



CITY OF GREATER  
**BENDIGO**

# Climate Change & Environment Strategy 2021-26



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# Glossary

<b>Circular Economy (CE)</b>	A circular economy designs out waste and pollution, keeps products and materials in use and regenerates natural systems. It aims to create society wide benefits by designing waste out of systems.
<b>City / Council</b>	City of Greater Bendigo
<b>CO<sub>2</sub></b>	Carbon dioxide, a greenhouse gas
<b>CSIRO</b>	Commonwealth Scientific and Industrial Research Organisation
<b>DELWP</b>	Department of Environment, Land, Water and Planning
<b>E-waste</b>	Electronic waste
<b>Embodied carbon</b>	Embodied carbon means all the CO <sub>2</sub> emitted in producing materials. It's estimated from the energy used to extract and transport raw materials as well as emissions from manufacturing processes.
<b>EPA</b>	Environment Protection Authority
<b>EV</b>	Electric vehicle
<b>FFG Act</b>	Flora and Fauna Guarantee Act 1988
<b>GDP</b>	Gross domestic product
<b>ITLUS</b>	Integrated Transport and Land Use Strategy
<b>MEPS</b>	Minimum Energy Performance Standards
<b>North Centra CMA</b>	North Central Catchment Management Authority
<b>SDG</b>	Sustainable Development Goals are 17 goals adopted by the United Nations aimed at ending poverty, protecting the planet and ensuring that by 2030 all people enjoy peace and prosperity
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organization
<b>VECO</b>	Victorian Electricity Collaboration
<b>VMIA</b>	Victorian Municipal Insurance Authority
<b>VPP</b>	Virtual Power Plant
<b>WSUD</b>	Water sensitive urban design
<b>Virgin materials</b>	Previously unused raw material, such as non-recycled timber, steel or plastic
<b>Zero carbon</b>	No net release of carbon dioxide into the atmosphere

# Traditional Owners

The City of Greater Bendigo is located on the traditional lands of the Dja Dja Wurrung and the Taungurung Peoples of the Kulin Nation. They are the traditional custodians of this land. We recognise their continuing connection to land, waters and culture, pay our respects to their elders past and present.

We express our gratitude in the sharing of this land, our sorrow for the personal, spiritual, and cultural costs of the sharing and our hope that we may walk forward together in harmony and in the spirit of healing. Moreover, we are thankful for the knowledge and insight that Traditional Owners and other Aboriginal and Torres Strait Islander people contribute to our shared work.

## *Dja Dja Wurrung*

The lands and waters across the City of Greater Bendigo are and always have been Dja Dja Wurrung Country. Dja Dja Wurrung Country is a mosaic of cultural landscapes crafted over thousands of generations. Cultural landscapes are the product of the skills, traditions, and technology of Djaara (people) and reflect our way of engaging with the world.

Djaara are forest gardeners: the environment is our garden, and our cultural practices are our management tools. Forest gardening, or our contemporary cultural land management, will produce co-benefits to the wider community such as increased biodiversity, landscape restoration and revegetation.

However, current land use and foreign cultural values have resulted in our cultural landscapes being overgrown and turned upside down. Therefore, reinserting Djaara in Djandak (Country) through public land and cultural landscape management, will restore and heal Crown Land for the benefit of all Greater Bendigo residents. The primary indicator of healthy Country, healthy people and landscape or ecosystem health is Djaara in Djandak.

~ Dja Dja Wurrung Clans Aboriginal Corporation

## *Taungurung*

Taungurung Country is the cultural landscape north of the Dividing Range, bounded by the Campaspe River in the west, and the Ovens River in the east. The Taungurung People have always cared for Country, and our knowledge and skills are deeply bound in our cultural practices. Taungurung People know what Country needs to be healthy.

Taungurung People have cultural law to carefully care and protect our clans and Country. These cultural practices have allowed us to live in harmony with Country for millennia. We have provided food and fibre to meet the needs of our People and keep Bunjil's creations abundant and healthy.

Colonisation dispossessed and oppressed Taungurung People and destroyed Country and food systems, yet our People remain resilient and proud. Our People have never ceded our intrinsic rights and obligations to care for Country, Culture and People.

The Taungurung Land and Water Council are determined to Heal Knowledge and Heal Country, so that Taungurung People and cultural practices are embedded throughout the cultural landscape. Supporting self-determination is a fundamental act to reconciliation.

~ Taungurung Land and Water Council

# This strategy

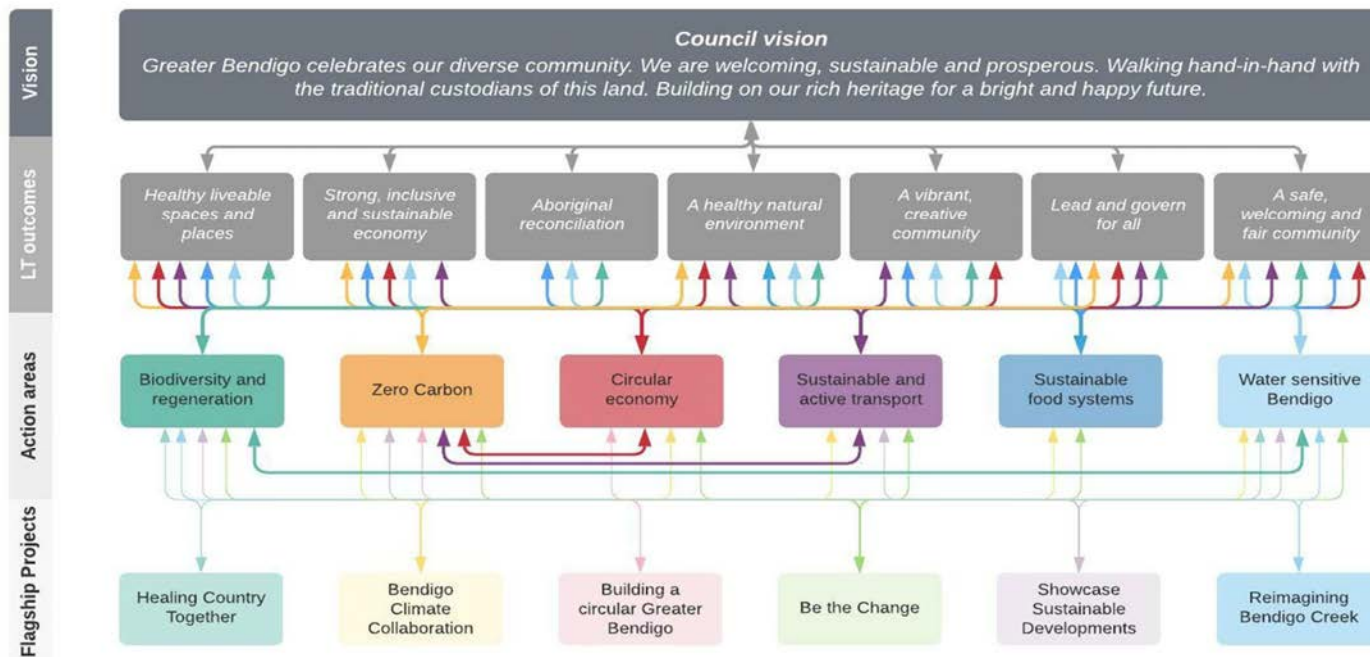
This Strategy is an investment in regenerating and protecting our natural environment, but it goes beyond that. It is an investment that will improve community health and resilience, reduce power bills, increase the attractiveness of our landscapes, reduce pressures on social services and hospitals, increase economic opportunities and secure our local food network.

This Strategy was developed in consultation with the community of Greater Bendigo, agencies, stakeholders, and Council staff.

## Vision

The 2021-26 Climate Change and Environment Strategy has been designed to align with the community vision for Greater Bendigo. This recognises that the success of Greater Bendigo is inextricably tied to the health of our environment and the sustainability of our systems. Without these, we cannot have a healthy, sustainable and prosperous community.

The Climate Change and Environment Strategy has six action areas, which collectively contribute to all seven outcomes in the Council Plan. The contribution of the City of Greater Bendigo Climate Change and Environment Strategy to achieving our community vision is to: **regenerate biodiversity** in natural environment and green spaces, reach **zero carbon** emissions, create a **circular economy**, have an **active and sustainable transport** network, support **sustainable food systems** and have **water sensitive** places and communities.



## A shared effort

This Strategy was developed in consultation with the community of Greater Bendigo, agencies, stakeholders, and Council staff.

Development of the strategy commenced with a review of 2016-2021 Environment Strategy. We consulted with councillors and staff from across the organisation and external stakeholders such as Traditional Owners, government agencies and community groups about Council's progress to date. This gave us a strong foundation for areas where we could improve for the next five years.

To inform the content for the strategy, we reflected on the community engagement from Imagine Greater Bendigo including the new Community Vision. We further talked with our stakeholders and partner organisations to identify opportunities for alignment to achieve shared goals. This included: Dja Dja Wurrung Clans Aboriginal Corporation, Taungurung Land and Waters Council, Department of Environment, Land, Water and

Planning, North Central Catchment Management Authority, Regional Roads Victoria, Coliban Water and Central Victorian Greenhouse Alliance.

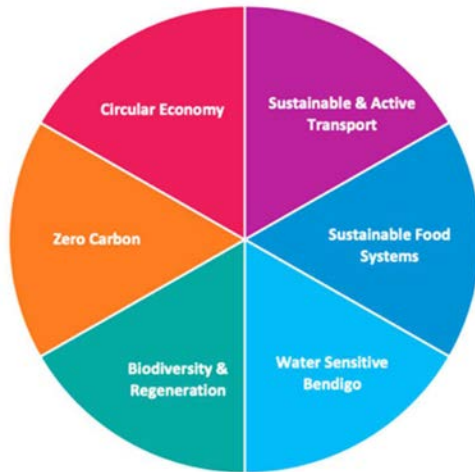
We also established a project working group of experienced professionals across Council to co-write this strategy. That included staff who work in the fields of health and wellbeing, biodiversity, parks and open space, transport, economic development, emergency management and climate change. Together we wrote and contributed to the goals, actions, and targets in the Climate Change and Environment Strategy.

Once developed, the Strategy was released by Council for broader community consultation.

This approach enabled us to seek the input of all our stakeholders, our staff, and our Greater Bendigo community. This Strategy ensures that Council can advocate for change, influence stakeholders to achieve our shared goals and change what is within our control



# Evolved One Planet Living Framework



The 2016-2021 Environment Strategy was designed using the One Planet Living principles as a framework for action. The One Planet Living principles, developed by Bioregional, are based on the understanding that environmental sustainability is more than protecting the natural environment.

While all ten principles are considered in the Climate Change and Environment Strategy, the strategy will focus on the six action areas shown on the left. The sustainable buildings and materials being consolidated into zero carbon and circular economy.

The other three One Planet Living principles (shown below) have been incorporated into the Climate Change and Environment Strategy principles, which shaped the development of goals and targets:

Health and happiness

Equity and local economy




Culture and community

This approach will allow the Climate Change and Environment Strategy to complement rather than overlap with other key Council strategies like the Economic Development Strategy and the Health and Wellbeing Plan.



# Principles

Each action area in the renewed Climate Change and Environment Strategy has been developed to ensure positive contribution to consideration of the following three **One Planet Living principles**:

	<b>Health and happiness</b>	Encouraging active, sociable, meaningful lives to promote good health and well being
	<b>Equity and local economy</b>	Creating bioregional economies that support sharing, equity, diversity, employment, emergency response, and fair trade
	<b>Culture and community</b>	Respecting and reviving local identity, wisdom and culture; encouraging the involvement of people in shaping their community and creating a new culture of sustainability

This strategy has also considered the **principles within the Local Government Act 2020**, in particular:

- Priority is given to achieving the best outcomes for the municipal community including future generations
- Economic, social, and environmental sustainability of Greater Bendigo (including climate change risk) is promoted
- Regional, state, and national plans are considered
- We consider the resources needed for effective implementation
- Strategic planning addresses the Community Vision
- The community is engaged in strategic planning and strategic decision making
- That innovation and continuous improvement are to be pursued
- We provide for ongoing monitoring of progress and regular reviews to identify and address changing circumstances and achievements<sup>1</sup>

And finally, the strategy has been developed to uphold the five endorsed **community values within the Community Plan (2021-2025)**:

*Transparency    Sustainability    Inclusion    Innovation    Equity*

# Sustainable Development Goals

The United Nations Sustainable Development Goals (SDGs) set global 2030 targets for all countries aimed at ending poverty, protecting the planet, and ensuring that by 2030 all people enjoy peace and prosperity.

In September 2015, Australia was one of 193 countries to commit to the Sustainable Development Goals (SDGs). All stakeholders, including governments, civil society and the private sector, are expected to contribute to the realisation of these goals.

As such, each of the action area of this strategy contains a figure describing which SDGs they contribute to.



<sup>1</sup> Local Government Act 2020 principles (not all are listed)



# The case for investing in action

Greater Bendigo is an attractive and welcoming regional city surrounded by rural settlements. We have beautiful city parks, access to forests, a diverse economic base, growing population and a nationally acclaimed arts and culture scene.

Our communities, like other communities around the world, continue to be confronted by challenges associated with climate change, loss of biodiversity, depletion of natural resources, landfill closure and water scarcity.

In the first Environment Strategy, released in 2016, the City recognised that the challenges that confront us are not only a threat to the health of the natural environment, they also threaten human health and the wealth and liveability of our city and settlements.

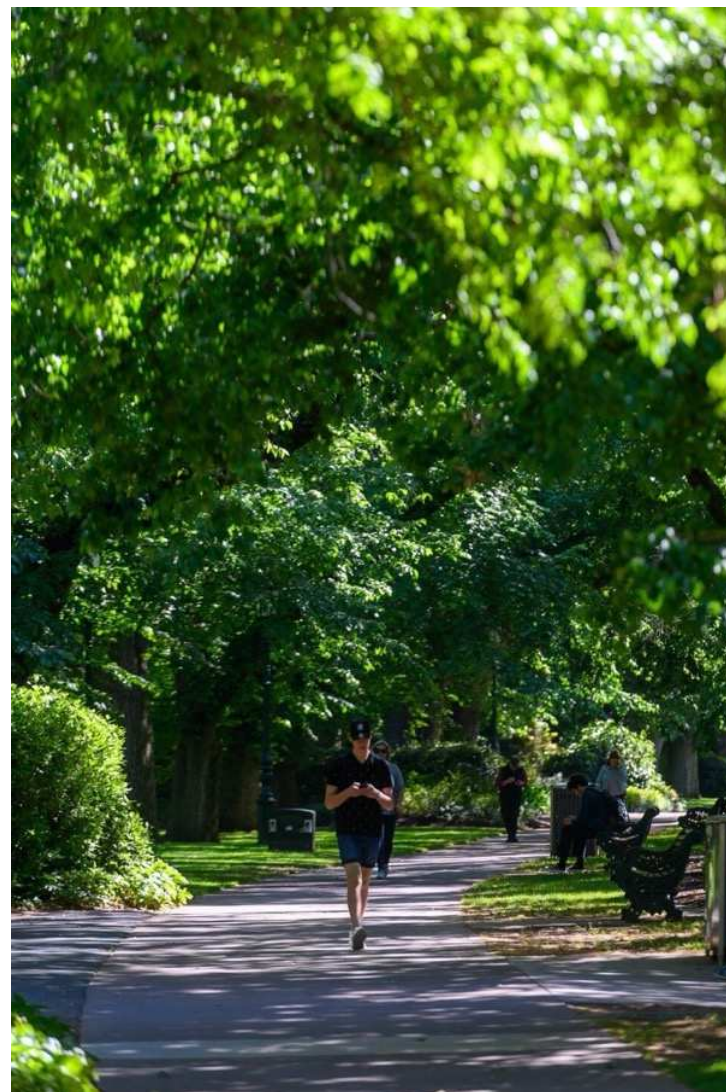
This strategy has been designed to contribute to the whole community vision of Greater Bendigo, not just the aspects relating to environmental sustainability. It considers ways to achieve equity while reaching zero carbon, inclusion while restoring ecosystems, Aboriginal reconciliation while fostering sustainable food systems.

Greater Bendigo is already seeing the vast benefits that came from enacting the 2016 Environment Strategy. In partnership with community and other stakeholders, the City has invested in initiatives like Greening Greater Bendigo, bike paths along urban corridors, supported Dja Dja Wurrung to heal water at Wanyarram Dhelk, and commenced food and organics kerbside collection. These initiatives are changing our communities for the better, socially, economically, culturally and environmentally.

Council's investment in environmental sustainability is certainly an investment in regenerating our natural environment, but it goes beyond that.

***This strategy is an investment that will improve community health and resilience, reduce power bills, increase the attractiveness of our landscapes, reduce pressures on social services and hospitals, increase economic opportunities and secure our local food network.***

There is still a lot to do if we are to meet the challenges of our times and avoid the worst of the negative outcomes, but if we act now, we will reap the benefits. Each chapter of this strategy contains a case for investment and action in zero carbon, circular economy, sustainable and active transport, sustainable food systems, water sensitive Bendigo and biodiversity and regeneration.



# Climate change & biodiversity risk and action

For thousands of years, a stable climate and ecosystems allowed humankind to flourish due to regular seasons for food production and natural reproductive cycles. This is now changing. Climate change and biodiversity breakdowns now threaten the ecosystems that support life on earth. We need to act now to reduce human impacts to climate whilst also protecting and restoring our ecosystems.

## The global perspective

Climate change is a global issue that will have acute impacts at the local level. In late 2021, The United Nations Intergovernmental Panel on Climate Change (IPCC) released the Sixth Assessment Report on the physical science basis of climate change.

***“Global warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in CO<sub>2</sub> and other greenhouse gas emissions occur in the coming decades.”***

***“Very low or low greenhouse gas emissions would have rapid and sustained effects to limit human-caused climate change...”***

~ IPCC Sixth Assessment Report, 2021<sup>2</sup>

In 2019, a landmark report from the United Nations Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) found that the health of ecosystems on which we and all other species depend is deteriorating more rapidly than ever before. This is eroding the foundations of human economies, livelihoods, food security, health and quality of life.

***“The Report also tells us that it is not too late to make a difference, but only if we start now at every level from local to global. Through ‘transformative change’, nature can still be conserved, restored and used sustainably.”***

~ IPBES Chair, Sir Robert Watson<sup>3</sup>

## The role of local government

Local Councils are at the forefront of responding to the impacts of climate change and biodiversity breakdown. The costs largely fall with local communities and are projected to drastically increase in the future.

Under the new *Local Government Act 2020*, it is a requirement that all Councils consider climate and environment risks, including mitigation and planning for climate risks. These considerations must be embedded across Council's services, strategies, policies and processes.

Local councils have played a leading role in climate action to date. Their connection to the community means they are well placed to understand local needs and invest in making their communities more resilient to climate change, as well as facilitating biodiversity.

## The City of Greater Bendigo response

In August 2019, the Council passed a resolution seeking urgent action to avoid the worst impacts of climate change and biodiversity breakdown. The resolution recognised that the climate change will pose a serious risk to the health and wellbeing of the people of Greater Bendigo, especially to the vulnerable and disadvantaged members of our community.

This strategy has been designed to support action to restore and regenerate ecosystems and mitigate against climate change through reducing carbon emissions and sequestering carbon. It further includes action to adapt to climate change, as our communities and ecosystems must transition to a harsher climate. By adapting early, we can reduce our exposure to climate risks. Failure to do so will exacerbate risks for current and future generations. This strategy, along with the climate and environment working group will provide a strong base for Council to plan and communicate climate risk.

<sup>2</sup> IPCC, 2021: *Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press.  
[https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC\\_AR6\\_WGI\\_SPM.pdf](https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf)

<sup>3</sup> IPBES 2019, Media Release: Nature's Dangerous Decline 'Unprecedented' Species Extinction Rates 'Accelerating' <https://ipbes.net/news/Media-Release-Global-Assessment>

## The impacts of climate change in Greater Bendigo

Greater Bendigo has already experienced an increase in temperatures in recent decades and it will continue to get warmer and drier into the future. Greater Bendigo will also experience more extreme weather, increased bushfire risk and intense storms yet less annual rainfall. Figure 1 shows the projected climate change impacts for Greater Bendigo.

The impacts of climate change have far-reaching implications to human health, natural systems, economics and communities. Below and overleaf describes specific impacts to key sectors of our community.

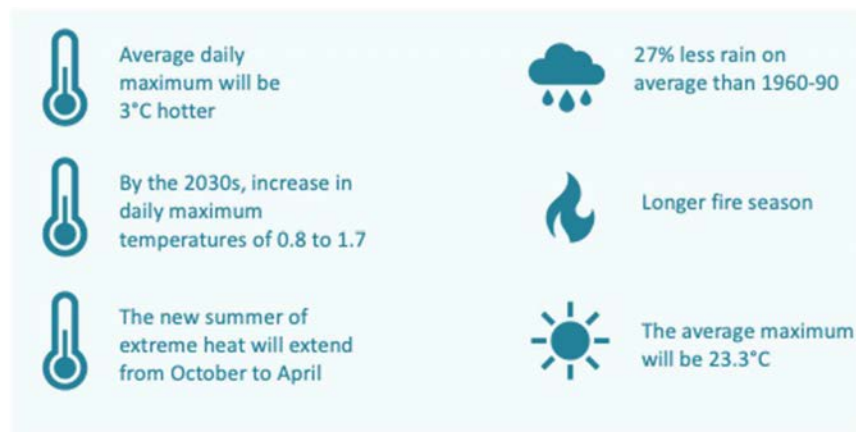


Figure 1: Greater Bendigo future climate projections<sup>4</sup>

### Food supply impacts

Food supply systems may be temporarily disrupted by extreme weather or become permanently unviable due to long-term climate shifts or impacts on ecosystems services. This will lead to food insecurity and lost livelihoods. Evolving our food systems to be more resilient to climate change is a critical adaptation action, while modifying our eating preferences to choose more locally based and plant rich diets is a critical climate mitigation action.

### Biodiversity and disease impacts

Shifting climate patterns further risk the natural reproductive cycles of our ecosystems. The extent of impacts are not yet fully known but have potential to contribute to a significant decline in biodiversity. This shift may result in further extinctions of native fauna and flora, whilst seeing an increase in disease carrying insects like mosquitoes and lead to an increase in infectious diseases. To reduce these ecosystems impacts and the associated impacts to human health, there is an urgent need to restore habitats and manage threats to biodiversity. This includes trialling novel conservation approaches such as rewilding and supporting regenerative land practices.

### Human health impacts

Human health and life will be directly impacted by climate change, extreme heat and prolonged heatwaves are major risks to the mortality of the elderly and vulnerable members of our community. Reducing urban heat through planting street trees, constructing and retrofitting well-designed buildings and developing urban wetlands are just some of the required adaptation actions to cool urban areas.

### Financial impacts

The Victorian Municipal Insurance Authority - the Victorian Government's insurer and risk adviser, points out that climate change risks include both physical risks and transition risks<sup>5</sup> to any organisation or community. Both have flow-on financial impacts, across the categories of revenues, expenditures, assets and liabilities, and capital and financing.

Physical risks arise from changes in the frequency and severity of extreme weather events and long-term changes in weather patterns.

Transition risks arise from social and economic changes associated with adjusting to the low- carbon economy including policy, legal, technology, market, reputation, social and financial risk.

For Greater Bendigo, longer-term economic impacts of climate change include increased costs to maintain green spaces, faster deterioration of infrastructure and higher costs for water dependent industries. This strategy incorporates ways to adapt to a warmer drier future and to use the challenges as an opportunity to create a zero carbon economy.

<sup>4</sup> Projections from (Clarke JM, Grose M, Thatcher M, Round V & Heady C. 2019. Loddon Campaspe Climate Projections 2019. CSIRO, Melbourne Australia)

<sup>5</sup> VMIA, Climate Change Risk Management Guide

## Economic impacts

The industries most vulnerable to the effects of climate change are similar to those affected by Covid-19 economic risks and economic disruption risks. They include agriculture, construction, manufacturing, tourism and mining sectors. Aside from manufacturing, these industries are not the key industries in Greater Bendigo<sup>6</sup>. Greater Bendigo, therefore, is well placed to plan ahead and support the continued development of a low emission economy. Deloitte Access Economics<sup>7</sup> estimated that Australia's low emission economy is worth \$680 billion and would consist of 250,000 extra jobs by 2070 (Australia wide figures).

The economic impacts of both the physical risks and transition risks and their compounding effects on health and wellbeing will need to be considered in all future planning. Climate change damage impacts how land is used, how people work and how money is spent.

***Climate change is not a scenario. It is the baseline for decision making.***

*- Deloitte Access Economics, 2020*

## Mental health impacts

Psychological impacts of climate change range from mild stress to chronic stress and significant mental health problems. There is a significant risk of mental health problems following extreme weather event disasters, most commonly PTSD, depression, complicated grief, followed by substance use, and other anxiety disorders. Approximately 30% of people affected by these events are at risk.

For First Nations people, landscape degradation, loss and disruption of native bush foods and medicines has a detrimental impact on physical, mental and spiritual health. In fact, the mental health and wellbeing of all people is negatively impacted by ecosystem decline, heatwaves and extreme weather that prevent cultural and social events, limit access to natural places or damage infrastructure, community services and recreation facilities.

Many people may also feel seriously concerned, frightened, angry, pessimistic, or guilty in response to climate change. Qualitative research finds evidence of some people being deeply affected by feelings of loss, helplessness, and frustration due to their inability to feel like they are making a difference in stopping climate change.

## Compounding social factors

Social factors further compound climate change impacts. Factors such as age and gender, health status, socioeconomic status, access to public services and transportation, social capital and housing infrastructure will influence the extent to which climate change impacts are felt by individuals and communities. This demonstrates that the impacts of climate change will not be shared uniformly across communities and the more vulnerable populations are likely to be most impacted. This includes people with disabilities and pre-existing or chronic medical conditions, low-income earners, those with limited English, First Nations people, children, pregnant women and the elderly.

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<sup>6</sup> <https://www.rdv.vic.gov.au/victorias-regions/bendigo>

<sup>7</sup> Deloitte Access Economics, November 2020 *A New Choice Australia's climate for growth*,



# A lot has changed in 5 years...

In the last five years, there has been substantial policy and legislative reform, which has changed the operating context for managing our natural environment.

The biggest change for Council is the new Local Government Act (2020). It is a principles-based Act, meaning it provides guidelines on the way Councils need to lead and govern for their communities. The Act's overarching principles aim to achieve the best outcomes for the community now and into the future:

- Priority to be given to achieving the best outcomes for the municipal community including future generations
- Economic, social, and environmental sustainability (including climate change risk) is to be promoted
- The community is to be engaged in strategic planning and strategic decision making
- Innovation and continuous improvement are to be pursued
- Collaboration with other Councils and statutory bodies is to be pursued
- Ongoing financial viability of the Council is to be ensured
- Regional, state and national plans are to be taken into account
- Transparency of decisions and actions is to be ensured

Other significant policy and legislation reforms that impact the City include:

## Legislative reform:

- Water Act Amendment 2019
- Environment Protection Amendment Act 2018
- Climate Change Act 2017
- Flora and Fauna Guarantee Amendment Act 2019
- A New Victorian Waste Authority (in development)
- Public Land Act (in development)

## New plans and strategies:

- *Victorian Traditional Owner Cultural Landscapes Strategy*
- *Protecting Victoria's Environment – Biodiversity 2037*
- *Recycling Victoria: A new economy*
- *Loddon Mallee Renewable Energy Roadmap 2020*

- *Strategic Directions Statement for the Coliban Integrated Water Management Forum 2021*
- *Victoria's Climate Change Adaptation Plan 2017*
- *Water for Victoria – Water Plan 2016*
- *Victorian Waterway Management Strategy 2013*
- *Our Catchments Our Communities 2016-19*
- *North Central Regional Catchment Strategy 2021-2027*  
<https://northcentral.rcs.vic.gov.au/>

## New Council plans and strategies:

- *Public Space Plan*
- *Food Systems Strategy*
- *Walk, Cycle Greater Bendigo*
- *A Stronger Greater Bendigo*
- *Barpangu: Reconciliation Plan*
- *Health and Wellbeing Plan*
- *Greening Greater Bendigo*
- *Municipal Emergency Management Plan*

## WHAT IMPACT DOES THIS HAVE?

The legislative reforms are making sure we have the right frameworks and controls in place to protect our land, waterways, and biodiversity.

The new plans and strategies are setting goals, targets and actions for improving our ecosystems, health and wellbeing and the way we use our natural resources. These frameworks are important advocacy tools and for keeping us on track to mitigating the impacts of climate change



# Governance & accountability

The goals of the Climate and Environment Strategy rely on a long-term commitment and shared responsibility. Effective governance is required to oversee successful implementation.

The governance process designed for this Strategy will enable ongoing monitoring, evaluation and reporting on our progress. It will further coordinate resources and investment. Collectively these steps will sustain effective action over the longer term.

This section outlines the governance arrangements which will be complemented by the monitoring and evaluation and implementation planning.

## ROLES AND RESPONSIBILITIES

The Climate and Environment Working Group is a dedicated group made up of representatives across the organisation. Their role is to support implementation and collaboration across the organisation. They will also support the design, delivery and collation of quarterly and annual reporting against the implementation plan.

The Working Group will be chaired by a member of the Executive Management Team. The Working Group will:

- Provide guidance and implementation support to staff
- Provide a quarterly report to EMT on the execution of the annual implementation plan
- Provide oversight of the development of an annual implementation plan
- Provide an annual report to Council about the progress on goals, targets and interim targets
- Seek advice from the community, Traditional Owners, agencies, and sector partners regarding implementation and renewal of annual implementation plans, primarily through Sustainability and Environment Advisory Committee (SEAC).

Council will also be accountable to the global community through reporting commitments under the Global Covenant of Mayors for Climate and Energy. As part of this agreement, Council has committed to:

- Developing greenhouse gas emissions inventories and reporting results
- Assessing climate risks and vulnerabilities and reporting results
- Defining ambitious climate change mitigation targets
- Developing integrated climate actions plans
- Monitoring, measuring, and reporting results

<https://www.cdp.net/en>

<https://www.globalcovenantofmayors.org/cities/oceania/australia/city-of-greater-bendigo/>



# Implementation and renewal

Successful implementation of the strategy requires the combination of long term and annual monitoring, and regular evaluation so that actions can be continuously improved. This section describes the annual cycle to renew the implementation plan (Figure 1), and the longer-term lifecycle to update the strategy every five years (Figure 2).

The Climate Change and Environment Strategy will be delivered via a rolling annual Implementation Plan that sets actions focussed on achieving the interim targets. The current Implementation Plan is shown in Appendix 1. The Implementation Plan is a 'living document' and will be routinely updated based on context, priorities and resources.

The annual monitoring and reporting of the strategy's implementation will allow us to understand our progress and adapt to the shifts in the operating environment and broader context. Detailed monitoring, evaluation and reporting arrangements are outlined in Appendix 2.

The Working Group will report progress on actions quarterly to the Executive Management Team and report to Council annually on progress and achievement of goals and targets. The Annual report will be made available to the community.

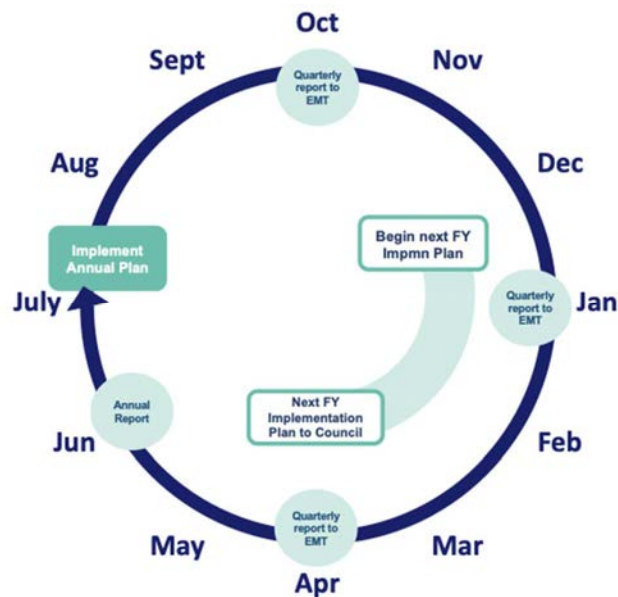


Figure 2: Annual implementation and renewal

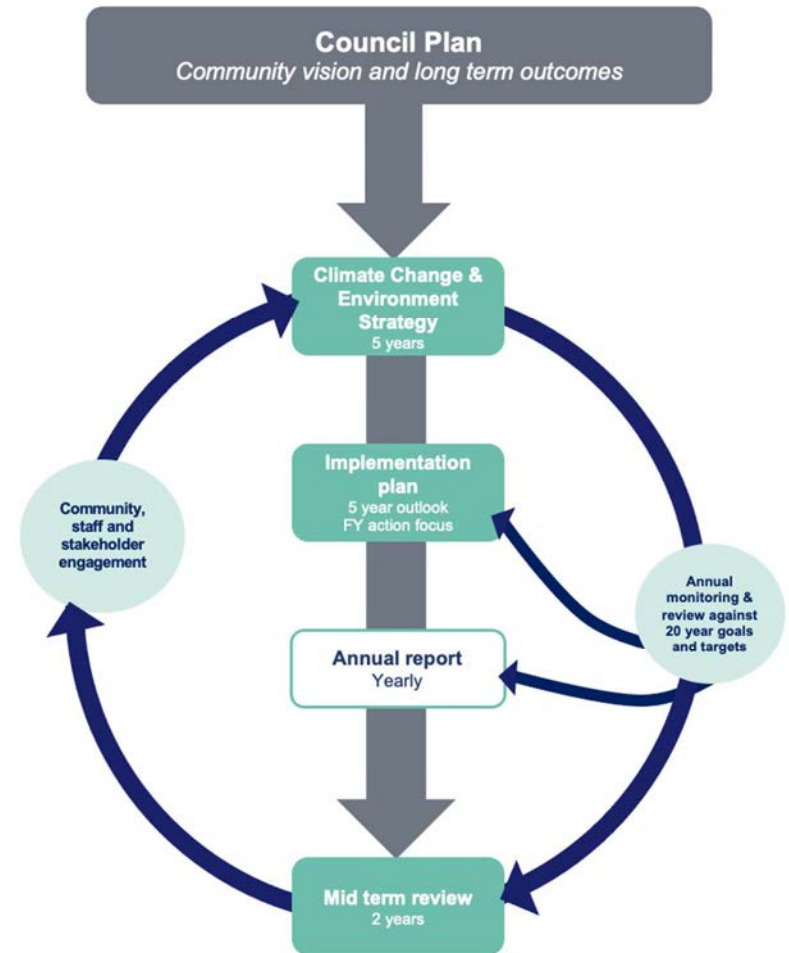


Figure 3: Climate change and Environment Strategy implementation

# Monitoring and evaluation

Council is committed to monitoring and evaluation, as this formalises the collection of learnings from the implementation of the strategy. It further enables continuous improvement, as collected learnings will inform future actions.

The evaluation of the strategy will be guided by the following themes and key evaluation questions (KEQs).

- **Strategy design** - Strategy design focuses on whether the governance and actions were appropriately designed to deliver the intended targets (and goals)
  - *KEQ 1: Was the design of the Strategy appropriate to deliver the intended outcomes?*
- **Strategy implementation** - Strategy implementation focuses on whether the actions of the Strategy were delivered as planned and seeks to identify how these approaches have ensured efficient and cost-effective delivery.
  - *KEQ 2: To what extent have the Strategy actions been delivered as planned?*
  - *KEQ 3: To what extent was the delivery good value for money?*
- **Strategy impact** - Strategy impact focuses on what the Strategy has achieved to date against the intended targets (and goals). At the end of the Strategy term, the focus is also on the legacy of the program and to what extent the impact of the actions will extend beyond the life of the Strategy (long-term outcomes).
  - *KEQ 4: To what extent did the actions lead to the achievement of the targets (and interim targets)?*
  - *KEQ 5: What impact will the actions have beyond the life of the Strategy?*

There is a comprehensive monitoring and evaluation plan for the Strategy, which includes program logics, interim targets, monitoring indicators, and more detailed key evaluation questions.





# Flagship projects 2021-26

The following five flagship projects have been chosen for this strategy to lead and inspire municipal-wide action to achieve the goals of the Climate Change and Environment Strategy. Each project will have multiple benefits for our environment and communities.

Flagship projects are designed in consultation with the community and council partners to get the highest impact in multiple action areas, with multiple stakeholders. They are designed to support long term outcomes that inspire broader change. These flagship projects will be used to focus council's efforts as we work towards the goals of the Climate Change and Environment Strategy.

***Flagship Project 1: Reimagining Bendigo Creek***

***Flagship Project 2: Healing Country Together***

***Flagship Project 3: Be the Change***

***Flagship Project 4: The Greater Bendigo Climate Collaboration***

***Flagship Project 5: Showcase Sustainable Developments***

***Flagship Project 6: Building a Circular Greater Bendigo***



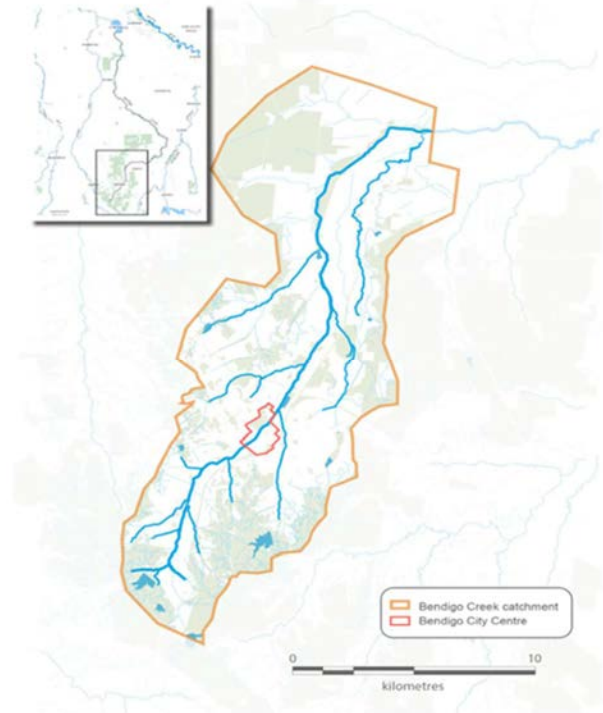
## FLAGSHIP PROJECT 1: REIMAGINING BENDIGO CREEK

In 2016, *Reimagining Bendigo Creek* marked the beginning of a process of renewal, understanding and connection over many generations, which aims to create a healthier, more inclusive, more connected and more beautiful creek. In 2020, the *Reimagining Bendigo Creek* plan set a vision to restore the health of the Bendigo Creek and the surrounding catchment. It further included goals to create connections to the creek and celebrate Dja Dja Wurrung and migrant cultural values along the creek.

The purpose of this flagship project is to continue that work and implement the plan that was co-designed by the community, Dja Dja Wurrung, City of Greater Bendigo, North Central Catchment Management Authority, Department of Environment, Land, Water and Planning, Coliban Water and other agencies.

Over the next five years, we will focus on

- Securing investment including advocating for priorities in the Reimagining Bendigo Creek prospectus
- Undertake investigations and works that restore the creek and catchment, including adjoining tributaries. The works will be jointly implemented by the Dja Dja Wurrung, Council, relevant agencies, local schools & community groups.
- Creating and enhancing cultural values along the creek, for greater identity and tourism appeal
- Planning and building cycling and walking infrastructure along the creek lines – including the low line.





## FLAGSHIP PROJECT 2: HEALING COUNTRY TOGETHER

Greater Bendigo landscapes have undergone significant environmental disruption and fragmentation from mining and land clearance. The Healing Country Together flagship project is about fostering connections between our communities and the natural environment so that we can all become stewards of biodiversity and landscapes. It will involve partnerships between Traditional Owners, communities and agencies, so that we can all heal Country together.

This flagship project aims to regenerate biodiversity, connect more communities with nature and support the self-determination of Dja Dja Wurrung and Taungurung people to heal Country. The project will contribute to the goals in the Country Plans for Taungurung and Dja Dja Wurrung, and deliver some of the biodiversity, water and sustainable food goals in this strategy.

The project will foster self-determination by initially facilitating co-management of public land, and then progressively transitioning to sole management by Traditional Owners over the longer-term. In doing so, this project will strongly contribute to reconciliation and support implementation of Recognition and Settlement Agreements, through Traditional Owner employment and empowerment. It will also directly support Traditional Owners to achieve the aspirations of their Country Plans

Healing Country Together will produce a range of benefits including increased biodiversity and pollination, landscape restoration and revegetation, revitalising traditional food and fibre plants and improved fire management. It will support communities to connect with nature and regenerate biodiversity in urban, rural and bush landscapes.

During this project we will:

- Facilitate a co-design process with Taungurung and Djaara, Council and relevant agencies to identify public land of interest, management aspirations, opportunities to foster community stewardship
- Partner with Taungurung and Djaara, Parks Victoria, DELWP and North Central Catchment Management Authority and community groups to better connect people with nature
- Support Taungurung and Djaara, community groups, agencies to do on-ground works to heal Country
- Restore and nurture Country by practicing cultural fire and water management, and planting native species including bush tucker and medicine plant species
- Monitor the condition of waterways, cultural landscapes and biodiversity using both Western Science and Traditional Ecological Knowledge.



## FLAGSHIP PROJECT 3: BE THE CHANGE

The consultation messages for the Greater Bendigo Council Plan were clear: our community expects Council to play a leadership role in prioritising climate risk, environmentally sustainable design and the sustainability of council infrastructure.

*Be the Change* is a flagship project to garner and catalyse the expertise of our staff to drive and demonstrate resource circularity, sustainable water, sustainable food, zero carbon, sustainable transport, regeneration and biodiversity. And in doing so, we will play a leadership and support role in our community and with our partners.

Council will run an internal, cross-council sustainability project to support our units to identify and implement opportunities to increase sustainability across everything we do. This will include: reducing, reusing and sourcing circular resources; making buildings energy efficient and powered by renewable energy; and increasing biodiversity outcomes in council projects. We will also support our units to understand the climate risks and vulnerabilities across the municipality determine ways to build resilience and improve emergency preparedness, across a range of systems and sectors (e.g., human health, infrastructure, transport, food, water, air quality, and social well-being).

Economist Mariana Mazzucato<sup>8</sup> points out that, contrary to many opinions, the public plays a crucial role in supporting and seeding innovation. Through this project, the City of Greater Bendigo will support our communities, businesses and partners to take action and invest in innovation following public sector investment.

This flagship project involves:

- Growing an internal culture and capability to drive and demonstrate sustainable outcomes
- Assessing climate risk and vulnerability for all Council buildings and infrastructure and identify necessary adaptation actions
- Assessing climate risk and vulnerability across the municipality to understand current and projected hazards and vulnerable sectors. Report this publicly via the Global Covenant of Mayors
- Incorporate evidence based and scenario planning into Council decision making process
- Planning, designing, and implementing buildings and infrastructure retrofits
- Assessment of Council's systems and policies to identify improvements and efficiencies in line with the goals of this strategy
- Supporting innovation and design thinking to identify new ways of working and programs that build community adaptive capacity.

<sup>8</sup> <https://marianamazzucato.com/books/the-entrepreneurial-state>





## FLAGSHIP PROJECT 4: THE GREATER BENDIGO CLIMATE COLLABORATION

Greater Bendigo is a thriving, self-contained regional centre with a history of innovation and a goal to become the world's most liveable city. With clear goals, funding, projects and partnerships, Greater Bendigo will reap the economic, social and environmental rewards of the quickly approaching global shift to a zero-carbon emissions economy and will play its part in avoiding the worst impacts of a changing climate.

The Greater Bendigo Climate Collaboration is a flagship project that aims to mobilise communities, organisations and agencies within Greater Bendigo to be zero carbon by 2030. It has four levels of collaboration:

- **Households:** 1,000 local households working together to create climate action plans to achieve the 2030 target. These plans will include actions to reduce household emissions. Households will receive support and encouragement to get involved in local community climate projects
- **Organisations:** Support 100 businesses, schools and organisations to create climate action plans and commit to the 2030 target
- **City-wide Projects:** Bringing Greater Bendigo together in key sectors of the local economy to enhance, create and fund city-scale collective climate projects
- **Regional Advocacy:** Bringing together councils from the Loddon Campaspe regional network to create and design the top 10 regional-scale climate projects to advocate for.

The project aims to make real change by building a zero carbon economy for Greater Bendigo and the surrounding region. The transition to zero emissions will mean significant investment and returns for our local economy including our energy, transport, food, waste and building sectors. It will further result in the protection and restoration of our local biodiversity through carbon and landscape restoration investments.

The project will involve:

- Seeking financial partners to support the collaboration and project financing
- Working in partnership with community organisations to increase equity and community ownership
- Working with 1000s of homes & 100s of businesses to make zero carbon plans
- Banding together with organisations across different sectors of the economy to design and deliver city-scale projects that will achieve zero carbon economy
- Hosting a Greater Bendigo Climate Summit in late 2022 with inspirational climate speakers and a climate festival to celebrate progress, make public commitments to zero carbon and announce city-wide projects
- Working with Loddon Campaspe regional councils to collectively design and advocate for the top ten regional projects to support zero carbon
- Providing two years of support for implementation of household and organisation action plans, city-scale projects and regional project advocacy.



## FLAGSHIP PROJECT 5: SHOWCASE SUSTAINABLE DEVELOPMENTS

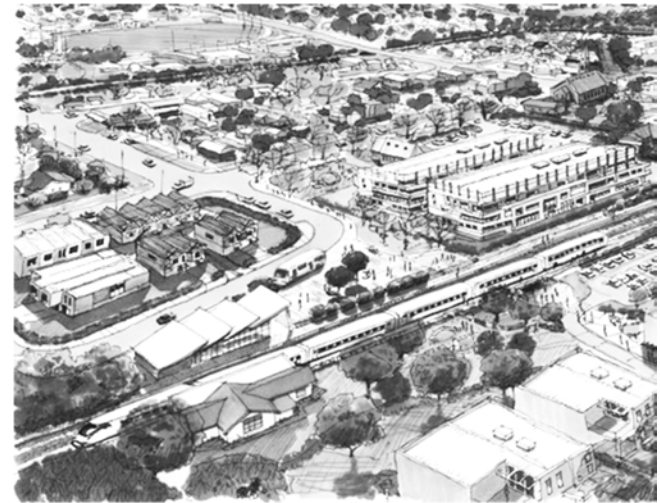
Population and economic growth in Greater Bendigo present interlinked challenges and opportunities for community development, housing affordability, services and the environment.

The Showcase Sustainable Developments flagship project will see Council partner with the community, business and government sector to plan, design and build sustainable developments. The developments will be on surplus council land and demonstrate four or more of the One Planet principles of environmentally sustainable design, zero carbon, water sensitive urban design, sustainable and active transport, circular economy and urban food and biodiversity.

One priority development will showcase an affordable residential development. At least one other will showcase a commercial or industrial development. Our showcase developments will give Greater Bendigo a legacy of high-quality developments that demonstrate our community vision for a welcoming, sustainable and prosperous community.

The project will involve:

- Investigating partner opportunities with affordable housing providers, developers and government agencies
- Investigating surplus land appropriately located to support the selected project
- Designing an innovative financing and delivery model
- Collaborating for the planning and design of the development
- Preparing a manual to deliver future, low impact developments achieving zero carbon, circular economy sustainable and active transport and sustainable food and water sensitive Bendigo principles
- Sharing outcomes and learnings with the community to inspire broader change, including the connection between sustainability health, wellbeing and social inclusion.



## FLAGSHIP PROJECT 6: BUILDING A CIRCULAR GREATER BENDIGO

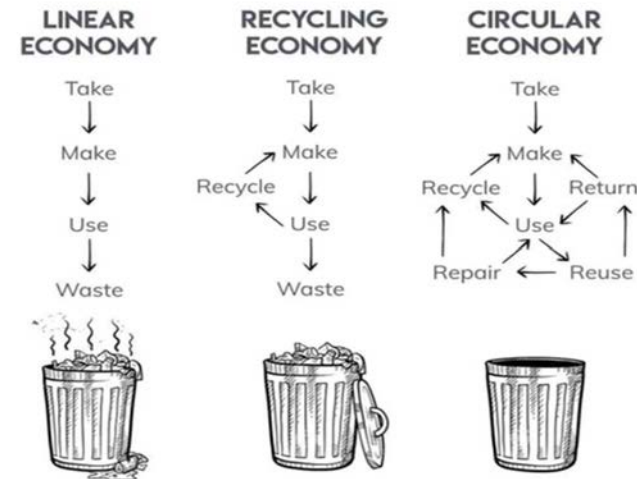
The environmental, social and economic cost of waste represents a huge opportunity to be tapped for the benefit of all Greater Bendigo.

The Building a Circular Greater Bendigo project will draw upon the global rise of the circular economy concept to shift how Greater Bendigo consumes resources, moving from a linear Take-Make-Waste approach to a circular 'Take-Make-Remake' approach (see Figure 4). In a linear economy "cost" approach, materials at the end of their life are considered waste, an unavoidable cost of production. In the circular economy "value" approach, materials at the end of their life are valued and cycled back into new products. A circular economy approach not only recirculates end-of-life materials and products back into our system, but reduces the amount of materials businesses and organisations need, reduces negative environmental impacts and increases productivity and profitability.

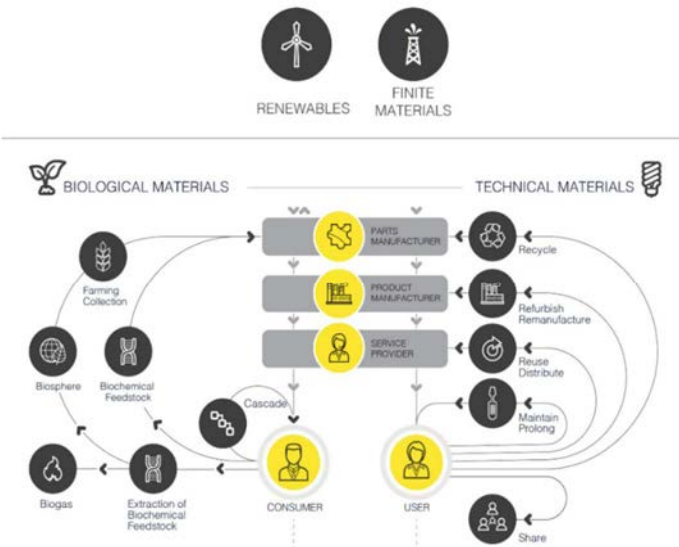
In this flagship project, Council will work with the community, business, and government sector to develop circular economy solutions for Greater Bendigo. These circular solutions will range from 'downstream' technologies and services that recover end-of-life material ("waste") and recirculate it back into the economy, through to 'upstream' solutions that prevent waste in the first place. Business level solutions include service and take back business models and manufacturing from recycled materials, community level solutions include upcycling centres, remakeries, repair cafes and tool libraries.

This project will involve Council:

- Developing 'Circular Economy Hub' sites to host circular economy business solutions to end-of-life materials, such as those solutions currently being procured to replace the Eaglehawk Landfill
- Procuring further Circular Economy solutions to hard-to-recirculate end-of-life materials e.g. textiles, hard-waste, plastics etc.
- Implementing its recently adopted Circular Economy & Zero Waste Policy to standardise the use of recycled materials in all Council projects and procure only recyclable materials and goods
- Working with local businesses to reduce their resource use and identify opportunities for circular economy business models
- Working with residents and community groups to establish local circular economy initiatives
- Developing a detailed model of the flows of materials and goods into and out of the region, to better inform opportunities for circular economy solutions in Greater Bendigo
- Expanding organics waste collection across all viable businesses in the region and recovering it for use in the region



**Figure 4 Linear, recycling and circular economies**  
Source: J. Lorenz, *The R Collective*, 2017



**Figure 5: Example model of flows of materials and goods**  
Source: Green Industries SA, 'Potential Benefits of a Circular Economy in South Australia' 2017



# Action areas

The Climate Change and Environment Strategy has six action areas, which collectively contribute to all seven outcomes in the Council Plan.

The goals and targets in each action area has been set by council in consultation with community, business and agency partners to ensure we can achieve our community vision

***Greater Bendigo celebrates our diverse community.  
We are welcoming, sustainable and prosperous.  
Walking hand-in-hand with the Traditional  
Custodians of this land. Building on our rich heritage  
for a bright and happy future.***

## ***~ Greater Bendigo's community vision***

This section outlines the 2036 goals and targets for the life of this strategy in each action area:

**BIODIVERSITY AND REGENERATION**

**ZERO CARBON**

**CIRCULAR ECONOMY**

**SUSTAINABLE & ACTIVE TRANSPORT**

**SUSTAINABLE FOOD SYSTEMS**

**WATER SENSITIVE BENDIGO**



# Biodiversity and regeneration

***Our region's Upside Down Country – the term Dja Dja Wurrung people use to describe environmental disruption and fragmentation from mining and land clearing – requires dedicated regeneration of landscapes. Together with communities and partners, the City will support protection and regeneration of biodiversity and landscapes.***

2036 Goals	2026 Targets	2036 Targets	
COUNCIL	A. Council projects regenerate landscapes & ecosystems	A1. Council has a 'net vegetation gain' plan completed	A1. 150% net gain in vegetation and biodiversity from Council projects
	B. Native habitat and areas of important biodiversity are protected for future generations	B2. Completed required investigations and consultation to increase controls under the planning scheme	32. Important environmental assets have formal protection under the planning scheme
		B3. Baseline biodiversity assessment completed	33. No net loss of native habitat in the municipality from 2016 baseline
		B4. Indicator species selection and baseline dataset established	34. The population of indicator species (determined by 2026) has increased from the baseline
COMMUNITY		C. Connected and flourishing urban and rural landscapes and ecosystems	C1. No net loss of tree and shrub cover across all Greater Bendigo
	C2. Fragmented vegetation identified and plans developed for linking them		32. No patch of native vegetation over 20 ha within the municipality is fragmented from other native vegetation
	C3. Completed a baseline assessment of local biodiversity		33. No vulnerable or near-threatened species will have become endangered
	C4. Reintroduce the 'Magnificent Six' native fish into Bendigo Creek and establish a baseline of their population		34. The 'Magnificent Six' native fish have a sustained and viable population in Bendigo Creek
	D. Strong community connection to, awareness of and care for our ecosystems and biodiversity	D1. 25% of all Greater Bendigo's residents have actively participated in stewardship of the natural environment	31. 50% of all Greater Bendigo's residents have actively participated in stewardship of the natural environment.
	E. Respectful and effective partnerships with Traditional Owners to regenerate ecosystems	E1. Two public land areas are identified to be solely managed by Traditional Owners and current management arrangements are shared, if suitable. E2. Management framework and, if required, collaborative governance arrangements with other agencies are developed.	31. Two additional public land reserves or parks managed by other agencies are solely managed by Traditional Owners (from 2021 baseline)



### Why we need to act

The Greater Bendigo municipality covers an area of 3,048km<sup>2</sup>. Within this inland landscape is an extensive network of national and regional parks, crown land reserves, public forests and private land. These areas provide important ecological functions and habitats for significant flora and fauna. Bendigo is known as the 'city in the forest' because the Greater Bendigo National Park and the Bendigo Regional Park almost surround the entire city.

Natural ecosystems give significant benefits to the community of Greater Bendigo. Services include fresh air, clean water, nutrient cycling and climate regulation as well as the preservation of culture and amenity.

Over the past two centuries, Victoria more broadly has experienced extensive biodiversity loss due to land clearing, fire, pest plants and animals, land development, river regulation, water pollution and climate change. Most biodiversity indicators are poor and trending downwards. In the Greater Bendigo region, the natural environment has been vastly changed for mining, agriculture and urban development.

Many ecological communities and biodiversity in general are still under pressure from urban development, agriculture, habitat fragmentation, invasive species and climate change. Greater Bendigo is home to 105 threatened flora species, 65 threatened birds, seven threatened mammals, four threatened fish, seven threatened reptiles, two threatened amphibians and two threatened invertebrates. Greater Bendigo is expected to lose 15 percent of all Council managed urban trees by 2030 due to their end of life, let alone trees that are lost to storms, development and other pressures. Consequently, Council is addressing this by tripling the street-tree planning program of Greening Greater Bendigo.

There are local successes where local biodiversity is improving including the reintroduction of native fish species into streams and lakes; and populations of Tuans (Brush-tailed Phascogale), Gliders and Powerful Owl at Crusoe Reservoir and Number 7 Park. However, it is difficult to assess the overall health of local biodiversity due to limited data and monitoring.

Limited resources for managing biodiversity is a major impediment to successful management. Available resources are often stretched to address the existing threats of invasive pest species and responding to inappropriate fire regimes. Whereas it is difficult to effectively resource more complex issues of repairing degraded and fragmented landscapes. Finding new approaches and partnerships and better utilising available resources are just some of the approaches required to halt the decline of biodiversity.

## Current initiatives, policy, and strategic direction

Greater Bendigo recognises the critical importance of maintaining and enhancing biodiversity, protecting areas of vegetation. In 2020, Council endorsed *Greening Greater Bendigo*, which aims to:

- Maintain liveability in a changing climate
- Connect community to nature
- Integrate green and grey infrastructure
- Celebrate the identity and enhance the aesthetic of urban areas and townships
- Increase biodiversity in urban areas

Council's *Public Space Plan* sets the direction to complete the forest edge around Bendigo and increase forest interface. Council's Invasive Plants and Animals Policy and Procedures provides the framework and operational response for pest plant and animal management.

This strategy builds on Council's current work and aligns with the State Government's goals outlined in *Protecting the environment – Biodiversity 2037* to stop the decline of our native plants and animals. We will focus on enhancing and restoring our ecological communities on public land, work with the community to do it on private land and connect vegetation within urban and rural areas.

## The benefit of investing



### Health and happiness

There is a large body of research that shows the health benefits of time spent in biodiversity-rich natural spaces, from stronger immunity to stress reduction. This is important knowledge for Greater Bendigo where rates of obesity and chronic diseases such as diabetes are far higher than the state average and are estimated to cost our community \$65m annually<sup>9</sup>. Park visitation in Victoria gives our state \$80-\$200 million per annum in avoided health costs for physically active park visitors<sup>10</sup>.



### Equity and local economy

As well as reducing heat related illness, canopy trees help to reduce people's exposure to harmful UV rays. Shade alone can reduce exposure to UV radiation by as much as 75 percent<sup>11</sup>.

Healthy and biodiverse ecosystems are critical to some of humans' most basic needs – provisions such as clean air and water, productive soils, natural pest control, pollination, flood mitigation and carbon sequestration. Ecosystems also provide us with food, raw materials for production (such as timber, pastures and fertilizers), genetic resources and pharmaceuticals, while contributing to waste decomposition and detoxification.

The value we get from 'ecosystem services' is immeasurable and replacing them would be impossibly expensive. Protecting and regenerating biodiversity avoids replacing ecosystem services with costly human alternatives.

Vulnerable communities such as the young, the frail, elderly and those with a pre-existing illness greatly benefit from efforts to increase shade in urban areas<sup>12</sup>. Increasing tree cover by 10 percent over a small building or house has an estimated \$50-\$90 per year in power savings<sup>13</sup>.

Regeneration of biodiversity connects people to their local places in ways that are beneficial for culture and community. Victoria's parks provides social benefits through volunteering work in parks valued at \$6 million per annum and park-related heritage valued at \$6-23 million per annum<sup>14</sup>.



### Culture & Community

As the custodians of the land, Traditional Owners attach great social and spiritual value to the plants and animals that have supported their subsistence and economies for thousands of years. Traditional Owners have great knowledge and cultural obligations to keep Country healthy. They know that healing country will also heal people. This strategy supports the basic human rights of Traditional Owners and Aboriginal Victorians to practise their culture, and to enjoy the economic benefits that flow from healthy ecosystems

<sup>9</sup> Healthy Heart of Victoria, <https://www.bendigo.vic.gov.au/Services/Community-and-Care/Healthy-Heart-of-Victoria>

<sup>10</sup> Parks Victoria DELWP 2015, Valuing Victoria's Parks: Accounting for ecosystems & valuing their benefits.

<sup>11</sup> Parsons et al 1998, The shady side of solar protection, Queensland Cancer Fund Laboratories

<sup>12</sup> Norton et al, 2013, *Planning for a cooler future: Green infrastructure to reduce urban heat*, VCCCAR

<sup>13</sup> Parsons et al 1998, The shady side of solar protection, Queensland Cancer Fund Laboratories

<sup>14</sup> Parks Victoria, DELWP, 2015, Valuing Victoria's Parks - Accounting for ecosystems and valuing their benefits.



## WHAT COUNCIL WILL FOCUS ON FOR 2021-2026

- Develop an ecological baseline and mapping to determine the extent and condition of existing biodiversity and remnant vegetation in Greater Bendigo
- Investigate and progress potential nature corridors between existing remnant vegetation, and commence developing partnerships and implementation arrangements to facilitate corridors
- Investigate and develop stronger planning controls to protect for native vegetation under the Planning Scheme
- Implement the Sustainability and Environment recommendations of the 2019 Planning Scheme Review
- Review and update the Rural Roadside Management Plan 2005
- Implement a program to monitor and maintain the Council's 300 environmentally sensitive water sensitive urban design assets
- Employ an Environmental Education and Community Liaison Officer
- Establish a Gardens for Wildlife program to support and empower the community to actively store biodiversity
- Establish a rare and threatened species collection and research program at the Bendigo Botanic Gardens
- Implement Greening Greater Bendigo, including:
  - Develop a local planning policy to increase tree canopy and vegetation cover in subdivision design
  - Develop a biodiversity management policy and investment plan
- Implement the Council's Invasive Plants and Animals Policy and Procedures
- Join ICLEI's Cities with Nature program

## WHAT COMMUNITY AND PARTNERS CAN DO

- Traditional Owners to manage public land and deliver natural and cultural resource management strategies on Country
- Create Wildlife friendly Gardens to attract pollinators and create habitat for native animals. Principles for design are illustrated in the Council's Creating Wildlife Friendly Gardens
- Avoid removal of native vegetation on your property
- Farmers to increase native vegetation on farm and consider how new vegetation corridors can be linked to existing remnant vegetation on your property and neighbouring properties
- Volunteer in a Landcare group (or similar) and tree planting programs to restore habitats and repair landscape health
- Volunteer in North Central Catchment Management Authority's citizen science program
- Advocate for increased native vegetation on public land to support threatened species habitat
- Advocate for more native revegetation along waterways to improve habitat for local fauna, decrease nutrient loads and decrease sedimentation in waterways



# Zero carbon

**Zero carbon is about reducing carbon emissions as quickly as possible, and thus contributing to climate change mitigation. The City is not only committed to achieving zero carbon, we will facilitate energy equity, carbon sinks, and locally owned power.**

## 2036 GOALS

## 2026 TARGETS

## 2036 TARGETS

COUNCIL	<b>F. Zero carbon from Council operations by 2030</b>	F1. No new gas connections in new council buildings built after 2021 F2. 60% of council small and medium-sized owned and operated buildings transitioned off-gas F3. 90% of Council owned buildings have solar systems installed F4. 35% of lightweight fleet is electric F5. Five heavy plant vehicles are electric or powered by a sustainable fuel source F6. Program for local regenerative offsets established in partnership with North Central CMA F7. Offsets purchased to reach 2026 net-zero target F8. More than 60% of Council's funds are: invested with financial institutions that do not lend to fossil fuel industries; or invested in products that reduce carbon emissions	F1. All council owned buildings powered by 100% renewable locally generated electricity F3. 100% electric lightweight vehicle fleet F4. 100% of the heavy vehicle fleet is electric or powered by a sustainable fuel source F7. Purchase 25% fewer offsets than in 2031 F8. 100% of Council's funds are: invested with financial institutions that do not lend to fossil fuel industries; or invested in products that reduce carbon emissions F9. Leverage \$100 million investment in local regenerative projects that bring Greater Bendigo community beyond net zero
	<b>G. Zero carbon across Greater Bendigo community by 2030</b>	G1. 40% households and commercial businesses have solar system installed G2. 50% of region's 2021 energy demand is generated through local renewable energy G3. No gas connection in new subdivisions (e.g.no option to connect) G4. One Zero carbon new development G5. 20% of all passenger vehicles sold in Greater Bendigo are electric or hybrid	G1. 50% community ownership of local renewable energy (incl commercial solar and wind and community generation) G2. 500% of the region's 2021 energy demand is generated through local generated renewables G3. Community and business don't use fossil fuel for their stationary energy G5. 95% of Greater Bendigo's passenger vehicles sold are electric or hybrid G6. 100% of public transport is powered by a sustainable fuel source

## Why we need to act

The Greater Bendigo community is currently responsible for more than 1.8 million tonnes of carbon emissions per year. To achieve zero carbon, we need to continue reducing our emissions by focussing on the source – gas, electricity, fuel and the materials we use. We can reduce our emissions by transitioning away from fossil fuels, increasing our renewable energy generation to power our facilities and purchasing offsets.

While Council has little direct control over emissions generated by the community, we can act on behalf of our communities to influence change, and we can show leadership and support our community to transition to net-zero emissions.

## Current initiatives, policy and strategic direction

In May 2021, Council was proud to join 45 other Victorian Local Governments in announcing the Victorian Energy Collaboration (VECO) - a joint contract to purchase renewable energy. The 46 Councils have pooled investment of 240 gigawatt hours of renewable electricity, reducing greenhouse emissions by 260,000 tonnes of carbon dioxide per year. For Council, this means we have shifted all our purchased electricity to 100% renewable, at a lower cost than business as usual. The project demonstrates the value of local governments working together and highlights that large-scale collaboration is possible to transition to a renewable energy future and address climate change.



With this step change to renewable energy, the Council's focus now turns to electrification of all buildings and fleet so that all the energy we use can be 100% renewable. And we look further, to the building materials we use and how the planning scheme can deliver healthy, resilient and sustainable buildings and new subdivisions.

## The benefit of investing<sup>15</sup>



### Health and happiness

Research into the economic and social benefits of zero carbon cities shows that direct investment into low carbon projects reduces health and energy costs. For example:

- The community health benefits of improving indoor air quality can be more than 10 times the value of energy savings, especially important in the context of a pandemic
- Staff in energy-efficient buildings have been found to be more productive due to a healthier working environment and less illness

Up to half of the total benefit of building retrofit programs are in the form of improved health, thermal comfort and living conditions – particularly for more vulnerable groups in the community.



### Equity and local economy

Achieving zero carbon will build a more competitive local economy and create high-quality jobs. The focus on energy equity in this strategy will increase energy efficiency and improve access to affordable energy for low income homes.

Supporting local ownership and control over energy generation and supply will contribute to a more competitive energy market, bringing down costs for our community and council operated facilities and homes.

In the long term, a Zero Carbon Greater Bendigo will reduce liability risks and costs to Council and ratepayers, by preparing for climate impacts.



### Culture & Community

Collectively reducing our emissions will foster communities to move toward more sustainable lifestyles. Exchanging knowledge and skills amongst neighbours and local communities about how we can live a zero carbon lifestyle will increase our confidence and community connections.

<sup>15</sup> Gouldson, Sudman, Khreis & Papargyropoulou (2018), 'The Economic and Social Benefits of Low-carbon Cities - A Systematic Review of the Evidence', The University of Leeds

## WHAT COUNCIL WILL FOCUS ON FOR 2021-2026

- Purchase all electricity used by Council owned and operated facilities from 100% renewable energy via VECO (2022).
- Support community groups operating from Council owned facilities to access 100% renewable energy via VECO
- Facilitate and plan for the transition to locally generated renewable energy power supply
- Install solar panels on Council owned buildings via Power it from the Rooftop program
- Progressively remove existing gas appliances from Council owned buildings (including those run by community) and replace them with electric alternatives
- Develop a policy mandating no new gas connections installed in Council owned and operated buildings
- Progressively replace Council's lightweight vehicle fleet to be electric vehicles
- Investigate options and costs to transition Heavy Fleet away from fossil fuels
- Install Electric Vehicle charging stations at selected Council sites powered by renewable energy
- Purchase offsets for other emissions to reach 2026 Target, including offsetting emissions from fleet, landfill and gas
- Raise awareness and support community groups to prepare for climate change and create zero carbon homes and lifestyles
- Identify and retrofit Council owned buildings to maximise energy efficiency
- Develop a baseline of energy intensity across all Council's assets and operations
- Partner with North Central Catchment Management Authority and other stakeholders to explore and develop local carbon offset schemes
- Advocate for upgrading inefficient street lights on major roads

## WHAT COMMUNITY AND PARTNERS CAN DO

- Participate in the Greater Bendigo Climate Collaboration, including developing and implementing zero carbon plans
- Retrofit homes with energy efficient appliances and fixtures; install solar panels and batteries; and progressively remove gas appliances at the end of their working life
- Support Bendigo businesses to transition to 100% renewable electricity and increased energy efficiency
- Support locally owned renewable energy generation and storage projects, including:
  - via the Greater Bendigo Climate Collaboration flagship project
  - Partnering with housing agencies
  - Solar Savers – zero interest loans for solar.
  - Australian Energy Foundation
- Advocate for the community partnership in renewable energy development projects (e.g. solar farms require 20% local community ownership)
- Advocate for:
  - Victorian Renewable Energy target
  - Finance products and options for low-income households to gain access to renewable energy and housing upgrades
  - Minimum rental energy efficiency standards for rental housing
  - Minimum Energy Performance Standards

### Carbon offsets

Carbon offsets are certificates that represent emission reductions that have occurred elsewhere. They drive investment into emission reduction projects that would not have occurred otherwise. Council purchased carbon offsets to achieve our 2020 target and will continue to purchase offsets as we also take action to electrify buildings and fleet. Purchasing carbon offset certificates allows us to accelerate our progress toward net zero emissions for Council operations.

# Circular economy

*It is time for Greater Bendigo to transition to a circular economy. A circular economy aims to revolutionise the cycle of production, consumption and disposal, by designing out waste and pollution. It will do this by keeping products and materials in use and regenerating natural systems. With good design and effective recovery of materials, we can avoid waste and create new industries.*

## 2036 GOALS 2026 TARGETS

## 2036 TARGETS

COUNCIL

### H. Zero recoverable waste from Council operations

- H1. 35% reduction in Council's 'general waste' production (baseline of 3420t/y general waste from 2020)
- H2. Zero organics to landfill from the Council
- H3. 25% reduction in the 'embodied carbon' footprint of Council operations
- H4. Reused and recycled content products and materials are a standard part of project design and service delivery

- H1. 90% reduction in Council's 'general waste' production (baseline of 3420t/y general waste from 2020)
- H2. Zero organics to landfill from the Council
- H3. 50% reduction in the 'embodied carbon' footprint of Council operations
- H4. Council use reused and recycled content products and materials in all projects

COMMUNITY

### I. A well-established circular economy with zero recoverable waste to landfill

- I1. Zero organics to landfill from the region
- I2. 72% of region's 'waste' diverted from landfill
- I3. Council has established 'Circular Economy Hubs'

- I1. Zero recoverable resources (including organics) sent to landfill from the region
- I2. Reduce material consumption to .2 tonnes per person per year (baseline in 2020 was 34.8 tonnes per person per year)
- I3. All products and materials in Greater Bendigo have recycled or reused content
- I4. Exceed Victorian Government's targets of 80% waste diversion from landfill and 15% per capita reduction in waste production





## Why we need to act

All levels of government in Australia face a challenging future when it comes to dealing with the end-of-life materials currently known as 'waste'. This challenge is influenced by Australians' high level of consumption and disposal of 'waste', along with Australia's previous reliance on exporting our "recycling" waste. However, in 2017 China decided to stop accepting recycling waste, which has forced Australia's waste and recycling industry to rapidly change its approach. A raft of state and national strategies have been prepared to inform this transition.

For Greater Bendigo, the imminent closure of Eaglehawk Landfill is exacerbating the urgency for new solutions, as the site will close as a landfill in 2022. Consequently, innovative solutions are required. This includes evolving from a waste resource management approach to a circular economy approach.

Circular economy aims to shift how society consumes resources, moving from a "waste cost" approach of 'take-make-waste', to a "value" approach of 'take-make-remake'. It is estimated that this shift is worth \$US 4.5 trillion per year globally<sup>16</sup>. Simultaneously, it represents an opportunity to mitigate climate change, as material consumption represents 45% of global emissions<sup>17</sup>.

However, material consumption and disposal is heavily embedded in current Australian lifestyles, therefore we must change our practices and attitudes towards 'waste'. This change must start within our homes and workplaces but also be supported by new business models to utilise previously discarded waste.

## Current initiatives, policy and strategic direction

Council has taken measures to reduce waste reaching landfill by making it easier for the community to divert food and organics (FOGO) from landfill through a kerbside system. Council further provides collection programs for electronic waste (e-waste), hard rubbish and chemical waste. Educational resources are also provided to the community to promote better use of materials and incorrect disposal. Recently, Council has developed a Circular Economy and Zero Waste Policy to encourage

better use of the materials we design, develop, and use. This policy aims to avoid 'waste' by keeping our material resources in circulation.

By implementing this policy, Council can make significant changes including improving use of resources and decreasing emissions from material production and landfill. This approach will help us contribute to mitigating climate change.

Over the next five years, Council has committed to build on the work we have already done to:

- Find ways to reduce the quantity of virgin materials used
- Drive regional demand for recycled content and create a market for recirculated materials
- Reduce the embodied carbon footprint in Council operations

## The benefit of investing



### Health and happiness

A circular economy supports sustainable growth, good health and decent jobs, while reducing our impact on the environment and natural resources. The benefits are both direct, such as savings in the health care sector, and indirect, from reduced environmental impacts of production and consumption<sup>18</sup>.



### Equity and local economy

Innovation is crucial to realising possible economic gains from designing new products and materials, advanced manufacturing and embracing new business models to create domestic and export markets for waste streams. Designed well, the transition could triple job creation from resource recovery in Greater Bendigo. The recycling sector currently generates 9.2 jobs per 10,000 tonnes of 'waste' product, compared to only 2.8 jobs for the same amount sent to landfill. Increasing Australia's recovery rate by just 5% would add an estimated \$1 billion to GDP<sup>19</sup>. The transition to a circular economy will take significant upfront

<sup>16</sup> Lacy, P., Long, J., Spindler, W., 2020, The Circular Economy Handbook: Realising the circular advantage

<sup>17</sup> Ellen McArthur Foundation, 2019, Completing the picture: How the circular economy tackles climate change, V3

<sup>18</sup> International Institute for Sustainable Development, 2020, Effects of the Circular Economy on Jobs

<sup>19</sup> Access Economics, 2009, Employment in waste management and recycling A report prepared for the Department of Environment, Water, Heritage and the Arts



### Culture & Community

investment and will need to consider how environmental impacts can be reduced at a local scale and how to improve equality within the economy through reforms and economic tools.

Consumer demand is driving changes in materials choices. A circular economy increases opportunities for increasing community connections by creating sharing platforms for equipment, knowledge, appliances or vehicles, connecting businesses who have by-products that can be used as a resource somewhere else, and promoting the right to repair equipment.

### WHAT COUNCIL WILL FOCUS ON FOR 2021-2026

- Evaluate options and implement solutions to address the closure of Eaglehawk Landfill
- Revise design and procurement approaches for new and existing projects that require the use of reused and recycled products and ensure product recyclability at end of life.
- Provide all Council facilities with access to organic recycling options
- Implement the single use plastics policy
- Reduce general waste to landfill by implementing the Circular Economy and Zero Waste Policy
- Quantify Council's embodied carbon emissions (e.g. scope 3 emissions)
- Engage with businesses and residents to support adoption of reused and recycled materials
- Establish 'Circular Economy Hubs' that act as physical material hubs for the drop-off and recirculation of materials and products from and for both commercial and residential activities
- Support the establishment of Tool Libraries, Repair Cafes, Library of things to facilitate the repair and sharing of products and goods rather than the need to buy new

### WHAT COMMUNITY AND PARTNERS CAN DO

- Commercial and industrial businesses can seek new opportunities to use waste as a resource and reduce waste generation
- Avoid disposal of 'waste' materials and products by practising the 5 Rs of refuse, reduce, reuse, repurpose, and recycle
- Divert food and organics from landfill by using kerbside FOGO collection or backyard composting
- Avoid plastic bag shopping and single use plastic
- Buy products with less packaging to influence suppliers
- Actively support retailers who offer take-back old products or recycling schemes for end of life consumables

# Sustainable & Active Transport

**Greater Bendigo has the opportunity to recalibrate our transportation system to enable more sustainable and active forms of transport. Such a shift will stimulate our local economy, improve our health and reduce our emissions.**

## 2036 Goals

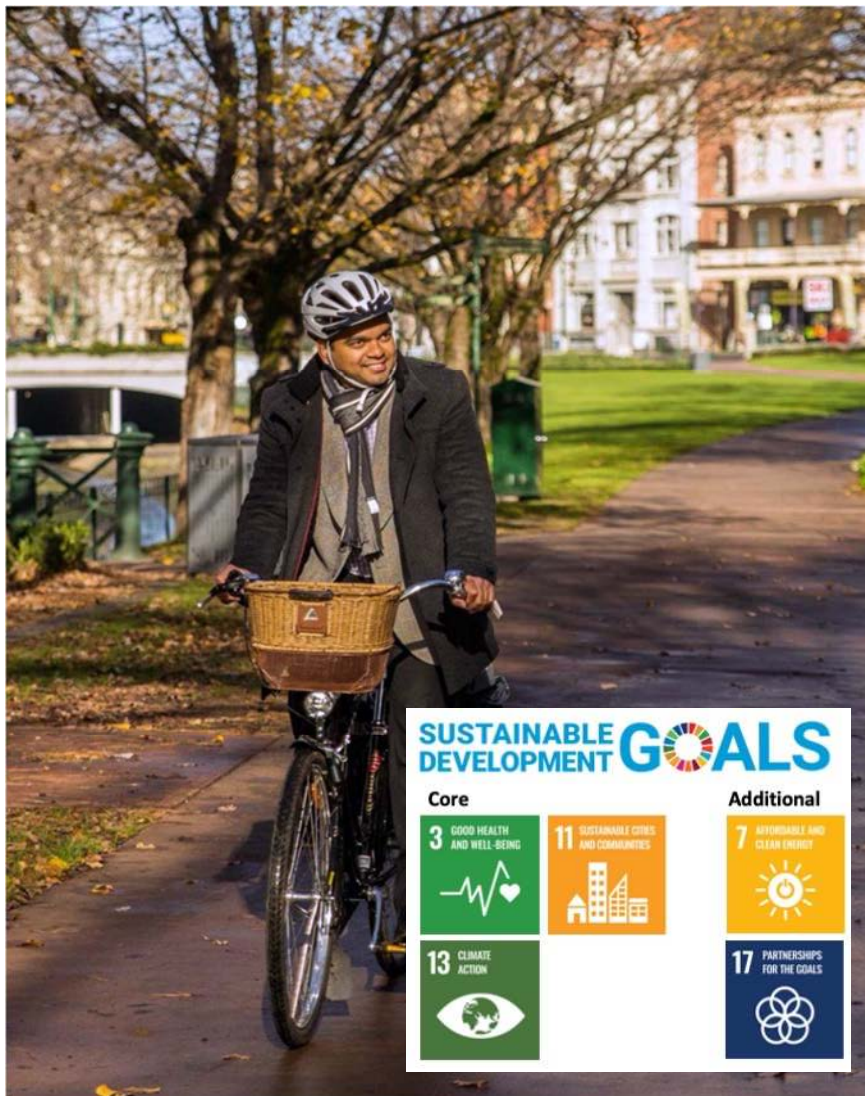
## 2026 Targets

## 2036 Targets

COUNCIL	<b>J. Council staff use active, public and low carbon transport</b>	J1. 20% of staff trips to work are by active, shared and public transport.	J1. 66% of staff trips to work are by active, shared and public transport
	<b>K. Greater Bendigo has a safe and well-connected active transport network</b>	K1. Priority gaps in the walking and cycling network have been reduced by doubling the new footpath program (baseline 2.2 km in 2020) K2. 10-year walking and cycling infrastructure plan developed and implementation commenced	K1. All priority gaps in the footpath network have been addressed (as identified in the 10 year walking and cycling infrastructure plan.) K2. The shared path network <sup>20</sup> includes strategic connections in: Bendigo City centre, Regional City Trail, Ironbark Gully Trail, Bendigo Low-line, University to City Centre, Eaglehawk to city centre, Huntly to Bendigo, Maiden Gully to Bendigo
COMMUNITY	<b>L. Transport and development installs infrastructure that supports active and public transport</b>	L1. A commuter rail service is servicing Goornong (via Huntly and Epsom), Raywood (via Eaglehawk) and Kangaroo Flat to Bendigo L2. 10 kilometres of additional shared paths installed in new developments L3. Urban bus service is servicing Marong, and adjusted bus services to reach growth areas in Maiden Gully and Huntly	L1. A commuter rail service is servicing Goornong (via Huntly and Epsom), Raywood (via Eaglehawk) and Kangaroo Flat to Bendigo L2. 60 kilometres of additional shared paths installed in new developments L3. Bus stops within 400m of 90% of dwellings within the urban area of Bendigo and 15-minute frequency on priority routes
	<b>M. Greater Bendigo community uses active, public and low carbon transport network</b>	M1. 10% of trips are by active transport M2. Car sharing program established	M1. One third of all trips are by active transport, and one third of all trips are by public transport M2. 50% of the population are using car and/or bike sharing programs

<sup>20</sup> As identified through the Walk, Cycle Greater Bendigo Strategy





### Why we need to act

Greater Bendigo relies heavily on private and commercial vehicles to transport people and goods to and from destinations and around the region. However, cars are responsible for roughly half of Australia's transport emissions. In Greater Bendigo, more than 85% of the population rely on cars for their transportation.

Throughout the Greater Bendigo region, the active transport network is fragmented and there is low participation (<8% of the population). There is also low connectivity between urban bus services and low service frequency. Regional centres and towns are not well integrated, for example, it is difficult to get from Bendigo to Ballarat because there is no rail link. Collectively, these factors increase Greater Bendigo's reliance on private cars.

Active transport drives improved health outcomes and reduces carbon emissions. There is currently 700 km of footpaths in the City of Greater Bendigo relative to 2,800 km of roads (approximately half unsealed<sup>21</sup>). Socially, sustainable transport improves health and wellbeing by increasing active travel. This has multiple benefits as it improves physical and mental wellbeing, whilst also reducing the health costs and personal impacts of sedentary lifestyles.

### Current initiatives, policy and strategic direction

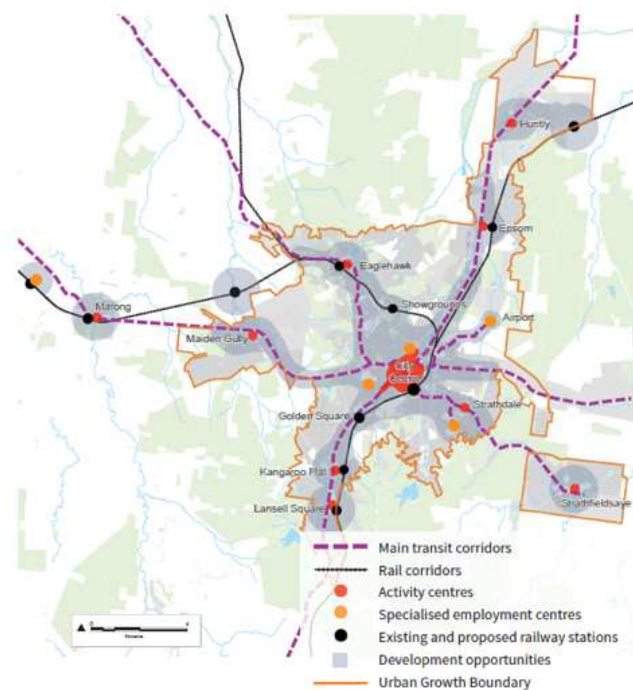
The Integrated Transport and Land Use Strategy (ITLUS) and the Walk Cycle Greater Bendigo Strategy have changed the way we think about movement across Greater Bendigo. Both strategies have set clear directions for strengthening connections between people and places, improving health and wellbeing, improving public transport networks, changing individual travel behaviours, using low carbon modes of transport and inspiring innovation.

These strategies are driving an increasing shift to more shared paths and linking existing paths and trail networks around Greater Bendigo. Creating safe and convenient travel options is a priority for the Council.

<sup>21</sup> Multi-modal Integrated Transport Strategy, Bendigo Action Plan Case Study 2020-2040

This Strategy builds on the direction of ITLUS and Walk Cycle Greater Bendigo to provide a greater emphasis on active modes of transport, which can help us reduce our individual carbon emissions.

**Figure 4 ITLUS land use objectives<sup>22</sup>**



## The benefit of investing



### Health and happiness

Active transport contributes to good physical and mental health through exercise, being outdoors and improved air quality (e.g. less smog from cars). Victoria Transport Policy Institute research adapted for Bendigo shows that investment in sustainable transport has a benefit-cost ratio greater than 1.3, due to the wide benefits in increased safety, improved health, time savings and better use of public land<sup>23</sup>. Additionally, every time someone cycles 20 minutes to and from work, the Greater Bendigo community will gain a net economic benefit of \$21.<sup>24</sup>



### Equity and local economy

While there are benefits for all community cohorts, sustainable transport and sharing services has even greater benefits for vulnerable communities, as it improves accessibility for young people, the elderly, non-drivers and those without the means to own and run a car.

Economically, sustainable transportation will help reduce the costs of car dependency and the costs to upgrade road infrastructure. Additionally, there are avoided costs by reducing the health costs associated with sedentary lifestyles.



### Culture & Community

Sustainable transport increases the opportunities for the interactions that build communities and social capital. Sustainable transportation modes prevent urban sprawl and expansion of road infrastructure that places physical separation between people and places.

<sup>22</sup> Integrated Transport and Land Use Strategy, 2015, p15.

<sup>23</sup> Regional Roads Victoria, Multimodal Integrated Transport Strategy, Bendigo Action Plan Case Study 2020-2040

<sup>24</sup> <https://www.smh.com.au/national/bike-riders-save-economy-21-on-each-commute-20130730-2qxdg.html>

## WHAT COUNCIL WILL FOCUS ON FOR 2021-2026

- Implement Walk, Cycle Greater Bendigo Strategy including:
  - A 10 year walking and cycling infrastructure plan
  - An activation plan to increase community capacity to use active transport
  - Develop a budget bid to increase the funding for new footpaths
- Design and construct the Mundy Street and Hargreaves Street separated cycleway infrastructure to enable better connections to the City Centre
- Deliver priority works to reduce gaps and barriers within the walking and cycling network (including building underpasses and road crossings)
- Deliver sustainable transport education program promoting low carbon modes of transport
- Update the Environmentally Sustainable Design policy and deliver increased bicycle parking and change room facilities for new developments
- Partner with Development Victoria to deliver best practice bicycle and end of trip facilities in GovHub
- Advocate for additional and more frequent public transport options that meet growing community needs
- Advocate for bike sharing and car sharing programs
- Advocate for the implementation of the Bendigo metro rail project
- Advocate for Public Transport to be powered by renewable or sustainable fuel sources

## WHAT COMMUNITY AND PARTNERS CAN DO

- Reduce transport related emissions by regularly walking and riding, using public transport and carpooling
- Advocate for improved workplace facilities to support active transport
- Advocate for improved public transport services including more frequent services and greater coverage
- Advocate for improved walking and cycling infrastructure
- Start or join a shared car and/or bike program



# Sustainable Food Systems

*The Greater Bendigo region is a unique landscape, with extensive agriculture, excellent hospitality and Indigenous food systems that date back thousands of years. Faced with biodiversity decline, climate change and the need for healthier lifestyles, Greater Bendigo is changing what we grow and eat, how we support our community and heal our regional landscape.*

## 2036 GOALS

## 2026 TARGETS

## 2036 TARGETS

COUNCIL

N. Council is a leader in sustainable food procurement, practices, and policy	N1. 30% of relevant City contracts, leases and tenders include clauses related to sustainable food practices	N1. All relevant City contracts, leases and tenders pertaining to food include clauses related to sustainable food practices
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O. Sustainable food production systems are viable, resource efficient and regenerate natural ecosystems	O1. 20% farms are on the sustainable agriculture rate O2. 20% primary producers involved in a Landcare group or similar	O1. 60% farms are on the sustainable agriculture rate O2. 60% primary producers involved in a Landcare group or similar
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P. Communities are aware of the resources and required to produce food and know how they can influence the food system	P1. 80% of early childhood education settings, primary and secondary schools incorporate sustainable food system education into the curriculum	P1. All early childhood education settings, primary and secondary schools incorporate sustainable food system education into the curriculum
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Q. Enable Traditional Owners to grow and harvest indigenous food and fibre plants	Q1. Annual target area of land to plant and harvest, as set by Traditional Owners, is achieved	Q1. Annual target area of land to plant and harvest, as set by Traditional Owners, is achieved
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COMMUNITY



## Why we need to act

Council recognises that the majority of our food is, and will continue to be, sourced from commercial-scale production systems because these provide affordable food to the majority of people. However, with the evolving impacts from climate change and biodiversity decline, and impacts to global supply chains, we will require our food systems to be more sustainable and locally sourced.

Our food systems are currently reliant on significant inputs such as fertilisers, pesticides, and herbicides to enable continuous, large-scale food production. However these practices cause many environmental impacts including: degradation of water and soil; destruction of beneficial insects, pollinators and microbes; and large carbon emissions. Additionally, the production of processed and packaged food is resource intensive and generates large volumes of by-products, which often end up as waste disposable.

The need to change our food systems is abundantly clear, and collectively we need to work towards a food system that can absorb carbon, create circular resource flows and regenerate our local biodiversity.

## Current initiatives, policy and strategic direction

In 2019, Bendigo was designated a UNESCO Creative City of Gastronomy – the first in Australia. Our gastronomy story is about growing, sourcing, cooking and sharing food. This has given Greater Bendigo a strong link to networks across the globe through the UNESCO Creative Cities Network, which aims to drive sustainable development through creativity.

Greater Bendigo's Food System Strategy was developed in 2020, and it provides direction for Council and its partners to create a healthy, equitable and sustainable food system. This includes supporting local primary producers to produce healthy food whilst regenerating the land and ecosystems; reducing food waste; improving the health and wellbeing of our communities; and enabling Traditional Owners to grow and harvest food and fibre plants. It further provides a framework for Council to be a leader in sustainable food procurement, practices, and policy.

## The benefit of investing



### Health and happiness

Cultivating sustainable local food systems can significantly enhance the health and wellbeing of communities; improve the availability of and access to nutritious food; strengthen the local economy; and revitalise urban and natural environments<sup>25</sup>. A national review of the Stephanie Alexander Kitchen Garden Program indicated the program increased children's willingness to try new foods and improved children's knowledge and confidence in relation to growing, preparing, cooking and eating a diverse range of fresh foods<sup>26</sup>.



### Equity and local economy

Sustainable food systems can help build stronger and more sustainable local economies and support networks<sup>27</sup>, which in turn improves food security and the health of local residents.<sup>28</sup>



### Culture & Community

Greater Bendigo has a diverse cultural heritage. Celebrating culture through growing, cooking and sharing food brings people together, helps bridge cultural differences and fosters connection. Growing food offers a way to connect the broader Bendigo community with caring for the land and create connection through sharing of knowledge and swapping seeds and produce.

For Greater Bendigo's Traditional Owners, Country is more than a place and is linked to identity – spiritually, culturally, socially, physically, and emotionally. Growing and harvesting food, fibre and medicine plants supports healing, reconciliation and caring for Country.

<sup>25</sup> Lock & Associates, 2011

<sup>26</sup> Block et al. 2019

<sup>27</sup> Bell et al. 2013

<sup>28</sup> <https://localfoodenvironments.com.au/page/13/economicenvironments>

## WHAT COUNCIL WILL FOCUS ON FOR 2021-2026

- Implement Greater Bendigo's Food System Strategy
- Progress the City of Gastronomy, including promoting and supporting sustainable food production
- Provide financial incentives for producers to transition to sustainable agricultural practices including applying for the sustainable agriculture rate
- Improve Council's procurement practices by preferencing caterers who source locally produced food
- Encourage local businesses and community to procure food from local producers
- Support schools and early education centres to incorporate sustainable food education into the curriculum, including kitchen garden programs
- Enable Traditional Owners to grow and harvest traditional food and fibre plants
- Support local businesses and the community to avoid food and packaging waste
- Partner with North Central Catchment Management Authority and Landcare groups to promote and deliver sustainable agricultural practices
- Advocate for greater incentives for primary producers to transition to regenerative / agro-ecological practices, including carbon sequestration
- Advocate to State and Federal government to create more sustainable food systems

## WHAT COMMUNITY AND PARTNERS CAN DO

- Learn about the origins of your food purchases and who and how it is produced
- Grow food and create pollinator habitats within your backyard, including practicing organic and permaculture gardening techniques
- Support local farmers and producers by buying locally and sustainably grown and produced food
- Choose foods that are fresh and in season
- Consume less meat and dairy, and eat more plant based diets
- Select food that is as close as possible to its natural form, with minimal processing and packaging
- Plan meals and consume food responsibly to avoid food waste
- Join a local Landcare group or similar

At the time of writing, Council was in the process of developing a sustainable agricultural rate as part of its review on property rates. The sustainable agricultural rate aims to incentivise sustainable agricultural practices by having a cheaper rate for primary producers who demonstrate best practice.



# Water Sensitive Bendigo

*Waterways across Greater Bendigo have high environmental, recreational, cultural and economic value. They play an important role in sustaining physical and mental wellbeing of our communities and the appearance of our city and towns. Tackling current and future water challenges will require an integrated and coordinated approach so that the full benefits of the urban water cycle are realized by all.*



## 2036 GOALS

## 2026 TARGETS

## 2036 TARGETS

COUNCIL	<b>R. Council operations are water efficient and utilise diverse water supplies</b>	R1. Council's total use of potable water reduced by 5% from the 2016 baseline (307 ML)	R1. Council's total use of potable water reduced by 30% from the 2016 baseline (307 ML)
	<b>S. Flood risk in Greater Bendigo is reduced through flood mitigation infrastructure and planning</b>	S1. A 5% reduction in flooding occurrence affecting properties (2020 baseline).	S1. A 30% reduction in flooding occurrence affecting properties (2020 baseline).
	<b>T. Investment in water projects is secured through collaborative partnerships</b>	T1. The Water Sensitive Bendigo partnership has leveraged \$0.5 million investment in water initiatives and infrastructure	T1. The Water Sensitive Bendigo partnership has leveraged \$50 million investment in water initiatives and infrastructure
COMMUNITY	<b>U. Waterways in Bendigo are healthy, connected &amp; nurturing places</b>	U1. Three large WSUD infrastructure projects are designed and approved U2. Design and approvals for 5 kilometres of new shared paths along waterways of Bendigo U3. 50 new meeting places located along waterways of Bendigo	U1. All Bendigo catchments have WSUD infrastructure that reduces peak flows and average nutrients and suspended solid loads by 60% U2. 20 kilometres of new shared paths along waterways of Bendigo U3. 150 new meeting places located along waterways of Bendigo
	<b>V. Waterways in Greater Bendigo are collectively managed by Traditional Owners, agencies and community</b>	V1. Two waterway reserves are co-managed by the Djaara or Taungurung and relevant agency.	V1. Two waterway reserves are solely managed by the Djaara or Taungurung.

The City of Greater Bendigo is situated within the catchments of the Loddon and Campaspe Rivers, which is an upper part of the Murray Darling Basin. Greater Bendigo is naturally water scarce, and significant water supply infrastructure has been built to support the development of Bendigo and surrounding towns. These contextual factors continually require the Greater Bendigo community to be prudent with their water usage so that water can be equitably shared with the broader catchment. It further requires the Greater Bendigo community to avoid polluting our creeks and rivers so that we pass on clean water to downstream communities and ecosystems.

### Why we need to act

The future availability of water for Greater Bendigo will be challenged by population growth, whereby the population is expected to more than double to 250,000 by 2056. This challenge will be exacerbated by climate change, as annual rainfall is expected to reduce by up to a third by 2070. The duration and frequency of drought is also forecast to increase over the course of the century. Overcoming these challenges, along with addressing current water challenges, will require ongoing leadership and innovation.

Flooding remains an ongoing challenge for Greater Bendigo, and future storm events are projected to increase in severity and frequency<sup>29</sup>. Urban areas will be particularly impacted due to the abundance of concrete and pavements and development of floodplains. To reduce flood risk, urban areas must be progressively retrofitted with flood storages and levees, whilst also reducing the amount of hard surfaces and incorporating water sensitive urban design elements.

Greater Bendigo has legacy mining issues that impact the local groundwater, creeks and land. Mine impacted groundwater has resulted in contaminated groundwater which is rising within parts of Bendigo. This problem is currently reliant on high cost management interventions of groundwater extraction and treatment. However, the interim solution is not sustainable, DELWP is currently working with relevant agencies to identify a long-term solution.

### Current initiatives, policy, and strategic direction

The City of Greater Bendigo is committed to building and supporting collaborative partnerships to address current and future water challenges. In 2019, a cross-agency partnership known as Water Sensitive Bendigo was formed to implement the Vision and Transition Strategy for Water Sensitive Bendigo. The partnership has been formalized via memorandum of understanding, and the partner organisations include: Dja Dja Wurrung, City of Greater Bendigo, Coliban Water, the Department of Environment, Land, Water and Planning and the North Central Catchment Management Authority. The Water Sensitive Bendigo partnership includes a cross-agency governance structure, and they continue to progress and adapt their implementation plan.

Water for Victoria (2016) is the key policy for water management in Victoria, and amongst other things, it has driven the uptake of integrated water management approaches across the State. This means there is better integration of social, cultural, economic, and environmental factors in water decision making. To support this, DELWP has created Integrated Water Management forums to allocate priority investment and coordinate future policy development.

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<sup>29</sup> Timbal, B. et al. 2015, *Murray Basin Cluster Report, Climate Change in Australia Projections for Australia's Natural Resource Management Regions: Cluster Reports*, eds. Ekström, M. et al., CSIRO and Bureau of Meteorology, Australia

## The benefit of investing



### Health and happiness

It is widely understood that water quality is strongly linked to our health and the health of our environment. Water ecosystems both replenish and purify our water resources which is essential to human health and wellbeing.

Research by Beyond Blue<sup>30</sup> shows that, irrespective of socio-economic background, age or gender, contact with natural environments has a significant positive effect both physically and psychologically on human health and wellbeing. It affects numerous parts of a person's life such as:

- Reducing anger, frustration and aggressions,
- Increases a sense of belonging and acceptance
- Socialisation, mobility, mental stimulation, touch and physiological benefits.



### Equity and local economy

Access to clean safe drinking water is a human right. Adequate planning protections, infrastructure and stewardship of our waterways can significantly reduce the threats to water quality from the introduction of contaminants through activities on the water, intensification of land use, bushfires, and flooding events<sup>31</sup>.

It is estimated that urban landscapes with 50–90% impervious cover can lose 40–83% of rainfall to surface runoff compared to 13% in forested landscapes<sup>32</sup>. Water sensitive urban design and implementation of water efficiency measures in projects will help to conserve the potable water we have by retaining water in the landscape rather than putting extra demand on our potable water supply for parks and home gardens.



### Culture & Community

People who are connected to waterways are often motivated to look after them because they have a special connection to their local part of the waterway, landscape, and community. Providing opportunities to interact with the natural environment through shared paths, seating areas, citizen science and environmental volunteering facilitates that connection overtime.

Traditional Owners have lived on and cared for Country over many thousands of years. Enabling Traditional Owners to care for Country (particularly through joint and sole management opportunities) will produce a wide range of benefits for the health and wellbeing of Aboriginal people, the wider community, and biodiversity.

<sup>30</sup> Townsend, M & Weerasuriya, R. (2010) Beyond Blue to Green: The benefits of contact with nature for mental health and wellbeing. Beyond Blue Limited: Melbourne, Australia.

<sup>31</sup> Annual report on drinking water quality in Victoria 2019-20

<sup>32</sup> IUCN, 2013, Urbes Project - Valuing ecosystem services in urban landscapes

## WHAT COUNCIL WILL FOCUS ON FOR 2021-2026

- Implement Reimagining Bendigo Creek Plan including:
  - Finalise integrated water quality monitoring plan
  - Commence creating chain of ponds on Bendigo Creek
  - Retrofit the urban catchment with flood mitigation and WSUD infrastructure
  - Enhance cultural values and connections to urban creeks
- Develop a policy for the water quality reserve that advances Water Sensitive Urban Design outcomes for new developments and stormwater offsets
- Develop the Central Bendigo and Heathcote flood mitigation studies
- Evaluate and secure funding for highest priority flood mitigation options for Greater Bendigo
- Partner with Coliban Water to install digital meters on Council's water connections and implement water efficiency measures
- Investigate and evaluate alternative water supply infrastructure for Council's assets
- Develop a policy to promote alternative water supply options (includes stormwater harvesting) for new sporting fields and recreational reserves
- Implement Council's Domestic Wastewater Management Strategy
- Facilitate the Water Sensitive Bendigo Partnership including shared decision making for integrated water management outcomes
- Support and facilitate relevant agencies to undertake water security planning including investigating alternative supply options
- Advocate for and enable Traditional Owners to heal Country and actively manage waterways
- Partner with North Central Catchment Management Authority and other agencies to monitor and raise awareness about waterway health
- Partner with DELWP to identify a long-term solution for the Bendigo Groundwater project
- Partner with Coliban Water to improve household and business water use efficiency
- Advocate for investment for priority water initiatives via the Water Sensitive Bendigo Partnership

## WHAT COMMUNITY AND PARTNERS CAN DO

- Install water tanks and adopt water saving behaviours in your homes and businesses
- Construct a frog pond or rain garden in your backyards
- Businesses can increase water efficiency and/or adopt recycled water and stormwater for non-potable water uses
- Volunteer in a Landcare group (or similar) to restore catchment and creek health
- Volunteer in North Central Catchment Management Authority's citizen science program
- Advocate for Traditional Owners to secure adequate and equitable water rights that meet their social, cultural, spiritual, economic, and environmental needs



**City of Greater Bendigo**

PO Box 733

Bendigo VIC 3552

P: 03 5434 6000

E: [requests@bendigo.vic.gov.au](mailto:requests@bendigo.vic.gov.au)

W: <http://www.bendigo.vic.gov.au>

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