

# How we're going to get there: **21 Action Steps**

**Our transition journey starts now  
but requires tangible actions  
over the course of ten years.  
These are the steps Mornington  
Peninsula Shire intends to take.**

The 21 actions outline how the Shire will respond to the climate emergency, and how we will collaborate with you to prepare for change and lower our collective community emissions.

The actions - step by step - provide the momentum for us to reach the Seven Summits and the Peak Goal. Each action outlines a key focus, and lists many detailed tasks for Council and Shire officers to undertake.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Lead in the Climate Emergency	Advocate and Innovate for Climate Emergency Response	Reach Beyond Carbon Neutral	Create a Resilient Built Environment
<b>5</b> Mobilise and Strengthen Community Action	<b>6</b> Raise Community Awareness and Foster Behaviour Change	<b>7</b> Grow Community Resilience to Enhanced Natural Disasters	<b>8</b> Plan for Changing Health and Wellbeing Impacts
<b>9</b> Transition to Sustainable Transport	<b>10</b> Convert to a Zero-emissions Shire Fleet	<b>11</b> Generate a Thriving Peninsula-wide Natural Environment	<b>12</b> Connect Communities and Nature in Precinct Planning
<b>13</b> Grow Nature-Based Infrastructure	<b>14</b> Optimise Use and Management of our Water	<b>15</b> Enhance Sustainable Agriculture and Food Systems	<b>16</b> Enhance Environmentally Sustainable Design
<b>17</b> Transition to a Circular Economy	<b>18</b> Embed Sustainability and Circular Economy into the Shire's Procurement	<b>19</b> Prioritise Sustainable Investment	<b>20</b> Strengthen and Integrate Climate Data into Decision Making
<b>21</b> Understand Climate Risks on Assets and Services	<b>2020-30 ANNUAL REVIEW (21 Action Steps)</b>		<b>2040 ACHIEVE NET ZERO-EMISSIONS</b>

# Taking Action

**This section delivers the detail; it's an itemised list of what the Mornington Peninsula Shire can do to address the climate emergency.**

Tackling climate change requires a combination of activities and stakeholders to get the job done.

Our 21 action steps were cohesively designed to take us to the Seven Summits and guide us to the Peak Goal of net zero-emissions by 2040.

Each action feeds into the Seven Summits. There's a number of keys and icons to show you how. Each action has detailed tasks that sit underneath. These are the activities for the Shire and our community to undertake.

The actions were informed by advice from Shire-wide experts and professional consultants, with local community input and feedback.

Many tasks rely on the gathering of further high quality and relevant data, to enable informed and appropriate decisions. This is a significant challenge. The tasks in the Plan include this, especially within Action 19 'Strengthen and Integrate Climate Data into Decision Making'.

Many activities that emerge from this Plan are new, others build on the work we've already got underway. Some items depend on us convincing others to take action.

The detailed Plan outlines the scope of what the Shire can and will do, and how this addresses the climate emergency. This gives us a framework to allocate resources, undertake the essential work and to track and report our progress.

Resourcing information has been provided at the action level. This allows for much greater flexibility as new data,

technology and funding sources arise. The Shire actions and tasks will be led by the team(s) with relevant experience and capacity. Implementation of the plan will therefore involve teams right across the organisation working with the community and other stakeholders. This is what 'embedding climate emergency' looks like.

Critical to the Plan's success is concise and transparent reporting on its successes and failures. Targets, actions and tasks will be reviewed for every year to ensure that it reflects the best available knowledge, experience and approaches.

This Plan enables every Shire department to respond directly to the climate emergency. We are optimistic that this Plan and the actions we undertake will create the momentum and change to ensure our future.

**Taking effective action means working together, especially with our partners and allies as a team. This is vital in helping deliver our 21 Action Steps.**

## Key partners in addressing the Climate Emergency

- Residents
- Community groups
- Holiday makers
- Businesses
- South East Councils Climate Change Alliance (SECCCA)
- Greenhouse Alliances
- South East Water
- Melbourne Water
- Integrated Water Management Forums (Dandenong and Westernport)
- Mornington Peninsula Landcare Network
- Environmental Protection Authority Victoria (EPA Vic)
- Western Port Biosphere Reserve
- Port Phillip and Western Port Catchment Management Authority (PPWPCMA)
- Department of Environment, Land, Water and Planning (DELWP)
- Department of Health and Human Services (DHHS)
- Country Fire Authority (CFA)
- Victorian State Emergency Services (SES)
- Tertiary Education Institutions
- Research Centres and Institutes
- Bureau of Meteorology (BOM)
- Commonwealth Scientific and Industrial Research Organisation (CSIRO)



Bittern Coastal Wetlands,  
Warringine Park, Bittern

1

LEAD

ADVOCATE

ENERGY

COMMUNITY

TRANSPORT

LAND

WASTE



## How to Read

As you read ahead, you'll find a colour-coded diagram with a sliding scale assigned to each action. The diagram is divided into four sections; **summit, status, resourcing and role.**

These snapshots highlight how the pieces of the Plan fit together, what our starting point is for each action, the resources we'll need to progress work, and our sphere of influence to get the job done.

### ① The Seven Summits

Each of the Seven Summits is represented by an icon. From left to right, they are:

- Leadership and Governance
- Increased Climate Advocacy
- Zero Carbon Energy
- Resilient and Adaptive Communities
- Sustainable Transport and Travel
- Sustainable Land Use and Environmental Restoration
- Circular Economy and Zero Waste

The shading of an icon indicates the impact of the respective action:

- **No Shading:** This action does not significantly affect our ability to reach this summit objective
- **Light Green:** This action moderately impacts our ability to reach this summit objective
- **Dark Green:** We are unlikely to reach this summit objective unless we deliver this action.

### ② Status

The scale slides from accelerated on the left to new on the right:

- An **accelerated action** is something the Shire already had planned or underway. The activity will now be fast-tracked or widened in scope.
- A **new action** represents a significant transformation to respond directly to the climate emergency.

### ③ Resourcing

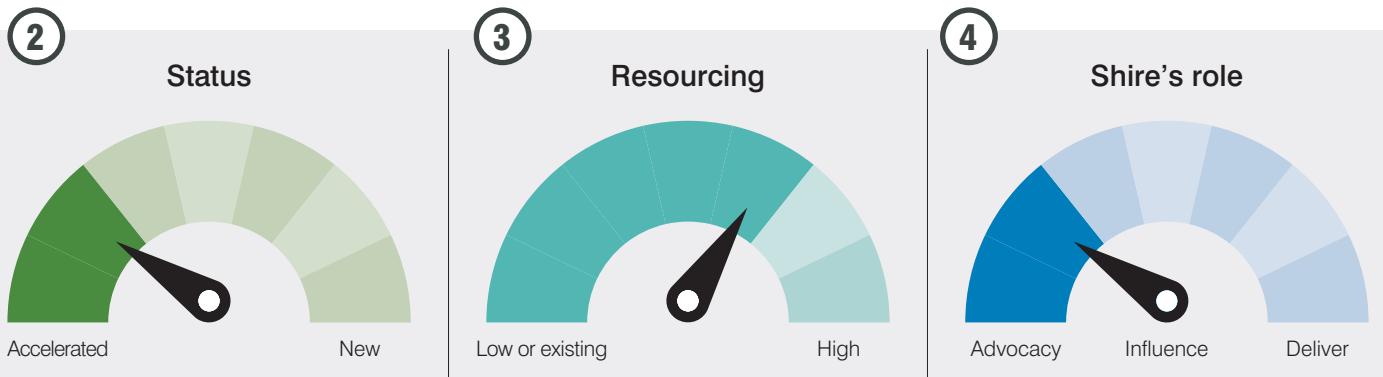
Actions require resources to succeed. This Plan is underpinned by estimates. Many tasks need further enquiry to be fully costed:

- **Existing/low budget** implies that the climate emergency action can be delivered with current Shire resources, or at a relatively low cost, under the auspices of an existing policy, plan or strategy
- **High resources** suggest a need for additional direct funding or human resources.

### ④ The Shire's Role

Each action has been placed on a sliding scale to indicate the sphere of the Shire's influence:

- **Advocacy:** Action is delivered by the State or Federal Government or another entity, so the Shire's role is limited
- **Influence:** Action is delivered by an organisation, group or person that can be influenced by the Shire
- **Deliver:** Action is entirely within the Shire's ability to deliver.



Task	Description	Time	Links
1.1	Form an executive-led Climate Oversight Group (COG), immediately following the adoption of this Climate Emergency Plan, and to oversee the Plan's implementation and ensure that the Shire's values of Integrity, Courage, Openness, Respect and Excellence are upheld	S	Summit 1
1.2	<b>Community</b> By 2021, establish appropriate community representation to provide recommendations to Council and Executive on community climate change issues, climate emergency priorities and relevant scientific advice. The format may be a deliberative panel, an expert reference group or any model suitable for genuine collaboration	S	Summit 1
1.3	<b>Community</b> Representatives from Registered Aboriginal Party and other Traditional Owner Groups are involved in decision making impacting the region, especially regarding protecting the natural environment	O	

## ⑤ Task Highlights

The tasks within each action have been colour coded to represent its primary audience, although many will be relevant for both.

- **Green:** community
- **White:** the Shire

## ⑥ Timeline

Each task has been given the expected timeline to complete. Some tasks are to develop and implement plans, which typically would be one to two years for development, delivery from year three.

- **S: Short term** (1-2 years)
- **M: Medium Term** (2-5 years)
- **L: Long Term** (6-10 years)
- **O: Ongoing**

## ⑦ Links

**Target:** While most summit targets depend on many actions, these tasks are essential in achieving the target noted.

**Pathway:** These tasks play a key role in enabling other tasks, actions and targets to be delivered. These will be prioritised early in the implementation of the Plan, to ensure that future tasks can be delivered successfully.

**Co-benefit:** Many actions overlap in their outcomes, methods and delivery projects. We have highlighted the strongest connections with co-benefit icons.

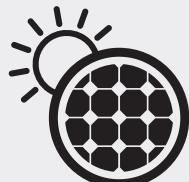
## 21 Action Steps Overview



LEAD



ADVOCATE



ENERGY

1. Lead in the Climate Emergency			
2. Advocate and Innovate for Climate Emergency Response			
3. Reach Beyond Carbon Neutral			
4. Create a Resilient Built Environment			
5. Mobilise and Strengthen Community Action			
6. Raise Community Awareness and Foster Behaviour Change			
7. Grow Community Resilience to Enhanced Natural Disasters			
8. Plan for Changing Health & Wellbeing Impacts			
9. Transition to Sustainable Transport			
10. Convert to a Zero-emissions Shire Fleet			
11. Generate a Thriving Peninsula-wide Natural Environment			
12. Connect Communities and Nature in Precinct Planning			
13. Grow Nature-Based Infrastructure			
14. Optimise Use and Management of our Water			
15. Enhance Sustainable Agriculture and Food Systems			
16. Enhance Environmentally Sustainable Design			
17. Transition to a Circular Economy			
18. Embed Sustainability and Circular Economy into the Shire's Procurement			
19. Prioritise Sustainable Investment			
20. Strengthen and Integrate Climate Data into Decision Making			
21. Understand Climate Risks on Assets and Services			



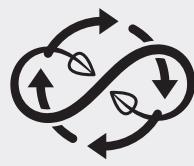
COMMUNITY



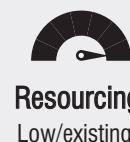
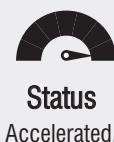
TRANSPORT



LAND



WASTE



				Accelerated	Low/existing	Advocacy
				Accelerated	Medium	Advocacy
				Mixed	Medium	Deliver
				Mixed	Low/existing	Influence
				New	Low/existing	Influence
				Mixed	Low/existing	Influence
				Accelerated	Medium	Influence
				New	Low/existing	Deliver
				New	Low/existing	Deliver
				New	Low/existing	Deliver
				Mixed	Medium	Influence
				New	Medium	Deliver
				Mixed	Medium	Deliver
				Accelerated	Medium	Influence
				Mixed	Low/existing	Influence
				Accelerated	Medium	Influence
				Mixed	High	Influence
				Accelerated	Medium	Deliver
				New	Low/existing	Deliver
				New	Low/existing	Deliver
				New	Low/existing	Deliver

# Action 1.

## Lead in the Climate Emergency



### Key Focus

The Shire CEO will lead the Climate Emergency Plan implementation. An executive-led Climate Oversight Group (COG) will be established to embed climate emergency priorities into all Shire decisions, programs, policies, strategies and actions.

Implementation of actions and progress of targets will be reported in the Shire's Annual Report and Quarterly Community Reports.

The COG will be chaired by the CEO to maximise scope and decision-making power. It will:

- Ensure a consistent, long-term, Shire-wide approach by designing and monitoring a program that embeds cultural and policy change and ensures that climate emergency targets and actions are properly funded, resourced, and met
- Maintain close relationships and open communication channels with community, government and business stakeholders
- Respond quickly to emerging issues that affect greenhouse gas emissions and provide recommendations to Council and Executive to inform relevant decision making.

### How does this address the Climate Emergency?

This action recognises that business-as-usual operations are insufficient to safeguard our future wellbeing and operations.

By transforming our own operations we'll demonstrate that deep, meaningful, systemic change is possible.

Our proactive leadership will be an exemplar for the community, councils and governments. Individuals, organisations and businesses will be inspired to integrate climate emergency responses into their operations and daily lives.



# Action 1.



Task	Description	Time	Links
1.1	Form an executive-led Climate Oversight Group (COG), immediately following the adoption of this Climate Emergency Plan, and to oversee the Plan's implementation and ensure that the Shire's values of Integrity, Courage, Openness, Respect and Excellence are upheld	S	Summit 1
1.2	<b>Community</b> By 2021, establish appropriate community representation to provide recommendations to Council and Executive on community climate change issues, climate emergency priorities and relevant scientific advice. The format may be a deliberative panel, an expert reference group or any model suitable for genuine collaboration	S	Summit 1
1.3	<b>Community</b> Representatives from Registered Aboriginal Party and other Traditional Owner Groups are involved in decision making impacting the region, especially regarding protecting the natural environment	O	
1.4	<b>Community</b> From 2021 onwards, establish a panel of strategic industry partners and experts to deliberate solutions and approaches as required	S	Summit 1
1.5	Embed the Climate Emergency in all future Shire plans, decisions, programs, actions, policies, strategies and contracts	O	
1.6	Identify and coordinate a systematic review of relevant existing Shire strategies, plans and policies and related resources to incorporate climate emergency principles	M	
1.7	Seek funding for climate emergency responses, including partnerships, grants and sustainable loans	O	
1.8	Empower the Shire's Learning and Development Program and change management channels to strengthen the organisation's resilience and foster climate change leadership	M	
1.9	Improve internal messaging and communications regarding the Shire's role, programs and achievements related to the Climate Emergency	S	
1.10	Report to the public on a regular basis on climate change actions taken by the Shire	O	
1.11	Monitor and evaluate progress and amend the Climate Emergency tasks as required to ensure progress towards our targets is achieved	O	
1.12	<b>Community</b> Lead initiatives in cultural awareness and change, particularly regarding connectedness to land and waters, Indigenous culture and practices	O	
1.13	Prioritise Climate Emergency projects on and/or affecting the peninsula ahead of climate-damaging projects. Seek climate-safe alternatives where available and feasible. Encourage innovation by seeking market-based options and alternate funding models	O	
1.14	Oversee advocacy activities with and by Councillors on behalf of the organisation, to ensure consistency in approach	O	
1.15	Oversee all actions delivered by this Plan to ensure that they align with Shire values, and remain equitable and fair to all vulnerable and marginal people in the communities.	O	

## Action 2.

# Advocate and Innovate for Climate Emergency Response



## Developing an advocacy plan



### Key Focus

Develop and begin to implement a *Climate Emergency Advocacy Plan* by 2021, to achieve social and economic change at state and federal levels.

The Shire will amplify our community's voice on critical issues to address the climate emergency. This includes advocating for governments to declare a climate emergency and to reduce emissions to meet the Paris Agreement 1.5°C target.

Our advocacy will be based on current scientific evidence and projections.

We will increase alliance with organisations that pursue meaningful climate action and decarbonisation of the global economy.

Mornington Peninsula Shire will lead in climate change action. Our innovative approaches will provide strong evidence of success, experience and learning that inspire others to act.

The Advocacy Plan will educate and assist community groups, residents and other stakeholders to become effective advocates.

The Advocacy Plan will be reviewed every two years to keep it relevant to current issues, technologies and research, and inclusive of recent impacts of climate change. The items listed in the tasks below are the starting point only.

The Climate Emergency requires new ways for our voices to be heard strongly.

### How does this address the Climate Emergency?

The role of local government by itself is limited. To stop climate change we need social and economic transformation that is driven by all levels of government and industry.

State and Federal governments determine energy policy, industry support and regulation, taxation and public infrastructure, including transport, global trade, social policy and media laws. Advocacy and collaboration are the mechanisms for the Shire and Community to influence these arenas.

So, a significant portion of our climate emergency response must look outwards, to escalate and accelerate advocacy with other governments, international organisations, corporate and industry organisations.

The Shire will leverage existing connections and bolster new partnerships with community groups, businesses, non-governmental agencies and intergovernmental alliances.

## Action 2.



Task	Description	Time	Links
2.1	Publish an annual Climate Emergency Advocacy Report, detailing collaborations and actions taken	O	Summit 2
2.2	Review the Climate Emergency Advocacy Plan every two years	O	
2.3	Advocate immediately to state and federal government for a 'Green Recovery' from COVID-19	S	
2.4	Develop at least three 'climate action' case studies annually which include measurable indicators, benefits and lessons learnt of projects and activities undertaken by the community and the Shire	O	
2.5	Advocate to the Victorian Government to declare a Climate Emergency and to: <ul style="list-style-type: none"> <li>a. Set a 100% renewable energy target for 2040 or earlier, reduce greenhouse gas emissions and transition rapidly to a renewable energy-based economy</li> <li>b. Improve transportation policy and infrastructure, including improving and incentivising public transport; and transition to zero-emission vehicles</li> <li>c. Support vulnerable communities to mitigate and adapt to climate change</li> </ul>	M	
2.6	Advocate to the Federal Government to declare a Climate Emergency and to: <ul style="list-style-type: none"> <li>a. Protect and care for people displaced due to climate change, both nationally and internationally</li> <li>b. Develop a 'National Economic Transition Plan'</li> <li>c. Reduce greenhouse gas emissions and implement a renewable energy-based economy</li> <li>d. Fund and deliver effective and scalable methods to draw down carbon from the atmosphere</li> <li>e. Improve ecosystem and species protections under the <i>Environment Protection and Biodiversity Conservation Act 1999</i></li> <li>f. Improving sustainability in the transport, water management and agriculture sectors, including setting ambitious targets and identifying project opportunities</li> <li>g. Improve minimum standards for residential homes in the National Construction Code</li> <li>h. Develop a 'National Zero Waste and Circular Economy' policy</li> <li>i. Develop a simple scheme for small businesses to measure and reduce emissions to net zero</li> </ul>	M	
2.7	Advocate to other councils and local government collective organisations such as ABM, MAV, SECCCA to: <ul style="list-style-type: none"> <li>a. Declare a Climate Emergency and develop an appropriate response</li> <li>b. Promote membership in effective climate action alliances</li> </ul>	M	
2.8	Advocate to business and industry operating within the Peninsula, and beyond to: <ul style="list-style-type: none"> <li>a. Declare a Climate Emergency</li> <li>b. Actively reduce their emissions in line with the Shire's Climate Emergency targets</li> <li>c. Reduce their waste, including plastic, food and construction materials</li> <li>d. Support manufacturing, services, and sourcing of local and sustainable products</li> <li>e. Prioritise the manufacturing and purchasing of recycled products where possible.</li> </ul>	M	

## Action 3.

### Reach Beyond Carbon Neutral



#### Key Focus

**Develop a Beyond Carbon Neutral Plan (BCNP) to set out how the Shire will continue to reduce greenhouse gas emissions from its own business operations, and to source locally generated carbon offsets.**

The BCNP will ensure the Shire continues to reduce its direct emissions e.g. landfill, natural gas and refrigerants, and indirect emissions e.g. coal-fired electricity generation and our supply chain. The plan will also explore local carbon sequestration opportunities to offset residual emissions and draw down past zero emissions.

#### How does this address the Climate Emergency?

The primary cause of climate change is the release of carbon dioxide, methane and other greenhouse gases into our atmosphere. The Shire's reduction of these gases is the primary step we can take as an organisation to mitigate the Climate Emergency.

Our historical emissions have contributed to climate change. We acknowledge our responsibility to actively reduce emissions through our operations.

The latest climate science indicates that we collectively need to turn back the emissions clock. Neutrality is not enough to ensure our future. That's why we intend to move towards a future beyond carbon neutral.

Since 2016, the Shire has been implementing a five-year plan to become carbon neutral, via **Carbon Neutral Policy**. We're on track to be certified carbon neutral by 2021.

Accreditation under the Commonwealth Government's 'Climate Active Carbon Neutral Standard' requires a continued commitment to reduce emissions.

This BCNP provides the Shire the opportunity to continue to reduce emissions, accelerate innovation and prioritise local carbon offset projects. By working with other councils and businesses, we'll galvanise effort, demonstrate climate leadership and show what's possible.



## Action 3.



Task	Description	Time	Links
3.1	Achieve zero net emissions for Shire operations and be accredited as carbon neutral under the ' <i>Climate Active Carbon Neutral Standard</i> '  Identify and deliver projects to minimise residual emissions and reduce the subsequent offsets required to maintain carbon neutral accreditation. The plan will consider emissions from Shire energy and water use, Shire and staff travel and transport (including accommodation), refrigerants, leased facilities and the supply chain. Some projects already proposed include: <ul style="list-style-type: none"> <li>• Solar farm next to Rye Landfill</li> <li>• Energy efficiency initiatives and solar PV for community buildings</li> <li>• LED main road and decorative street lights</li> </ul>	S	● Summit 3
3.2	By 2023, the Shire will source all electricity from renewable generation  Develop, adopt and implement a 'Carbon Offsetting Strategy', seeking to maximise carbon offsets from emissions reduction projects on the Mornington Peninsula through facilitation, collaboration and support with potential partners	O	
3.3	Restrict new natural gas connections for Shire facilities, and develop a 'Natural Gas Phaseout Strategy' with clear targets	M	● Summit 3
3.4	Invest in innovative technology to accelerate activities that go beyond carbon neutral, especially those that support local industries and businesses.	S	
3.5		O	

## Action 4.

### Create a Resilient Built Environment



#### Key Focus

**Develop programs for Peninsula homes and businesses to reduce their carbon footprint and increase climate resilience.**

The programs will cover reducing fossil fuels reliance, increasing resilience to extreme weather, integrating natural and built infrastructure, reducing energy costs and minimising health risks.

#### How does this address the Climate Emergency?

The energy use in buildings is the single largest source of our local community emissions (61%). This means we have significant potential to make a positive impact on the Climate Emergency by taking action in our built environment.

Our community has conveyed to us that individual, household and community energy use should take prominence in our collective response to the Climate Emergency. The Shire is committed to supporting the community to reduce greenhouse gas emissions by providing leadership and direct access to programs and funding (loans and grants).

#### Local leadership: community and the Shire

The Shire is committed to working with our community to create transformational change on the Peninsula that will combat climate change, protect our people and enhance our beautiful place.

The Shire will look to the community to better understand which programs and support will catalyse local action. The programs and support the Shire offers will change over time in response to emerging needs.

Community groups across the Peninsula are also gearing up for climate action. Their activities will provide opportunities for individuals to get involved. The Shire is committed to facilitating connections and helping people and groups to access and share information.



Mornington Peninsula Regional Gallery, Mornington

## Action 4.



Task	Description	Time	Links
4.1	<b>Community</b> Increase the uptake of Environmental Upgrade Finance (EUF) to enable eligible parties to access low risk finance for environmental building upgrades to improve energy, water and waste efficiencies	O	○ Summit 3
4.2	<b>Community</b> Support, promote and advocate for programs to sustainably retrofit homes to build resilience to the impacts of climate change, particularly for socially and economically disadvantaged households	M	
4.3	<b>Community</b> Facilitate competitive offers to encourage community uptake of sustainable options such as solar panels, batteries, electric vehicle charging infrastructure and electrical equipment to replace gas appliances, e.g. bulk buys and power purchase agreements	S	○ Summit 3
4.4	<b>Community</b> Provide advice to support community owned renewable energy programs, such as solar farms and micro-grids	O	
4.5	<b>Community</b> Seek partnerships and/or services to enable residents and businesses to easily access expert advice on energy efficiency, solar and other products	O	
4.6	<b>Community</b> Run sustainability workshops and information sessions to encourage residents to sustainably retrofit or design their homes, install renewables and build resilience to climate change	O	
4.7	Undertake planning scheme amendments to protect buildings against the impacts of climate change, including 'Land Subject to Inundation Overlay' (LSIO), 'Special Building Overlay' (SBO), Bushfire Management Overlay (BMO) and Erosion Management Overlay (EMO)	M	
4.8	Evaluate, and implement if appropriate, a scheme to incentivise land rates rebates for higher environmental standards in building performance and renewable energy supply	M	
4.9	Support demand response programs to manage peak energy usage to minimise blackouts and brownouts (e.g. United Energy's demand response program 'Summer Savers')	O	
4.10	Provide educational programs and displays to assist residents to sustainably retrofit their homes and prepare for the impacts of climate change.	O	

## Action 5.

### Mobilise and Strengthen Community Action



#### Key Focus

**Strengthen relationships among the Shire and local groups to amplify community voices and enhance action, and leverage stakeholder connections to improve Shire decision-making.**

There are many separate and distinct groups, businesses and interests represented on the Peninsula. They often share objectives but work separately. The Shire can play a role in connecting these parties and identifying common goals to bolster unified action.

#### How does this address the Climate Emergency?

We cannot stop global warming alone or by a single action.

The climate emergency requires a collective response. The expertise and passion of our community is a key resource.

We must work together and build on our respective strengths. Close communication and working relationships among the Shire and community groups will be essential for effective climate action.

The private sector has major role to play by reducing its emissions and environmental impacts. It also has capacity to foster positive collaboration and drive social change.



#### Co-benefit

This action benefits from and is supported by Action #1.2.



## Action 5.



Task	Description	Time	Links
5.1	<p><b>Community</b> Provide direct support for community and youth groups to pursue climate action. This may include:</p> <ul style="list-style-type: none"> <li>a. Assistance for planning actions and projects which deliver the goals of this Plan and meet the community's needs and interests</li> <li>b. Publicly communicating Shire climate activities</li> <li>c. Providing and receiving feedback on climate action initiatives</li> <li>d. Provide advice on funding and grants</li> <li>e. Facilitating training to cope with an increasing anxiety relating to the impacts of climate change</li> </ul>	O	Summit 4
5.2	<b>Community</b> Support community volunteers with access to training and networks to build skills in communication, leadership and advocacy.	O	
5.3	<b>Community</b> Establish a 'Climate Change Community Action Grants' program to fund community groups, youth groups and businesses to reach our climate emergency goals	S	
5.4	<b>Community</b> Collaborate with businesses, farmers and other organisations to support climate action and positive behaviour change, in relation to food security, ecosystem resilience, water, energy, waste and resource reduction and future-impact resilience	L	
5.5	<b>Community</b> Identify, act and amplify shared advocacy goals between the Shire and the community (groups and businesses), by facilitating networking opportunities and providing information and education sessions on key topics	O	Action 2
5.6	<b>Community</b> Incentivise activities that reduce energy emissions, through rates, rebates or other mechanisms, especially where the return on investment is long	M	
5.7	<b>Community</b> Investigate mechanisms to increase renewables energy supply in short stay accommodation as part of the review of the Shire's 'Short Stay Rental Accommodation' Local Law.	S	

## Action 6.

# Raise Community Awareness and Foster Behaviour Change



## Key Focus

Expand and accelerate the Shire's existing program of community engagement, education and climate change awareness to highlight impacts, solutions and responses.

The education program will ensure that climate science is easy to understand, that information is tailored to community sectors and that options are presented for people to reduce the impact at personal, household, community and society levels.

## How does this address the Climate Emergency?

Collective community action is essential to reduce our environmental footprint. This relies on individual action at a large scale. We need people who are well informed and empowered to act.

We've known this for some time, which is why the Shire adopted a *Climate Change Community Engagement Strategy* in 2018. Engagement and education are vital components of Council's climate emergency response.

We can:

1. Inform the public of the sustainability services available to them, explain what they are for and show people how to access them
2. Encourage and empower sustainable behaviour change in the community and support those who are working with us to ensure our future

By providing stakeholders with the climate action tools for daily life and broader economic and business culture, the Shire will act as leader. We'll model ways for other communities embrace a future in which nature and people thrive.

## Gender Equality

In 2020, Mornington Peninsula Shire adopted the *Gender Equality Strategy*.

One of its key settings is education and training, to "promote and support opportunities for women and girls to participate in lifelong learning across all areas of education and training."

This is particularly relevant when it comes to climate change action.

"Women are ... powerful agents of change, and possess specific knowledge and skills to effectively contribute to climate change adaptation and mitigation, but they are largely under-represented in decision-making processes at all levels".

By equalising gender roles in leadership positions and building educational capacity amongst women and girls we can enable strong and effective action to stop climate change.

Further reading: [UNESCO: Climate Change and Gender Equality<sup>16</sup>](#)



## Action 6.



Task	Description	Time	Links
	<b>Community</b> By 2021, review and update the <i>Climate Change Community Engagement Strategy 2018</i> and expand key aspects of the plan: <ul style="list-style-type: none"> <li>a. Build human and social adaptive capacities with community engagement programs that prepare residents and businesses for extreme weather events</li> <li>b. Introduce initiatives that minimise consumption, waste, water and energy use, and promote sustainable food and lifestyle choices</li> </ul>		
6.1	<ul style="list-style-type: none"> <li>c. Assist community groups to develop, support, lead and promote community-led education programs</li> <li>d. Host guest speakers on climate related topics in Libraries and Youth Centres</li> <li>e. Run training programs to equip community leaders to respond issues such as heat wave and heat stroke, climate change impacts on mental health, and sustainability leadership</li> <li>f. Run training programs to equip community leaders to advocate to governments for stronger climate policies and learn how to have effective climate conversations</li> <li>g. Regularly review and improve education programs to be fit for purpose</li> </ul>	S	
6.2	Facilitate exhibitions and public art on climate change and our natural environment to generate community reflections	S	
6.3	Develop activities and programs that nurture creativity and culture to showcase our unique environment, advocate for its protection and generate long-term behavioural change	M	
6.4	Demonstrate and highlight sustainable agricultural and horticultural best practice land management and ecological restoration techniques at the Briars test site and private properties, and use these test sites as an education tool	L	
6.5	Conduct an education campaign to raise awareness of the benefits and availability of sustainable food choices utilising resources such as Best Bites, Mornington Peninsula Produce and food rescue programs	M	Action 15.5
6.6	Collaborate with Mornington Peninsula Business to develop a long-term plan to implement far-reaching behaviour change programs and campaigns for businesses, community groups and individuals	L	
6.7	Expand on the existing educational programs and displays offered at the Shire's 'Eco Living Display Centre' to encourage sustainable living and build community capacity to respond to extreme weather events.	O	

## Action 7.

# Grow Community Resilience to Enhanced Natural Disasters



### Key Focus

**Review and expand emergency management plans to ensure that the emergency and recovery response to any future event is swift, effective and enabling.**

This includes decreasing reliance on fossil fuels and reducing energy costs and health risks. The programs will deliver ways to increase our resilience to extreme weather, maximise comfort levels and integrate natural and built infrastructure.

### How does this address the Climate Emergency?

Climate change will bring increased frequency and severity of natural disasters and extreme weather events such as bushfires, storms, flooding and heatwaves. We need to prepare.

These events will increase our need to support displaced people, which will strain our emergency response resources to unprecedented levels. Vulnerable communities and culturally and linguistically diverse (CALD) communities, are likely to be at higher risk during these emergencies.

The Shire has a key role in leading and coordinating community groups, businesses and tourists, alongside emergency management agencies, to ensure that our emergency response plans and procedures are sufficiently robust and versatile to protect the community. Projections from various emergency management agencies can now be incorporated into local emergency response plans.



## Action 7.



Task	Description	Time	Links
7.1	<p>Develop tailored adaptation plans for coastal areas based on <i>Marine and Coastal Policy 2020</i> (MCP) considering existing infrastructure, cultural heritage and biodiversity values. This involves:</p> <ul style="list-style-type: none"> <li>a. Identify sites at risk of coastal inundation and erosion, considering storm surge impacts</li> <li>b. Investigate most appropriate adaptation actions for at-risk sites, applying the 'pathway approach' detailed in the MCP</li> <li>c. Support citizen science projects that monitor coastlines and biodiversity</li> <li>d. Fund ongoing monitoring and assessment of coastal erosion and sand movement</li> </ul>	L	
7.2	Investigate planned retreat options from dangerous areas, especially those at extreme risk of frequent or intense bushfire	L	
7.3	Partner with Department of Transport and key emergency management organisations to evaluate and improve, road networks and communications infrastructure that facilitate emergency management coordination and access	L	
7.4	Review the <i>Victorian Heat Health Plan</i> and develop an 'Extreme Weather Health Plan' that addresses heat waves and extreme cold <sup>17</sup>	S	
7.5	<b>Community</b> Educate all sectors of the community on climate change risks and encourage preparedness	M	 Summit 4
7.6	<b>Community</b> Raise community awareness of the <i>Municipal Emergency Management Plan</i>	M	
7.7	Investigate and review the potential inappropriate use of bushfire risk reduction planning scheme exemptions (e.g. Clause 52.12) in low-risk urban settings	M	
7.8	Work with partner agencies to review and implement strategies to manage bushfire risk	M	
7.9	Collaborate with the Municipal Emergency Management Planning Committee to plan for local evacuations and relief during an emergency	O	
7.10	Investigate dedicated relief centres and associated infrastructure/equipment for residents and other climate displaced individuals	M	
7.11	Incorporate emergency management planning in the Shire's maintenance works, capital works planning and all permitted public events	S	
7.12	Assist disaster recovery management by mitigating social risks and harms arising from displacement of people	O	
7.13	Plan for potential increases in number and scale of emergencies indirectly resulting from climate change, especially those that affect multiple systems at once.	O	

## Action 8.

### Plan for Changing Health and Wellbeing Impacts



#### Key Focus

Review existing public health, social and financial service planning and identify significant gaps, risks and liabilities. Following this review, develop a long-term Climate Change Adaption Plan (CCAP) to build resilience within these sectors.

#### How does this address the Climate Emergency?

Climate change will present us with substantial environmental, social and financial impacts. We must manage these effectively.

The flow-on-effects include increased vector borne diseases transmitted by mosquitos, breathing difficulties due to poor air quality from bushfires, and increased financial burden, especially to businesses, due to blackouts in extreme weather conditions.

The health impacts of climate change are widely recognised by medical professionals world-wide. Medical associations across the globe recognise climate change as a health emergency. The Australian Medical Association has calculated and cited significant health impacts on our mortality, wellbeing and productivity.<sup>18</sup>



## Action 8.



Task	Description	Time	Links
8.1	Develop a 'Climate Change Adaptation Plan' to address the full range of climate related health impacts, including risks to specific population cohorts, assessing any gaps in service provision and advocating for action	S	
8.2	Incorporate relevant parts of the <i>Climate Emergency Plan</i> and the latest climate knowledge in the next <b>Municipal Health and Wellbeing Plan</b>	S	
8.3	<b>Community</b> Work with businesses to develop plans to cope with power shortages and blackouts, particularly where refrigeration, heating and cooling have direct impacts on public health	M	
8.4	Conduct an education program on climate change health impacts and coping strategies for health practitioners, in collaboration with key stakeholders (e.g. Peninsula Health, Vic Health, DELWP)	M	
8.5	<b>Community</b> Conduct township-specific community engagement to raise awareness of locational impacts, and assist preparedness	M	➡ Action 12
8.6	Evaluate key biosecurity and disease risks, such as the Peninsula's vulnerability to new vector-borne diseases	M	
8.7	<b>Community</b> Identify private industries and services at risk from climate-related social and economic pressures, and collaborate to develop appropriate responses	L	
8.8	<b>Community</b> Collaborate with public and private health professionals to advocate for a response to the mental health impacts from climate change	M	➡ Action 6.1
8.9	By 2021, develop a robust and measurable 'Social Impact Assessment' report card to set a baseline for the Mornington Peninsula to measure social resilience to climate change.	S	

## Action 9.

### Transition to Sustainable Transport



#### Key Focus

**Develop an Integrated Transport Plan (ITS) to achieve best practice sustainable transport outcomes with the goal to reduce and then eliminate transport emissions.**

The ITS will be relevant for all modes of transport including public transport, cycling, walking and private vehicle use.

The strategy will support and expand existing and upcoming strategies including the *Pedestrian Access Strategy* and the *RideSafe Strategy*.

#### How does this address the Climate Emergency?

Transport is the second largest source of our community greenhouse gas emissions on the Peninsula (31%). We can change this.

Nearly all of our emissions come from road transport. This includes the private vehicle use by locals and visitors.

The forthcoming *Integrated Transport Strategy* will influence how people travel within and to the Shire, and prioritise our transition to low and zero-emission transport options.



## Action 9.



Task	Description	Time	Links
9.1	Design infrastructure and accelerate programs that make active transport options (e.g. walking, cycling) accessible and preferred for movement within a town, particularly to and from schools and economic hubs, through implementation of the <i>Pedestrian Access Strategy</i> and <i>RideSafe Strategy</i>	O	Summit 5
9.2	Design safer, quieter and cooler streets that appeal to pedestrians and other active transport users through implementation of the <i>Pedestrian Access Strategy</i> and <i>RideSafe Strategy</i>	O	
9.3	Collaborate with neighbouring councils across the South East region to advocate for reliable, attractive, convenient and sustainable public transport options between key activity hubs and Melbourne's CBD	M	Action 2
9.4	Collaborate with the Victorian Government to improve connectivity and integration between local and state transport networks, e.g. sustainable and efficient on-demand public transport	O	
9.5	Determine the most effective ways for the Shire to support and enable the transition from combustion engine to zero emission vehicles on the Mornington Peninsula	S	
9.6	Maximise the efficiency of existing transport infrastructure with the use of smart technology such as car park, traffic and pedestrian flow management technology	M	
9.7	<b>Community</b> Increase engagement to educate the community on the benefits of sustainable and active transport	S	
9.8	Investigate and plan for semi-autonomous and autonomous vehicles and transport services to enable 'Movement as a Service' (MaaS)	O	Summit 5
9.9	<b>Community</b> Investigate the role for the Shire and the private sector to reduce work-related travel by developing telecommuting infrastructure and shared office spaces across the Peninsula and encouraging people to work from home	O	
9.10	Facilitate the installation of storage facilities for active transport at all major activity centres, precincts and sports and recreational facilities	L	
9.11	Facilitate the installation of electric vehicle charging infrastructure at all major activity centres.	M	Summit 5

## Action 10.

### Convert to a Zero-emissions Shire Fleet



#### Key Focus

Transition the Shire fleet from internal combustion to zero-emission vehicles, and develop infrastructure guidelines to guide future capital works and precinct scale plans.

#### How does this address the Climate Emergency?

The Shire will demonstrate leadership to the community by reducing its own carbon footprint and reliance on fossil fuels. By leading the transition to zero-emission vehicles and encouraging alternative transport, the Shire will set the optimal conditions to increase investment in infrastructure that supports a low carbon economy.



## Action 10.



Task	Description	Time	Links
10.1	Decrease the size of the vehicle fleet where possible	S	
10.2	Encourage Shire staff to minimise vehicle use, and choose alternative options such as public transport, e-bikes and carpooling or local video conferencing	S	
10.3	By 2025, all Shire pool vehicles will emit zero-emissions from the tailpipe	M	
10.4	By 2030, all Shire fleet vehicles will emit zero-emissions from the tailpipe, where fit for purpose options are available (including utility vehicles)	L	 Summit 5
10.5	Adopt a full life-cycle approach to fleet vehicle selection, i.e. capital and operational expenditure; material usage and waste produced at end-of-life	S	
10.6	Support working from home and local shared work hubs	S	
10.7	Incorporate electric charge stations in new Shire building developments where appropriate	O	
10.8	Ensure adequate power supply and charging infrastructure at Shire facilities to accommodate the targeted increase in zero-emissions vehicles.	M	

# Action 11.

## Generate a Thriving Peninsula-wide Natural Environment



### Key Focus

**Restore and value our natural environment and biodiversity by enhancing land management strategies to support ecosystem resilience and healthy natural landscapes.**

The Shire's 2019 *Biodiversity Conservation Plan* (BCP) addresses many threats and impacts arising from the Climate Emergency. Accelerating and building on this plan will benefit the local ecology and aid community resilience, economic stability, regional partnerships, sequestration and urban resilience.

### How does this address the Climate Emergency?

The biodiversity crisis is at the core of the Climate Emergency. We are in the middle of a planet-wide mass extinction.<sup>19</sup> Business as usual will hasten this trend.

Biodiversity and healthy ecosystems underpin our economy, food system and climate. Without a healthy, sustainable and diverse ecology, these all collapse.

Less than one third of native vegetation remains on the Peninsula, and less than 3% of our ecosystems are in high quality health.<sup>20</sup> The natural systems on the Mornington Peninsula are at risk of collapse, rapidly approaching the emergency tipping point.

Our existing *Biodiversity Conservation Plan* outlines the first critical steps to create a sustainable future.

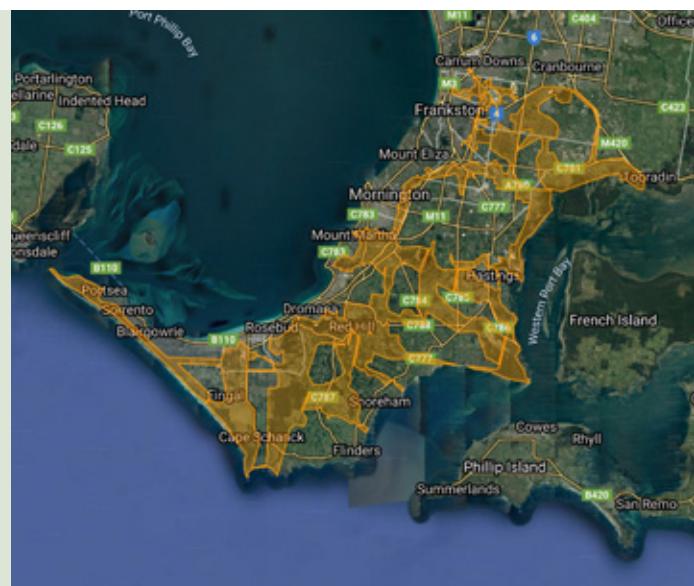
But the Climate Emergency means that conservation can no longer be a passive, protection-based practice. To ensure our future we need active participation and management, and careful, innovative solutions.

### Biolinks Project

The 12 Landcare groups of the Mornington Peninsula Landcare Network have developed a local Biolinks plan based upon vegetation quality analysis conducted by the Arthur Rylah Institute.

This plan was created using Landcare members' local knowledge of the area, with input from local flora and fauna experts, Parks Victoria rangers and Mornington Peninsula Shire Conservation Officers.

The MPLN Biolinks Plan is used to ensure that community restoration work is conducted in the optimal areas that are most important for landscape connectivity. The plan has received positive feedback from many organisations, who use it in their regional planning, including the PPWCMA, the Western Port Biosphere and neighbouring Landcare Networks.<sup>21</sup>



## Action 11.



Task	Description	Time	Links
11.1	<p><b>Community</b> Fully fund and accelerate the Shire's <i>Biodiversity Conservation Plan</i> (BCP) in its entirety, especially:</p> <ul style="list-style-type: none"> <li>a. Review the Conservation Land Rate to enable continual ecosystem restoration on private land</li> <li>b. Provide ongoing support to community conservation projects to build human-nature connections such as delivery of biolinks projects, Gardens for Wildlife and Friends Group working bees</li> <li>c. Continue to develop specific operational guidelines to improve biodiversity for maintenance activities e.g. guidelines for fuel reduction</li> <li>d. Increase investment in Shire biodiversity management programs</li> <li>e. Investigate the potential biodiversity impacts of vegetation removal for bushfire reduction purposes through planning scheme exemptions, particularly in low-risk urban settings.</li> <li>f. Develop an urban street tree protection and renewal program, in consultation with residents, that addresses tree canopy cover, and indigenous plant biodiversity and investigates options for a street tree adoption program</li> <li>g. Develop a biodiversity protection and management partnership with local Traditional Owners</li> <li>h. Build ecosystem resilience to a changing climate through implementation of Strategic Direction 6</li> <li>i. Protect existing trees on private land through progressively reviewing and, where appropriate, updating the Planning Scheme</li> </ul>	L	Summit 6
11.2	By 2022, complete a Green Infrastructure Mapping project, to generate critical data to guide future projects, e.g. urban street tree program, bushfire fuel reduction, ecosystem protection	S	
11.3	Develop and implement a 'Carbon Bio-sequestration Implementation Plan', for local terrestrial revegetation, soil carbon and blue/teal carbon programs	L	Summit 6
11.4	<p>Identify areas vulnerable to erosion, inundation, and storm surge and investigate monitoring and mitigation options:</p> <ul style="list-style-type: none"> <li>a. Identify vulnerable, priority sites at risk of environmental degradation</li> <li>b. Incorporate current research and data e.g. <i>Port Phillip Bay Coastal Hazard Assessment</i></li> <li>c. Work with relevant partners and stakeholders to protect coastal and marine ecosystems</li> </ul>	M	
11.5	Investigate the viability of natural asset valuation tools to influence financial and strategic decision making	M	
11.6	Benchmark environmental management plans against best practise to identify the most sustainable pest and weed control methods to reduce the need for chemical control	M	
11.7	Use existing and new resources at the Briars to research and develop knowledge on ecological restoration, recycled water for conservation, causes of local dieback, species conservation and reintroduction practices.	M	

## Action 12.

### Connect Communities and Nature in Precinct Planning



#### Key Focus

**Connect townships and urban environments with essential community services and natural local ecology, so that we can thrive alongside our environment.**

People across the Mornington Peninsula will experience the natural world and the benefits of nature as we go about everyday life.

#### How does this address the Climate Emergency?

We cannot neglect the role of nature and community in our lives. The way we design townships to include nature can benefit local ecosystems and residents.

By applying sustainable principles to the way we think about townships, precincts and suburban planning, we can promote healthy lifestyles, improve physical and mental health outcomes and foster stronger connections to nature.

The ecosystem can improve urban temperature regulation and reduce urban heating, provide fauna habitat, improve water management and landscape quality, improve air and offer recreational opportunities. These are vital to ensure our future wellbeing.

Local environmental benefits also bring our people benefits when it comes to climate change mitigation, adaptation and reversal.



Warringine Park, Bittern

## Action 12.



Task	Description	Time	Links
12.1	Set canopy cover targets for specific urban areas vulnerable to the urban heat island effect or those that offer opportunities to promote walking and cycling. These localised targets will align with the Peninsula-wide canopy cover target <sup>22</sup>	S	Summit 6
12.2	Implement localised stormwater diversion programs that operate alongside the street tree program and the greening of public spaces	S/M	
12.3	Strengthen and improve township plans and neighbourhood character studies by prioritising climate emergency objectives; including mitigation, adaptation, reversal and sustainable behaviour change; without compromising protection of human life	O	
12.4	By 2022, prepare and adopt a Placemaking Framework that incorporates the environment and climate emergency principles in the quadruple bottom line benefits	S	
12.5	Incorporate the 'Principal Pedestrian Network' and other active transportation routes within all masterplans, urban and township plans, and other high level strategic decisions	M	
12.6	<b>Community</b> By 2022, investigate sustainable business opportunities within key commercial and industrial areas which would provide residents and visitors with access to sustainable goods and services	S	Action 20.6
12.7	Incorporate 'Integrated Water Management' principles into strategic decision making and town planning, especially relating to alternative water use and waterway, wetland and coastal health	O	
12.8	Consider, and incorporate where possible, blue (marine and coastal) and teal (wetlands) carbon management opportunities on private or public land in urban planning design.	O/M	

## Action 13.

### Grow Nature-based Infrastructure



#### Key Focus

Prioritise the use of nature-based solutions and infrastructure to adapt to climate change.

This includes addressing the impacts of coastal erosion, sea level rise, urban heat, stormwater management and bushfire resilience. Nature-based infrastructure is also known as Blue-Green infrastructure because it considers 'blue' assets (e.g. wetlands, drainage areas and flood storage) and 'green' assets (e.g. trees, parks, gardens) together.

#### How does this address the Climate Emergency?

Mornington Peninsula Shire is on the front line of the coastal impacts of the Climate Emergency. Most of the Shire's population lives and conducts economic activity on or near the coast. The Shire is expected to lose significant land in the climate crisis, due to coastal erosion and sea level rise.

Coastal nature-based solutions provide an opportunity to alleviate this impact through options like mangroves, tidal marshes and seagrass meadows. They bring climate adaptations, including protection from storms or shoreline erosion. These ecosystems also help us to take carbon out of the atmosphere and create habitat for local wildlife.

Terrestrial nature-based infrastructure includes things like urban green projects, green roofs and parks – options specifically designed and engineered to provide ecological services for the public.

These assets support Environmentally Sustainable Design (ESD) principles that can reduce heating impacts and improve amenity and use of the urban environment.

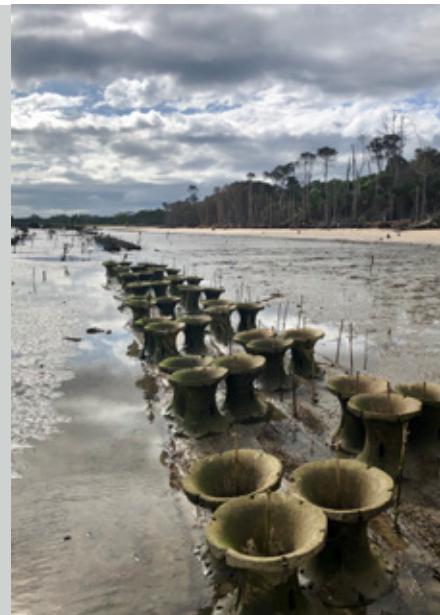
The inclusion of cost-effective, nature-based infrastructure solutions in the Shire's asset registry will minimise reliance on the traditional 'grey' infrastructure, such as concrete, steel and plastic materials that contribute to climate change.

#### Western Port mangrove restoration project, National Centre for Coasts and Climate<sup>23</sup>

"Solutions to Climate change impacts in the coastal zone require solutions-focussed science that co-produces knowledge, technologies and practices in conjunction with relevant stakeholders to inspire and enable local communities to act in ways that support their values and long-term goals."

– Professor Stephen Swearer, Director National Centre for Coasts and Climate

Images by Rebecca Morris



## Action 13.



Task	Description	Time	Links
13.1	Continue to research and implement innovative approaches to blue-green infrastructure for all Shire capital projects, especially relating to coastal defence systems, e.g. mangrove establishment, artificial reefs, biodiversity enhancing seawalls	O	
13.2	Develop a sustainable infrastructure investment and valuation framework for blue-green infrastructure which considers the low maintenance costs, comparative amenity values, benefits for fisheries, sequestration potential, indefinite future functionality, and ecosystem benefits	M	
13.3	<b>Community</b> Work with Parks Victoria, Marine Safety Victoria, Better Boating Victoria, DELWP and the community to implement new boating and coastal recreation policies to protect coastal and marine habitat from the detrimental impacts of water transport, vessel mooring and sports and recreational activities	M	
13.4	Use low-water demand turf for sporting fields, and prioritise indigenous species for other green open spaces	O	
13.5	Collaborate with and support research partners to work locally in nature-based infrastructure, and to integrate their findings into the Shire's planning and strategic decision making	M	Action 12.8
13.6	<b>Community</b> By 2023, publish easy-to-read guides for residents and businesses on the Peninsula to incorporate biolinks (habitat corridors), green walls and other blue-green infrastructure into existing and new developments.	S	

## Action 14.

# Optimise Use and Management of our Water



### Key Focus

Enhance the liveability, resilience and prosperity of our community and environment through integrated water planning and management.

In collaboration with our community, partners and stakeholders, we will holistically manage the water cycle on the Peninsula. This includes potable water, stormwater, wastewater, surface water and groundwater.

The overarching strategy for the Shire's water use, supply and management will be the *Integrated Water Management Plan* (IWM). Integrated Water Management is a collaborative approach to planning and managing the whole water cycle to maximise the outcomes of water cycle management and provide greater community and environmental value.<sup>24</sup>

### How does this address the Climate Emergency?

We must overcome water management challenges to ensure our future. Based on current trends, Melbourne's water resources should last until 2043, though under a high demand scenario it may be exhausted as early as 2028.<sup>25</sup>

In our region, average annual rainfall has already declined and it will fall further, particularly in cool seasons (April to October). Reduction in average annual rainfall means prolonged drought, which puts pressure on our water supplies, the environment and limits agricultural production. Extreme rainfall events will increase, leading to more flash flooding.

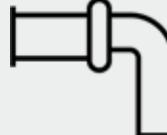
Increased use of alternative water sources, such as stormwater and recycled water, can significantly reduce the Mornington Peninsula's demand on mains water resources, which are shared with drier regions.

IWM Plan is supported by the *Domestic Wastewater Management Plan*, that outlines out the management of wastewater on the peninsula and helps to protect our waterways and coastal areas from pollution.

Alternative water sources can be used in agriculture as well as in ecological restoration and maintenance. Climate change is driving Australia's cropping belt further south and altering local cultivation prospects.<sup>26</sup> Access to recycled water can strengthen our contribution to Melbourne's food bowl and improve soil health and landscape-wide water retention.

The IWM Plan seeks to achieve the seven strategic outcomes set by the 'Integrated Water Management Framework for Victoria'.<sup>24</sup>

### Strategic outcomes

						
Safe, secure and affordable supplies in an uncertain future	Effective and affordable wastewater systems	Opportunities are sought to manage existing and future flood risks and impacts	Healthy and valued waterways and marine environments	Healthy and valued urban and rural landscapes	Community values are reflected in place-based planning	Diverse jobs, economic benefits and innovation

## Action 14.



Task	Description	Time	Links
14.1	<p>Increase use of alternative water sources (e.g. recycled water and stormwater) to support:</p> <ul style="list-style-type: none"> <li>a. green open spaces (sport fields, parks, gardens) and tree canopy growth, which will provide urban cooling as well as support community health and wellbeing</li> <li>b. Increase use of alternative water sources to support emergency management, agriculture, business and tourism growth</li> <li>c. Increase access to recycled water at strategic locations to support agriculture, industry, fire-fighting and other beneficial uses</li> </ul>	L	 Summit 6
14.2	<b>Community</b> Empower the community to improve water cycle management through highlighting initiatives such as raingardens, water efficient products, water saving practices and leak detection monitoring	L	
14.3	<b>Community</b> Increase number of sewer connections in high risk catchments to eliminate septic system impacts on the environment	L	
14.4	Improve stormwater drainage infrastructure to reduce flooding impacts, protect life, properties and assets from flooding and increase stormwater use as an urban resource	O	 Summit 4
14.5	<b>Community</b> Increase stormwater harvesting initiatives to protect the environment, enable capture and reuse of this resource, and reduce nuisance flooding	L	
14.6	Promote best practice stormwater management through the planning scheme, by applying existing clauses as well as new planning scheme amendments such as the 'ESD Planning Policy'	M	 Action 16.2
14.7	Integrate Water Sensitive Urban Design (WSUD) principles alongside and as part of the ESD integration into Shire capital works	S	 Action 16.1
14.8	Build new and ensure ongoing effectiveness of existing large scale WSUD assets such as wetlands to protect the health of our waterways from the impacts of increasing urban development	L	
14.9	Use the Briars as a demonstration and research site to establish the viability of recycled water for ecological regeneration and agriculture, as a fit for purpose alternative water source to mains or rainwater.	M	

## Action 15.

### Enhance Sustainable Agriculture and Food Systems



#### Key Focus

**Support sustainable businesses and landholders, and guide consumer choices to create a sustainable and regenerative food system informed by accurate and local climate data.**

This includes promoting regenerative, indigenous, ecologically friendly, local agriculture, and supporting sustainable consumption.

#### How does this address the Climate Emergency?

Agriculture is the dominant type of land use on the Mornington Peninsula. We play a critical role providing food security for Victoria and the nation. The food system is complex, but it's an area in which we can do much to transition into a sustainable society and economy.

We can reduce emissions and mitigate and adapt to climate change by supporting regenerative agriculture on the Peninsula, and encouraging sustainable food consumption.

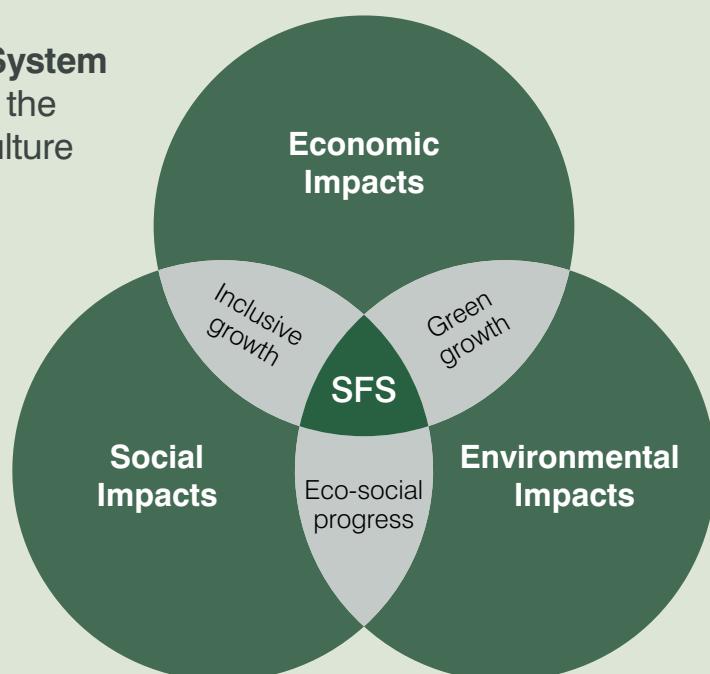
According to the 2018 'EAT-Lancet Commission' report, "food is the single strongest lever to optimize human health and environmental sustainability on earth".<sup>27</sup>

Our actions will protect and expand local jobs, and embed ways to work with nature to simultaneously protect the natural environment and agricultural productivity.

#### Sustainable Food System (SFS) adapted from the UN Food and Agriculture Organisation 2014<sup>28</sup>

##### Social:

- Added value distribution (gender, youth, Indigenous people)
- Cultural traditions
- Nutrition and health
- Workers' rights/ safety
- Animal welfare
- Institutions



##### Economic:

- Profits
- Jobs/incomes
- Tax revenues
- Food supply

##### Environmental:

- Carbon footprint
- Water footprint
- Water health/soil health
- Animal and plant health
- Food loss and waste
- Biodiversity
- Toxicity

## Action 15.



Task	Description	Time	Links
15.1	Deliver the actions set out in the <i>Green Wedge Management Plan</i> that align with environmentally beneficial outcomes for the local food economy  By 2021, review the Agricultural Rate to incentivise transitions to sustainable agriculture. Agricultural Rate priorities could include: a. Agroecological and regenerative farming practices b. Incorporating indigenous agricultural practices and crops c. Sequestering soil carbon d. Improving biodiversity outcomes on farms	O	➡ Action 11
15.2		S	
15.3	Through consultation with local agriculture and food manufacturing sector, develop and deliver a 'Food Economy and Agroecology Strategy': a. Identify ecological and climatic impacts of and opportunities for local food industries b. Support the uptake of regenerative farming practices and showcase businesses using sustainable, regenerative food production methods c. Forecast sustainable economic and production opportunities and threats d. Encourage and enable circular economy practices amongst local businesses e. Determine regulatory barriers to business growth and diversification f. Forecast opportunities and threats for food production and security, and devise mitigation and adaptation strategies to help businesses g. Work collaboratively with partner organisations to advocate for recycled water access to key agricultural areas within the region	M	➡ Summit 6
15.4	Use the Briars as a demonstration site for regenerative agriculture and opportunity for agricultural research and development, particularly to: a. Gather and share locally relevant weather data b. Adapt to a changing climate by researching and trialling new crops c. Grow indigenous crops as commercially viable competitors d. Determine opportunities to increase biodiversity	M	
15.5	<b>Community</b> Promote and improve access to sustainably produced local food for farmers, residents, visitors, and vulnerable communities, through extending the Mornington Peninsula Produce Program, implementing the <i>Municipal Public Health and Wellbeing Plan</i> as it relates to sustainable food options, and strengthening connections between producers and retailers	M	
15.6	Work towards a circular economy by investigating opportunities to divert local organic waste streams from landfill, to contribute to the creation of valuable by-products	M	➡ Action 17.4
15.7	Investigate options such as carbon farming to promote the diversification and expansion of revenue streams for farmers on the Peninsula	O	
15.8	<b>Community</b> Implement community and landowner engagement and capacity-building programs to encourage sustainable agriculture, sustainable land management, and to maximise restoration opportunities, such as climate data access, land and biodiversity stewardship, partnerships with farming networks and Traditional Owners.	O	➡ Action 20.3

## Action 16.

### Enhance Environmentally Sustainable Design



#### Key Focus

Introduce Environmentally Sustainable Design (ESD) and climate risk impact considerations into the Mornington Peninsula Shire Planning Scheme and capital works programs. This will apply to both Shire-owned and community buildings and assets.

ESD is a dynamic design philosophy that encourages innovation and new technologies. It's a process that considers energy and water use, waste generation, construction and fit out materials, thermal and operational comfort, ecology and biodiversity impacts - all from the earliest stages of planning and design.

#### How does this address the Climate Emergency?

Mornington Peninsula owns or manages over 600 buildings, 713km of footpaths and 3,637km of roads. We approve approximately 1,000 residential and non-residential planning permits each year.

According to the United Nations 'Environment Program', buildings account for nearly half of the world's energy expenditures, 40% of greenhouse gas emissions, 25% of the earth's potable water, and over 20% of all solid waste in developed countries.<sup>29</sup>

An ESD Policy will be a practical exemplar that improves environmental outcomes for community groups and building users.

By incorporating ESD within the Planning Scheme, the Shire can improve the environmental outcomes, and ensure that new buildings create healthy spaces for occupants and users.

Any ESD Policy is expected to continually improve the Shire's standards and best practice benchmarks.

#### Case Study: The Cape<sup>30</sup>

The Cape at Cape Paterson is located near Inverloch in Gippsland, close to the beach and National Parks. The sustainable residential project brings together innovative and unique ESD principles, and supports residents to live a sustainable lifestyle. The precinct is a leader in home design with:

- 7.5 star energy efficiency rating, which reduces active heating and cooling, and lowers electricity and gas bills
- Renewable energy generation with a minimum of 2.5kW of solar
- Capture, reuse and treatment of rain and storm water, reducing the potable requirements
- A 5000m<sup>2</sup> community garden with efficient water, supplying locals with fresh produce
- Integration with adjacent habitats, protecting and enhancing native flora and fauna

The Cape is a model for local developers and builders to exceed the minimum standards required by the building code, and offer a built environment that benefits the community and nearby ecosystems. Further reading at [The Cape](#).

## Action 16.



Task	Description	Time	Links
16.1	By 2021, develop and implement an ESD Policy for Shire buildings and civil works, encompassing all new builds, extensions, refurbishments, fit outs and civil works, using tools such as SECCCA's 'Brief Ezy'	S	
16.2	Advocate to the Minister for Planning, for expedited authorisation of proposed amendment C232morn to introduce a local ESD policy to the Planning Scheme and ensure the Shire is appropriately resourced to effectively implement the new Planning Scheme policy	S	Summit 3
16.3	Incorporate climate projections into the 'Asset Management Framework' to improve future decision making	M	
16.4	<b>Community</b> Provide residents, developers and builders with the resources to understand and adapt practices and to incorporate sustainability principles and climate change impacts	S	
16.5	<b>Community</b> Incentivise early adoption of ESD in private development	S	
16.6	Continue to partner with CASBE to support the continual improvement of best practice regarding ESD and WSUD policy and implementation, e.g. the 'Elevating Targets' project	M	
16.7	Develop a 2030 ESD roadmap, detailing the Shire's future direction of both the internal policy and any potential subsequent Planning Scheme amendments, focussing on location-specific climate change risk mitigation, blue-green infrastructure integration, township-scale planning and other innovative technologies and design philosophies.	M	



## Action 17.

### Transition to a Circular Economy



#### Key Focus

Fully support the Shire's *Beyond Zero Waste Strategy* and embed circular economy principles within the Shire, including promoting local resource recovery initiatives and businesses.

In 2020, the Victorian Government released the *Recycling Victoria Policy*, which outlines the goals and objectives at the state level, plus key actions to achieve them.<sup>31</sup> Our local action will need to align with and support this Policy.

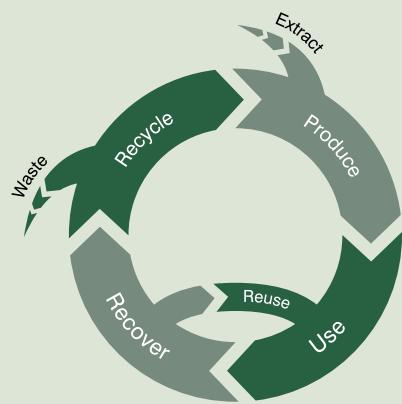
#### How does this address the Climate Emergency?

Tackling waste is a high priority for our community. The 'Circular Economy Model' dictates that products and services are planned and designed with zero waste created as a by-product. This model eliminates the consumption of finite resources – a necessary step towards material sustainability.

Approximately 45% of the Shire's corporate emissions come from landfill site activity. Moving towards a circular economy allows us to reduce emissions and develop economic opportunities for the Peninsula.

Achieving and taking steps towards a circular economy has clear benefits for other parts of this Plan and the community, including food systems and agriculture, businesses and tourism, water efficiency and health and many others.

#### Reaching zero waste by 2030 Our model of a circular economy



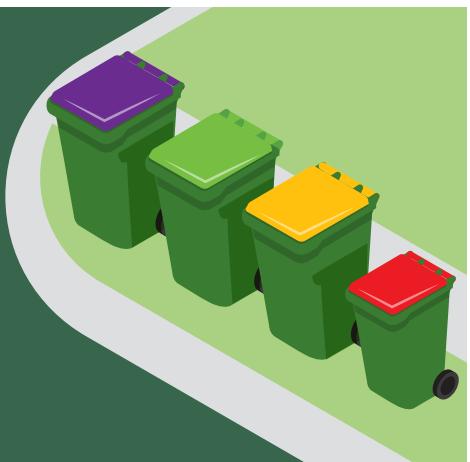
#### Recycling Victoria Policy<sup>31</sup>

In March 2020, the Victorian Government published *Recycling Victoria: A new economy*, which sets out the steps to a circular economy, including four goals:

- Design to last, repair and recycle
- Use products to create more value
- Recycle more resources
- Reduce harm from waste/pollution.

The State has committed \$300M to transform the recycling sector. For us that means:

- A 4-bin system for all households, separating glass recycling, co-mingled recycling, food and garden and general waste
- A container deposit scheme, promoting and streamlining recycling outside the home
- Industry and infrastructure development to sort and process priority materials to avoid landfill.



## Action 17.



Task	Description	Time	Links
17.1	<p>Adopt and fast-track the <i>Beyond Zero Waste Strategy</i>, which will:</p> <ul style="list-style-type: none"> <li>a. Achieve 100% diversion from landfill by 2030</li> <li>b. Introduce the Food Organics, Garden Organics (FOGO) collection system across the municipality</li> <li>c. Create opportunities to explore and test new and emerging technology and infrastructure to support improved recycling and reuse</li> <li>d. Create opportunities to explore how a circular economy can support the development of new, local industries and economic opportunities</li> <li>e. Actively collaborate with other councils and the state government to enhance waste management systems and infrastructure</li> <li>f. Work with and educate the community to encourage waste avoidance, change purchasing behaviour, improve recycling and normalise sharing and reuse</li> <li>g. Heighten controls around minimising the contamination of recyclable and compostable waste streams</li> <li>h. Work with and educate local businesses to encourage and support circular economy practices, e.g. implementing the 'Single Use Plastic Free Policy', and promoting state and federal programs to minimise business waste and improve recycling</li> <li>i. Investigate levers to incentivise waste avoidance and local circular economies in businesses, agriculture and industry.</li> <li>j. Support the promotion and delivery of Federal and State commercial initiatives and programs that minimise business waste and improve recycling</li> </ul>	L	Summit 7
17.2	<b>Community</b> Drive a cultural change away from consumerism and towards a circular economy model of conscious consumption, where waste is eliminated, and all materials are used as a valuable resource	O	
17.3	Continue active participation in the MWRRG procurement process of alternative waste treatment, ensuring alignment with circular economy principles	M	
17.4	<b>Community</b> Conduct and publish a materials flow analysis of the Peninsula to: <ul style="list-style-type: none"> <li>a. Identify waste streams and encourage local reuse of materials, e.g. organic waste, bird netting</li> <li>b. Encourage industries and businesses to reprocess and recycle waste on or near the peninsula</li> <li>c. Support businesses to improve resource efficiency, waste reduction and procurement choices of raw materials and packaging</li> </ul>	S	(internal icon)
17.5	Investigate and implement new and emerging technology and nature-based solutions to enhance landfill management and resource recovery, especially where available locally.	L	

## Action 18.

### Embed Sustainability and Circular Economy into the Shire's Procurement



#### Key Focus

Improve product and services procurement to reflect and set best practice sustainability.

This includes updating the Shire's **Procurement Policy**, internal processes and decision-making frameworks so staff make consistent, positive decisions across all Shire business.

#### How does this address the Climate Emergency?

The Shire purchases approximately \$18M of goods and services each year (not including capital works and existing contracts). Our sustainable choices can influence the Shire's supply chain, encourage the transition to sustainable practice, and create demand for circular economy products and services.

We'll include life cycle assessments as standard practice in decision making to ensure that the Shire maximises positive environmental outcomes and value for money over the life of the product. We'll consider costs and emissions including raw materials, manufacture, use and disposal.

#### Recycled plastic bench at the Shire's Eco House

This seat is made from 98% recycled plastics.

This bench alone diverts over 80kg of plastic waste from landfill, into a viable and useful new product.



## Action 18.



Task	Description	Time	Links
18.1	Set sustainability criteria in all procurement evaluation e.g. emissions generated	S	
18.2	Update standard contracts to include provision of all contractor and product emissions data, including fuel use	S	
18.3	Review existing contracts to encourage innovation and greening of the supply chain	S	
18.4	Incorporate sustainability requirements into future maintenance contracts, such as zero-emissions vehicles and plant, circular economy practices, net zero emissions and soil improvement methodologies	M	
18.5	Develop a sustainable products and materials register to assist procurement decisions, including reactive and proactive maintenance	M	
18.6	Set ambitious targets for recycled content use for Shire operations, including stationery and consumables as well as construction and other civil works	S	<b>Summit 7</b>
18.7	Provide ongoing education and training for staff and contractors to understand short and long-term impacts of procurement decisions	O	
18.8	Embed Climate Emergency principles into the <i>Healthy Food and Drink Policy</i> and all future corporate catering contracts, prioritising sustainably grown, local, plant-based produce, and eliminate food and packaging waste for Shire-run and permitted events	S	
Embed sustainability within all Shire-run and permitted events on the Peninsula to implement, demonstrate and communicate cultural and behavioural change, by:			
18.9	<ul style="list-style-type: none"> <li>a. Renewing the <b>Events Policy</b> in 2021 to incentivise sustainable events, including a roadmap for future Policy updates</li> <li>b. Updating the 'Sustainable Events Toolkit' to improve event management practices and ensure that the Shire incorporates advocacy and education.</li> </ul>	S	

## Action 19.

### Prioritise Sustainable Investment



#### Key Focus

Update the Shire's *Investment Policy* and other banking and financial standards to ensure that by 2023 our financial operations are fully divested from industries that cause ecological, social, economic and humanitarian harm.

#### How does this address the Climate Emergency?

Banking with and investing in institutions that invest in fossil fuels and environmentally destructive industries supports these industries to continue contributing to global warming.

Instead, our focus on economic and environmental sustainability will direct significant cashflow to sustainable and just business practices that can stop climate change.

Our Policy will demonstrate leadership, send a clear market signal and uphold our value of 'Integrity'.



## Action 19.



Task	Description	Time	Links
19.1	Review banking and investment policies to divest the Shire's from activities that cause or promote environmental harm	S	
19.2	Implement new criteria relating to environmental sustainability, human rights and ethical concerns	S	
19.3	Inform current banking partners of the upcoming change in policy, and the new criteria for future contracts	S	
19.4	<b>Community</b> Provide education and resources for all residents to make informed choices about sustainable banking, investment and divestment, e.g. training/webinars.	S	

## Action 20.

### Strengthen and Integrate Climate Data into Decision Making



#### Key Focus

**Research, synthesise and integrate climatic data projections and risks into the Shire's Geographic Information System (GIS) and other data management platforms.**

This will include information on inundation, stormwater flooding, increased bushfire risk, reduced rainfall, biodiversity risks and urban heating.

The information will be made accessible to inform residents of localised risks and vulnerabilities, and it will be suitable to interpret and apply to planning recommendations and policy at all levels of Shire operations.

Community and the Shire will be educated to ensure that climate data is embedded into both short and long-term decision-making processes. Data availability is the first step, it must then be put into the hands of those that can effectively use it.

#### How does this address the Climate Emergency?

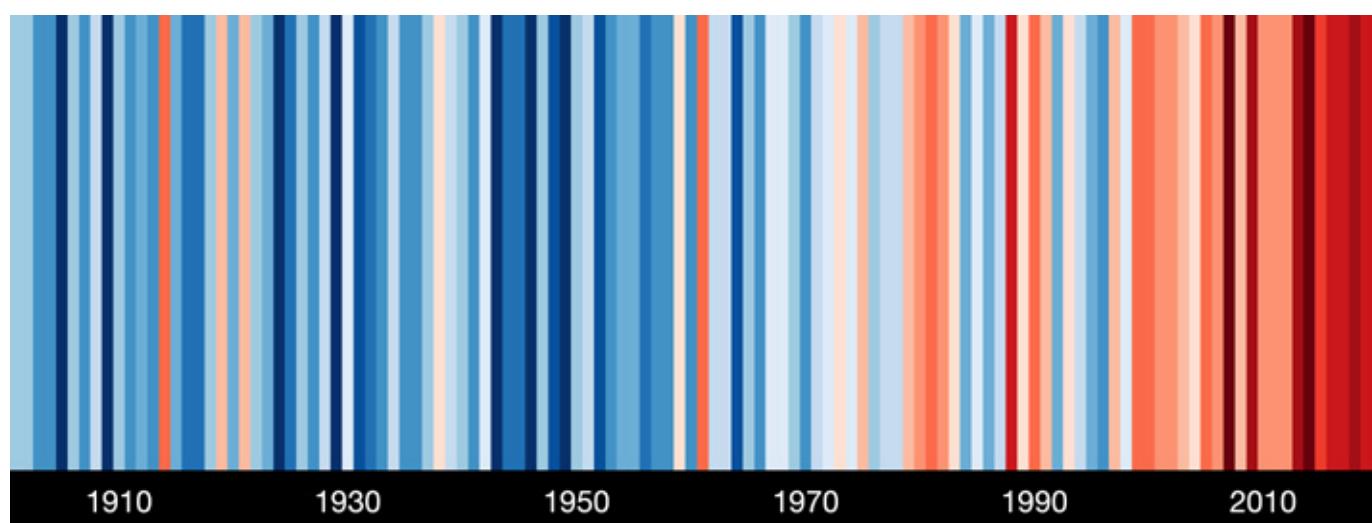
It is essential to understand how climate change will impact us on a local scale, so we can plan sound adaptation and mitigation techniques, and manage the impacts.

The Shire's research will be refreshed as the quality of climate projections improve and up-to-date information becomes available. Decisions will be reviewed regularly to ensure they maintain currency with best available science.

### 'Warming stripes' Average annual temperature change in Victoria since 1901<sup>32</sup>

Each stripe represents the temperature anomaly of one year.

Reds indicate temperatures above the 1961–1990 average / Blues, below average (ACORN-SATv2 data set, scale ranges from 1.5 to +1.5°C, methods of Ed Hawkins)



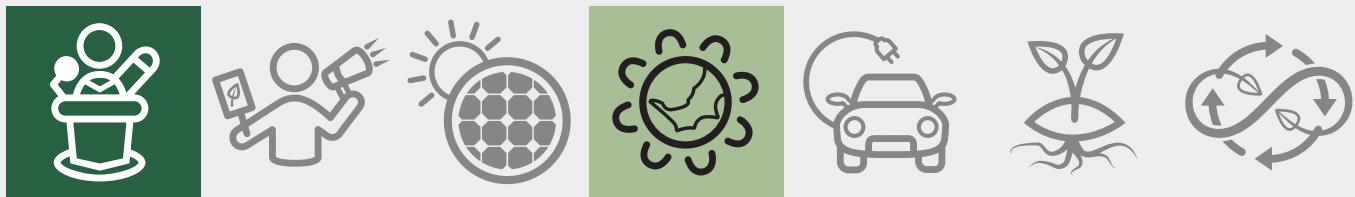
## Action 20.



Task	Description	Time	Links
20.1	<p>Access, or conduct where necessary, detailed modelling to identify erosion and inundation impacts in key coastal areas, assisting in strategic planning.</p> <ul style="list-style-type: none"> <li>a. Derive baseline data to develop a strategy to mitigate damage and risk for community and Shire property, such as the use of nature-based infrastructure and incorporation of blue carbon projects</li> <li>b. Advocate where required for access to state government modelling resources</li> </ul>	O	
20.2	<p>Partner with the Association of Bayside Municipalities and the State Government and seek to introduce provisions to the Planning Scheme to address predicted sea level rise and storm surge induced erosion, inundation and groundwater impacts identified by the <i>Port Phillip Bay Coastal Hazard Assessment</i></p>	M	
20.3	<p>Undertake regular review and monitoring of relevant climate data and use to inform strategic planning</p> <ul style="list-style-type: none"> <li>a. Improve understanding of local weather and climate changes by investigating historical weather records, utilizing existing weather stations on the Peninsula, and assessing the viability and need for more automatic weather stations on the Peninsula</li> <li>b. Review relevant data and learnings from other municipalities, cities and government organisations. Investigate data sharing partnerships and sharing platforms</li> <li>c. Consolidate existing and new data into standardised format, facilitating access and distribution for users</li> <li>d. Make climate data available to community, emphasising education as it pertains to climate change adaptation and mitigation</li> </ul>	O	
20.4	<p>Investigate the role of artificial intelligence (AI) in the collection, analysis, interpretation and communication of data, especially relating to key activities within this Plan</p>	M	
20.5	<p>Work with community, government organisations and the private sector to ensure that risk mapping is accurate according to latest projections</p> <ul style="list-style-type: none"> <li>a. Bushfire Management Overlay (BMO), Victorian Fire Risk Register (VFRR) and Bushfire Prone Areas (BPAs) accurate and consolidated in conjunction with the Department of Environment, Land, Water and Planning (DELWP) and the Country Fire Authority (CFA)</li> <li>b. Consolidate relevant risk mapping with local water authorities, South East Water (SEW) and Melbourne Water</li> </ul>	O	Action 7
20.6	<p>In partnership with community, research economic impacts to local industries to advise businesses of future threats and opportunities.</p>	O	

# Action 21.

## Understand Climate Risks on Assets and Services



### Key Focus

Incorporate climate change risks and controls into projects, long-term plans and strategies for all Shire services and assets, as well as the Shire's natural environment.

Every long-term business plan and service analysis should consider the best available scientific projections to ensure future viability. All infrastructure projects, including planning capital works, maintaining or renewing assets, must assess current and future climate change impacts to ensure asset investment remains sound.

### How does this address the Climate Emergency?

Adapting to climate change requires continuous evaluation, re-evaluation and sound decision making in order to build and manage infrastructure that can withstand and respond to the impacts.

We need to be equipped to protect people and services during intensifying weather conditions and changing social and economic structures. We also need to understand and articulate the risks of 'doing nothing' so that we don't plan in business-as-usual mode.

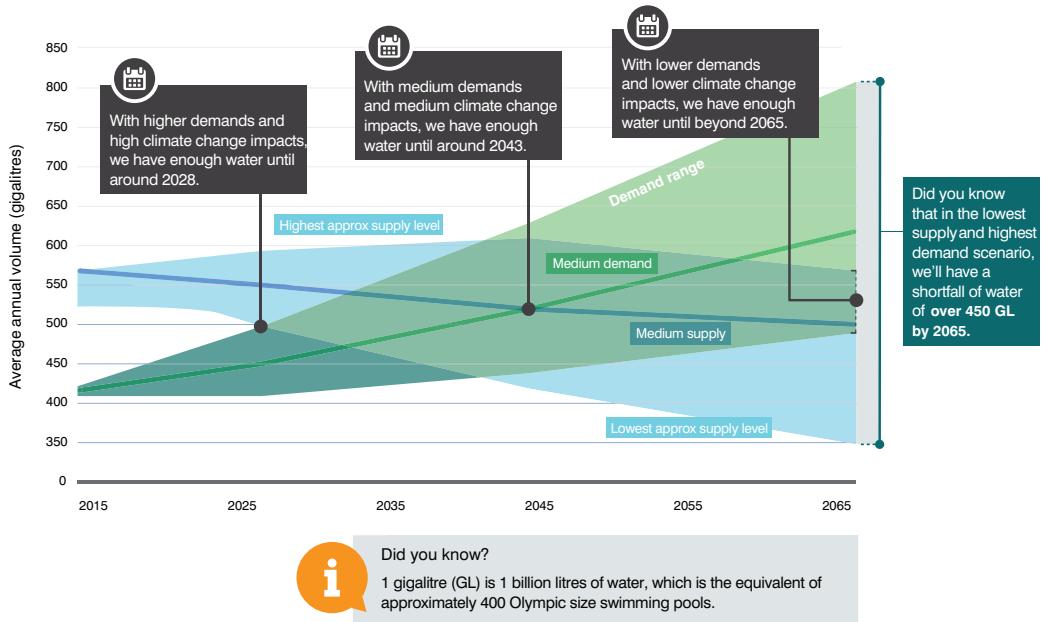
### Melbourne's Water Security

The security of Melbourne's future water supply is impacted by a number of factors including population growth and climate change. This graph shows a range of projected outcomes.

Under the worst-case scenario, it is forecast that water supply will run out by 2028.

(Source:  
Melbourne Water<sup>25</sup>)

### Supply and demand scenarios in Melbourne



## Action 21.



Task	Description	Time	Links
21.1	Annually review the 'Climate Change Risk Register', incorporating current Victorian Climate Projections	O	
21.2	<p>Conduct regular vulnerability assessments and financial risk modelling of Shire services and assets, both built and natural, based on the latest climate change projections. Consider the escalating impacts of:</p> <ul style="list-style-type: none"> <li>a. Coastal inundation and sea level rise</li> <li>b. Heatwaves on service delivery</li> <li>c. Intensified rainstorm and wind events</li> <li>d. Humidity and temperature impacts on building materials</li> <li>e. Soil contraction, groundwater availability and secondary consequences caused by increasing incidence and severity of droughts</li> <li>f. Increased incidence and severity of bushfires</li> </ul>	O	Action 20.5
21.3	Elevate the use of best available climate science projections into planning and delivery to:	O	
21.3	<ul style="list-style-type: none"> <li>a. Minimise emergency response costs by identifying and adopting climate adaptation practices</li> <li>b. Ensure all new projects and rebuilds include a climate risk evaluation and impact statement, along with mitigation measures</li> </ul>	M	
21.4	Develop standards and guidelines for building and maintaining Shire built and natural assets, and embed these into Shire programs and practices	S	Action 1.5
21.5	Investigate avenues to efficiently integrate climate impact reporting into existing Shire reporting mechanisms	O	
21.6	Increase human resources and in-house expertise for climate change impact and risk management, particularly regarding coastal risks	S	
21.7	Assess liability risks when considering planning permits in high-risk areas, particularly those areas at risk from coastal erosion, inundation and storm surges. Investigate changes to insurance and loan application processes as they pertain to increasing climate risk	S	
21.8	Produce a report on the impacts of not acting to address climate change and the risks of continuing business-as-usual	S	
21.9	Implement 'Australian Accounting Standards Board (AASB) Practice Statement 2' requirements into accounts reporting to ensure climate related risks are considered in the context of financial statements. <sup>32</sup>	S	

# Glossary

## Active Transport

Physical activity undertaken for transport purposes, rather than recreation e.g. cycling or walking.

## Adaptation

Preparedness and resilience to the impacts of climate change occurring now and into the future.

## Alternative Waste Treatment (AWT)

A process to divert solid waste from landfill and increase resource recovery (e.g. recycling) or generate energy.

## Alternative Water

Non-drinking water from sustainable sources such as rainwater, stormwater, recycled and grey water.

## Annual Average Damage (AAD)

The damage per year that would be expected from flooding in a particular area, averaged over a very long period of time in which floods ranging in severity are experienced.

## Blue Carbon / Blue-Green Carbon

Carbon that is captured and stored by wetlands and coastal ocean ecosystems, typically in seagrass, mangrove and saltmarsh environments.

## Biodiversity

The variety of all life-forms and the ecosystems of which they are a part, including plants, animals, fungi, protists (including algae) and bacteria, and their encoded genes.

## Biodynamics

A holistic, ecological and ethical approach to farming, gardening, food and nutrition founded by philosopher and scientist Rudolf Steiner; a form of regenerative agriculture.

## Business as Usual

Little to no action on climate change is taken, emissions continue to rise as if climate change were not a threat

## Carbon Neutral

A state of net zero carbon emissions, commonly achieved through reducing emissions, as well as purchasing offsets.

## Carbon Dioxide Equivalent (CO<sub>2</sub>e)

A measure for simply estimating the global warming potential of various other greenhouse gases, such as methane or nitrous oxide.

## Carbon Drawdown

Drawing carbon down from existing levels of greenhouse gases in the atmosphere to reverse global warming

## Carbon Offset

An exchange or reduction of emissions to compensate for emissions made elsewhere, commonly measured in tonnes of carbon dioxide-equivalent (CO<sub>2</sub>-e).

## Carbon Sequestration

The removal of carbon from the atmosphere by capturing or storing it through biological, chemical and physical processes

## Circular Economy

A closed system in which reuse, recycling and disposal channels are in-built to consumer and industrial products, to eliminate waste.

## Climate Change

The long-term rise in global average temperature, caused by human influence, resulting in negative effects such as sea level rise, ocean acidification, extreme weather events, loss of biodiversity and increase in human suffering.

## Climate Change Impacts

A wide range of current and future physical, environmental, social and financial effects.

## Climate Emergency

Recognition that urgent action is required to avoid the worst effects of climate change.

## Climate-Damaging Projects

Projects that have a detrimental effect by increasing the impact or likelihood of climate change and diminish the capacity to respond.

## Climate-Safe Projects

Projects that do not have damaging effects on the climate, and facilitate a safe and sustainable future.

## Community

The people or organisations that live, work, visit or are connected to the region.

## Community Resilience

The sustained ability of a community to respond to, withstand and recover from shocks and stressors. Acute shocks include disasters like fires, floods and terror events.<sup>33</sup>

## Decarbonisation

The transition to a low or zero carbon economy to limit the effects of climate change.

## Divestment

Reducing and then eliminating connection to funds invested in fossil-fuel supporting industries, typically through banking, loans, shares and other financial portfolios.

## Environmentally Sustainable Design (ESD)

A school of design that seeks to improve building performance, reduce environmental impact, resource use and waste, and create healthy environments for occupants and users.

## Greenhouse Gas (GHG)

Gases such as carbon dioxide, methane and others that, when present in the atmosphere, increase the amount of solar radiation absorbed, leading to a rise in global average temperature. GHGs are primarily released by the combustion of fossil fuels.

## Inter-governmental Panel on Climate Change (IPCC)

United Nations body for assessing the science related to climate change. The panel provides regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation.

## Life Cycle Assessment (LCA)

Assessing the total cost of an asset throughout its useful life taking account of the planning, design, construction, acquisition, operational, maintenance, rehabilitation and disposal costs.

**Mitigation**

Limiting and avoiding the most harmful effects of climate change, primarily achieved through reducing global carbon emissions.

**Natural disaster**

A sudden or violent event in nature (e.g. earthquakes, hurricane or flood) that kills a lot of people or causes a lot of damage.

**Net Zero (emissions)**

Carbon emissions are produced, but balanced out with equivalent offsets. Carbon dioxide is captured and sequestered equivalent to the CO<sub>2</sub> emitted.

**Organic**

Living things or material from living things, such as food and garden waste or animal manure.

**Paris Agreement**

A 2016 agreement between 196 countries (including Australia) to limit the global average temperature to well below 2°C of the world's pre-industrial temperature levels.

**Recycled Products**

Products that are made from or contain recycled materials such as plastic, glass, rubber or any material that would otherwise be sent to landfill.

**Regenerative Agriculture**

A conservation and rehabilitation approach to food and farming systems. It focuses on topsoil regeneration, increasing biodiversity, improving the water cycle, enhancing ecosystem services and supporting biosequestration. Agroecology or Sustainable Agriculture are alternative terms.

**Renewable Energy**

Energy generated from renewable sources such as solar, wind or geothermal, in contrast to the energy from fossil fuels such as coal, natural gas or oil.

**Representative Concentration Pathway (RCP) 8.5**

Refers to the concentration of carbon that delivers global warming at an average of 8.5 watts per square meter across the planet. The RCP 8.5 pathway delivers a temperature increase of about 4.3°C by 2100, relative to pre-industrial temperatures. A high emissions scenario, often referred to as 'business as usual'.

**Residual Emissions**

The emissions still being generated after reductions through avoidance, efficiency and renewable energy generation.

**Resilience**

Ability to recover or adapt to changes in environmental and/or living conditions at a personal, community, economic and ecological level.

**Shire/Corporate Emissions**

Greenhouse gas emissions from Shire projects and operations, included within the scope of the Climate Active Carbon Neutral Standard.

**Shire/Community Emissions**

All Greenhouse Gas emissions from within the Shire boundaries, including residential and commercial energy use, transport and waste

**Significant weather events**

Unseasonal or extreme weather events for the affected region.

**Single Use Plastics**

Plastic products that are unable to be reused, primarily food and drink packaging.

**Soil Carbon**

Carbon stored in the soil ecosystem in various forms.

**Smart Parking**

Technology solutions for efficiency and sustainability in the design and use of car parks

**Social Impact Assessment (SIA)**

The processes of analysing, monitoring and managing the intended and unintended social consequences of planned interventions (policies, programs, plans, projects) and any resulting social change.

**Stationary Energy**

Consumption of fuels used in electricity generation, in the manufacturing, construction and commercial sectors, and in other sources like domestic heating.

**Sustainable Agriculture**

Farming practices and research that replenish soil and improve crop yields and plant health while minimising the use of non-renewable resources. Also referred to as regenerative agriculture.

**Urban Heating**

An increase in localised temperature due to the urban built environment, primarily due to high amounts of concrete and asphalt, and a reduction in vegetation. Increasing tree canopy cover is a key method to reduce these effects.

**Water Sensitive Urban Design (WSUD)**

A holistic approach to water management that integrates urban design and planning with social and physical sciences in order to deliver water services and protect aquatic environments in an urban setting.

**Zero-emissions Vehicle**

A vehicle with no tailpipe emissions, typically powered by electricity from a battery or hydrogen.

# Reference List

1. United Nations Framework on Climate Change, *The Paris Agreement* (UNFCCC, Bonn, 2020)  
Available at: <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

---
2. Department of Environment, Land, Water and Planning, *Climate-ready Victoria: Greater Melbourne* (DELWP, East Melbourne, 2015)  
Available at: [https://www.climatechange.vic.gov.au/\\_data/assets/pdf\\_file/0019/60742/Greater-Melbourne.pdf](https://www.climatechange.vic.gov.au/_data/assets/pdf_file/0019/60742/Greater-Melbourne.pdf)

---
3. Intergovernmental Panel on Climate Change, *Summary for Policymakers of IPCC Special Report on Global Warming of 1.5°C approved by governments* (IPCC, Geneva, 2018)  
Available at: <https://www.ipcc.ch/2018/10/08/summary-for-policymakers-of-ipcc-special-report-on-global-warming-of-1-5c-approved-by-governments/>

---
4. Department of the Environment and Energy, *National Inventory Report 2017 Volume 1* (Department of Environment and Energy, Canberra, 2019)  
Available at: <https://publications.industry.gov.au/publications/climate-change/system/files/resources/gas-group/national-inventory-report-2017-volume-1.pdf>

---
5. Johannes Friedrich, Mengpin Ge and Andrew Pickens, "This Interactive Chart Explains World's Top 10 Emitters, and How They've Changed", *World Resources Institute* (2017)  
Available at: <https://www.wri.org/blog/2017/04/interactive-chart-explains-worlds-top-10-emitters-and-how-theyve-changed>

---
6. Climate Action Tracker, "Australia – Country Summary", *Climate Action Tracker* (last modified: 2 December 2020)  
Available at: <https://climateactiontracker.org/countries/australia/>

---
7. Department of the Prime Minister and Cabinet, *Australia's 2030 Emission Reduction Target* (Australian Government, Canberra, 2015)  
Available at: <https://www.pmc.gov.au/sites/default/files/publications/Summary%20Report%20Australia%202030%20Emission%20Reduction%20Target.pdf>

---
8. Department of Land Water and Planning, "Climate Change Act 2017", DELWP (last modified: 10 January 2019)  
Available at: <https://www.climatechange.vic.gov.au/legislation/climate-change-act-2017>

---
9. Miki Perkins, "Overheating our planet": Andrews government urged to set emissions target for critical decade", *The Age* (11 March 2020)  
Available at: [https://www.theage.com.au/national/victoria/overheating-our-planet-andrews-government-urged-to-set-emissions-target-for-critical-decade-20200311-p5495c.html?mc\\_cid=0731661530&mc\\_eid=f4fb790c](https://www.theage.com.au/national/victoria/overheating-our-planet-andrews-government-urged-to-set-emissions-target-for-critical-decade-20200311-p5495c.html?mc_cid=0731661530&mc_eid=f4fb790c)

---
10. Independent Expert Panel on Interim Emissions Reduction Targets for Victoria, *Interim Emissions Reduction Targets for Victoria (2021-2030)*, Victorian Government, Melbourne (2019)  
Available at: [https://www.climatechange.vic.gov.au/\\_data/assets/pdf\\_file/0016/420370/Final-Report\\_Interim-Emissions-Reduction-Targets.pdf](https://www.climatechange.vic.gov.au/_data/assets/pdf_file/0016/420370/Final-Report_Interim-Emissions-Reduction-Targets.pdf)

---
11. Department of Environment, Land Water and Planning, *Victorian Climate Projections 2019 Technical Report* (DELWP, East Melbourne, CSIRO Melbourne, 2019)  
Available at: [https://www.climatechange.vic.gov.au/\\_data/assets/pdf\\_file/0016/435121/Vic-Climate-Projections-2019-Technical-Report\\_20200218.pdf](https://www.climatechange.vic.gov.au/_data/assets/pdf_file/0016/435121/Vic-Climate-Projections-2019-Technical-Report_20200218.pdf)

---

12. Department of Environment, Land, Water and Planning, *Climate Change Adaptation Snapshot Greater Melbourne* (DELWP, East Melbourne, 2018)  
Available at: [https://www.climatechange.vic.gov.au/\\_data/assets/pdf\\_file/0029/392924/D18-001.RegCCASnapshotReports\\_GreaterMelbourne\\_FALR.pdf](https://www.climatechange.vic.gov.au/_data/assets/pdf_file/0029/392924/D18-001.RegCCASnapshotReports_GreaterMelbourne_FALR.pdf)
13. Department of Environment, Land, Water and Planning, *Climate Ready Victoria Greater Melbourne Climate Projections Data Sheet* (DELWP, East Melbourne, 2015)  
Available at: [https://www.climatechange.vic.gov.au/\\_data/assets/pdf\\_file/0021/60753/Greater-Melbourne-Data-sheet.pdf](https://www.climatechange.vic.gov.au/_data/assets/pdf_file/0021/60753/Greater-Melbourne-Data-sheet.pdf)
14. Flood Strategy Project Control Board, *Flood Management Strategy - Port Phillip and Westernport* (Melbourne Water, Melbourne, 2015)  
Available at: <https://www.melbournewater.com.au/sites/default/files/2017-10/Flood-Management-Strategy-2015.pdf>
15. National Climate Change Adaptation Research Facility, *Synthesis Summary 5: Community resilience and vulnerability* (NCCARF, Southport, 2016)  
Available at: [https://www.nccarf.edu.au/sites/default/files/attached\\_files/Synthesis\\_Summary\\_Vulnerable\\_Communities\\_web.pdf](https://www.nccarf.edu.au/sites/default/files/attached_files/Synthesis_Summary_Vulnerable_Communities_web.pdf)
16. United Nations Educational, Scientific And Cultural Organization, "Climate Change And Gender Equality", UNESCO, (2017)  
Available at: <http://www.unesco.org/new/en/natural-sciences/priority-areas/gender-and-science/cross-cutting-issues/climate-change-and-gender-equality/>
17. Department of Health and Human Services, *Heat health plan for Victoria* (Department of Health and Human Services, Melbourne, 2019)  
Available at: <https://www2.health.vic.gov.au/about/publications/policiesandguidelines/heat-health-plan-for-victoria>
18. Australian Medical Association, *Climate change is a health emergency* (AMA, Barton, 2019)  
Available at: <https://ama.com.au/media/climate-change-health-emergency>
19. Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, *Nature's Dangerous Decline 'Unprecedented' Species Extinction Rates 'Accelerating'* (IPBES, Bonn, 2019)  
Available at: <https://ipbes.net/news/Media-Release-Global-Assessment>
20. Ecology Australia, *Mornington Peninsula Shire State of Biodiversity Report* (Mornington Peninsula Shire, Rosebud, 2019)  
Available at: <https://www.mornpen.vic.gov.au/files/assets/public/new-website-documents/your-property/environment/flora-and-fauna/docs/state-of-biodiversity-report-for-mornington-peninsula-2018.pdf>
21. Mornington Peninsula Landcare Network, "Linking the Mornington Peninsula Landscape (LMPL)", *Mornington Peninsula Landcare Network* (Last modified: n.d 2020)  
Available at: <https://impl.org.au/peninsula-wide-biolinks/>
22. The Nature Conservancy and Resilient Melbourne, *Living Melbourne: Our Metropolitan Urban Forest* (The Nature Conservancy and Resilient Melbourne, Melbourne, 2019)  
Available at: [https://resilientmelbourne.com.au/wp-content/uploads/2019/09/LivingMelbourne\\_Strategy\\_online3.pdf](https://resilientmelbourne.com.au/wp-content/uploads/2019/09/LivingMelbourne_Strategy_online3.pdf)
23. National Centre for Coasts and Climate, "National Centre for Coasts and Climate", NCCC, Parkville (2019) Accessed: 20 May 2020  
Available at: <https://nccc.edu.au/>
24. Department of Environment, Land, Water and Planning, *Integrated Water Management Framework for Victoria* (DELWP, East Melbourne, 2017)  
Available at: [https://www.water.vic.gov.au/\\_data/assets/pdf\\_file/0022/81544/DELWP-IWM-Framework-FINAL-FOR-WEB.pdf](https://www.water.vic.gov.au/_data/assets/pdf_file/0022/81544/DELWP-IWM-Framework-FINAL-FOR-WEB.pdf)
25. Melbourne Water, *Melbourne's Water Outlook 2020* (Melbourne Water, Melbourne, 2019)  
Available at: <https://www.melbournewater.com.au/water/water-outlook>

## Reference List

26. Neal Hughes, "Australian farmers are adapting to climate change", *The Conversation* (23 May 2017)  
Available at: <https://theconversation.com/australian-farmers-are-adapting-to-climate-change-76939>
27. Walter Willett, Johan Rockström, Brent Loken, Marco Springmann, Tim Lang, Sonja Vermeulen, Tara Garnett, David Tilman, Fabrice DeClerck, Amanda Wood, Malin Jonell, Michael Clark, Line J Gordon, Jessica Fanzo, Corinna Hawkes, Rami Zurayk, Juan A Rivera, Wim De Vries, Lindiwe Majele Sibanda, Ashkan Afshin, Abhishek Chaudhary, Mario Herrero, Rina Agustina, Francesco Branca, Anna Lartey, Shenggen Fan, Beatrice Crona, Elizabeth Fox, Victoria Bignet, Max Troell, Therese Lindahl, Sudhvir Singh, Sarah E Cornell, K Srinath Reddy, Sunita Narain, Sania Nishtar, Christopher J L Murray, "Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems", *The Lancet*, Vol 393, Issue 10170 (2019) pp.447-492  
Available at: <https://www.thelancet.com/commissions/EAT>
28. Food and Agriculture Organization of the United Nations, *Sustainable food systems: Concept and framework* (FAO, Rome, 2014)  
Available at: <http://www.fao.org/3/ca2079en/CA2079EN.pdf>
29. United Nations Environment Program, "Sustainable Buildings", *United Nations Environment Program*, accessed 14 May 2020  
Available at: <https://www.unenvironment.org/explore-topics/resource-efficiency/what-we-do/cities/sustainable-buildings>
30. The Cape, "Welcome to the Cape", The Cape, Cape Patterson, (Last modified: March 2020) accessed 14 May 2020  
Available at: <https://www.liveatthecape.com.au/>
31. Department of Environment, Land, Water and Planning, "Recycling Victoria Policy: A new economy" DELWP (2020) accessed 14 May 2020  
Available at: <https://www.vic.gov.au/transforming-recycling-victoria>
32. Ed Hawkins, "Warming Stripes for Victoria from 1901-2019", University of Reading (2019)  
Available at: <https://showyourstripes.info/>
33. Australian Accounting Standards Board, "Accounting Standards" AASB (Last modified: December 2019) accessed 14 May 2020  
Available at: <https://www.aasb.gov.au/Pronouncements/Current-standards.aspx>
34. Stephanie Butcher, Elanna Nolan and Kathryn Davidson, *Academic Literature Review of Resilient Communities 2019* (Resilient Melbourne, Melbourne, 2019)  
Available at: <https://resilientmelbourne.com.au/wp-content/uploads/2019/10/PUBLIC-Academic-Literature-Review-and-Independent-Review-of-Resilient-Co....pdf>



## Contact Mornington Peninsula Shire

 1300 850 600 (24 hours) or 5950 1000

TIS: 133 677 then ask for 1300 850 600

NRS: connect to NRS on [www.relayservice.com.au](http://www.relayservice.com.au)  
then ask for 1300 850 600

 [customerservice@mornpen.vic.gov.au](mailto:customerservice@mornpen.vic.gov.au)

Private Bag 1000, Rosebud 3939 DX 30059

 [facebook.com/mornpenshire](https://facebook.com/mornpenshire)

 @MornPenShire

 MornPenShire

## Mornington Peninsula Shire Service Centres

### ROSEBUD

90 Besgrove Street, 3939

### MORNINGTON

2 Queen Street, 3931

### HASTINGS

21 Marine Parade, 3915

### SOMERVILLE

1085 Frankston-Flinders Road, within Somerville Library, 3912