needs of cities and towns while enabling some water to be returned to rivers will be progressed – some implemented by one water corporation, others implemented across water corporation boundaries.

This two-scale approach – the Strategy together with the eight complementary urban water strategies – will ensure that decisions on planning and investment in new major infrastructure and supplies are made at the right time, so that we have the best options ready when we need them, supporting a secure water future for all users across the Central and Gippsland Region.

1.5 How we developed the Strategy

The Strategy was developed by the Victorian Government (Department of Environment, Land, Water and Planning) in partnership with Traditional Owner groups, water corporations, catchment management authorities, and the Victorian Environmental Water Holder. Representatives from these groups and authorities formed a ministerially appointed consultative committee that guided the Strategy's development. An independent panel oversaw the Strategy's development with a particular focus on community engagement (see [Appendix B](#)).

This is the first Strategy of its kind to be developed in partnership with Traditional Owners from the region. Representatives from four RAPs formed a Traditional Owner Partnership that collaborated in the decision-making with government and with the water industry and guided the development of the Strategy.¹² Read more about the Traditional Owner Partnership and its role in [Chapter 6](#).

Sustainable water strategies are legislated through the Water Act. The Water Act sets out what must be included in the Strategy, how a consultative committee and panel should be appointed and their responsibilities and the requirements for public consultation. A summary of what must be included in the Strategy is provided in [Appendix B](#).

Technical data and modelling

The Strategy reflects best available data and evidence that was prepared and collated by policy working groups set-up to support the development of the Strategy. For example, the environmental working group with representatives of waterway managers across the region developed the environmental water recovery targets for major rivers in the region using the latest environment flow studies and modelling.

The Strategy draws on data from several technical reports and water sector strategies, including modelling on the long-term availability of surface water (river water) was taken from the 2020 *Long-term water resource assessment for Southern Victoria* (DELWP 2020a) while latest data on urban water supply and demand projections was sourced from urban water strategies such as the Greater Melbourne Urban Water and System Strategy (GMUWSS) (Greater Western Water et al. 2022). The links between this Strategy and urban water strategies are described in [Figure 1.10](#).

12 The Traditional Owner Partnership consists of: Bunurong Land Council Aboriginal Corporation; Gunaikurnai Land and Waters Aboriginal Corporation; Wadawurrung Traditional Owners Aboriginal Corporation; Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation. Eastern Maar Aboriginal Corporation self-determined to participate through alternate ways.

Greater Melbourne Urban Water and System Strategy

The Strategy was developed in parallel with the GMUWSS allowing policy alignment and sharing of best available modelling and data. The GMUWSS was developed by Greater Western Water, Melbourne Water, South East Water and Yarra Valley Water and includes updated urban water supply and demand projections, climate change and population scenario modelling over the next 50 years as well as a range of new water supply options and plans to respond to drought and extreme events across Greater Melbourne and the connected system. The policy directions in this Strategy have informed the development of the GMUWSS and the technical and modelling data from the GMUWSS have been key inputs to this Strategy.

Engagement

The Strategy has been informed by stakeholders and the community based on two stages of engagement. Preliminary engagement helped shape the discussion draft of the Strategy (DELWP 2021b). The goal was to understand the community's and key stakeholders' challenges and considerations to inform the Strategy's discussion draft (Figure 1.11).

The discussion draft was released for community consultation from October to December 2021. In line with COVIDSafe settings in Victoria, all engagement was via online forums, including a virtual consultation room, interactive community information sessions, webinars, and stakeholder forums (see Figure 1.11). Feedback was provided via 225 survey responses, 22 comments on proposed directions or chapters and 58 submissions.

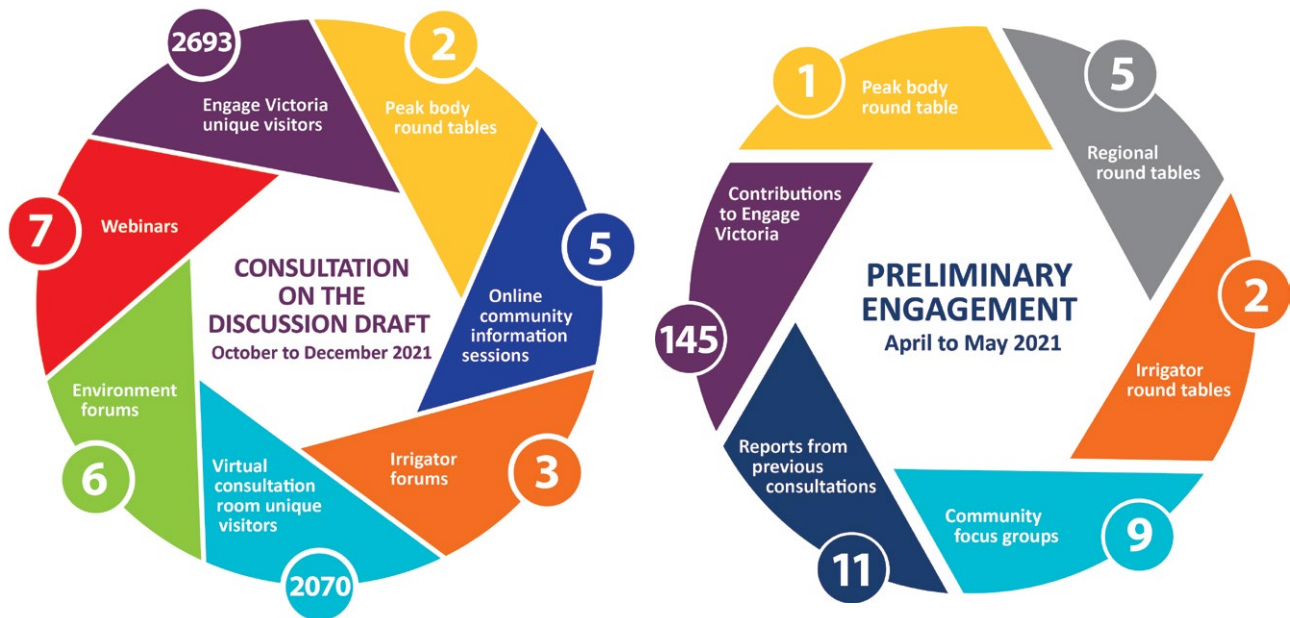


Figure 1.11: Summary of the Strategy engagement

The results should be viewed considering the sample of people who responded. Of the respondents, 65 per cent represented community or environmental groups and 61 per cent were from the central sub-region, which covers Melbourne.

All community engagement feedback was considered and informed the Strategy's development. High-level themes that emerged from the consultation are listed in the box below

High-level themes emerging from consultation

Theme: Concern for the environment and health of waterways

Our response

A dedicated chapter on healthy waterways explains how we will achieve environmental outcomes by returning water to the environment, investing in complementary works and infrastructure upgrades, and other actions to improve how we use and share water to benefit the environment (see [Chapter 8](#)).

Theme: Support for new sources of water

Our response

A revised chapter on manufactured water explains how we will increase the use of recycled water and stormwater while protecting human health and the environment (see [Chapter 3](#)), as well as role of desalination.

Theme: The discussion draft lacks detail

Our response

[Chapter 3](#) provides greater detail on how we will expand manufactured water supplies in the future and [Chapter 9](#) provides more information on the associated roles and responsibilities. [Chapter 8](#) of the Strategy provides more detail on how we will achieve environmental outcomes, which includes returning water to the environment. The implementation plan ([Appendix E](#)) sets out who is responsible for each action, indicative timeframes, and actions that require targeted community and stakeholder engagement. The Water Grid Plan will provide more detail on regionally significant options for increasing our water supplies as readiness work progresses.

Further details on the consultation and feedback are provided in the *What we heard* report (DELWP 2022a).



1.6 Actions at a glance

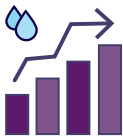
THE STRATEGY IDENTIFIES 41 POLICIES AND 96 ACTIONS TO DELIVER WITHIN THE NEXT 5 YEARS, 10 YEARS AND BEYOND, WHICH WILL:



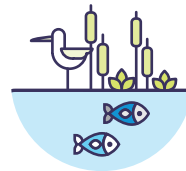
Support people, businesses and schools to continue to use water efficiently (**Chapter 2 - Using water efficiently**)



Support farmers adapt and expand in a drying climate by using water more efficiently and through greater use of recycled water and treated stormwater (**Chapter 7 - Water for agriculture**)



Plan for how we could double our water supplies over the next 50 years by using more manufactured water – desalination water, recycled water and treated stormwater – for a range of uses (**Chapter 3 - Transitioning to manufactured water**)



Return water to the environment in major rivers in the region in the next 10 years and deliver environmental works and complementary measures (**Chapter 8 - Healthy waterways For all**)



Improve how we share the benefits of our limited water resources, without compromising existing water entitlements (**Chapter 4 - Sharing water for multiple benefits**)



Commence planning for preferred future urban water supply options so new water supplies are ready when they are needed (**Chapter 9 - A new approach to planning and delivering water**)



Restore water justice to Traditional Owners, including by returning water to Traditional Owners (**Chapter 6 - Water justice for Traditional Owners**)

Figure 1.12: The Strategy identifies 41 policies and 96 actions to deliver within the next 5 years, 10 years and beyond



Image: Port of Sale, Gunaikurnai Country