



Rural City of Murray Bridge  
**ENVIRONMENT  
MANAGEMENT PLAN  
2020-2024**  
Inclusive of  
**CLIMATE EMERGENCY ACTION PLAN**







# Acknowledgement of traditional owners

We acknowledge the Ngarrindjeri people as the traditional owners of this land on which we meet and work. We respect and acknowledge their spiritual connection as the custodians of this land and that their cultural heritage beliefs are still important to the living people today.

We recognise the living culture and combined energies of the Ngarrindjeri people our global pioneers and community members today for their unique contribution to the life of our region.

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# OVERVIEW

## Introduction

The Rural City of Murray Bridge recognises that all Council activities impact on the environment. This Environment Management Plan will guide Council in the management of the environment in ways such as: using water where it falls, reducing climate impacts and improving biodiversity.

It is acknowledged that natural environment issues are complex and interconnected.

This interconnection is recognised in the implementation of the actions contained within this Environment Management Plan, and, where possible, actions will address multiple environment outcomes. However, to focus our actions and reduce the complexity of the document, the plan focuses on core environment areas.

The Core Environment Areas addressed in the Environment Management Plan are:

- Water and River
- Biodiversity
- Development
- Building Community Capacity

The River Murray is integral to all of these areas, as we improve water management, deal with climate change, improve our biodiversity and waste management and change the philosophy of development we will improve the River, our lifeblood and make the Rural City of Murray Bridge more liveable.

The Rural City of Murray Bridge will improve the recognition, management and protection of our natural resources. The implementation of additional management plans will provide Council with the

tools required to move forward in an environmentally sustainable manner.

Additional plans include:

- Environment Policy
- Biodiversity Strategy
- Waste Strategy
- Tree Management Framework
- Roadside Vegetation Management Plan
- Site-specific Vegetation Management Plans
- CFS Murray Mallee Bushfire Management Plan<sup>1</sup>
- Tree Management Policy (relating to street trees)
- Climate Emergency Action Plan
- Construction Environment Management Plan

Council declared a Climate Emergency in October 2019 agreeing to deliver a Climate Emergency Action Plan to begin to mitigate its contribution to Climate Change.

The Climate Emergency Plan is an appendix to this plan and expands on the previous Climate Change Adaptation Plan 2016-2021.

Council is creating an Environment Risk Register that includes issues such as low river levels, urban heating and waste management.

As a member of the Adelaide Hills Region Waste Management Authority, Council aims to provide an environmentally sustainable waste management system whilst encouraging reduction in waste generation to landfill and increasing recycling of resources.

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<sup>1</sup>

[https://www.cfs.sa.gov.au/site/prepare\\_for\\_a\\_fire/bushfire\\_ma](https://www.cfs.sa.gov.au/site/prepare_for_a_fire/bushfire_management_planning/bushfire_management_area_plans.jsp#Murray)

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## Core Environment Areas

The core environment areas addressed in the Environment Management Plan are:

### Water and River

The Rural City of Murray Bridge is a river dependant community; the sustainable use of water is one of our most critical resource challenges. Council needs to expand alternative water supplies such as stormwater harvesting and reuse, implementing Water Sensitive Urban Design and use of reclaimed water.

There is greater pressure on the River from upstream communities and states meaning the Lower Murray and Lower Lakes must manage the River even better to survive drought, climate change and overuse.

Under the previous Environment Management Plan, Council developed a stormwater detention and reuse basin at Gifford Hill saving over 200ML of water from being extracted from the Murray each year. Council is investigating further stormwater opportunities on the east and west side of the River. Further opportunities to use wastewater will come from the SA Water treatment site at Gifford Hill and any new developments that means less polluted water entering the River.

### Biodiversity

Our region has outstanding biodiversity and a riverine environment the envy of the Murray Darling Basin; however, both are under threat from a poor understanding of biodiversity values and poor development choices. Our council and community must value the environment, minimise environmental impacts, use resources wisely and protect biodiversity. This will come from education, building capacity and promoting the understated diversity and beauty of our region to protect it from the effects of human activities.

Native vegetation must be valued much more highly than it currently is. Much of Councils biodiversity is in roadside vegetation and as we grow this will come under more pressure during road construction and demand for land.

### Development

The Murray Bridge Region is undergoing significant growth, set to continue into the next decade. Council's Development Plan places greater emphasis on energy saving and Water Sensitive Urban Design (WSUD) principles associated with future public and private developments. This policy focus will transition across under the new Planning Development and Infrastructure Act. All development must be mindful of energy, water, climate and biodiversity during and after construction and should leave the site in a better position than before.

### Community Capacity

Council cannot achieve everything it needs to from its own resources to improve our environment. Committing to education, training and knowledge of our community will increase the capacity of the entire region to take on these challenges of water, climate and biodiversity protection.

### Waste

A summary of waste management is provided here with all actions relating to waste to be delivered in the updated Waste Strategy.

## About the Action Plans

The Rationale: To link the Core Environment Areas to the actions a rationale is provided which explains how Council will act locally to become more liveable.

Strategies: Like actions are grouped to form a coherent and consistent strategy.

Actions and Measures: The actions described are a mix of measurable targets and aspirational goals. Both are necessary to guide the Rural City of Murray Bridge to be more liveable, improve biodiversity, manage water and the River better, guide development and build capacity in the community.

Similarly, the actions in the Climate Emergency Action Plan, if completed, will push the Rural City of Murray Bridge a considerable way forward to reducing its greenhouse gas emissions and tackle climate change head on. Not all aspirational goals will be achieved such as "Making the city cooler by 2 degrees in 5 years" however with no goal all of the actions lack context.



## Background

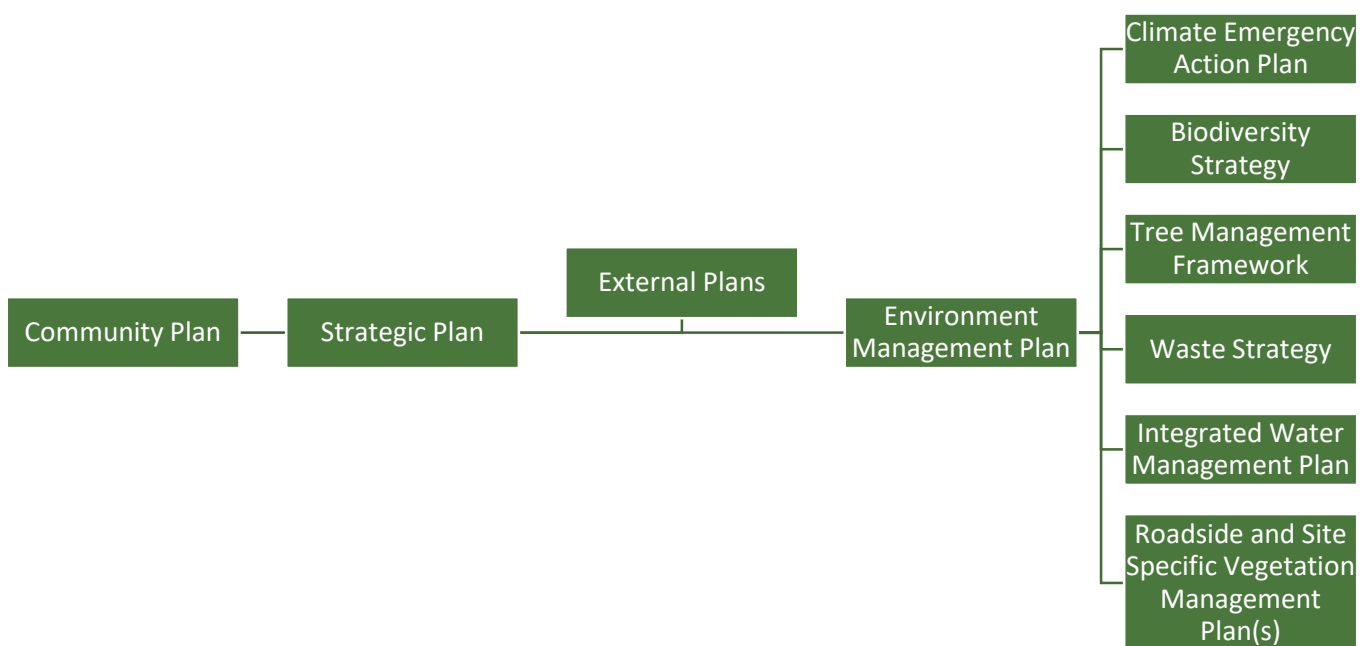
The Rural City of Murray Bridge is located approximately 80 kilometres to the east of metropolitan Adelaide. The Council area covers an area of 1,832 square kilometres and includes the urban centre of Murray Bridge, the river towns of Jervois, Myponga, Wellington, Monteith, Woodlane and Woods Point, and the rural towns of Callington and Monarto.

The Rural City of Murray Bridge is one of the fastest growing centres in regional South Australia. It is

anticipated that the population will increase from 22,495 in 2020<sup>2</sup> to at least 29,000 by 2041.

As the city grows, so do pressures on the environment. There is the challenge of balancing urban and rural development, economic growth and protection of the environment. The community needs to be more aware of the impact we have and the Council needs to show leadership to ensure the environment is respected and cared for.

## Relationship to other internal strategies and plans



## Relationship to External Strategies and Plans

In addition to supporting delivery against our internal strategies and plans, the Environment Management Plan and supporting Climate Emergency Action Plan contribute to the broader regional environment objectives. Below is the list of objectives this plan is supporting externally.

### Landscape SA (formally NRM)<sup>3</sup>

- **Water** - water resources that are healthy, valued and support communities and thriving ecosystems
- **Biodiversity** - a healthy and ecologically productive environment that sustains biodiversity and is valued by the community

- **Sustainable production** - sustainable, productive landscapes
- **Atmosphere** - a clean and healthy atmosphere with effective adaptation to climate change
- **People** - communities contributing to the management of natural resources.

### Department for Environment and Water

- South Australian Government Climate Change Action Plan 2021-2025
- Directions for a Climate Smart South Australia
- Guide to climate projections for risk assessment and planning in South Australia, November 2020

<sup>2</sup> <https://www.murraybridge.sa.gov.au/for-business/the-rural-city-of-murray-bridge-economic-profile>

<sup>3</sup> <https://landscape.sa.gov.au/mr-rap/Homepage>

## Strategic Plan 2020-24

The Environment Management Plan (EMP) contributes to delivery against the following objectives from the Strategic Plan 2020-24. The EMP

and associated strategies and plans will expand on these strategic actions, unpacking them into manageable tasks delivered over the next four years:

VALUED ENVIRONMENT	GREAT PEOPLE AND LIFESTYLE	DYNAMIC ECONOMY	CONNECTED COMMUNITIES
<p><b>The river is the lifeblood of our towns</b></p> <p><i>Our river is protected, showcased and at the centre of city and riverside townships</i></p> <ul style="list-style-type: none"> <li>• Build and promote a shared understanding of river protection processes, river ecology and water security with our communities</li> <li>• Further, reduce dependence on traditional water supplies through the introduction of sustainable practices and alternative sources of water such as stormwater harvesting and reuse and rainwater catchment</li> </ul>	<p><b>All ages and cultures are celebrated, accommodated and valued</b></p> <p><i>Our community is inclusive and welcoming with people of all ages, capabilities and backgrounds living harmoniously together</i></p> <ul style="list-style-type: none"> <li>• Local history and heritage is preserved and promoted</li> <li>• We will work towards reconciliation with our indigenous community</li> </ul>	<p><b>The Rural City of Murray Bridge is a destination of choice</b></p> <p><i>RCMB is a highly desirable destination for short and long term visitors to the region</i></p> <ul style="list-style-type: none"> <li>• Tourists will be enticed to visit our region through packaged attractions and access to cultural and environmental experiences</li> </ul>	<p><b>Active citizens and community leaders</b></p> <p><i>Our community is engaged through decision making, leadership, active citizenship and volunteerism</i></p> <ul style="list-style-type: none"> <li>• Build and improve trust and relationships between the Council and its communities</li> <li>• Encourage and recognise volunteerism and support volunteering opportunities throughout Council region</li> </ul>
<p><b>Our natural environment is preserved, promoted and enhanced</b></p> <p><i>Our environment is protected to retain its natural beauty and diversity; impacts are minimised protecting and preserving for future generations to access and enjoy</i></p> <ul style="list-style-type: none"> <li>• Waste is managed through a variety of programs that encourage waste reduction, redirection and reuse of recycled materials</li> <li>• Respond to climate change emergency through the development and implementation of a climate change action plan</li> <li>• Continue to reduce dependence on the traditional power supply with more sustainable electrical supply such as solar panels on all community assets</li> <li>• Enhance, protect and restore local biodiversity, remnant and native vegetation</li> </ul>	<p><b>Secure and resilient communities</b></p> <p><i>A well-prepared community that is safe, supportive and resilient</i></p> <ul style="list-style-type: none"> <li>• Potential emergencies are considered, evaluated and prepared for</li> <li>• The community is supported to adapt to the changing external circumstances such as climate or economic change</li> </ul>		<p><b>A proud community</b></p> <p><i>We showcase our towns through storytelling and promotion of our unique and individual charm</i></p> <ul style="list-style-type: none"> <li>• We show pride in our indigenous and multicultural heritage which is celebrated through storytelling and cultural experiences</li> </ul>

## Principles of Environment Management

This Environment Management Plan follows these principles throughout all actions developed and described in both the Environment and Climate Emergency Plans. They provide the criteria to create actions that will accomplish the outcomes needed for our Region to become more liveable and set a high standard in all Council functions involving our natural environments.

To determine if a decision or action is likely to make a positive contribution to the environment, Council and its staff need an understanding of the key considerations for environment management. The following principles provide a set of core issues for consideration and broad objectives to be pursued as part of Council's decisions. Council's decisions and actions should aim to:

- Integrate long and short-term economic, natural environment and community considerations. Decisions need to consider the linkages between economic, environmental and communities' dimensions and take account of impacts that may occur over several years.
- Provide for equity within and between generations. Ensure that everyone and every community have enough for a decent life and opportunities to seek improvements. We should not simply use up all available natural resources. Instead, we should commit to ensuring that all community members have equitable access to resources now, and into the future.
- Enhance and maintain biodiversity and natural environmental systems. Natural systems, and the plants and animals that inhabit them, have important benefits to the community. We need to build a relationship between people and the environment that will maintain the long-term integrity of these systems.
- Act cautiously when there is a risk of serious or irreversible impacts on the environment or the community. This is the 'precautionary principle'. We should avoid causing serious or irreversible damage and not use uncertainty as a reason to not protect the environment or community.
- Environmental damage should be rectified at the source. Working alongside the prevention principle, this ensures damage or pollution is dealt with where it occurs. It
- Recognise dimensions beyond our border while concentrating on issues we can influence. Environment and development issues operate on a global scale. Our local actions should connect with regional, national and global scale activities and directions. For example, although we cannot single-handedly stop climate change, we can demonstrate leadership by taking actions to reduce greenhouse gas emissions as part of a global effort.
- Provide for broad public involvement on issues that affect the community. We need to engage individuals, communities, stakeholders and businesses and adopt more open deliberations to build an understanding of sustainability and promote collective responsibility.



# MAKE IT YOURS



Murray Bridge is changing. We're creating an environment where you can make your own opportunities, make a home, make an investment, and make memories.

The aim behind this plan and actions are to make the Rural City of Murray Bridge more liveable and resilient; a place where people want to live, work and prosper in.

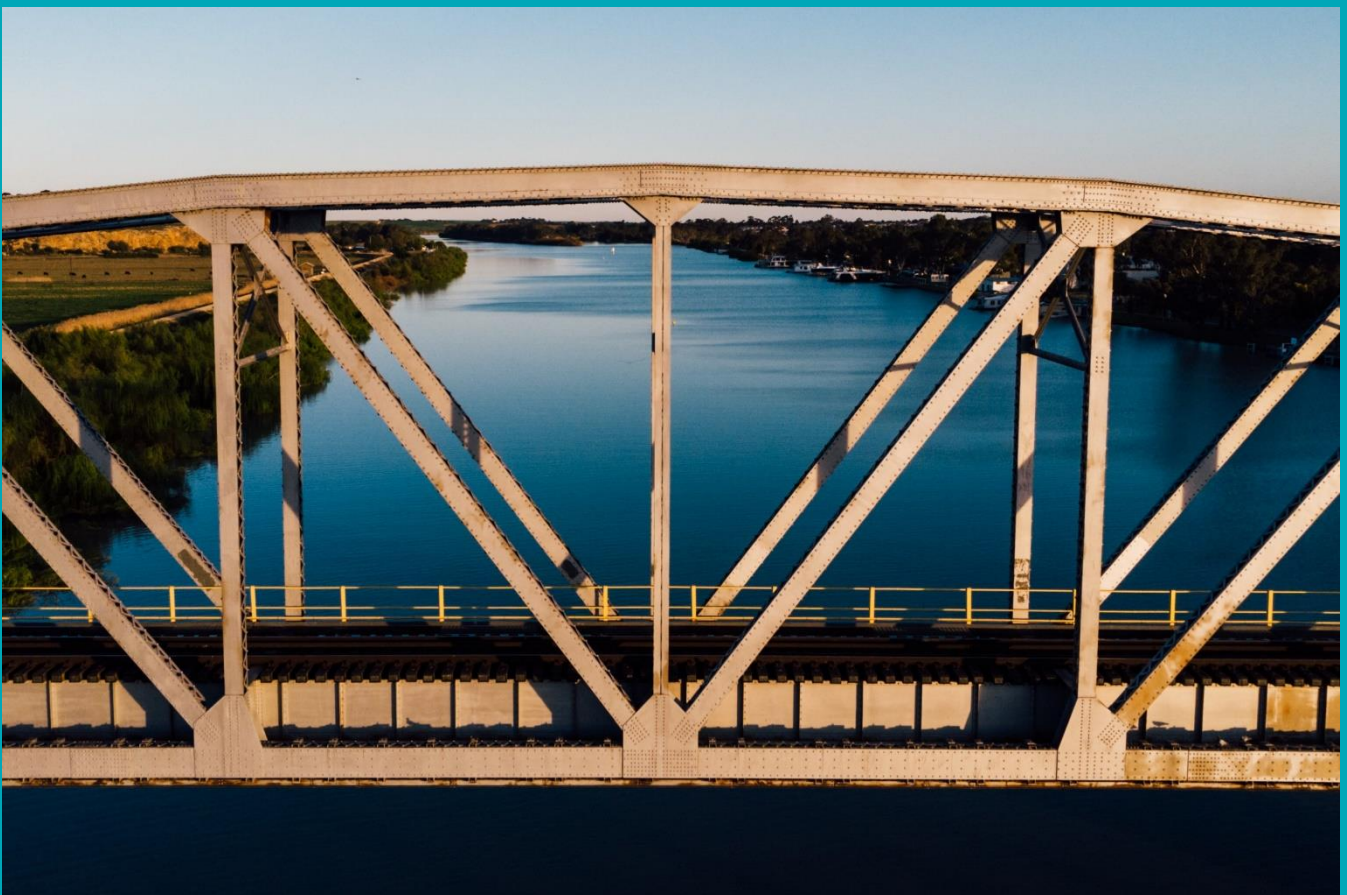
To achieve these aims, the city needs to ensure delivery against the targets and goals set, which will improve the environment, tackle climate change and make the region more liveable in the process.

The key actions include but are not limited to:

- replacing 1600 street lights with LED lights which will reduce our carbon footprint and save money
- more trees, shrubs and vegetation to be planted and less removed, aiming at more shade and a cooler city

- less water will be drawn from the River, whilst more green spaces will be created
- water sensitive urban design (WSUD) will be built into footpath and road renewals
- new developments will incorporate water and climate change design elements
- there will be an expansion of stormwater detention and reuse
- run waste free events and provide organic waste kitchen tidies for households

The actions within this plan combined with other strategies will improve everyday life for the whole community and make our towns more attractive for people to visit and live.



## Achievements

Since the delivery of the previous Environment Management Plan in 2013, the Rural City of Murray Bridge has delivered:

- The Rural City of Murray Bridge, along with 18 other Councils “crowd funded” the production of Snapshot, providing emission information for all 67 South Australian Councils.
- A 100kw solar system on the Local Government Centre (LGC) roof delivering over \$35000 in savings in 2019.
- All internal lights in Local Government Centre and Library replaced with LED (Light Emitting Diode) lights. Town Hall lights are being replaced currently.
- In 2015 Gifford Hill Stormwater Harvesting and Reuse project Stage 1 was completed. This water source reuses over 200ML per year, saving that much being taken from the River or SA Water.
- Electric Vehicle charging stations are available at Local Government Centre carpark and Mary Terrace.
- Council developed and implemented a Biodiversity Management Strategy, Roadside Vegetation Management Plan and Tree Management Framework.
- All reserves and wetlands have a current management plan
- Reserve and Wetland Management Plans were developed and implemented covering vegetation management, weed and pest control and proposed improvements.
- Five hundred houses were provided with Kitchen Caddies. Organic waste diverted from landfill increased by 14% between 2018/19 to 2019/20.
- Agreement to change over all eligible street lights to LEDs from 2021-22. Likely emissions reduction of around 158 (t CO<sub>2</sub> –e) per year



*Figure 1 Volunteers in action*



# **WATER AND RIVER**



# WATER AND RIVER

## Water Quantity and Quality and the River Murray



The River Murray is the principal water resource for South Australia and is a major feature defining the character of the urban centre of Murray Bridge and the river towns within the Rural City of Murray Bridge. The Rural City of Murray Bridge is a river dependant community, which acts as a regional centre for a wide range of agricultural enterprises that are dependent on the River Murray. The river is a highly valued resource which supports extensive recreational and tourism activities within the region.

Within the lower Murray, below Lock 1 to Lake Alexandrina, the River Murray travels through an alluvial floodplain. Most of the area consists of reclaimed irrigated swamps on the river floodplain. This environment has been highly modified by the irrigation activities that occur on the reclaimed swampland.



A series of barrages separate the freshwater Lakes, Alexandrina and Albert, from the sea. The construction of the barrages and locks changed the river into a series of weir pools, which regulate water levels. The barrages maintain a higher water level than what would occur naturally within the river system from the Murray mouth to Blanchetown resulting in permanent inundation of many wetlands. Many of these wetlands, creeks and the like have regulation devices to control flows in and out to help mimic natural flows, dry conditions and floods.

Within South Australia, we have very little inflow from tributaries into the River Murray system. The volume of water available for domestic use

and the health of our river system are reliant on the volume of water made available from our upstream states. The Murray-Darling Basin Agreement provides South Australia with a maximum regulated entitlement flow of 1,850 GL per annum. The actual regulated volume that South Australia receives depends on the volume of water available in the River Murray system, which means in some years SA receives less than 1,850 GL. There are years when regulated and unregulated flow is greater than 1,850 GL, with that unregulated flow being available to sustain the River's environments.

The River Murray provides a finite water supply that has to be shared between domestic, industrial and agricultural users as well as the environment. The river is also a major source of water for other parts of South Australia. On average 40% of Adelaide's mains water is supplied from the river, this can rise to 90% in times of drought. Other major extractions include the Clare and Barossa Valleys, Port Pirie, Port Augusta, Whyalla, the Eyre Peninsula and mining, Keith in the South East of the state, and the Langhorne Creek, Finnis and Currency Creek irrigation districts.

The Millennium Drought resulted in reduced river flows into South Australia. Water levels in the lower Murray and the Lower Lakes were at unprecedented lows, with the water level below Lock 1 at Blanchetown falling to one metre below sea level. This resulted in the drying of the swamps and exposure of acid sulphate soils in the Lower Lakes and with the barrages holding back the seawater.

Over the years, the combination of natural droughts and increasing human use of the waterways for agriculture, manufacturing and communities has led to a decline in the health of the Basin.

In 2012, there was widespread agreement across government that a plan was needed to manage our water carefully and protect the Basin for future generations. The Murray-Darling Basin

# WATER AND RIVER

## Water Quantity and Quality and the River Murray



Plan was developed to manage the Basin as a whole connected system.

The Murray–Darling Basin Plan aims to bring the Basin back to a healthier and sustainable level while continuing to support farming and other industries for the benefit of the Australian community. For more and current information, please go to <https://www.mdba.gov.au/>

Council maintains membership in the Murray Darling Association<sup>4</sup> (MDA) Region 6, as this provides an opportunity on a national forum to participate actively in policy and activities for the whole Basin and work towards implementation of Murray Darling Basin Plan and secure water for Lower Murray River users.

MDA Region 6 recognises the Ngarrindjeri people as the traditional custodians of the lands and waters of the Lower Murray, Lakes & Coorong region and supports their right to be involved in Basin Plan decision-making. As the Traditional Owners, they have lived in this area for many thousands of years. The Coorong remains an intrinsic part of their culture, spirituality and identity, with freshwater flows seen as their lifeblood.



Riverfront access and major development at Sturt Reserve are being undertaken which will improve access and support eco-tourism. As well, Council is progressing an interpretive trail from the Coorong-to-the Murray, which will

provide opportunities for walkers, bikers and day visitors to experience the Murray up close.



*Figure 2 Swanport Wetlands Walkway*

As part of this Council is trialling bank stabilisation techniques to manage low river levels, which caused extensive riverbank, collapse during the Millennium Drought.

There is a need for the Rural City of Murray Bridge to source alternative water supplies such as stormwater harvesting and reclaimed wastewater. These alternatives are at present underutilised water sources.

Other potential stormwater harvesting sites are being investigated on both the east and west sides of the River for implementation.

Most current stormwater systems endeavour to move stormwater as quickly as possible to the nearest creek or river. This means water carries many pollutants such as hydrocarbons, sediment, pathogens, chemicals and rubbish to the waterways we value. Councils then need to pump water either to the River, or back to where it is needed for watering Council vegetation assets.

<sup>4</sup> <https://www.mda.asn.au/>



# WATER AND RIVER

## Water Quantity and Quality and the River Murray



Water Sensitive Urban Design is the practice of installing structures to use stormwater where it falls. The designs take many forms from simple tree watering diversions to underground holding tanks for year-round watering. Using a variety of methods, stormwater is cleaned, rubbish trapped and more vegetation can be planted in urban areas. The Rural City of Murray Bridge will be installing two to three of these each year as part of planned footpath and road upgrades and using permeable paving to replace footpaths. This should help water planted trees and reduce root damage to concrete footpaths.

Within the Rural City of Murray Bridge, there are significant wetlands that support a diverse range of flora and fauna. Rocky Gully Wetland, Murrundi, Riverglades, Piawalla, Sunnyside, Dury and Swanport Wetlands are cared for by

enthusiastic volunteer groups with the assistance and support of Council.

Pollutant sources along the river include stormwater runoff, irrigation drainage and septic tank discharges from shacks. Irrigation drainage from Lower Murray Reclaimed Irrigation Areas is no longer a major cause as the majority is retained on-farm for reuse.

Native fish populations can provide an environmental indicator to the health of the river system. It is estimated that native fish populations are approximately 10% of their levels before European settlement due to habitat degradation and introduction of exotic species such as European carp<sup>5</sup>. A virus which will target European Carp is being developed however its release is subject to considerable debate and is unknown at this time. For more information go to <https://www.carp.gov.au/>



*Figure 3 Swanport Wetlands*

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<sup>5</sup> Lintermans, M. 2007, Fishes of the Murray-Darling Basin: An introductory guide. At

<https://www.mdba.gov.au/sites/default/files/pubs/MDBA-Fish-species-book.pdf>

## Water and River Action Plan

### Rationale:

- Investigate and implement measures to improve water quality in the Murray River,
- Make better use of stormwater throughout the communities, use water where it falls to enhance aesthetics, vegetation, and biodiversity and reduce stormwater flows.
- Work with River groups, MDA and government to improve River flows and quality

Actions	Partners and key stakeholders	Measure	Time frame	Cost range <sup>6</sup>
<b>Strategy A1: Water Actions</b>				
<b>A1.1</b> Install Water Sensitive Urban Design (WSUD) structures into footpath and road renewals. Aim for installations to become business as usual.	WaterSensitiveSA	At least two per year	2020-24	M
<b>A1.2</b> Update the Stormwater Management Plan. Investigate implementation options for managing and using stormwater in a holistic approach (Including wetlands which could also meet the local biodiversity needs especially in summer). 1) seek matched grant funding from the Stormwater Management Authority (SMA) to prepare a stormwater management plan (SMP) which meets the SMA's guidelines for stormwater management planning. 2) seek approval of the SMP by the SMA in accordance with Schedule 1A of the Local Government Act 1999.	Stormwater Management Authority	Complete and implement the plan	2020-2024	M
<b>A1.3</b> Plan for stormwater management including investigate options for harvesting in two locations in Murray Bridge and elsewhere if feasible and beneficial.	WaterSensitiveSA, SA Water, Murraylands and Riverland Landscape Board	Locations confirmed and plans developed	2020-24	H
<b>A1.4</b> Investigate installing water flow meters for stormwater outlets to measure outflow.		Meters installed to show reduced flow	2021	L
<b>A1.5</b> Seek opportunities to access more locations to use reclaimed wastewater.	SA Water	Use wastewater in other locations in RCMB	Ongoing	L
<b>A1.6</b> Include use of Permeable Paving in footpath and road renewal where suitable.	WaterSensitiveSA	All footpath repairs.	Ongoing	M

<sup>6</sup> L = \$0-\$5000; M = \$5001 - \$20000; H = \$20001- \$100000+

## Water and River Action Plan

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Actions	Partners and key stakeholders	Measure	Time frame	Cost range <sup>6</sup>
<b>A1.7</b> Undertake a water efficiency audit to reduce water consumption through Council's property management and Council assets.	External contractors, SA Water, LGA	Reduce water consumption by 10%	2022	M
<b>A1.8</b> Explore opportunities to reduce the dependence on traditional water supplies by moving to sources of water such as stormwater and wastewater reuse.	SA Water	Reduction of traditional SA water usage.	Ongoing	L
<b>A1.9</b> Develop and deliver a program to encourage greater uptake of green building design and construction within our Council area.	WaterSensitiveSA, Green Building Council Australia, planners and developers	Incorporated into Development Plan and forming part of the Planning and Design Code used by developers	Ongoing	L
<b>A1.10</b> Develop community awareness of water usage and water conservation, pursue measures that aim to reduce water consumption (residential and agricultural). Seek grants to support initiatives	Murraylands and Riverland Landscape Board, local schools, community, WaterSensitiveSA, LGA, Planning	Increase of community awareness of River and water issues aiming to draw less water from River	Ongoing	L
<b>A1.11</b> At least twice-yearly cleaning of Gross Pollutant Traps and after storm events	Council	Cleaned as required	Ongoing	L
<b>A1.12</b> Become members of StormwaterSA and WaterSensitiveSA	WSSA, SWSA	Membership	Ongoing	M
<b>A1.13</b> Review of Council's irrigation management system including service levels to minimise irrigation water use across priority reserves, sporting properties and open spaces.	RCMB	Better water use	Ongoing across City	L



## Water and River Action Plan

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Actions	Partners and key stakeholders	Measure	Time frame	Cost range <sup>6</sup>
<b>Strategy A2: River Actions</b>				
<b>A2.1</b> Maintain Council membership of Region 6 in Murray Darling Association (MDA)	MDA, Region 6 Councils	Funding committed annually	Ongoing	M
<b>A2.2</b> Actively participate with Region 6 Councils to develop policies that support lower River Murray communities and ensure ongoing water flows to the Coorong and ocean.	MDA, Region 6 Councils		Ongoing	M
<b>A2.3</b> Continue to work with State and Local Governments on methods to address bank stabilisation and River access at those locations	Murray and Riverland Local Government Association, LGA	Learnings are shared and options trialled	Ongoing	M
<b>A2.4</b> Work to improve water quality returned to the Murray according to the EPA's Aquatic ecosystem condition reports (AECRs).	EPA	Use EPA AECR's reports	Ongoing	M
<b>A2.5</b> Long-term aim to prevent all stormwater from entering the River Murray directly.	WaterSensitiveSA	Reduced outflow	Ongoing	L
<b>A2.6</b> Continue to provide updates and involve the RCMB community in the different programs relating to the riverine environment and river health	Volunteers and all Community Groups, Murraylands and Riverland Landscape Board, Murray Bridge Library, Art Gallery and Council media, DEW and MDBA.	Increase in participation and awareness of water issues	Ongoing	L
<b>A2.7</b> Continue to publish water quality data on RCMB website from RCMB Community Wastewater Management Systems at the Woodlane and Riverglen schemes.	EPA	Monitoring water quality.	Ongoing	L

# BIODIVERSITY



# BIODIVERSITY



*Please refer to Council's Biodiversity Strategy for a comprehensive review of all actions about managing and improving our biodiversity. All vegetation management plans, wetland plans and significant locations are featured in the Biodiversity Strategy.*

The Biodiversity section in the Environment Management Plan is a broader level perspective considering the interactions with other plans such as the Climate Emergency Action Plan and the Strategic Plan. As well, actions regarding animal management which affect biodiversity, tree canopy cover and water sensitive urban design are incorporated.

Biodiversity is the term used to describe the variety of all living things. This includes plants, animals, insects, microorganisms, and the ecosystems of which they form a part. A healthy, biologically diverse ecosystem is dependent on the variety of animals, plants and soil biota that exist within the ecosystem. Biological diversity is the genetic, species and ecosystem diversity that exist within an ecosystem.

Biodiversity of our natural ecosystems provides the resources we require to live and therefore we need to proactively protect and rehabilitate areas of high biodiversity value thereby improving the ecosystems on which all life depends. Our community needs to value the environment, minimise environmental impacts, use resources wisely and protect biodiversity. We as a Council should educate the community to value our environment and protect it from the effects of human activities.



Soil and soil organisms such as bacteria, insects, worms and fungi make up a large portion of the earth's terrestrial biodiversity. These soil organisms break down wastes from dead organisms and play a crucial role in the biodiversity life cycle. All species within the biodiversity life cycle contribute holistically; the disturbance or removal of just one species can have detrimental results not only to one or more other species but also to an entire ecosystem.



*Figure 4 Callington - Murray Bridge Trail*

Our natural environment is degraded due to many decades of the clearance of land, pollution and poor development practices. The results have been the loss of species and natural habitats for plants and animals and the degradation of agricultural land and our natural water resources.

Over 90% of the original vegetation has been cleared within the Rural City of Murray Bridge for agricultural purposes. Small pockets of native vegetation and roadside reserves are the only remaining areas of remnant native vegetation which has become highly fragmented and isolated. These remnants are highly valued for their biological diversity serving as important wildlife corridors, a seed source for revegetation and areas of species habitat. The progressive degradation of native vegetation and an increase in exotic plants and animals continues to have a devastating impact on our natural biodiversity within the Rural City of Murray Bridge.



# BIODIVERSITY



Council maintains a system of Roadside Vegetation Markers identifying areas with significant and endangered roadside vegetation.



*Figure 5 Roadside marker*

Council, in partnership with various volunteer groups, manages several significant biodiversity sites. These include Council reserves, Murray Park and Morphett Reserve, wetlands and roadside vegetation sites including one Bush for Life site at Reedy Creek.

Existing native vegetation on State Government, non-government, private and Council land constitute a mosaic of habitat fragments and biodiversity corridors throughout the district. However, while these are vital to the survival of native flora and fauna, this fragmentation affects species ability to move freely and disperse across the landscape, utilise seasonal food resources, and take refuge from disturbance events (such as bushfire and flood). For many species, vegetation reduction and fragmentation mean that there is insufficient habitat and/or fragments are too small and isolated to support viable populations. Fragmentation is one of the key causes of biodiversity decline in the region.

Identifying and mapping habitat and linkages to connect and expand habitat, incorporating remnant and restored vegetation areas, wetlands, creek lines, railway lines, roadside marker sites, unmade road reserves, infrastructure easements, and Heritage Agreements with the Native Vegetation Council will enable Council to prioritise resourcing and conservation activities in areas of the highest value.

The Rural City of Murray Bridge is fortunate to have passionate and highly valued conservation community members who volunteer in citizen science, strategic and on-ground conservation activities. As the Council's resources are limited, the Council must work closely with volunteers in our environment programs along with the existing conservation groups, to engage local knowledge and support to facilitate biodiversity outcomes already being delivered. Council also supports community biodiversity programs and projects which include education and awareness through the Council Community Grants programme.

There are many opportunities for volunteers to support Councils parks, wetlands, assets and other roles in the beautification of the City.



# BIODIVERSITY



The Monarto Woodlands are home to locally significant bird species in dramatic decline:

- Diamond Fire Tail
- Willy wagtails
- Robins
- Restless flycatcher
- White winged chuff
- Yellow tailed black cockatoo

(Of the 100 species, 60 to 70 breed there and it is a popular location for birdwatchers, walkers, bike riders, horse riders and carriage drivers).

Mallee Fowl - the Monarto South population is the only population west of the River Murray.

Southern Bell Frog, *Litoria raniformis* is an endangered frog species and was recorded at Murrundi Reserve in 2015/2016<sup>7</sup> - (GWLAP)

Other important local species are:

- *Lomandra effusa*, Irongrass is indigenous to our Council and is nationally endangered.
- Menzel's Wattle local to Bondleigh/ Rockleigh
- Monarto Mint Bush
- Metallic Sun Orchid local to Brinkley / Mulgundawah.



Figure 6 Male and female Rainbow Bee Eaters

<sup>7</sup> <http://www.gwlap.org.au/publications/>

## Biodiversity Action Plan

Rationale: Council uses a range of actions to manage its biodiversity assets such as plans, assessments and community support. Volunteers are a highly valued component of land management; without whom many parcels of native biodiversity would not be in the managed state they are in today. Council is always seeking more volunteers in a variety of roles from reserve groups, nursery, graffiti and many other roles.

Council manages feral plant and animal control, improving water quality, increasing plantings, protecting roadside vegetation and building the knowledge and skills of the community in the region and the River and Reserves.

Actions	Partners and key Stakeholders	Measure	Time frame	Cost range <sup>8</sup>
<b>Strategy B1: Council Actions</b>				
<b>B1.1</b> Update and publish the Roadside Vegetation Management Plan 2020-2025	DPTI, Austroads	Plan completed and implementation underway	2020	L
<b>B1.2</b> Update and continue implementing Biodiversity Strategy	Murraylands and Riverland Landscape Board, Volunteers, Community groups	Review plan and implementation	2020	M
<b>B1.3</b> Continue development of a Significant Environmental Benefit (SEB) offset program.	NVC	Determine suitable areas for revegetation.	2021	M
<b>B1.4</b> Seek to link key remnant vegetation sites to increase biodiversity. Preserve and promote environment corridors for native fauna and flora. E.g. between Monarto Conservation Park and South Eastern Freeway.	Landowners, Murraylands and Riverland Landscape Board, Nongovernment agencies. <del>LAPs.</del>	Sites located and linking progressed	2020-2024	M
<b>B1.5</b> Complete urban heat and canopy cover mapping, tree coverage reviews and set targets for trees and cover to reduce heat difference between treed and non-treed landscapes.	Refer Climate Change Plan	Mapping completed and	2021	L

<sup>8</sup> L = \$0-\$5000; M = \$5001 - \$20000; H = \$20001- \$100000+



## Biodiversity Action Plan

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Council manages feral plant and animal control, improving water quality, increasing plantings, protecting roadside vegetation and building the knowledge and skills of the community in the region and the River and Reserves.

Actions	Partners and key Stakeholders	Measure	Time frame	Cost range <sup>8</sup>
		tree target reviewed		
<b>B1.6</b> All biodiversity information to have links on Council webpage	RCMB	Completed and current.	Ongoing	L
<b>B1.7</b> Develop, update and implement management plans for all Council reserves. <ul style="list-style-type: none"> <li>• Murrundi Wetland/Reserve</li> <li>• Murray Park</li> <li>• Rocky Gully Wetlands</li> <li>• Boggy Lake</li> <li>• Swanport Wetlands</li> <li>• Hefford Reserve</li> <li>• Callington Cemetery</li> <li>• Callington Hill Grasslands</li> <li>• Dorset Reserve</li> <li>• Morphett Reserve</li> <li>• Reedy Creek Reserve et al</li> </ul>	Murraylands and Riverland Landscape Board, Native Vegetation Council, local community and volunteer groups	All plans completed and current.	Ongoing	L
<b>B1.8</b> Mowing and weed control Murrundi Reserve and surrounds	Wellington Progress Association	Conducted as required	Ongoing	L
<b>B1.9</b> Brinkley Nursery to propagate plants for sale, Open Space team and revegetation programs.	Volunteers	Over 1000 plants per year	Ongoing	L
<b>B1.10</b> Use interpretive signage to explain the value of local biodiversity	Bush for Life, Murraylands and Riverland Landscape Board	Signs designed and installed	Ongoing	M

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Council manages feral plant and animal control, improving water quality, increasing plantings, protecting roadside vegetation and building the knowledge and skills of the community in the region and the River and Reserves.

Actions	Partners and key Stakeholders	Measure	Time frame	Cost range <sup>8</sup>
<b>Strategy B2: Community Support</b>				
<b>B2.1</b> Continue to develop links with and support Murraylands and Riverland Landscape Board, and local catchment, wetland and volunteer groups to enhance Council's environment objectives.	Murraylands and Riverland Landscape Board, Non-government agencies; e.g., Bush for Life LAs.	Continue liaison.	Ongoing	L
<b>B2.2</b> Be aware of bushfire management through the Murray Mallee Bushfire Management Plan (MMBMP)	CFS	Incorporation of MMBMP in RCMB Planning	Ongoing	L
<b>B2.3</b> Continue to involve the RCMB community in the different programs related to the riverine environment	Murraylands and Riverland Landscape Board, Murraywatch	Increased capacity of community	Ongoing	L
<b>B2.4</b> Increase the knowledge capacity of the community on the health of the river system.	Murraylands and Riverland Landscape Board	Increased capacity of community	Ongoing	L
<b>Strategy B3: Town and Community Actions</b>				
<b>B3.1</b> Use public Council events as an opportunity to increase environmental awareness, (e.g. events at the Murray Bridge Showground, Sturt Reserve)	Murraylands and Riverland Landscape Board, Bush for Life	Reduced waste, increased capacity of community	Ongoing	L
<b>B3.2</b> Conduct annual tree planting & regular weed control on Callington Hill Grasslands	Kanmantoo - Callington Land Care Group	Annual event	Ongoing	L

## Biodiversity Action Plan

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Council manages feral plant and animal control, improving water quality, increasing plantings, protecting roadside vegetation and building the knowledge and skills of the community in the region and the River and Reserves.

Actions	Partners and key Stakeholders	Measure	Time frame	Cost range <sup>8</sup>
<b>B3.3</b> Coordinate weeding events yearly at Reedy Creek Road Reserve	Bush for Life site Reedy Creek Road	Weeding events conducted	Ongoing	L
<b>B3.4</b> Promote trails and trail use: More walking improves our environment and interpretive signs can help users understand our biodiversity	Refer to Sport, Recreation and Open Space Strategy	Improved understanding and appreciation of our region	Ongoing	L
<b>Strategy B4: Animal Management</b>				
<b>B4.1</b> Encourage responsible dog and cat ownership to reduce nuisance, social and environmental harm.	Dog and Cat Management Board	Less unmanaged animals	Ongoing	L
<b>B4.2</b> Investigate a feral cat management program targeting colonies of concern on both Council and private land.	Dog and Cat Management Board	A feral cat management program is assessed	Ongoing	M
<b>B4.3</b> Provide information and guidance to the community to minimise issues related to pest birds (e.g. feral pigeons) and native birds of abundance (e.g. Little Corellas)	Murraylands and Riverland Landscape Board	website is updated and current	Ongoing	L
<b>B4.4</b> Continue working with SA Water to develop a sacrificial site at Toora swamps to draw Little Corellas away from communities	SA Water	Site prepared	Ongoing	M
<b>B4.5</b> Continue to manage feral animals and set management targets where possible. Carp, Cats, Foxes, Deer, European Wasp, Rabbits, etc.	Murraylands and Riverland Landscape Board	Less introduced animals in the region	Ongoing	M



## Biodiversity Action Plan

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Council manages feral plant and animal control, improving water quality, increasing plantings, protecting roadside vegetation and building the knowledge and skills of the community in the region and the River and Reserves.

Actions	Partners and key Stakeholders	Measure	Time frame	Cost range <sup>8</sup>
<b>Strategy B5: Vegetation Management</b>				
<b>B5.1</b> Encourage native plants at all opportunities	Planning and Development	Less introduced species	Ongoing	L
<b>B5.2</b> Manage roadside vegetation better, Council to decrease clearance levels.	DPTI, Developers	Fewer clearance requests, more vegetation retained and planted	Ongoing	L
<b>B5.3</b> Use indigenous and local plants in WSUD installations and Council garden areas where suitable	WaterSensitiveSA,	2-3 installations a year	Ongoing	L
<b>B5.4</b> Continue to manage feral plants and set management targets for Caltrop, Gazania, African Boxthorn, Branched Broomrape (if still a threat), other Weeds of National Significance	Murraylands and Riverland Landscape Board, Volunteers	Cleaner land, fewer infestations	Ongoing	M
<b>B5.5</b> Maintain and develop sustainable biodiversity habitats. Sustainable landscaping of the riverine environment through plant selection and maintenance.	Murraylands and Riverland Landscape Board	Improved biodiversity in Council reserves	Ongoing	M
<b>B5.6</b> Develop programs that support biodiversity protection and enhancement.	Murraylands and Riverland Landscape Board, Nongovernment agencies; e.g. Bush for Life L.A.P.s.	Programs developed and endorsed by community	Ongoing	L

## Biodiversity Action Plan

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Actions	Partners and key Stakeholders	Measure	Time frame	Cost range <sup>8</sup>
<b>B5.7</b> Continue information gathering, sharing photos, plans and details, Murray Mallee Landscape Group	DEW, Murraylands and Riverland Landscape Board	Information shared	Ongoing	L
<b>B5.8</b> Provide support and advice on vegetation clearance, local pests and weeds to community.	Native Vegetation Council		Ongoing	L

# COMMUNITY CAPACITY

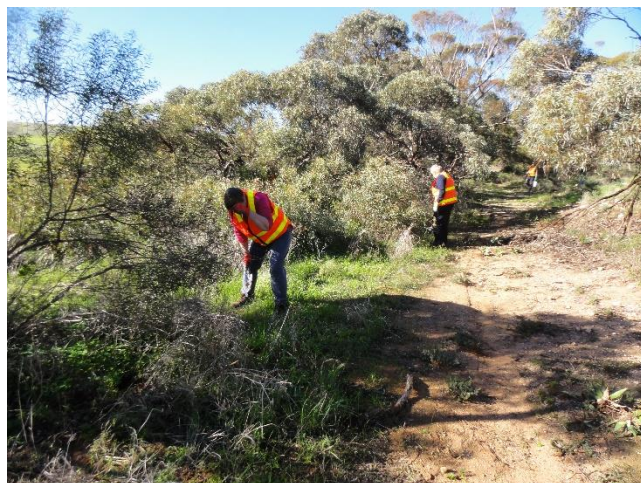




# COMMUNITY CAPACITY



A plan such as this can only be effective if the community and Council work together as part of the process. To do this requires an increase in knowledge, ability and encouragement to participate in the themes of the plan. We call this “capacity building” and is fundamental for plans that are integrated into how a community lives, particularly if the plan is to make the Rural City of Murray Bridge more liveable. So, for example, encouraging residents to look after and value the work of the Council in vegetation planting, reducing waste, keeping the River clean and many other actions is very important to the success of all Councils endeavours.



*Weeding*



*Volunteers in action: fertilising plants*



*Gathering seed*



*The Nursery at Brinkley ReUse Centre*



## Community Capacity Action Plan

Rationale: Council has a key role in enhancing community capacity and knowledge for the benefit of the whole community. The more capacity and knowledge, the better the opportunities for sound decision making and progress.

Acknowledging and preparing for the challenges associated with the range of items that encompass environmental management is prudent and wise and prepares Council for further challenges created as they arise. This strategy allows the community to own these actions and guide where they go.

Actions	Partners and Key Stakeholders	Measure	Time frame	Cost Range
<b>Strategy C1: Community Capacity</b>				
<b>C1.1</b> Foster relationships with local environment groups and support the creation of new groups	NGOs, Murraylands and Riverland Landscape Board, Friends groups	Greater opportunities for all	Ongoing	L
<b>C1.2</b> Increase demand for Environment Grants by local community groups	Council	Increased applications and all funds allocated	2022	L
<b>C1.3</b> Engage local environment champions in awareness raising initiatives.	Community Groups, NGOs	Increased locals taking action	Ongoing	L
<b>C1.4</b> Encourage the community to beautify and revitalise their property, provide advice on native plantings for habitat	Volunteers and Community Groups	Improved town aesthetics and biodiversity habitat	Ongoing	L
<b>C1.5</b> Support local schools in their environmental efforts according to the actions of this plan.	Murraylands and Riverland Landscape Board	Students taking action	Ongoing	L
<b>C1.6</b> Continue school planting opportunities in Council developments	Local Schools	Participation numbers	Ongoing	L
<b>C1.7</b> Continue to support and expand Spring Garden competition	Residents	Increase in nominations	Ongoing	L
<b>C1.8</b> Develop programs and provide resources to educate the community on sustainable development, energy efficiency and alternative energy systems, waste reduction and efficient water use	Murraylands and Riverland Landscape Board, State Government, KESAB, Green Industries	More resilient community	Ongoing	L

## Community Capacity Action Plan

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Acknowledging and preparing for the challenges associated with the range of items that encompass environmental management is prudent and wise and prepares Council for further challenges created as they arise. This strategy allows the community to own these actions and guide where they go.

Actions	Partners and Key Stakeholders	Measure	Time frame	Cost Range
<b>C1.9</b> Identify key community groups such as business owners, community leaders, students, local farmers and community organisations for environmental awareness sessions in partnership with other stakeholders	Planners, Developers, Murraylands and Riverland Landscape Board	Greater capacity of community	Ongoing	L
<b>C1.10</b> Support Community Gardens or similar	Community Groups and Volunteers	Community Garden(s) established	Ongoing	L
<b>C1.11</b> Investigate greater cooperation with Aboriginal Groups as environment champions	Community Groups, NGOs, Ngarrindjeri Advisory Committee, Murraylands and Riverland Landscape Board	More uptake, knowledge and identified actions in the Region	Ongoing	M
<b>C1.12</b> Develop new roles and programs to allow greater engagement in Council Volunteering in environmental fields	Community, Volunteers and Friends groups, Murraylands and Riverland Landscape Board and the Mallee and Coorong Advisory Committee	More interest, greater participation	Ongoing	L
<b>C1.13</b> Pursue opportunities to collaborate with scientific research institutions on projects including citizen science that will support the objectives of this Plan.	Universities, TAFE, CSIRO, MDBA	As required	Ongoing	L

## Community Capacity Action Plan

Rationale: Council has a key role in enhancing community capacity and knowledge for the benefit of the whole community. The more capacity and knowledge, the better the opportunities for sound decision making and progress.

Acknowledging and preparing for the challenges associated with the range of items that encompass environmental management is prudent and wise and prepares Council for further challenges created as they arise. This strategy allows the community to own these actions and guide where they go.

Actions	Partners and Key Stakeholders	Measure	Time frame	Cost Range
<b>C1.14</b> Involve Council's Youth Council and local schools in the environment policy development and planning process.	Youth Council, Schools, River Murray Youth Council	2-3 meetings per year with Council	Ongoing	L
<b>C1.15</b> Involve the community in Council decision-making and projects for environmental management.	Council, Community Groups	Better buy in by community of Council plans and projects	Ongoing	M
<b>C1.16</b> Advertise and explain the success of Council projects (e.g., the recent upgrade of the Library, LGC in insulation and lighting; Chlorine gas at the pool, LED lighting upgrade.	Website and Facebook	Recognition by the community of accomplishments	Ongoing	L
<b>C1.17</b> Promote community involvement in the maintenance of river sections.	LAPs, community groups and the Murraylands and Riverland Landscape Board.	More uptake, knowledge and identified actions along the River	Ongoing	L
<b>C1.18</b> Recognise community environment initiatives, possibly in conjunction with the Murraylands and Riverland Landscape Board.	Website and Council, Community staff,	Acknowledgement events, 1-2 per year	Ongoing	L



# DEVELOPMENT



# DEVELOPMENT



The Murray Bridge Region is poised for significant growth in the coming decades. The 30 Year Plan for Greater Adelaide has identified the Rural City of Murray Bridge as a growth area in both the original 2010 document and 2017 update.

The 30-Year Plan for Greater Adelaide originally identified the potential for an additional 6,000 dwellings, with the Gifford Hill development as a key contributor. Whilst this development has not progressed as quickly as originally anticipated, it is continuing and is expected to deliver residential, retail, recreation and public open space opportunities.

To accommodate the expected growth, Council undertook several studies, including the Murray Bridge Town Centre Master Plan, which formed the basis of recent rezoning of the Regional Town Centre to enable better opportunities for sustainable commercial and mixed-use development and economic growth.



The Murray Bridge Structure Plan maps out a long-term direction of how our Rural City should grow and develop in line with the 30 Year Plan for Greater Adelaide and the Murray Mallee Regional Plan. The Structure Plan is the Council's primary strategic planning document. The Plan presents an opportunity to promote an integrated and cohesive guide to the management of growth by identifying key growth areas and the infrastructure required to support this growth.

Council was a key contributor to the Integrated Water Management Plan Development Plan Amendment, which was a combined approach with adjoining Councils to provide stronger policies concerning stormwater protection and water management. Several additional WSUD policies and policies requiring the provision of improved stormwater management techniques were included within the Development Plan.

Whilst the Development Plan is the current document which guides development throughout the Council area, the introduction of the Planning Development and Infrastructure (PDI) Act in 2016 is changing this. This Act is currently being transitioned and in late 2020 is expected to result in individual Council Development Plans being replaced by a statewide Planning and Design Code.

The PDI Act includes several State Planning Policies, which focus on environment issues such as a specific State Planning Policy on Biodiversity along with a specific policy on Water Security and Water Quality. The Planning and Design Code will also include a suite of General Development policies with a focus on Water Sustainable Urban Design. These policies will be key contributors in enabling Council to provide improved environment outcomes.

## Development Action Plan

Rationale: Quality development with strong environment standards will provide Murray Bridge with many advantages. The Rural City will be more liveable, making it more attractive to visitors and new residents alike.

Implementing the Construction Environment Management Plan (a local government first) sets a high standard for development to eliminate pollution, retain native vegetation and maintain a clean waste free work site.

Actions	Partners and key stakeholders	Measure	Time frame	Cost range
<b>Strategy D1: New and Existing Infrastructure</b>				
<b>D1.1</b> Identify key groups such as urban developers, business owners, community leaders for environmental awareness sessions in partnership with other stakeholders	Town Planners, Environment Staff; Murraylands and Riverland Landscape Board	Updated External contact list, improved capacity of all stakeholders	2022	L
<b>D1.2</b> Follow and implement Planning and Design Code to ensure best practice concerning climate change and water practices is applied	Town Planners, <i>Planning, Development and Infrastructure Act 2016</i>	Planning and Design Code reflects challenges of Climate Change, water, and biodiversity targets	2021	M
<b>D1.3</b> Investigate creating a process to assess high priority projects, large-scale infrastructure projects or new developments, for climate risk considerations before approval from Council's Development Plan and the Planning and Design Code for all development	Developers and Planners; DPTI WaterSensitiveSA. Murraylands and Riverland Landscape Board	Part of the DA review process using Council Development Plans and standard practice	2021	M - H
<b>D1.4</b> Encourage and support developers to design and market future urban growth areas as 'green developments' with a focus on energy efficient and water sensitive design, sustainable transport options, biodiversity protection and natural open space.	Town Planners, WaterSensitiveSA, Planning, Development and Infrastructure Act 2016	Better building outcomes from new developments	Ongoing	L
<b>D1.5</b> Develop and apply Construction Environment Management Plan to ensure areas of biodiversity conservational value, recreational and open space are protected and enhanced.	DPTI, Murraylands and Riverland Landscape Board	Applied to sites of significance identified in Open Space and Recreation Strategy.	2020 and ongoing	L

## Development Action Plan

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Actions	Partners and key stakeholders	Measure	Time frame	Cost range
<b>D1.6</b> Apply Construction EMP to prevent and reduce pollution, dust, drag out, asbestos and noise from construction.	DPTI	Better building outcomes. Included in Planning and Design Code policies.	Ongoing	L
<b>D1.7</b> As part of vegetation removal, strongly consider and encourage a replacement opportunity of equal or better coverage. (This will help RCMB improve shade levels in the City)	Developers, horticulturists	Develop a tree replacement process	Ongoing	M
<b>D1.8</b> Encourage development to keep trees and native vegetation as a priority during construction.	Developers, community and Council	Part of Construction Environment Management Plan targets. More trees retained, fewer clearance applications	2021	L
<b>D1.9</b> Liaise with and encourage developers to incorporate maximum open space and natural environments within new developments.	Developers and Planners	Increased percentage of usable open space	2021	L



# WASTE



*Please refer to Council's Waste Strategy for all actions pertaining to managing waste.*

Waste management encompasses all activities and services that revolve around collecting, disposing, and reducing waste. In dealing with waste management, Council seeks to use the most effective technologies and methods available while striving to protect the environment and public health.

Council is a member of the Adelaide Hills Region Waste Management Authority (AHRWMA), which is a Local Government Regional Subsidiary established under the Local Government Act 1999. It was established to coordinate waste management and recycling on behalf of the member Councils: Mount Barker District Council, Adelaide Hills Council, Rural City of Murray Bridge and Alexandrina Council.

#### Council's Three Bin Waste Service:

1. 1 x 140 Litre blue lidded waste bin is provided to all residential and commercial properties as a weekly service
2. 1 x 240 Litre yellow lidded recycling bin is provided to all residential and commercial properties as a fortnightly service, and
3. 1 x 240 Litre green lidded organics bin is provided to residential properties within townships as a fortnightly service.



General waste is taken to landfill at the Brinkley Waste & Recycling Facility, recycling materials to VISY Recycling for processing and green waste to Peats Soil for composting.

#### Front Lift Bins:

Front-end Loader (FEL) trucks are used to collect general waste from front lift bins at locations where 240L bins cannot be serviced.

#### Hardwaste:

Council provides a hardwaste service to all residents which includes one free "on call" collection per year or a "tip pass" to dispose one 6x4 trailer load of residential waste per year.

#### Brinkley ReUse Centre:

The Brinkley ReUse Centre is run by volunteers and is located next to the Brinkley landfill. The centre accepts items that can be re-purposed and re-homed, diverting waste that would normally go to land fill.

#### China's National Sword policy:

Between 1992 to 2018, China imported approximately 50% of the world's recyclables and waste. In 2017 China's 'National Sword' was launched to target foreign recyclable imports and smuggling. In 2018 China implemented a ban on the import of 24 types of recyclables and introduced a contamination standard of 0.5%. Additionally, several Southeast Asian countries have introduced bans on foreign recyclables and have sent shipments back to their original country. Consequently, the price of recyclable material e.g. cardboard is worth less than 20% of its September 2017 value, increasing waste disposal costs to Council. All recyclable material from green and yellow bins in South Australia must be taken to a licenced recycling facility under the *Environment Protection (Waste to Resources) Policy 2010* and Council encourages its residents to continue to recycle.

# WASTE



## Waste Management Hierarchy:

Council seeks to use the waste management hierarchy as a foundation to evaluate and improve its waste management services.



Figure 7 Waste Management Hierarchy<sup>9</sup>

The waste management hierarchy ranks avoiding waste as the most preferable option followed by reducing, reusing, and recycling, while disposing is considered as the least preferable option, as illustrated in Figure 4.

## Council's objectives for waste management are:

### 1. *Reduce waste to landfill*

Reducing waste to landfill is best achieved through diverting recoverable resources from the blue lidded waste bin to both the yellow lidded recycling at residential and commercial premises and from the blue lidded waste bin to green lidded organics bins at residential premises. Council will use the targets set in *South Australia's Waste Strategy 2020-2025* as a basis for reducing waste to landfill. *Increase resource recovery and promote a circular economy*

Council will continue its trial of the Buying it Back LGA Circular Procurement Pilot Project with partner Councils. Council will "increase their purchasing of recycled materials each year until they are buying back recycled

materials equivalent to 50% of the weight of plastics collected through kerbside recycling services in their Council area"<sup>10</sup>.

### 2. *Provide an efficient and economical waste and recycling service*

Council delivers a range of waste management services and programs across the district. Council will review services provided to ensure they both adequately meet community needs and are cost effective. Council will seek external Government funding where appropriate to procure additional resources such as kitchen caddies and relevant educational material.

### 3. *Community Education*

Community education is vital to reduce waste to landfill and increase resource recovery. Council will educate and provide materials (where funding permits) to educate the community which bin to dispose household items into, including initiatives to assist the community to divert their food scraps from the blue lidded waste bin and into the green lidded organics bin.

<sup>9</sup> (EPA SA 2020)

[https://www.epa.sa.gov.au/environmental\\_info/waste\\_recycling](https://www.epa.sa.gov.au/environmental_info/waste_recycling)

<sup>10</sup>[https://www.lgprofessionalssa.org.au/resources/LG%20Professionals/Professional%20Development/ELP/Past%20pr](https://www.lgprofessionalssa.org.au/resources/LG%20Professionals/Professional%20Development/ELP/Past%20projects/2019%20Final%20Group%20Project%20-%20ELP%20Group%204%20-%20Responsible%20Waste%20Management.pdf)

[ojects/2019%20Final%20Group%20Project%20-%20ELP%20Group%204%20-%20Responsible%20Waste%20Management.pdf](https://www.lgprofessionalssa.org.au/resources/LG%20Professionals/Professional%20Development/ELP/Past%20projects/2019%20Final%20Group%20Project%20-%20ELP%20Group%204%20-%20Responsible%20Waste%20Management.pdf)





# Rural City of Murray Bridge **CLIMATE EMERGENCY ACTION PLAN 2020-2024**



# CLIMATE EMERGENCY ACTION PLAN



## Council's declaration

Council declared a Climate Emergency in October 2019 agreeing to deliver a Climate Emergency Action Plan to begin to mitigate its contribution to Climate Change.

This Climate Emergency Action Plan is an appendix to the Environment Management Plan and expands on the previous Climate Change Adaptation Plan 2016-2021.

Council also maintains an Environment Risk Register and Business Continuity Plans that guide emergency management planning.

This Climate Emergency Action Plan has the following key areas of focus:

- Reducing greenhouse gas emissions
- Alternative power options
- Capacity and knowledge
- Cooling the Council area

Mitigation of global warming involves taking actions to reduce [greenhouse gas](#) emissions and to enhance sinks aimed at reducing the extent of [global warming](#). This is in distinction to the [adaptation to global warming](#), which involves taking action to minimise the effects of global warming. [The scientific consensus on global warming](#), together with the precautionary principle and the fear of non-linear climate transitions, meaning that small changes in one part can lead to much larger changes elsewhere, is leading to increased effort to develop new technologies and sciences and carefully manage others in an attempt to mitigate global warming. The earth's climate is changing. This is evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice and rising sea levels. Greenhouse gas concentrations are increasing at an alarming rate and most of the human caused greenhouse gas emissions come from the combustion of fossil fuels.

## Local impacts of Climate Change

South Australia is becoming warmer. In the last century, the global surface temperature has increased by a 0.89°C in Australia and 0.96°C in South Australia, this is higher than the global increase of 0.7°C<sup>11</sup>. South Australia has also experienced a long-term reduction in autumn rainfall, particularly over southern agricultural areas that result in an overall reduction of inflows into dams and water storages. Although these changes are small, they can have a significant impact on already vulnerable ecological systems.

Rainfall<sup>12</sup>

Annual rainfall

### Annual rainfall will decline across all South Australian regions.

- By 2030 annual rainfall across the state is projected to decline by 4.4–9.0%, from the baseline period of 1981 to 2010, with smaller declines in the south.

The Northern and Yorke NRM region is projected to have the greatest decline (9.0%) with the AMLR and Kangaroo Island regions projected to have declines of 5.4% and 5.9% respectively. The smallest decline (4.4%) is projected for the South East NRM region.

- By 2050 annual rainfall is projected to decline by 6.6–15.0%.

The Northern and Yorke NRM region is projected to have the greatest decline (15.0%) with AMLR and Kangaroo Island NRM regions projected to have declines of 8.4% and 8.9% respectively. The smallest annual average decline (6.6%) is projected for the South East region.

<sup>11</sup> South Australian Government, 2015, *South Australia's Climate Change Strategy 2015-2050 towards a low carbon economy*.

<sup>12</sup> <https://data.environment.sa.gov.au/Content/Publications/Guide%20to%20climate%20change%20projections%20for%20risk%20assessment%20and%20planning%20in%20SA.pdf>



### Seasonal rainfall

**Across all South Australian regions, rainfall declines in spring are likely to be greater than any other season.**

- By 2030, rainfall declines are projected for all regions for *spring and autumn* (and winter in all but the SE region). Declines are greater in spring than any other season and range from 8% decline in the northern regions to 17.1% decline in the SA Murray-Darling Basin NRM region.
- By 2030, small declines in *summer* rainfall are projected for the South East, Kangaroo Island and Northern and Yorke NRM regions. Increases in summer rainfall are projected for the other regions apart from Eyre Peninsula which is projected to remain unchanged.
- By 2050 rainfall declines are projected for all regions in *all seasons*. Projected declines in spring rainfall are the greatest, ranging from 18.4% in northern regions to just over 27% decline for Eyre Peninsula and the SA Murray-Darling Basin NRM regions.

Climate modelling<sup>13</sup> suggests that average annual rainfall could decline by up to 11.4-21.7% by the end of the 21st century in the Murraylands and Riverland Landscape region.

Average annual rainfall is projected to decline under both intermediate emissions and high emissions scenarios.

By 2030, projected rainfall reductions are similar under both emissions scenarios. However, by the end of the century, projections diverge, with average rainfall declines nearly twice as much under high emissions. There is considerable overlap in the range of projections across the coming century.

13

<http://www.goyderinstitute.org/r216/media/system/attrib/file/207/SA%20Climate%20Ready%20Regional%20Summary%20-%20SAMDB.pdf>

### Mean and annual temperature<sup>14</sup>

**Annual mean daily maximum and minimum temperatures will increase across all South Australian regions.**

- By 2030 annual mean daily maximum temperatures are projected to increase by up to 1.3°C, with a greater increase projected in the north of the state.  
  
For example, in the Kangaroo Island NRM region, mean daily maximum temperatures are projected to increase by 0.8°C and in the SA Arid Lands NRM region, mean daily maximum temperatures are projected to increase by 1.3°C.
- By 2030 mean annual minimum temperatures will increase by up to 1.1°C. A greater increase is projected for the north of the state.  
  
For example, in the Kangaroo Island NRM region, annual mean minimum temperatures are projected to increase by 0.7°C and in the SA Arid Lands NRM region, annual mean minimum temperatures are projected to increase by 1.1°C.

- By 2050 annual mean maximum temperatures are projected to increase by up to 2.1°C, with a greater increase projected in the north of the state.

For example, in the Kangaroo Island NRM region, mean annual maximum temperatures are projected to increase by 1.4°C and in the SA Arid Lands NRM region, mean annual maximum temperatures are projected to increase by 2.1°C.

- By 2050 mean annual minimum temperatures will increase by up to 1.8°C. A greater increase is projected for the north of the state.

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<https://data.environment.sa.gov.au/Content/Publications/Guide%20to%20climate%20change%20projections%20for%20risk%20assmt%20and%20planning%20in%20SA.pdf>

For example, in the Kangaroo Island NRM region, annual mean minimum temperatures are projected to increase by 1.2°C and in the SA Arid Lands NRM region, annual mean minimum temperatures are projected to increase by 1.8°C.

#### Seasonal temperature

**Across all South Australian regions, warming in spring is likely to be greater than in any other season.**

- By 2030, mean daily maximum spring temperatures are projected to increase by up to 1.4°C, compared to mean daily maximum winter temperatures increases of up to 1.2°C.

For example, in the Kangaroo Island NRM region, mean daily spring maximum temperatures are projected to increase by 1°C compared to 0.7°C for mean daily winter maximums. In the Northern and Yorke and SAMDB NRM regions, mean daily spring maximum temperatures are projected to increase by 1.4°C compared to 1°C for mean daily winter maximums.

- By 2050, mean maximum spring temperatures are projected to increase by up to 2.4°C, compared to mean maximum winter temperatures increases of up to 1.9°C.

For example, in the Kangaroo Island NRM region, mean daily spring maximum temperatures are projected to increase by 1.7°C compared to 1.3°C for mean daily winter maximums. In the SA Arid Lands regions, mean daily spring maximum temperature is projected to increase by 2.4°C compared to 1.9°C for mean daily winter maximums.

#### Extreme heat and heatwaves

**Across all South Australian regions, the frequency of very hot days will continue to increase and heatwaves will get longer and hotter.**

- By 2030 the frequency of days per year above 35°C in most regional centres is projected to

increase by more than 30% from the baseline period of 1981 to 2010.

For example, in Mount Gambier, the number of days over 35°C is projected to increase to 9 days per year compared to an average of 6.5 days per year for the baseline period.

- By 2030 the frequency of days per year above 40°C is projected to increase by more than 50% from the baseline period of 1981 to 2010.

For example, in Whyalla, the number of days over 40°C is projected to increase to 10.4 days per year compared to an average of 6.7 days per year during the baseline period. In some regional centres, the frequency of days over 40°C is projected to double by 2030. In Burra, the number of days over 40°C is projected to increase to about 4 days per year compared to an average of 1.8 days per year during the baseline period.

In Adelaide, the number of days per year over 40°C is projected to increase from 2.4 days per year in the 1981 to 2010 baseline period to around 4.3 days per year.

- By 2050 the number of days per year above 35°C is projected to increase by more than 40%.

*For example, in Murray Bridge, the number of days over 35°C is projected to increase to over 32 days per year compared to an average of 21 days per year for the baseline period.*

- By 2050 the number of days per year over 40°C is projected to more than double.

For example, in Woomera, days over 40°C are projected to increase to an average of 31 days per year compared to 15 days per year for the baseline period. In Port Augusta, there will be 23 days per year over 40°C compared to 13 days for the baseline period. For Adelaide, it is projected that there will be more than 6 days per year compared to less than 3 days per year for the baseline period.

# CLIMATE EMERGENCY ACTION PLAN



## Frost

**Warming conditions will reduce the frequency of frost events after 2030. Locations where frost occurs only a few times a year under current conditions are projected to become nearly frost-free by 2030. Frost event frequencies are likely to remain comparable to current levels until then.**

Frost is the ice crystals or frozen dew drops on objects near the ground that occurs when the surface temperature falls below freezing point. Frost is most common when there is no cloud and little or no wind.

Despite continued warming, the number of frost days and length of the frost season increased in recent decades because of changing atmospheric conditions bringing more very cold air from further south, resulting in more frequent clear, dry nights. Research suggests that frost frequencies over the August to November period will remain comparable to current levels until the early 2030s<sup>15</sup>. After this point, it is forecast that frequency will decline.

For South Australia to adapt to climate change, sustainable water management measures must be incorporated into planning and infrastructure decisions, integrated water management will be imperative for diversifying water sources, reducing reliance on traditional sources of water and maximising water reuse. Council will be endeavouring to increase its stormwater capture and reuse capacity; increase its use of wastewater and introduce more water sensitive urban design to use rainfall where it falls. These actions are included in the Development and Water sections of the Environment Management Plan.

Some further climate change is inevitable regardless of how fast global greenhouse gas emissions are reduced. Therefore, we need to adapt to climate change as well as reduce emissions. Planning and adaptation to climate change is a relatively new concept. South

Australia has been the first State to legislate targets to reduce greenhouse gas emissions. In adapting to climate change there is a need to develop strategies to increase the understanding of risks, vulnerabilities and opportunities and to improve hazard management and minimise risk to Council.

South Australia is vulnerable to the impacts of climate change. However, there are economic opportunities from adapting to climate change such the cost savings in developing energy efficient products and the development of clean technology and low carbon products.



*Figure 8 Riverbank slumping on the River Murray caused by prolonged low river levels during the Millennium Drought*

Climate change is a critical issue for local government including the associated legal, social, insurance, economic and environmental risks. Local governments make decisions that not only impact present communities but future generations. The urgency of acting on climate change was highlighted in Council's Climate Adaptation Plan (2017-2021) followed by declaring a Climate Emergency in October 2019. This plan sets out Council's response to climate action focussing on being ready for climate change by preparing our communities for extremes in weather through resilience and adaptation. Council needs to actively assess and

<sup>15</sup> <http://climate.anu.edu.au/files/Steve-Crimp-Frost.pdf>

respond to the direct and indirect risks that climate change poses.

Council's Fire Prevention Officers work closely with delegates on the Murray Mallee Bushfire Management Committee from the CFS to develop the Murray Mallee Bushfire Management Plan for use by Council to manage local vegetation and support good planning<sup>16</sup>.

#### **Australia Key Points<sup>17</sup>**

- Australia's climate has warmed just over 1°C since 1910 leading to an increase in the frequency of extreme heat events.
- There has been a decline of around 11 per cent in April–October rainfall in the southeast of Australia since the late 1990s.
- Streamflow has decreased across southern Australia. Streamflow has increased in northern Australia where rainfall has increased.
- There has been a long-term increase in extreme fire weather, and the length of the fire season, across large parts of Australia.

Australia is a signatory to the Paris Agreement to keep any global temperature rise to below 2°C.

The Intergovernmental Panel on Climate Change (IPCC) released their most recent report in June 2019, making it clear that under current policies, temperatures are on track for between 3.3 and 3.9°C of warming. Anything above 2°C will result in catastrophic changes and impacts on human health and wellbeing, natural systems, ecological communities and on individual species. To avoid the worst impacts of climate change, we must collectively strive to limit temperatures to warming of below 2°C.

To achieve this, a science-derived emission reduction target needs to be set to demonstrate the scale and urgency of action needed by all levels of government to keep within its allocated carbon budget. This target aligns with the broader global emissions reduction needed to keep the temperature increase below 2°C. For industrialised countries such as Australia, this means approximately an 85% reduction in greenhouse gas (GHG) emissions by 2050, equating to a carbon budget of 10.1 gigatonnes CO<sub>2</sub>-e (carbon dioxide equivalent) for the 2013-2050 period.

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<sup>16</sup> [https://www.cfs.sa.gov.au/site/prepare\\_for\\_a\\_fire/bushfire\\_management\\_planning/bushfire\\_management\\_area\\_plans.jsp#Murray](https://www.cfs.sa.gov.au/site/prepare_for_a_fire/bushfire_management_planning/bushfire_management_area_plans.jsp#Murray)

<sup>17</sup> <http://www.bom.gov.au/state-of-the-climate/>



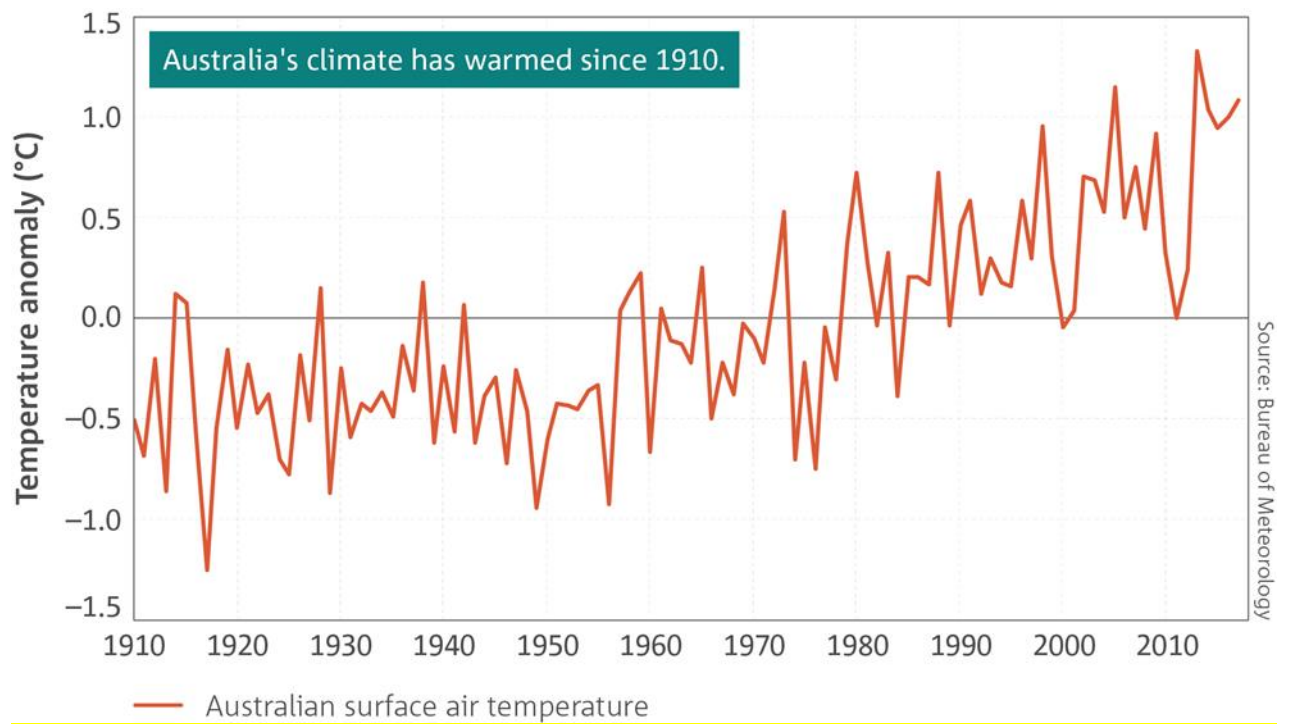


Figure 9 Australian temperature rise since 1910<sup>18</sup>

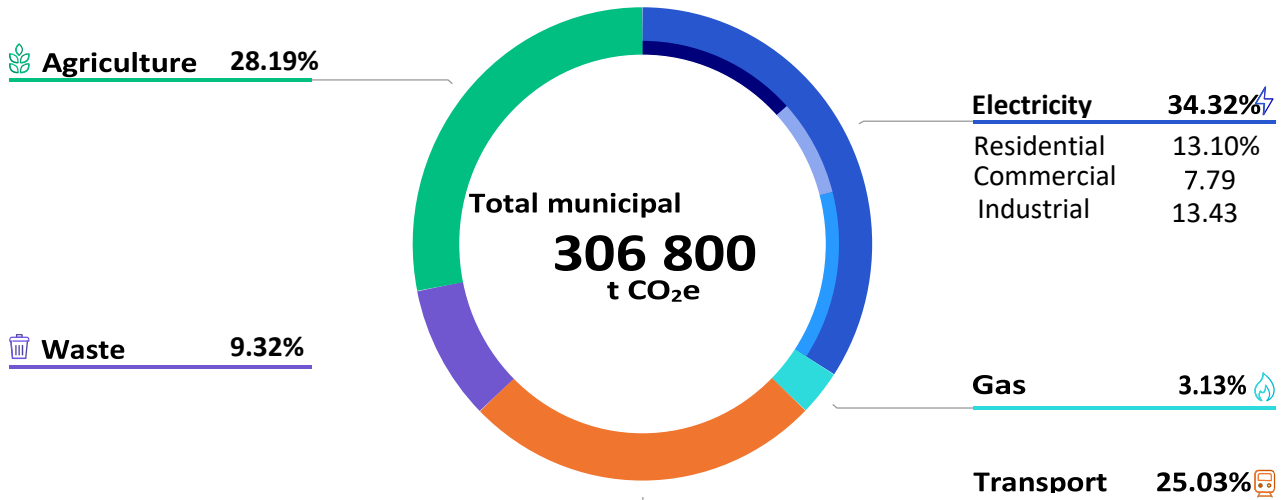


Figure 10 Solar panels on the Local Government Centre

<sup>18</sup> <http://www.bom.gov.au/state-of-the-climate/>

# EMISSIONS PRODUCTION

## Rural City of Murray Bridge 2017 municipal emissions snapshot<sup>19</sup>



Murray Bridge is a rural city that is small in area relative to the state average and has a moderate urban density. The major emissions source is electricity consumption, due to the community's scale of population and commercial activity. The second largest source of emissions is agriculture.

The carbon emissions for Murray Bridge have demonstrated a very large increase since 2005, mainly in the last few years.

Source	Sector	Emissions (t CO <sub>2</sub> e)
Electricity	Residential	40 200
	Commercial	23 900
	Industrial	41 200
Gas	Residential	4 300
	Commercial	1 800
	Industrial	3 500
Transport	On road	76 800
	Domestic air travel	0
Waste	Landfill	25 600
	Water	3 000
Agriculture		86 500
Land Use		-8 800

Land Use data is not used in the chart nor the displayed total municipal emissions.

[snapshotclimate.com.au](https://snapshotclimate.com.au)

Source: V7M • Last modified: 2020-07-13

Comparison report • Generated for Snapshot Administration



<sup>19</sup> <https://snapshotclimate.com.au/>

## About this report

### Sources of emissions

This report outlines the major sources of carbon emissions for the entire municipality. Due to the approximate nature of the profile, the emission values are represented as rounded numbers. This report includes the following sources:

- Stationary energy (grid supplied electricity/gas)
- Transport (on-road use and domestic passenger air travel)
- Waste (landfill and wastewater)
- Agriculture (enteric fermentation, manure management, and synthetic fertilizer use)
- Land Use Change (land clearance and reforestation)

It has been developed to be consistent with the Global Protocol of Carbon Emissions reporting (GPC Protocol), the main

international standard for cities and local government areas.

### Inclusions & Exclusions

The Snapshot provides you with a profile of your municipality's emissions for the inventory year (2017) and gives a breakdown of emissions by sector. The Snapshot of Rural City of Murray Bridge's greenhouse gas emissions profile is based on portioning state level data sets. Snapshot can be used alongside local data sets where more detail is needed.

Several minor emissions sources are included as part of a larger total or excluded. The full list of inclusions and exclusions can be found in the Methodology document.

### Understanding uncertainty

With any data, there is some level of uncertainty. This report will be more accurate for municipalities that are closer to the average across Australia.

## Council Infrastructure Emissions Production

In 2020, Council began extracting all greenhouse gas emission and energy use figures from power, gas, water and fuel used during the previous financial year. This is so Council knows its contribution to climate change and can set realistic targets and goals

to meet its obligations after declaring a Climate Emergency in October 2019.

The tables below provide the results of this work.

Energy Consumption Sources Year Ending 30-06-20	Greenhouse Gas Emissions Tonnes CO <sub>2</sub>	Energy consumed: Gigajoules (gas); Kilowatt hours (electricity); litres (fuel)
Gas (Pool Heating)	56.3	1,604 Gj
Grid Electricity (Library, Town Hall, Depot, LGC)	229.8	419,684.89 KwHr
Grid Electricity (All other sites)	354.66	627,278.40 KwHr
Public Lighting (street lighting)	383.19	826,554.33 KwHr
Council generated renewable energy ( <i>solar - LGC</i> )		27,110 KwHr
Diesel	598.45	226,683 l
ULP	44.71	18,630 l
<b>Total</b>	<b>1667.11 t CO<sub>2</sub>e</b>	

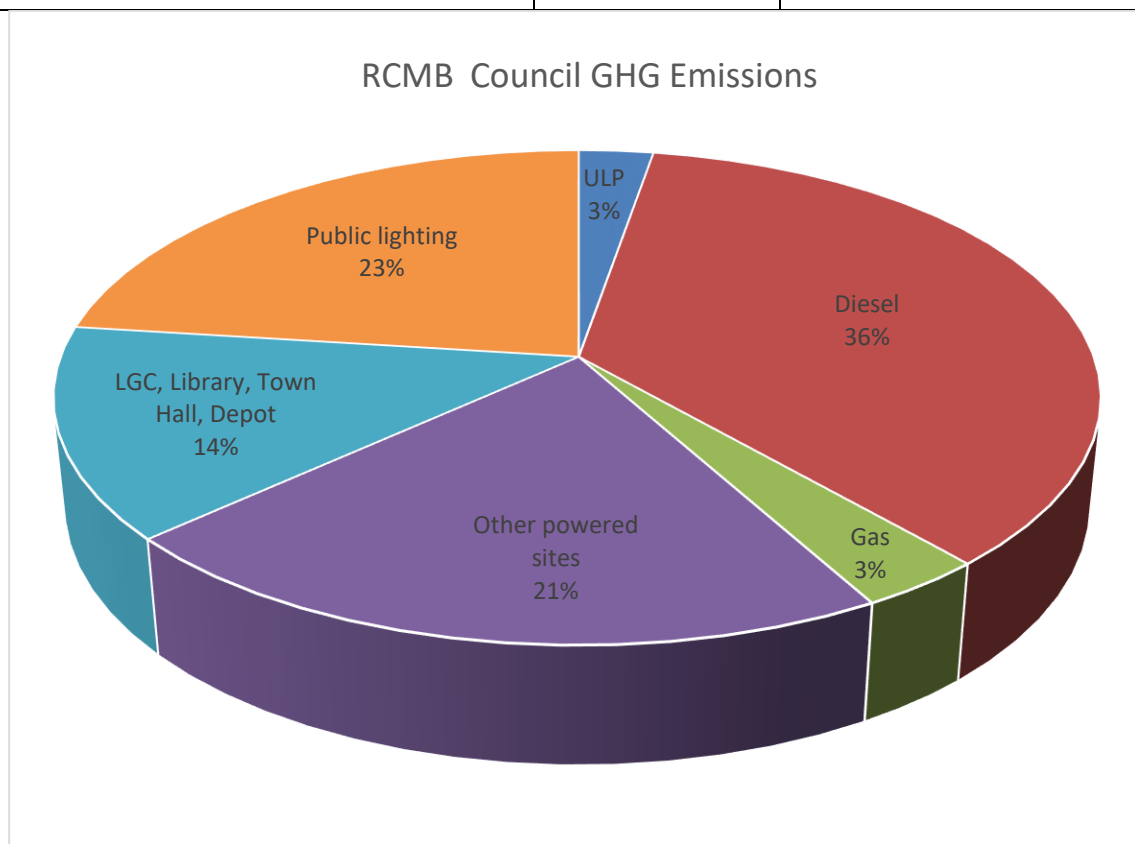


Figure 11 Council's Carbon Emissions 2019-20



**Table 1 RCMB Council GHG Emissions according to Scope**

<b>Greenhouse Gas Emissions</b>	
This section provides information about carbon emissions for Council purposes. Year Ending 30-06-20	
Reportable Council Carbon Emissions - <b>Scope 1</b> emissions come from usage of liquid fuels for stationary energy purposes, fuels for transport energy purposes, natural gas, refrigerant gas.	699 t CO <sub>2</sub> e
Reportable Council Carbon Emissions - <b>Scope 2</b> Consumption of purchased electricity from the South Australian Grid	968 t CO <sub>2</sub> e
Reportable Council Carbon Emissions - <b>Scope 3</b> emissions are indirect emissions that are a consequence of the activities of the organisations, but occur from sources not owned or controlled by the organisation. This includes business travel, waste generated, and paper.	Not available
<b>Emissions total</b>	<b>1,667 t CO<sub>2</sub>e</b>

# CLIMATE EMERGENCY ACTIONS

## Strategy E1: Reducing Greenhouse Gas Emissions (GHG)

Rationale: Council understands the importance of taking a leading local role in the challenge to reduce greenhouse gas emissions having declared a climate emergency in October 2019.

Starting in 2020, Council is calculating its GHG emissions and from this benchmark can set realistic and aspirational targets for various components of Council infrastructure. Council can measure any gains made in reducing its impact on climate change.

There are many opportunities to reduce emissions through simple changes to how we do things such as less printing, minimising colour printing, using hand dryers rather than paper towels and ceasing the use of disposable products. Larger scale initiatives such as LED street lighting can be pursued in addition to work with the private sector such as encouraging developers to be more climate aware by considering and implementing carbon credit offsets, green star buildings and incorporating climate change considerations in budgeting and planning.

The following actions set out Council's initiatives for the life of this place to achieve Strategy E1: Reducing Greenhouse Gas Emissions

Actions	Partners and key stakeholders	Measure	Time frame	Cost Range
<b>Council Infrastructure</b>				
<b>E1.1</b> Commence and progress the LED Street Lightning program. Expand LEDs to Council reserves, buildings and open space public lighting.	SA Power Network Developers	Number of LED street lighting within RCMB	2021-22	H
<b>E1.2</b> Pursue continued implementation of Digital Technology for Council meetings.		Continued use past Covid19. Increase in online viewership	2020	L
<b>E1.3</b> Utilise the power and lighting efficiency audit of Council assets for LGC, Lerwin and Depot to reduce the environmental impact of Council's equipment and buildings. Adapt the findings to other sites and apply to printers, computers and air conditioning.		Change lights as required. Reduced costs, paper use and general waste.	2021-24	M
<b>E1.4</b> Zero Emissions Transport. Council will investigate investing in electric fleet vehicles, trucks and mobile equipment, charged on renewable energy by 2024/25.	LGA Procurement	Council understands the feasibility of electric vehicles for use in its fleet	2021-25	H

Emission Calculations and Targets				
<b>E1.5</b> Conduct annual measuring and report on to Council on GHG emissions in compliance with the national mandatory reporting framework.	LGA.	Establish baseline data and monitor annually.	2020 baseline	L
<b>E1.6</b> Set an emissions reduction target using 2019-20 as a benchmark.	LGA	An emissions reduction target is set once the level of emissions is understood	2021	L
<b>E1.7</b> Ensure that consideration of Council's emissions reduction target is incorporated into the project management framework for Council infrastructure and retrofit projects.	Council Asset and Infrastructure Program	Consideration is given in project planning to Emissions Reduction Target and offset measures	2021	M
Management and Administration				
<b>E1.8</b> Develop guidelines to incorporate green infrastructure into council projects/buildings.	Development Assessment	Guidelines developed and implemented	2022	M
<b>E1.9</b> Investigate and consider switching to a 100% renewable energy contract to significantly reduce Council's overall emissions	Power supplier	Purchase of renewable energy	2021-26	H
<b>E1.10</b> Work with the LGA and other Councils to investigate opportunities for local governments to generate carbon credits on council land, via carbon sequestration, in a way that also delivers local biodiversity, recreation and/or amenity benefits.	LGA, Contractor	Offset scheme commenced, if available	2021-24	L
<b>E1.11</b> Work with LGA and other Councils to develop tools for translating the management of climate change impacts into Council's long term financial and asset management plans. Include managing for Climate Change into Council long term financial and asset management (consider risks for risk register)	LGA, Finance Group, Resilient Hills & Coast Councils Group		2022-23	L

## Strategy E2: Alternative Power Options

Rationale: Currently, Council generates power from its solar panels atop the Local Government Centre roof. An opportunity exists to do similar to the Depot roof which would potentially generate sufficient power for all Depot functions and with battery storage expand to power electric vehicles directly, taking Council a long way to becoming carbon neutral.

Actions	Partners and key stakeholders	Measure	Timeframe	Cost Range
<b>Alternative Power Options</b>				
<b>E2.1</b> Investigate solar panels on Council buildings to enhance renewable energy usage.	RCMB staff and supplier	Solar panel installation is undertaken on one additional Council building following assessment of feasibility	2021-22	L
<b>E2.2</b> Support home solar installation through available State and Federal Government grants	Energy.gov.au		ongoing	L
<b>E2.3</b> Advocate for State and Federal Governments to provide financial incentives and support for the uptake of renewable energy at the household and community level	LGA, SAROC	Grants are available and used locally	Ongoing	L



## Strategy E3: Capacity and Knowledge

Rationale: Council has a key role in enhancing community capacity and knowledge for the benefit of the whole community. The more capacity and knowledge, the better the opportunities for sound decision making and progress.

Acknowledging and preparing for the challenges associated with climate change is prudent and wise and prepares Council for further challenges created as they arise. Including climate change in planning and policy, confirms Council's commitment to tackling climate change on a local level.

Actions	Partners and key stakeholders	Measure	Time frame	Cost Range
<b>Community Support</b>				
<b>E3.1</b> Provide information to the community regarding mitigation measures and adaptation to climate change (simplify the 'climate change' message).  Raise awareness of climate change and the future impact to Council and the community.  Encourage transport options through the implementation of Council's Walking and Cycling Masterplan and Council's Footpath Construction Program	Murraylands and Riverland Landscape Board <sup>2021</sup> , State Government  Open Space, SA Health  Community groups	Note uptake through Facebook Successful implementation of the Strategy. Budgeted funds for the Footpath Construction Program are expended each financial year. Risks identified and adaptation strategies developed.	ongoing	L
<b>Climate Risk</b>				
<b>E3.2</b> Include climate change in the Environment Risk Register.	RCMB Planners and General staff	Included	2020	L
<b>E3.3</b> Undertake whole of organisation, climate risk assessment that enables the identification of priority risks across all functions within Council.	Contractor	Establish baseline data and monitor annually.	2022-23	M

<sup>20</sup> <https://www.naturalresources.sa.gov.au/samurraydarlingbasin/projects/all-projects-map/adapting-to-climate-change>

<sup>21</sup> [https://www.naturalresources.sa.gov.au/files/sharedassets/sa\\_murray-darling\\_basin/projects/building-resilience-to-a-changing-climate-plan.pdf](https://www.naturalresources.sa.gov.au/files/sharedassets/sa_murray-darling_basin/projects/building-resilience-to-a-changing-climate-plan.pdf)

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Acknowledging and preparing for the challenges associated with climate change is prudent and wise and prepares Council for further challenges created as they arise. Including climate change in planning and policy, confirms Council's commitment to tackling climate change on a local level.

Actions	Partners and key stakeholders	Measure	Time frame	Cost Range
<b>E3.4</b> Develop a climate change policy to ensure Council's method for adapting to climate change is consistent.	Staff	Staff have understanding and knowledge	2021	L
<b>E3.5</b> Investigate creating an Integrated Carbon Management Plan to manage all use and creation of power. This would consider power generation (through solar etc) and use to calculate Council's overall GHG emissions balance.	LGA	Plan completed	2021-22	L
<b>Financial impacts</b>				
<b>E3.6</b> Establish a template to evaluate project whole-of life-costs including climate risks and responses.	Finance and project managers	Part of business as normal	2021	L
<b>E3.7</b> Incorporate climate change considerations in all Council functions including the planning and assessment process and asset management plans.	DPTI	Climate Change considerations incorporated into Council Plans and documents.	Ongoing	L
<b>E3.8</b> Incorporate sustainability/environment key performance indicators into work plans and Council processes as business as usual.	Staff	Climate Change is part of all planning and processes	2021	L
<b>E3.9</b> Council to consider the creation of a climate change action fund with a yearly budget allocation to fund further climate change mitigation measures.		Fund is established	2021-22	M

## Strategy E4: Cooling the Council area

Rational: In declaring a Climate Emergency, Council is making a commitment to undertaking actions to mitigate and reverse the effects of climate change, predominantly the increase in the Earth's global temperature. The focus of local Government will remain on setting the policy environment to adapt to climate change while not negatively impacting economic growth, and reducing power and energy use to reduce carbon emissions. Council and the can make a significant impact in mitigating climate change. This includes planting more trees, creating shade and reducing the heat island effect from large, bare and reflective surfaces. At the same time, more plant biodiversity will improve our environment and make Murray Bridge and its communities more liveable.

Actions	Partners and key stakeholders	Measure	Time frame	Cost range
<b>Cooling the Council</b>				
<b>E4.1</b> Conduct urban and canopy heat mapping, complete tree coverage review, set targets for trees and cover to demonstrate heat difference between treed and non-treed landscapes.	Contractor	Mapping completed and targets set	2021-22	M
<b>E4.2</b> RCMB aim to increase tree cover and shade to improve liveability.		Achieve 20% increase in tree cover based on tree canopy study.	Ongoing until 20% coverage achieved	M
<b>E4.3</b> Where possible, trees are incorporated into new and reconstructed footpaths at regular intervals, to provide for an enhanced tree canopy.	Footpath Strategy	New footpaths are planted as recommended	2020	M
<b>E4.4</b> Where existing artificial turf is disturbed through verge works it should be replaced with lawn, trees or garden beds to enhance the visual amenity and biodiversity of the area.	Footpath Strategy		Ongoing	L
<b>E4.5</b> Incorporate indigenous plant species in landscapes where suited to improve biodiversity and create habitat corridors.	Link to Biodiversity Strategy B5.1	Indigenous plant species used in 20% of open space planting projects by 2024	Ongoing	M
<b>E4.6</b> Finalise and implement a street and public reserve tree planting program to promote township amenity.		Town hotspots are measurably cooled. 2-3 locations per year	2022-23	M
<b>E4.7</b> Aim for a temperature reduction over the life of the plan.		Measurable temperature decreases at an annual survey	Ongoing	H

# ABBREVIATIONS

AECRs	Aquatic ecosystem condition reports
AHRWMA	Adelaide Hills Region Waste Management Authority
CFS	Country Fire Service
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DEW	Department of Environment and Water
DPTI	Department of Planning, Transport and Infrastructure
EPA	Environment Protection Authority
GAROC	Greater Adelaide Region Organisation of Councils
GHG	Greenhouse Gas
LAP	Local Action Planning Group
LED	Light Emitting Diodes
LGA	Local Government Association
LGC	Local Government Centre
MDA	Murray Darling Association
MDBA	Murray Darling Basin Authority
NAC	Ngarrindjeri Aboriginal Corporation
NGO	Non-Government Organisation
NRM	Natural Resource Management
NVC	Native Vegetation Council
PDI	Planning Development and Infrastructure (PDI) Act
RCMB	Rural City of Murray Bridge
SAPN	South Australian Power Networks
SAROC	South Australian Regional Organisation of Councils
WSUD	Water Sensitive Urban Design



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