

# Green

WARRNAMBOOL

Warrnambool will be the most environmentally sustainable regional city in Australia







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Warrnambool

Green Warrnambool reflects our community aspirations as set out in the Warrnambool 2040 Community Plan. It is a roadmap for creating our environmentally sustainable and resilient future.

Green Warrnambool and Warrnambool 2040 take strategic steps to address specific issues confronting the municipality. These issues include the health of our waterways and our coast; land, air and water pollution; biodiversity and conserving our natural environment.

Global issues such as climate change, population growth and consumption patterns will affect us, however as a creative and resilient regional city we will provide local responses that are tailored and unique.

Reducing energy and water consumption, reducing and recycling waste and making more ethical and sustainable purchases will improve our local environment and play

a role in the global move towards becoming a more sustainable planet. As a leading regional city we will tackle these issues head on.

We will take a responsible, long term view to limit the effects of climate change. We will be creative in finding new ways to prevent irreversible damage to the ecosystems and resources that sustain and nourish our lives. We will reduce our energy needs and switch to renewable energy.

Because we believe in inter and intra-generational equity we will be responsible and efficient with resources. We will not leave future generations to bear alone the cost of unsustainable development, polluted environments and a changing climate.



We acknowledge that our targets are ambitious and to meet them requires a cultural shift in how we live our lives and develop our city. It will take significant commitment and investment across all sectors. It will require innovative solutions including some for which we may be early adopters.

We understand that sustainability is about doing more with less. It is also about having a better understanding of environmental systems and recognising that our environment, economy and community are intertwined. Environmental sustainability is also about having a better understanding of the environmental systems that support what we do, and the need to take a broader view to recognise that our daily activities can simultaneously affect our economy, environment and community.

We understand that we live in a closed system. When we throw something away, we understand that there is, in fact, no 'away'. When we over-consume - water for example - in the end there will be none left for future generations. When we push other species to extinction, they are gone forever. We understand that we are stewards not only of the environment today but of the environment we bequeath to the future.

Green Warrnambool takes stock of where we are now in regards to environmental sustainability. It acknowledges that in order to achieve significant change we must first assess our current position. To do this we will conduct audits and collect data about how we are performing so we can measure our progress from now to 2040.

This strategy identifies actions that Council will do and actions that the community can do. 'The community' is defined as any person or organisation that lives, works or operates in the Warrnambool municipality, including Council itself. Warrnambool City Council is just one of the players that influence environmental sustainability in our City and across the south west region. In order to achieve the goals and actions set out in this strategy, a collaborative effort between Council, a range of agencies, business and the community is needed.

By working together we will achieve the vision of this strategy and the vision of the Council Plan, making Warrnambool the most sustainable regional city in Australia.

Through the Warrnambool 2040 Plan process an overarching Vision and six goals were developed for environmental sustainability. They are:

# VISION:

Warrnambool will be the most environmentally sustainable regional city in Australia.



# Goals:

The six goals and associated actions developed through the Green Warrnambool Plan process are further described and outlined in this Report.



ZERO WARRNAMBOOL



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ZERO

# WARRNAMBOOL

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As a leading regional city we demonstrate innovative, smart solutions to achieve zero net emissions for a renewable future.

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Using contemporary ideas and technologies, we will be innovative and bold, working collaboratively on smart solutions. We will build our city and its transport systems for a sustainable future. We will have zero net greenhouse gas emissions and our energy needs will be met from renewable sources.





# What this looks like:

Zero Net Emissions	Green Futures: Renewable Energy	An Energised Community	Walking the Talk
<p>Warrnambool will have zero net greenhouse gas emissions.</p>	<p>Warrnambool will source all of its energy from renewable resources.</p>	<p>Our residents have the knowledge and desire to live carbon neutral lives.</p>	<p>Warrnambool is an active and sustainable transport leader in regional Australia.</p> <p>Warrnambool facilitates sustainable travel and transportation through infrastructure and education.</p>

## Overview:

**Warrnambool will be a city that applies technology and innovation to ensure a cleaner and more sustainable future by demanding innovation in the energy sector and the switch from fossil fuels to affordable, accessible, reliable and sustainable energy resources.**

Council is on track to meet its current emissions target of a 30% reduction by 2020. This has been achieved through various programs such as the Smart Building program and the Great South Coast Street Smart Lighting Project. Our new target of zero net emissions for the City by 2040 is ambitious. It will require substantial structural, economic and policy change to drive an increase in energy efficiency, decrease in use of carbon intensive fuel sources and finally offsetting any remaining emissions. Warrnambool will be nationally recognised as a leader in sustainable industry.

We will be at the forefront of investment in smart infrastructure. Solutions including micro-grids, renewable energy integration, battery energy storage systems, electric vehicles and intelligent control all provide a pathway for Warrnambool's future as a sustainable city. We will lead our community in deploying economically and environmentally sustainable technologies and techniques for reducing energy consumption and generating energy more sustainably.

Warrnambool's largest energy users will be asked to commit to working collaboratively towards Warrnambool

Net Zero 2040. We will support local renewable energy businesses to diversify our economy and secure clean energy supplies to industry. As a City we will develop Virtual Net Metering capabilities to aggregate the City's solar capacity and offset energy usage across key assets (towards 100% renewables).

Community energy projects will play a critical role in driving change at the grassroots level. The community will be engaged and supported to come together to act on climate change. There are significant opportunities for community energy and Council will support the community and give the tools to develop neighbourhood level energy systems.

Transport produces considerable emissions and these will reduce over time by increased use of walk and bicycle paths, uptake of electric vehicles and other new technologies. Our urban areas will be compact, creating a '20 minute city' where residents can walk, cycle or take public transport to all major services in twenty minutes or less. This will ensure our transport systems are efficient and have a reduced environmental footprint.









# ZERO WARRNAMBOOL

2040 Goal	2026 Interim Goal	Council Action Immediate	Community Action Immediate
<p>The City of Warrnambool will have Zero net greenhouse gas emissions.</p>	<p>Warrnambool City Council will have zero net greenhouse gas emissions.</p> <p>Warrnambool will reduce its citywide emissions by 20%</p> <p>Warrnambool will pave the way for a Zero Net Carbon Housing Development</p>	<p>Develop the Warrnambool Zero 2040 Plan outlining costed targets and transition pathways.</p> <p>Green Futures –Program implementation: Support for households and businesses to facilitate improved energy efficiency, use of renewable energy and reduce costs.</p> <p>Investigate opportunities for loan finance to accelerate uptake of solar PV, battery storage and Electric Vehicles.</p>	<p>Support development of the Warrnambool Zero 2040 Plan</p> <p>Implement behaviour change programs.</p> <p>Design and install technologies and systems to reduce energy use and demand.</p>
<p>Warrnambool’s energy is sourced from renewables.</p> <p>Homes and businesses use renewable energy for their energy needs.</p>	<p>Council will source 40% of its energy usage from renewable resources.</p> <p>Warrnambool will source 20% of its citywide energy from renewable resources. Warrnambool have at least 1 micro-grid set up and operating.</p> <p>Pilot a Neighbourhood Energy Project.</p>	<p>Develop Warrnambool Renewable Futures Project with key industry partners to investigate large scale renewable energy investment opportunities.</p>	<p>Industry to drive renewable investment.</p> <p>Continue to invest in and install domestic and commercial renewable energy systems.</p>
<p>100% of homes and businesses use renewable energy for their energy needs.</p> <p>Residents are actively engaged in reducing their carbon footprints.</p>	<p>25% of residential properties will have solar PV systems.</p> <p>Community Energy Program implemented.</p>	<p>Develop the Warrnambool Zero 2040 Plan</p> <p>Implement the Green Futures Business and Community Program including solar bulk buys, rebates, Energy Upgrade Finance options and other efficiency projects.</p> <p>Support community energy projects</p>	<p>Assist WCC develop the Warrnambool Zero 2040 Plan</p> <p>Continue installing domestic and commercial renewable energy systems.</p>
<p>Warrnambool community’s main forms of transport are to walk, cycle or use solar powered vehicles.</p> <p>Warrnambool has low emission public transport options.</p> <p>Council fleet is 100% fuelled by renewables</p> <p>Community vehicular transport is approaching 100% fuelled by renewables</p>	<p>Principle Pedestrian Network (PPN) and Principle Bicycle Network (PBN) finalised and top 3 networks are complete.</p> <p>Council pool cars and commuter use fleet consists of 20% low emission vehicles.</p> <p>City has smart infrastructure with EV charging stations.</p> <p>Electric vehicle charge points are available around the city to recharge electric cars and other e-vehicles, all powered by a smart grid.</p>	<p>Finalise the Principle Pedestrian Network (PPN) to prioritise capital works expenditure on pedestrian/walking projects</p> <p>Develop Warrnambool’s Principle Bicycle network (PBN) which identifies strategic cycling corridors.</p> <p>Develop an Electric Vehicle Infrastructure Strategy to support community Electric Vehicle uptake.</p>	<p>Support low emission transport options.</p> <p>Develop and support behaviour change programs to encourage and educate about sustainable transport</p> <p>Where possible make a modal shift to walking or cycling as transport.</p>





# ADAPTABLE WARRNAMBOOL

We will adapt to the impacts of climate change

Working together, we will be prepared, adept and resilient in the face of climate change challenges. Our institutions, agencies, universities, industries, businesses and community leaders will partner to develop the world's best responses. Our infrastructure and open space will be designed effectively and our community will have the knowledge to decrease climate change impacts.



# What this looks like:

## Building for The Future

Environmentally Sustainable Design principles underlay all infrastructure developments and upgrades in Warrnambool.

Our infrastructure and open spaces mitigate the impacts of a warmer climate, decreased rainfall and increased severe weather events particularly in high risk areas such as on our coast and waterways.

## A Climate Capable City

Our community understands and successfully responds to the challenges that a changing climate brings.

## Overview:

**Climate Change is the most pressing economic and environmental issue of our time. Council acknowledges the need to tackle the root causes of climate change. Council's Climate Change Action Plan outlines how we will achieve our target of reducing Council's emissions by 30 per cent by the year 2020 and we now need to look beyond this for future emissions reductions.**

We face four key climate change risks:

- less rainfall and more chance of drought
- extreme heatwaves and bushfires
- more intense rainfall and wind storms
- sea level rise; inundation and erosion.

Our Climate Change Action Plan assesses and explores the impact on our City's systems, including:

- water supply
- transport
- communications
- energy services
- emergency services; and the
- built environment.

Heatwaves and very hot days are known to have serious impacts on human and animal health, the performance of infrastructure and the delivery of essential services. Very hot days and heatwaves place stress on the provision of essential services such as electricity, roads, train tracks and overhead powerlines. Increased use of air-conditioners pushes up demand for power during heatwaves and can potentially outstrip supply leading to power blackouts.

This risk has significant implications during a heatwave, particularly for those managing their heat stress with air-conditioning. Council will minimise the urban heat island effect by incorporating smart features in the design of buildings, streetscapes and open spaces.

The increasing frequency of drought and reduced rainfall poses challenges to Warrnambool's water supply, as well

as the health of parks, trees and green spaces throughout the city. There is an existing flood risk to low lying precincts near the Merri River and Russells Creek, when high tides coincide with extreme rainfall events. We will consider climate change impacts, such as sea level rise, inundation and erosion, storm frequency and peak stormwater flows, on open space, infrastructure and services and adapt these over time, usually during design or service reviews.

The Warrnambool community will be climate ready and informed of the likely effects climate change will have on property, lifestyle and general circumstances. This will enable effective management of the risks to Council-owned assets as well and equip the community with the tools to manage their own.

Energy efficient buildings will play an important role in reducing emissions and ensuring that our homes and buildings can withstand changing climate conditions. Warrnambool's new developments and upgrades will align with Environmentally Sustainable Design (ESD) principles that include energy efficiency. Sustainable design assists with protecting our environment, secures today's living standards, helps future-proof communities against rising energy, water and waste disposal costs and reduces the impact of climate change.

The Council cannot fulfil this vision alone. We need the commitment and involvement of residents, including community groups, schools, businesses and government agencies to achieve these goals.









# ADAPTABLE WARRNAMBOOL

2040 Goal	2026 Interim Goal	Council Action Immediate	Community Action Immediate
<p>ESD principles used for all new developments and upgrades.</p> <p>All new infrastructure is designed for the changed and changing climate.</p> <p>New Council buildings have greater than a 5 Greenstar rating.</p> <p>Zero Carbon Neighbourhood</p>	<p>Sustainable Building Design Policy and Guide developed and in use.</p> <p>All new development, renewal and upgrade works to consider the IDM Sustainable Infrastructure Guidelines (or its successor documents).</p> <p>Council will have 1 x 5 Star Green Rated building.</p> <p>All Council buildings constructed from 2026 onward will operate as zero net emission buildings.</p> <p>Precinct Structure Plan complete for a Zero Carbon Neighbourhood.</p>	<p>Commence development of a leading practice Sustainable Building Design Policy and Guide incorporating the IDM Sustainable Infrastructure Guidelines where applicable.</p> <p>Review and update Climate Change Action Plan</p> <p>Council's Climate Action Plan to include Infrastructure and Open Space Climate Change Response Guidelines.</p> <p>Warrnambool will pave the way for a Zero Carbon Housing Development</p>	<p>Assist in the development of local case studies to support improved awareness of practical implementation of ESD in the built environment</p> <p>Support local energy and water efficiency retrofits of existing buildings.</p> <p>Invest in and support the development of zero emission construction opportunities.</p>
<p>High level of community awareness about how to avoid and decrease the personal impacts of severe weather events and a changed climate.</p> <p>Coastal Risks are embedded into the planning scheme.</p> <p>There are several 'Climate Resilient' playgrounds in Warrnambool</p>	<p>A Climate Capable City information program has been rolled out to support residents and business to successfully respond to a changed and changing climate.</p> <p>Local Coastal Hazard Assessment has been completed for Warrnambool's coastline.</p> <p>There is at least one 'Climate Resilient' playground in Warrnambool.</p>	<p>Climate Capable City Vulnerability mapped.</p> <p>Support State Government in Local Coastal Hazard Assessment program.</p> <p>Support the construction and development of Zero Net Carbon Neighbourhoods.</p>	<p>Assist in the support and development of zero emission construction opportunities.</p> <p>Invest in Zero Net Carbon Homes.</p>





# WISE

# WARRNAMBOOL

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We are a wise city that wastes not

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Warrnambool citizens will be environmentally informed, ethically motivated consumers of goods and services. We will have zero recoverable waste being sent to landfill by conserving, avoiding, reducing, recycling and reusing resources at every opportunity. We will significantly reduced land, water and air pollution, including littering and we will no longer be a source of plastics entering the marine environment.





# What this looks like:

## Zero Waste Warrnambool

Avoiding waste generation is a priority however sending residential, commercial and industrial waste to landfill is the last option after re-using, repairing, repurposing and recycling.

## The Pollution Solution

Warrnambool's Land, Wastewater, Waterways and Air will be litter and pollution-free.

## Warrnambool v Plastic

Warrnambool will support the phase out of single use plastics.

## Close the Loop

Warrnambool City Council and the Community will work together to foster lasting behaviour change and community ownership to develop local models for engagement and partnerships can enable communities to create value from local waste streams.

## Overview:

**We have become a consume and dispose society. We have historically relied on landfill for getting rid of a lot of our waste but there is a limit to the amount of landfill space we have across the region. We need to think about waste differently. Our waste contains valuable, recoverable and recyclable materials that are a potential resource. Recovery, reuse and recycling can provide long-term benefits. A zero waste future is not only possible; it is a critical part of solving today's climate crisis and addressing other environmental challenges.**

The concept of zero waste to landfill challenges the assumption that resources are unrecoverable from waste and that effective resource recovery is more costly than landfill disposal. It brings the focus up the waste hierarchy from landfill disposal to recovery, reuse and avoidance, and encourages a society that ultimately exists within resource constraints. There is great potential for improved diversion rates, where residents are recycling more material such as Food Organics - Garden Organics (FOGO) which currently goes to landfill. Smart technology for waste and resource collection and processing could revolutionise waste minimisation and recycling and Warrnambool can be a leader in this field.

In the decade to 2016 the city's population grew by an estimated 3,300 people. Encouragingly, the annual amount of waste generated through kerbside collection has not increased significantly in this period. The city's population, currently 34,000, is predicted to approach 50,000 by 2035 and with population growth of that magnitude will come greater waste volumes. Warrnambool's Resource Recovery, Waste Minimisation and Management Strategy 2017-2021 outlines how the city will tackle waste avoidance, recovery, reuse and recycling.

There is still much to be done to achieve our goal of zero recoverable waste to landfill. Smart technology for waste and resource collection and processing could revolutionise waste minimisation and recycling in Warrnambool. Waste management and resource recovery activities are being impacted by technological advances which are providing greater efficiencies and will ultimately change many current practices. Warrnambool will show leadership in resource recovery and renewable energy with investigation into the viability and sustainability of waste to energy technology

that may bring economic development and environmental management opportunities to the City.

Litter has been identified as a major environmental concern for our community. Every piece of plastic that has ever been made is still in existence and this makes plastic pollution a serious issue. It has become clear that plastic litter including plastic bags and other single-use plastics have had a major impact on our environment and amenity. A recent marine pollution event of plastic nurdles (small beads used in the manufacture of plastic goods) highlighted the need for action on plastic pollution and litter in our City. Community reaction to this event demonstrated that environmental damage like this is unacceptable.

Our consumerist culture is unsustainable if it continues to be based on environmentally damaging processes and depleting resources. We will make better, more informed choices that have less or zero environmental impact. We will encourage and support product stewardship and closed waste loop models. Product stewardship accepts responsibility at the point of manufacture for a product's end of life and distributes any costs associated with this through the supply chain and to the consumer. Closed waste loop models recognise that all waste is a resource that can be reused, recycled or repaired and this is recognised at the point of raw material selection and manufacture through to end of product life.

We will become a waste-aware City, acknowledging that those involved in producing, selling, using and disposing of products have a shared responsibility. Together, we will ensure that products and materials are managed in a way that reduces their impact, throughout their lifecycle, on the environment and on human health and safety.









# WISE WARRNAMBOOL

2040 Goal	2026 Interim Goal	Council Action Immediate	Community Action Immediate
<p>Zero recoverable waste to landfill.</p>	<p>Reduce resource consumption from 8.2 kg to 3 kg per person by 2038 (based on 2015 levels).</p> <p>Increase diversion from landfill to 80%</p>	<p>Introduce a FOGO collection in new kerbside collection contract.</p> <p>Investigate and invest in local and onshore stable recycling markets.</p> <p>Investigate the feasibility and sustainability of waste to energy models.</p> <p>Investigate automated and centralised resource collection systems to integrate across the City where feasible.</p>	<p>Commercial and industrial waste producers can seek opportunities to use waste as a resource and reduce waste generation</p> <p>Large waste producers in the municipality improve waste recovery and reduce net waste production</p> <p>Increase home recycling and diversion of organic waste.</p> <p>Support the Unpackaged Food Cooperative</p> <p>Buy products with less packaging to influence suppliers.</p>
<p>No littering</p> <p>No air pollution by EPA standards</p> <p>No wastewater or waterway pollution</p>	<p>The Warrnambool Pollution Solution Plan and information program has been rolled out.</p> <p>Reduce the volume of litter by 40%</p> <p>80% of drainage outfalls to be fitted with best practice, effective litter treatments.</p>	<p>Development of the Warrnambool Pollution Solution Plan and information program.</p>	<p>Assist WCC scope Warrnambool Pollution Solution Plan and information program</p> <p>Support Clean up Australia Day and Detox your Home events.</p>
<p>There are no single use, unrecyclable plastic items used in Warrnambool.</p>	<p>Single use plastic bags phased out</p> <p>Events in the city are plastic free.</p> <p>40% Reduction in plastic waste on our beaches.</p>	<p>Warrnambool v Plastic Policy including Plastic Bag Free Policy and Single-Use Item Reduction Strategy</p> <p>Support the Plastic Free Alliance and Support Boomerang Bag project</p> <p>Advocate for container deposit legislation and product stewardship</p> <p>Advocate for Switch the Stix program in Australia</p>	<p>Plastic Free Alliance and the Good Will Nurdle Hunting campaigns continue to advocate for behaviour change and community action.</p>
<p>Warrnambool has developed a framework for a closed loop economy.</p>	<p>Community and business Zero Waste campaign is developed and implemented.</p> <p>Business models are developed for local businesses to utilise circular economy framework.</p>	<p>Support community take up of responsible packaging products.</p> <p>Support local incentives are established which promote circular economy behaviour and the elimination of waste.</p>	<p>Buy local products with less packaging to influence suppliers.</p> <p>Conserve, Avoid, Reduce, Re-use, recycle</p> <p>Advocate for closed loop local economy</p>





# NATURALLY WARRNAMBOOL

We enjoy, love, respect and care for the natural environment

Warrnambool will restore, maintain and enhance its natural environment, drawing on the best scientific and Traditional Owner knowledge. We will build our knowledge, skills and involvement in protecting biodiversity, waterways and the coast for the benefit of current and future generations of people, flora and fauna. We will reduce the impacts of pest plants and animals and offer protection from damaging land uses and practices.





# What this looks like:

## Naturally Resilient

Warrnambool's ecosystems will be strong, diverse and protected. Warrnambool's coastline remains undeveloped and its environmental values protected. Warrnambool's rivers, tributaries and estuaries will be healthy and thriving natural ecosystems. Management of Warrnambool's landscape, flora and fauna will adapt to a changing climate. Strategic and coordinated approach to pest plant and animal control

## Naturally Warrnambool

Warrnambool's community will have the knowledge, skills and commitment to be active stewards of the natural environment

## Naturally Connected

A network of vegetation links for greening and biodiversity connection.

## Culturally Connected

Warrnambool's cultural landscape is protected and provides connection to country through shared land management

## Overview

### Warrnambool is located in a significant cultural landscape and surrounded by waterways, wetlands, coastal areas and native grassland reserves.

Dunes along Lady Bay have been revegetated over recent decades by willing volunteers and this effort has resulted in increased numbers of native animals, including wallabies, echidnas and a range of birds that now inhabit this area. Thunder Point Coastal Reserve contains Middle Island and the internationally famous project protecting its Little Penguins. The coast contains numerous Indigenous cultural heritage sites, including Moyjil - Point Ritchie which has national significance. Threatened Hooded Plovers and other beach-nesting birds nest on Levy's and Logan's beaches. These areas are fragile and threatened by damaging practices such as illegal motorbike riding and 4-wheel driving.

The banks of the Merri River and its tributaries, and to a lesser extent, the Hopkins River have been a focus for revegetation activities in recent years. Both rivers are in poor health from post-colonisation land clearing, de-snagging, species decline, bank erosion and agricultural, industrial and storm water run off. However, there is now a concerted effort from community and agencies to turn this around. Lake Pertobe and the Merri Wetlands are significant habitats, particularly for birds, including the threatened Orange Bellied Parrot.

Many vegetation communities are under pressure from urban development, agriculture and climate change.

Tozer and Maam Reserves contain remnant grassland plants that are now largely extinct in the municipality.

Natural environment groups such as the Warrnambool Coastcare Landcare Network, Making A Difference for the Merri, Warrnambool Australian Plants Society & Warrnambool Field Naturalists support the community interest, learning and connection to the natural environment.

In coming years we will protect our coast's environmental values and ensure it remains undeveloped. We will increase the number of indigenous plant and animal species in the municipality and ensure that none become extinct. This will include creating an urban forest and vegetation corridors that support indigenous fauna and help nature adapt to climate change. Our rivers, creeks and estuaries will be healthy, thriving, natural ecosystems. Pest plants and animals will be controlled. Our residents will be active stewards of the natural environment, increasing their knowledge and participation in environmental activities and providing individual and social health benefits. By working with and learning from Traditional Owners we will gain a deeper understanding of Warrnambool's long cultural history and its strong connection to country.









# NATURALLY WARRNAMBOOL

2040 Goal	2026 Interim Goal	Council Action Immediate	Community Action Immediate
<p>Over 330,000 plants planted and maintained</p> <p>90% of Warrnambool's biodiversity corridors planted</p> <p>Increased flora &amp; fauna biodiversity</p> <p>No new pest or weed species established.</p> <p>No further extinctions of indigenous flora or fauna species</p> <p>Ensure protection and maintenance of existing established vegetation.</p>	<p>The Warrnambool Biodiversity Plan has been prepared and implementation commenced</p> <p>120,000 plants planted and maintained.</p> <p>30% of Warrnambool's biodiversity corridors commenced</p> <p>5 key sites of biodiversity are identified for long term monitoring.</p> <p>Warrnambool's biodiversity values and natural environment is embedded within and protected by the Planning Scheme and Local Policy</p> <p>Strategic and coordinated approach to pest plant and animal control within the municipality. No new weed or pest animal species introduced</p>	<p>Develop Warrnambool's Biodiversity Plan including the collation of baseline data, establish monitoring programs and management plans for key sites of biodiversity.</p> <p>Development of educational tools to support community awareness and knowledge of Warrnambool's environment, biodiversity and native species.</p> <p>Develop Pest Plant &amp; Animal Management Framework.</p> <p>Undertake pest plant and animal eradication programs.</p> <p>Ensure protection and maintenance of existing established vegetation.</p>	<p>Collaborate and assist collecting data and participation in monitoring Warrnambool's flora, fauna &amp; landscapes</p> <p>Assist with pest plant and animal eradication activities or programs</p> <p>Monitor for the emergence of new threats</p>
<p>Traditional Owner Partnership in management of key cultural sites.</p>	<p>Implementation of Cultural Landscapes and Heritage Strategy</p> <p>Traditional Owners oversee management of significant sites including Moyjil Aboriginal place</p> <p>Research important stories associated with the region and identify the landscapes that best express these stories.</p>	<p>In partnership with Traditional Owners develop a Cultural Landscapes and Heritage Strategy which integrates and reflects Traditional Owner knowledge and land management practices</p>	<p>Work in partnership to implement the cultural landscapes strategy in collaboration with Traditional Owners</p> <p>Provide stewardship and respect Warrnambool's cultural landscape</p>
<p>50% of Warrnambool's population actively engaged in at least one natural environment stewardship activity</p> <p>No roaming domestic cats and dogs</p>	<p>10% of Warrnambool's population actively involved in natural environment stewardship activity</p> <p>Begin phase in of no roaming domestic cats and dogs program</p>	<p>Develop a Natural Environment Community Stewardship Plan with key community organisations</p> <p>Domestic animal control education</p>	<p>Develop a Natural Environment Community Stewardship Plan with WCC.</p> <p>Support community-based groups to continue the valuable work restoring the natural environment.</p> <p>Domestic animals (cats and dogs) better controlled</p>





# BLUE WARRNAMBOOL

## Water is for life

We will care for and regenerate our waterways, our coast and marine environment and support a natural water cycle. We will carefully use rainwater to contribute to the amenity of the city by bringing water management and green infrastructure together.

Water conservation and water sensitive urban design, including improved stormwater systems, will improve our waterway and marine health. We will capture rainwater and reuse stormwater to reduce our reliance on depleting water sources.





## What this looks like:

Blue-Green City	Wonderful Warrnambool Waterways	Water-Aware Warrnambool
<p>Infrastructure and open space developments and upgrades conserve water and improve waterways through integrated water management.</p>	<p>The Merri and Hopkins Rivers, tributaries and estuaries are healthy functioning ecosystems.</p>	<p>Our community understands that water and waterways are precious resources that require conservation and good stewardship.</p>

## Overview:

**Warrnambool's waterways, coastal areas and marine environment are some of our community's most valued natural areas. They provide rich habitats for a diversity of native plants and animals and they are highly frequented places for recreation and wildlife appreciation. These areas are also vulnerable to pollution, erosion, over-exploitation and neglect. Many stretches along our rivers and wetlands are unfenced, un-vegetated and eroded by livestock.**

The Hopkins and Merri Rivers and their catchments are highly significant biodiversity corridors and much-used recreational areas. Like many Victorian waterways, they suffer from streamside clearing of vegetation and subsequent erosion and lack of pollutant filtration. While the industrial practices in the past have largely ceased, where waterways were used as drains, stormwater and agricultural run-off are still significant pollutant sources.

The City is committed to adopting an integrated water management approach to the water cycle and provision of Green-Blue infrastructure to ensure the city is healthy, prosperous and resilient. This will result in improved

waterway health, improved public amenity and green spaces, reduced reliance on potable water, particularly for watering and an improved drainage network.

A range of community groups have active interests in our waterways, coast and marine areas: Making A Difference for the Merri, Warrnambool Coastcare Landcare Network, Merri Wetlands Protection Group, Friends of Merri Marine Sanctuary, Friends of Platypus Park and Russell's Creek Urban Forest Group, Warrnambool Australian Plants Society all have an active interest, along with the Merri River Alliance and the Clean Oceans Collective which are partnerships between agencies and community groups.









# BLUE WARRNAMBOOL

2040 Goal	2026 Interim Goal	Council Action Immediate	Community Action Immediate
<p>Water Sensitive Urban Design principles are used in all infrastructure and open space developments and upgrades.</p> <p>All new developments incorporate roof water harvesting infrastructure.</p> <p>No stormwater enters our waterways and coast without treatment.</p>	<p>The Green-Blue City Plan guides development of integrated water management WSUD guidelines</p> <p>Neighbourhood Level Green-Blue Water Pilot Project developed.</p>	<p>Develop a Green-Blue City Plan for Warrnambool to provide a framework for integrated water management and incorporate Water Sensitive Urban Design into residential and commercial development (partnership with Wannan Water and DELWP).</p> <p>Neighbourhood scale solutions for stormwater treatment and reuse.</p> <p>Contribute to management and protection of groundwater systems.</p>	<p>Install residential water tanks and adopt water saving behaviours.</p> <p>Increase the use of recycled water and stormwater for commercial, residential and industrial use</p> <p>Work with Council to assist in the operation and uptake of raingardens and swale drains.</p>
<p>The Index of Stream Condition for the Hopkins River and Merri River is Good to Excellent</p> <p>Wetlands and riparian areas are graze free zones.</p>	<p>The Index of Stream Condition for the Hopkins River and Merri River is Good</p>	<p>Partner with Moyne Shire GHGMA and Landcare to develop strategies for increasing riparian protection activities and reducing agricultural runoff and ensuring coordinated management and design of appropriate infrastructure and uses into the Hopkins and Merri catchments.</p> <p>Support Traditional Owner involvement in the management of waterways.</p>	<p>Assist WCC to develop strategies for increasing riparian protection activities and reducing agricultural runoff into the Hopkins and Merri catchments.</p>
<p>Warrnambool's use of potable water is 20% less than 2019 levels.</p>	<p>No net increase in potable water consumption based on 2019 levels.</p>	<p>Partner with Wannan Water to develop and implement community education program.</p>	<p>Deliver community education programs</p>
<p>The Merri River corridor is a connected series of parklands that support active transport, nature-based recreation and wildlife movement</p>	<p>Connectivity between parklands on the Merri has improved on 2018 levels. Woodend Road Reserve is being restored for environmental and recreation purposes.</p> <p>The significance of the Merri River as an open space corridor is recognised in the Planning Scheme and Council policy.</p>	<p>Develop policy that recognises the Merri River as a significant future open space corridor.</p> <p>Implement the North Dennington and North of Merri Structure Plans</p> <p>Undertake an Open Space Precinct Plan for public land on the Merri River between Queens Road and Manuka Drive</p>	<p>Merri River Alliance to drive and support appropriate open space development and protection of environmental and biodiversity values.</p> <p>Support and provide input into planning projects that inform development of the Merri River parklands</p>





# GREEN

# WARRNAMBOOL

We will become a city in nature.

We will be connected by green infrastructure and corridors of urban forest to support resilient and connected biodiversity. An increase in tree canopy cover in our urban areas will provide shade and carbon sinks, and decrease the number and severity of heat islands, while supporting biodiversity. The city will benefit from more green spaces, green roofs, vertical gardens and our agricultural fringes. We will grow our own food in community gardens, market gardens, backyards and nature strips.







## What this looks like:

### The Urban Forest

An Urban Forest Plan will map and incorporate tree canopy/rooftop and other infrastructure greening in the city to reduce urban heat island effects.

### Grow Local

Our community will be sourcing most of its, seasonal fresh fruit and vegetables locally, from the backyard, community gardens, farmers' markets and local businesses.

## Overview:

### **Climate change is increasing heatwaves, placing pressure on human health, amenity, productivity and infrastructure.**

However, green infrastructure such as street trees, green roofs and walls, is a viable way to help cities adapt to increased heat. Uptake of these technologies is slowly increasing globally. The development and implementation of an integrated strategy to deliver adaptive building and open/green space design is key to incorporate vegetation in streets, parks, sporting grounds, gardens, river and creek embankments, wetlands, railway corridors, community gardens, agricultural land and green roofs and walls.

We understand that vegetation through our urban, periurban and rural areas (the 'urban forest') provides ecosystem services and community wellbeing. Air and water filtration, shade and wind protection, oxygen production, carbon sequestration, nutrient recycling, habitat for pest insect eating birds and mammals.

The urban forest will also provide a connection to nature that can be missing in many urban areas. Combined with small and larger scale food growing, we can truly be A City In Nature. One key step towards citywide greening, is street scale greening. As a community we can start street scale greening literally on our doorsteps.

Warrnambool's public land and natural areas will be maintained, enhanced and protected both for nature and for the enjoyment of our community. Being A City In Nature will instil a sense of pride and contribute to a positive quality of life for our community. We can be clever with how we plant in our built-up areas. Just as we dramatically modified the natural environment in order to establish a city, we can now modify it to put nature back into the picture. It may take at least two decades to achieve significant levels of adaptive 'greening' of our streets









# GREEN WARRNAMBOOL



2040 Goal	2026 Interim Goal	Council Action Immediate	Community Action Immediate
<p>Warrnambool urban areas will have 30% vegetation canopy cover.</p> <p>Productive agricultural and rural land is protected.</p>	<p>Warrnambool urban areas will have 10% vegetation canopy cover. At least 1 Green Streets initiative underway. City Centre – Has 3 greener built spaces</p> <p>Provide a strategic framework for agricultural and rural land use</p>	<p>Provide information on appropriate vegetation selection to thrive in the local environment and climatic conditions. Pilot a Green Streets initiative to use vegetation to cool the urban environment.</p> <p>Identify rural land use trends and issues to inform the assessment of the agricultural capability of rural land.</p>	<p>Continue to undertake tree planting initiatives. Support the greening of infrastructure by greening private buildings.</p> <p>Participate in the Green Streets initiative to use vegetation to cool the urban environment.</p> <p>implement sustainable farming practices</p>
<p>Over 50% of fresh produce, consumed in Warrnambool is sourced locally, from backyards, community gardens, farmers' markets and local businesses.</p>	<p>The community has knowledge and connection to local produce growers, manufactures and businesses. A Local Fresh Food Plan is developed and implemented. Neighbour Food Assets increase with two vegetable patch nature strips supported.</p>	<p>Support and promote local producers, manufactures' and businesses.</p> <p>Develop the Local Fresh Food Plan and build baseline information of current trends and statistics related to consumption choices.</p> <p>Support food share initiatives.</p>	<p>Undertake food planting within backyards and nature-strips. Support local farmers by buying local and shopping at farmers markets. Community Gardens continue to develop food trade and education networks.</p>





# Review and Reporting

Green Warrnambool will be reviewed to ensure the document remains up-to-date with changing priorities, emerging issues and legislative requirements.

The Green Warrnambool objectives will be reviewed every four years, including setting new short term targets for the following 4 years. This will enable Council to continually work towards achieving the vision and principles set out.

The review will also provide Council with the opportunity to revisit emerging trends and changing needs in

environmental priorities from a local, national and global perspective as well as new policy positions.

An annual report will be prepared on progress towards the targets and the actions within the issue specific plans. These reporting mechanisms include the annual Sustainability Report and Environment Report and report on specific programs such as green procurement, greenhouse reporting and externally funded grants.

Baseline data will be developed and used to assess whether the targets in Green Warrnambool are being achieved and environmental sustainability is improving, declining or remaining constant.

Monitoring and reporting on the targets and actions will provide quantifiable data to develop a longitudinal profile from baseline to show trends, successes and lessons.

## APPENDIX 1 POLICY CONTEXT

Council operates within and in conjunction with a range of policy and legislation relating to sustainability and the environment.

The Council plan outlines the following objectives to support the Council's vision.

- Sustain and enhance the natural environment
- Foster a healthy city that is socially and culturally rich
- Maintain and improve the physical fabric of the city
- Develop a modern economy with diverse and sustainable employment
- Practice good governance through openness and accountability

Refer to Figure 1 for further information on how Green Warrnambool fits within Council's policy framework.





# Victorian State Government

## Victorian Climate Change Adaption Plan

**Vision:** Victoria will meet the challenges and act on the opportunities of climate change. Our state will sustain a thriving natural environment, and will be a healthy, prosperous, safe and vibrant place to work and live for all Victorians.

### **Broad Actions (these are further detailed in the plan):**

- Leading by example: addressing risks to State Government operations and assets
- Helping Victorian communities adapt to climate change - Guidance and authoritative up-to-date information
- A partnership with local government
- Embedding adaptation in core sectors of our community
- Addressing the impacts on health and human services
- Preparing for and responding to extreme weather events
- Managing impacts on the natural environment and Protecting biodiversity
- Adapting on our coasts
- Protecting our water resources
- Improving the resilience of our built environment and Factoring climate change impacts into land-use planning
- Addressing heat in the urban environment
- Building the resilience of our transport system

## Victorian Renewable Energy targets and action

**Targets:** In 2016, the Victorian Government committed to Victorian renewable energy generation targets of 25 per cent by 2020 and 40 per cent by 2025.

### **Actions:**

- Take 2: A pledge program that individuals, businesses and organisations can participate in and learn about how they can help keep climate change below a 2 degrees increase.
- New Energy Jobs Fund: This will support Victorian-based projects that create long-term sustainable jobs, increase the uptake of renewable energy generation, reduce greenhouse gas emissions and drive innovation in new energy technologies.
- Renewable Energy Action Plan: This plan encourages investment in the energy sector to ensure Victorians benefit from a renewable, affordable and reliable energy system.

## Protecting Victoria's Environment: Biodiversity 2037

**Vision:** Victoria's Biodiversity is Healthy, Valued and Actively Cared For

**Goal:** Victorians value nature

### **Targets:**

- All Victorians connecting with nature.
- Five million Victorians acting to protect the natural environment

- All Victorian Government organisations that manage environmental assets contribute to environmental-economic accounting.

**Goal:** Victoria's natural environment is healthy

**Targets:** A net improvement in the outlook across all species by 2037, so that:

- No vulnerable or near-threatened species will have become endangered.
- All critically endangered and endangered species will have at least one option available for being conserved ex situ or re-established in the wild (where feasible under climate change) should they need it.
- We achieve a net gain of the overall extent and condition of habitats across terrestrial, waterway and marine environments.

## Victorian Coastal Strategy 2014

**Vision:** A healthy coast, appreciated by all, now and in the future

### **A healthy coast**

- Natural coastal processes support habitat, biodiversity and the quality of life for Victorians
- Areas of coast are reserved primarily for biodiversity conservation, and significant environmental, cultural, geological and landscape features are protected
- Beaches, estuarine and marine waters are clean and healthy
- Coastal infrastructure takes into account the natural shifts and changes of the coastline
- The vast majority of Victoria's coastline remains in public ownership reserved as Crown land

### **Appreciated by all**

- Local communities and visitors enjoy the coast, co-existing in balance with a diversity of plants and animals
- Facilities that support coastal and marine recreation, such as life-saving clubs and yacht clubs, are appropriately sited, attractive, and designed and managed to meet a range of community needs
- Buildings and infrastructure are exemplary in siting, design, materials and environmental standards; they can adapt to natural coastal processes and have defined, but limited, ecological footprints

### **Now and in the future**

- Best available science and expertise informs coastal planning, management and decision-making
- Coastal planning and management is funded to meet its responsibilities, strategic and long-term in outlook, and integrated across all levels of government, industry, the community and land tenures
- Traditional Owners are actively involved in management of the coast and their aspirations for coast and sea country are respected and valued
- Coastal resources are sustainably used to ensure protection of environmental, economic and social benefits now and in the future
- Adaptation of communities, settlements and ecosystems to a changing climate is considered in all aspects of planning and management on the coast



Glenelg Hopkins

## Regional Catchment Strategy

**Vision:** Achieving a healthy and sustainable relationship between the natural environment and the community's use of land and water resources.

The vision over the next 50-years aims to foster an environment where:

- biodiversity thrives and clean water is available for environmental, economic and social uses
- environmental assets are valued and protected from threats, and the impacts of pest plants and animals are greatly reduced
- the community is proactive and aware, and understands that ecologically sustainable management of its natural resources is essential to a high quality of life.

## Great South Coast

### Regional Growth Plan

**Vision:** The Great South Coast region will create a thriving, multifaceted and resilient economy, while valuing and managing our natural resources and environment. Our people will be healthy, well educated and have great lifestyle choices. We will work together for a stronger, more prosperous, equitable and liveable Great South Coast.

The principles to achieve the vision are:

- Strengthen the region's economy through increased industry diversification, innovation and development.
- Attract more people to the region.
- Enhance our liveability through improved health, education and standards of living.
- Build on our network of towns and the roles played by them.
- Manage and utilise our strategic assets and support agricultural productivity.
- Sustainably manage our natural, cultural and environmental assets.
- Enhance equity of access to infrastructure, facilities and services.
- Strengthen connections to other regions.
- Ensure that land and infrastructure needed to support growth is identified and appropriately planned.

Relevant legislation includes but is not limited to:

- The Flora and Fauna Guarantee Act 1988
- The Catchment and Land Protection Act 1994
- The Marine and Coastal Act 2018
- Aboriginal Cultural Heritage Act 2006
- Planning and Environment Act 1987

# Australian Government

## Environment Protection and Biodiversity

**Conservation Act:** provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places—defined in the EPBC Act as matters of national environmental significance. The nine matters of national environmental significance this applies to are:

- world heritage properties
- national heritage places
- wetlands of international importance (often called 'Ramsar' wetlands after the international treaty under which such wetlands are listed)
- nationally threatened species and ecological communities
- migratory species
- Commonwealth marine areas
- the Great Barrier Reef Marine Park
- nuclear actions (including uranium mining)
- a water resource, in relation to coal seam gas development and large coal mining development.

## Climate Change Plan:

The Australian Government's climate change plan includes:

- Reducing emissions by 5 per cent below 2000 levels by 2020.
- Reducing emissions by 26 to 28 per cent below 2005 levels by 2030.
- Doubling Australia's renewable energy capacity to be achieved in 2020 which is driving innovation, creating jobs and providing a cleaner future
- Helping improve energy productivity by 40 per cent, by 2030.
- Ensuring big business and Australia's largest emitters do their part and continue to reduce emissions.
- Helping expand and protect our green spaces and iconic places such as the Great Barrier Reef
- Investing in innovation and clean technology to help capture the opportunities of a cleaner future.
- Managing climate risks by building resilience in the community, economy and environment.

# International

**Paris Agreement:** A global, legally binding climate treaty that covers emissions reduction, adaptation and finance, and commits to limit global warming to well below two degrees Celsius above pre-industrial levels. The Paris Agreement was negotiated at the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change in December 2015, and has been signed by 194 countries. It entered into force on 4 November 2016