

Sustainability Strategy 2021 to 2030

Issues and Options



Acknowledgment of country

We, in the spirit of Reconciliation, acknowledge the Wurundjeri People of the Kulin Nation as traditional custodians of the land now known as the City of Maroondah, where Indigenous Australians have performed age-old ceremonies. We acknowledge and respect their unique ability to care for Country and their deep spiritual connection to it. We pay our respects to their Elders, past, present and emerging.



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Introduction

Maroondah City Council is undertaking a comprehensive review of the *Maroondah Sustainability Strategy* which includes reflecting on the achievements of the past strategy (2016 to 2020), undertaking research, and preparing a new strategy to 2030.

This Issues and Options paper has been prepared to engage with the community and stakeholders on the development of the *Maroondah Sustainability Strategy 2021 to 2030*. A series of potential options are provided which seek feedback to guide the development of the strategy following this paper. This paper is informed by a series of background papers and considers inputs from technical experts, research and engagement findings from broader community engagement.

The Issues and Options Paper does not commit Council to any direction or action. Its purpose is to engage the Maroondah community in the discussion of complex issues, the evidence base, and exploration of potential options, that will then inform the directions and actions that Council will pursue into the future. The directions and actions that Council decides to pursue will be articulated in a draft Council strategy that community will be invited to comment on later in 2021.

This discussion paper presents options within Council's sphere of influence and invites community feedback on these options.



Providing feedback

Council is keen to understand your views on the information presented in this paper, in particular your views on the various options presented for Council to pursue into the future as part of the Maroondah Sustainability Strategy Review.

Please submit your feedback to Council by 5pm Sunday 29th August.

You can provide your feedback through the YourSay Maroondah website at:
<https://yoursay.maroondah.vic.gov.au/>

Alternatively, you can send your written submission to:

The Manager

Integrated Planning

Maroondah City Council

PO Box 156

Ringwood, Vic 3134

Or by email to maroondah@maroondah.vic.gov.au

Submissions can also be delivered in person to the Croydon or Ringwood Customer Service Centres.

For further information on this paper, or how to make a submission, please call Dale Bristow, Team Leader Strategic Planning and Sustainability on 1300 88 22 33 or email dale.bristow@maroondah.vic.gov.au.

Strategy Principles

Sustainability means different things to different people, however this Strategy embraces the following definition:

Sustainability means balancing economic, social and environmental factors. It is concerned with how we can manage resources to ensure future generations have the same opportunities that we enjoy today. - Source: Resilient Melbourne Strategy 2016

Sustainability is about finding and integrating ways that can be sustained in the long term to enable the natural environment, the human society it supports, and the economy that serves society, to become and stay healthy and strong. This means protecting and improving natural systems to enable them to provide ecosystem services, using resources that can be renewed and using them efficiently, eliminating waste, and equitable access for all of society to their living needs (eg food, shelter, education, health, employment, culture).

The *Maroondah Sustainability Strategy 2021 to 2030* (the Strategy) sits within Council's Integrated Planning Framework (see figure below). The *Maroondah 2040 Community Vision* and the *Council Plan 2017-2021*, along with associated legislation and regulatory requirements provide the direction for Council strategy, policies, plans and service delivery. These strategic documents in turn guide internal service delivery plans that identify service delivery activities and projects to be undertaken by Council to meet community needs and expectations. All community focused plans, strategies and policies have been formally adopted by Council and can be accessed via Council's website.

The Strategy is one of Council's key strategic documents and plays a key role in delivering on sustainability outcomes identified in *Maroondah 2040: Our future together*, providing a strong foundation to deliver a more liveable and sustainable environment in Maroondah. The strategy will contribute to Council's *Maroondah 2040 Community Vision* for the municipality for a clean, green and sustainable community:

In 2040, Maroondah will be a resilient community committed to sustainable living, enhancing our natural environment, and providing leadership in responding to climate change.

It also supports action across other key 2040 vision areas such as 'Accessible and connected', 'Attractive, thriving and well built', 'Well governed and empowered'.

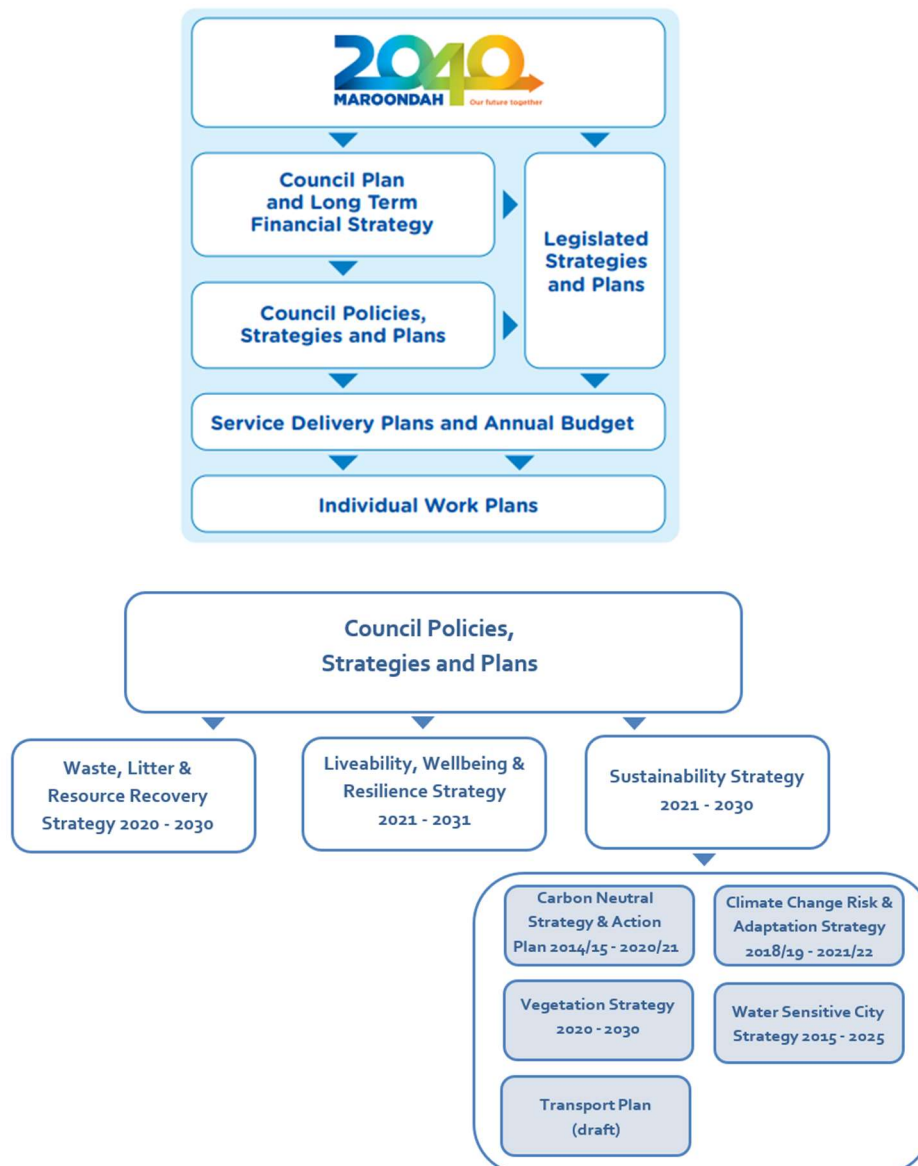


Figure: Maroondah City Council's Integrated Planning Framework

The Strategy will set out the action agenda for Council's service delivery until 2030, in partnership with the Maroondah community. The Strategy will embed sustainability into Council's service delivery to the community, continue to lead by example, build on and promote the sustainability efforts of the community, pursue partnerships to advance sustainability, and to help the community to lead a more sustainable lifestyle.

In addition to delivering operational change, the strategy will also look to influence and support community action. The types of intervention mechanisms that Council can employ to facilitate change include development and implementation of policy or regulation, advocacy, education, provision of incentive schemes or grants, strategic planning, supply contracting, and monitoring and reporting. Council already uses a variety of mechanisms to drive sustainability principles across the organisation and in the community.

The Sustainability Strategy 2016 to 2020 followed the following principles, which will also be embedded in the next strategy:

- **Whole of Council approach** - Pursue a 'whole of Council' approach with the root-and-branch adoption of a suitable sustainability framework.
- **Engage with and empower the community and key stakeholders** - Listen and respond to the needs of the community. Empowered and educated communities are required to effect more sustainable societies. Form partnerships where needed for the best outcomes.
- **Inter and Intragenerational equity** - Each generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations. Furthermore, economic, social and environmental (triple bottom line) factors should be integrated.
- **Evidence-based decision making** - Learning from the successes and failures of previous actions and programs increases understanding of best practice. Ongoing monitoring indicates the effectiveness of our decisions and facilitates continual improvement.
- **Deliverable and funded/realistic activities** - Focus on what is achievable within current resources. Concentrate efforts into areas where the most significant change can be effected.

Evaluation of the Sustainability Strategy 2016 to 2020

The *Maroondah Sustainability Strategy 2016 to 2020* was adopted by Council in July 2016 and set the agenda for Council's service delivery over the four years of the strategy. Through the implementation of the strategy, Council was striving to ensure that its decisions are for the long-term benefit of Maroondah's current and future communities and intended to inspire action and leadership on sustainability from all parties.

At the end of the strategy an internal evaluation of the strategy, key priority actions, and targets was undertaken to inform further internal consultation on the implementation of the strategy and the preparation of the *Sustainability Strategy 2021 to 2030*. A number of key recommendations to be considered during the development of the Strategy came out from this evaluation, including:

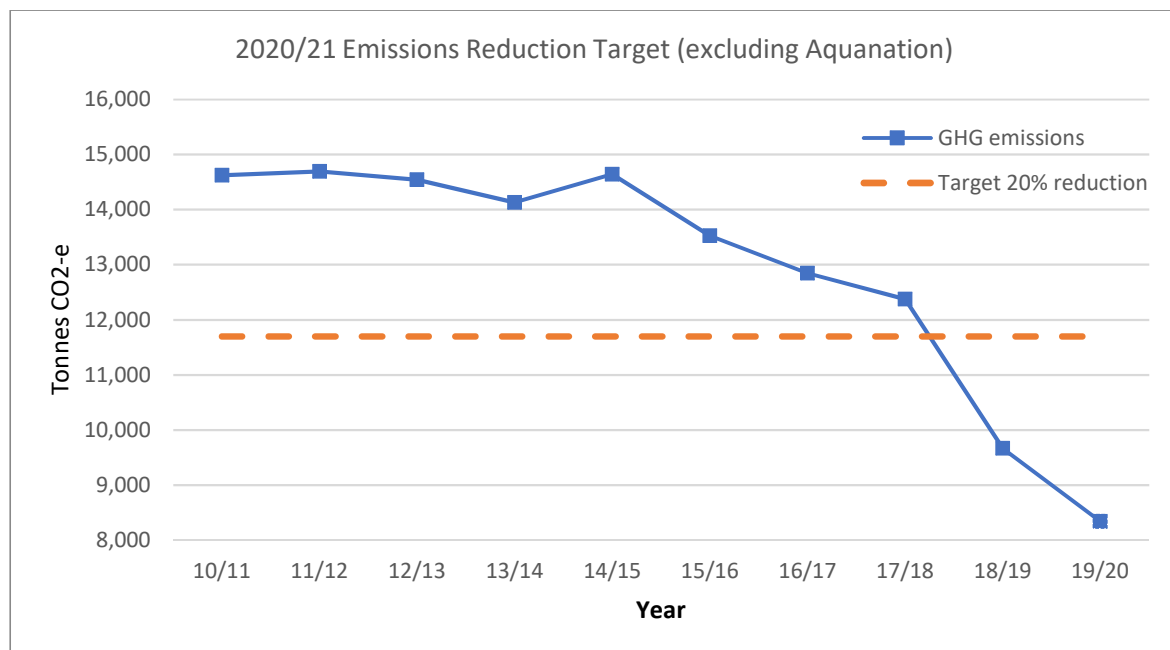
- Review and refinement of the targets and indicators and ensuring these are clearly linked to the Strategy focus areas, key directions and priority areas. This is not in the scope of this paper but will be considered in the preparation of the draft *Sustainability Strategy 2021 to 2030*.
- Consider key context changes that should be further explored to better understand the opportunities and barriers that they might present for sustainability into the future. These include, but are not limited to, revision of 2040 and feedback from community engagement processes, review of the *Maroondah Health and Wellbeing Strategy* (now called the *Liveability, Wellbeing and Resilience Strategy*), increasing community expectations, technological changes, and legislative requirements. These were considered during the development of the discussion papers supporting this issues and options paper, with some further detailed in this document.
- Increasing focus on community engagement needs, especially through deliberative engagement processes under the *Local Government Act*.

- Continue to pursue key projects that actively embed sustainability principles across Council.

The *Maroondah Sustainability Strategy 2016 to 2020 Activities Report* was also prepared to document the progress of the strategy and describes actions undertaken by Council, the community and our partners to improve sustainability in Maroondah.

The strategy was successful at driving action towards the achievement of key sustainability targets. Key targets that were achieved included:

- In December 2020, Council was certified Carbon Neutral by Climate Active for our operations as a public statutory body, achieving the long-term target set in 2008 to become carbon neutral by 2020.
- Council's emissions reduction target of a 20% reduction in greenhouse gas emissions, (excluding Aquanation) below 2010/11 was achieved in 2018/19, two years ahead of schedule. As this target was achieved, and based on the, now outdated, 2010 emissions boundary, this target is due for review and refresh.



- Fast tracking of the footpath program meant that 9 kms of new sealed footpaths were created over the lifetime of the strategy, 6.5 kms more than the target.
- The community's satisfaction with Council's performance in relation to environmental sustainability in 2020 was 61%.

A range of projects and initiatives were achieved as a result of the *Sustainability Strategy 2016 to 2020* including:

- Development of the *Climate Change Risk and Adaptation Strategy 2018/19 - 2021/22* which outlines how Council and partners will work together towards a more climate adapted future.
- Participating in the joint Eastern Alliance for Greenhouse Action energy performance contract project which saw energy efficiency upgrades to Aquahub, Aquanation, Federation Estate, Realm and The Rings.
- Offering a range of community resources and programs to redirect demand on private vehicle transport by redistributing journeys to other modes, retiming or

avoiding travelling altogether, including Bike It!, Walk to School and Ride to Work Day.

- Development of the *Maroondah Vegetation Strategy 2020-2030* which guides Council and the community's vision for protecting, enhancing, restoring, and creating vegetation in Maroondah's natural and urbanised areas.
- Participating in a joint regional procurement process to establish a long-term contract for processing of garden organics.
- Completed the 5-star Green Star Certified Realm office extension by implementing several sustainable building features including high efficiency glazing, solar PV panels, and a water tank to reuse rainwater runoff.

See Appendix 1 for an extensive list of projects implemented since 2016.

For more information and to read the report go to the Maroondah City Council website - <https://www.maroondah.vic.gov.au/files/assets/public/documents/strategies/sustainability-strategy-activities-report.pdf>

What have we have heard from the community?

During 2020 and 2021, the community took up the opportunity to engage with Council across many broad community consultation activities, including but not limited to, the 2040 Refresh, Liveability and Wellbeing, COVID-19 Recovery Action Plan and Maroondah 2040 deliberative panel.

Citizens engaged to understand, discuss, interact and share feedback on how the world has changed, sustainability visions, ideas, challenges and how to plan, prepare and respond to reach a more sustainable Maroondah. A topic of great interest and importance, sustainability always attracted considerable number of mentions, comments and feedback. Clarity about general community views, attitudes, aspirations for sustainably and the lived experience appeared from the consultations. This section is a summary of those of prominent sustainability messages that emerged from these significant engagement pieces.

Maroondah Environment Advisory Committee

The Maroondah Environment Advisory Committee have been engaged throughout the Strategy review and development of this paper. A strong, reoccurring theme from discussions with the Committee have been the importance of communications and community empowerment. Fostering community ownership and leadership in the development of solutions towards shared goals and supporting community organisations and leaders working in the sustainability space by partnering, promoting their work, and learning from one another. Discussions have also highlighted the importance of Council leading the way as a corporate citizen, including identifying opportunities to demonstrate and trial new technologies, and the integration of triple bottom line and sustainable development goal principles to promote thinking globally, acting locally.

2040 Refresh

Community engagement for the interim review of Maroondah 2040 was undertaken during 2018/2019 and aimed to gain an insight to emerging trends within the municipality and priority areas for future action.

There is a growing community interest in climate change and the role of Council as a leader in this space, with adapting to climate change being seen as one of the key emerging or continuing challenges for Maroondah. Urbanisation and climate change were also highlighted as some of the key challenges to achieving the 2040 Community Vision of clean, green and sustainable.

Highlighted policy prioritises from the engagement relevant to the review of the Sustainability Strategy included the need for:

- Providing leadership and capacity building in waste management and natural resource consumption
- Promoting sustainably grown local produce and community gardens
- Facilitating environmentally sustainable design across all forms of development
- Facilitating development of a community where everyone can live, work and play locally
- Establishing a network of 20-minute neighbourhoods
- Advocating for an improved public transport network and an integrated transport network
- Enhancing the shared path network ensuring connections with the wider Metropolitan Melbourne trail network

Maroondah 2040 Deliberative Panel Process

Early 2021, Council established a deliberative panel process in line with the Local Government Act requirements, to inform key council planning documents including the Council Plan, Health and Wellbeing Plan and Asset Management Plan. The deliberative panel consisted of 40 Maroondah community members and there were 11 sessions held throughout the process. Outcomes from the process included a series of panel recommendations that considered how council can work towards the Maroondah 2040 visions, and how might the community continue to be involved and partner with Council to achieve the future directions. Summary of the recommendations that align with the Maroondah 2040 vision towards a clean, green and sustainable Maroondah included:

- Continue to engage through a range of mechanisms that enable the community to be taken on the journey for different decisions and activities, and to enable those who have lived experience to make meaningful contribution throughout all stages of the project.
- Maximise our green public spaces, particularly in more densely populated areas, engage and create wildlife corridors and expand to roof top gardens and using space creatively and increase biodiversity.
- Inclusion of affordable sustainability, such as solar PV systems for all new and existing developments and ensuring infrastructure is fit for purpose and future proofed to handle future pressures from changes in climate.
- Continue to create a network of local 20-minute neighbourhoods to strengthen sense of connection, community and pride in the suburbs.
- Creation of 'street champions' who bring together local citizens to enact community led projects.

- Increase local food security through the implementation of community gardens and reuse and recycling of goods through a shared economy approach.

Liveability, Wellbeing and Resilience Strategy

In Maroondah's Liveability and Wellbeing Survey 2019/20, 'sustainable environments' was rated as 'extremely important' by 59% of respondents. Highlighting the importance of the topic amongst young people, respondents aged under 18 were more likely to rate sustainability as 'extremely important' (74%). Those who prioritise sustainability recognise the importance of action for the future and survival of humanity, with a strong sense that the green space and environment in Maroondah needs to be protected. For the community, the main focus from a sustainability perspective is conservation and climate change.

Survey respondents linked liveability ratings of Maroondah to the concept of sustainability. Some felt that liveability was being reduced by high density developments in unsuitable locations. The resulting increase in population, without adequate supporting infrastructure, is seen as having flow-of effects on transport and open space. Another concern involved the perceived loss of green space and trees. There were a range of transport challenges raised, the most prominent being congestion, lack of car parks, poor public transport linkages, need for more footpaths and bike paths, and dangerous pedestrian crossings. Opportunities to improve sustainable environments in Maroondah included stronger action to address climate change, encourage community behaviour change to reduce environmental impact and improving recycling infrastructure.

COVID-19 Recovery Action Plan

Community engagement to inform the long-term recovery in response to the impacts of COVID-19 in Maroondah, as well as the development of community recovery priorities as undertaken during mid-2020. Some of the relevant impacts to the sustainability strategy on the community that were highlighted during this engagement process were impacts to overall health and wellbeing, community connectedness and economic impacts. Relevant themes that link the outcomes of the recovery response and sustainability strategy principles included:

- Engaging and supporting community members who are vulnerable and disproportionately impacted
- Importance of local connections to nature and community connectedness to promote mental and physical wellbeing, access and inclusion for all



Figure: 2040 Community Vision, 2020 refresh word cloud generated from community consultation

Key drivers of change

Climate change

Climate change poses great challenges for the communities of the City of Maroondah. The next 10 years is widely acknowledged to be of profound importance for action to mitigate and reverse greenhouse gas emission to limit global warming and climate change. Since 1910, Victoria has warmed, with annual temperatures increasing by 1.2°C.ⁱ Maximum and minimum daily temperatures will continue to increase, rainfall is expected to continue to be variable, and extreme weather events are expected to become more intense.^j

For further information about the projected climate changes for the Greater Melbourne area, see the [State of Victoria's Greater Melbourne Climate Projections 2019](#).ⁱ

Governments have a duty of care in exercising their functions and powers to manage foreseeable risks. The *Climate Change Act 2017* legislates a collective state goal to achieve net zero emissions by 2050, providing a long-term foundation to drive climate change action. It introduces a new set of policy objectives and principles for local and state government to embed climate-change considerations into the decision-making processes and actions, also requiring decision-makers have regard to climate change for specific decisions and actions listed in the legislation. These potential impacts are listed as biophysical, long and short term economic, environmental, health and other social impacts, beneficial and detrimental impacts, direct and indirect, and cumulative impacts. The Local Government Act 2020 also states that Councils are required to promote the economic, social and environmental sustainability of the municipal district, including mitigation and planning for climate change risks.

For further information, the Victorian Government Department of Environment, Land, Water and Planning have released guidance for local government decision-makers called [Local Government Climate Change Adaptation Roles and Responsibilities under Victorian Legislation](#).ⁱⁱ

The cost of emissions reduction will be far less than the damages of inaction. The potential damages from climate change in Australia at current global emissions patterns have been quantified as \$584.5 billion in 2030, and more than \$5 trillion in cumulative damages from now until 2100.ⁱⁱⁱ In addition, Deloitte Access Economics estimates that by 2070, the economic cost of unchecked climate change will shrink Australia's GDP by 6% and over 880,000 jobs lost.^{iv} Comparing this to the national costs of effective emissions reduction and a transition to a low-carbon economy, which are estimated to be \$35.5 billion from 2019 to 2030.ⁱⁱⁱ

Across Australia and Victoria, local governments and their communities are leading the way on local climate action, aligning with the latest climate science and international agreements. Government and community collaboration are proven effective strategy to achieve local climate and sustainability action.

Case study: Solar Savers

Led by the Eastern Alliance for Greenhouse Action (EAGA), Solar Savers is a local government initiative that helps household to easily and reliably install quality, affordable rooftop solar. The Rates Loan program assists vulnerable households, such as pensioners and low-income families, where Council directly funds the installation of the solar PV systems and recover the costs over 8 to 10 years through a rates recovery mechanism.

Sustainability benefits

- Solar provides low cost energy throughout the day meaning that householders can cool their homes during heatwaves without fear of 'price shock'
- Reduces barriers of access to affordable loans by low income households and overcoming the need to provide up-front capital
- Provides access to reliable solar systems and installers
- Helps reduce energy bills and future-proof against increasing energy costs

Opportunities for Maroondah

The rates based Solar Savers mechanism was offered to Maroondah low income households in 2017/18 and again in 2020/21. In total 35 householders have participated in the scheme, saving an estimated annual greenhouse gas emissions of 226 tonnes CO₂-e annually. From the 2017/18 tranche of program participants, over two-thirds indicated that they may not or were unlikely to have installed solar without the program, and they used on average 35% less electricity year-on-year.

A bulk-buy option continues to be accessible for all Maroondah households during 2021/22. For more information go to www.solarsavers.org.au.

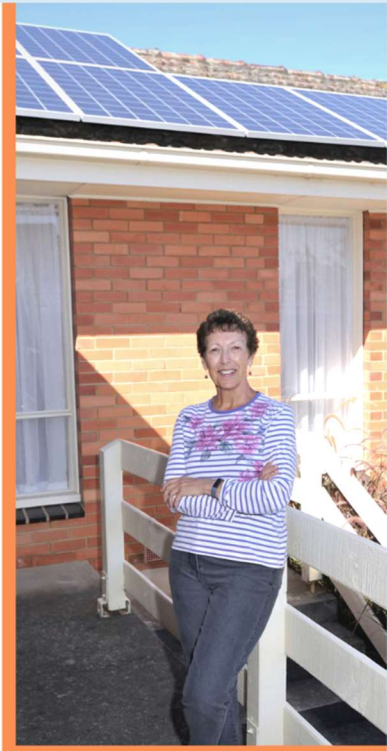


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Partnership projects such as the Victorian Energy Collaboration (VECO) demonstrate the power in regional collaboration. For this project, 46 Victorian Councils, including Maroondah, are pooling their electricity needs into one long term renewable electricity contract. It is the largest emissions reduction project undertaken by Local Government in Australia. Not only does the project deliver Councils to reduce greenhouse gas emissions, it also saves on electricity costs, protects councils against energy market volatility, and improves budget certainty.

An equitable climate response acknowledges that vulnerable community members face an unequal burden due to climate change, and require more support to adapt to the impacts, and it ensures that all people have the opportunity to benefit from climate solutions. The Victorian Council of Social Services proposes that a climate equity approach includes measure to ensure everyone is part of the transition to clean energy, making all homes 'healthy', equipping communities to be resilient to disasters and extreme weather, reducing the health sector's climate footprint, and helping it better support communities as the environment changes, and supporting clean, affordable and convenient transport.^v

Community attitudes and expectations

Citizen engagement and participation is considered essential to achieve many of the 17 sustainability goals of the United Nations Agenda for Sustainable Development, of which Australia is a signatory. The strong focus is acknowledgement that creating sustainable cities, industry and communities is a shared aspiration and responsibility between, governments, private sector and communities. Communities are a vital player in sustained action to make local places, spaces, business and living more sustainable. Community engagement that Council has undertaken in the last 2 years has shown an increased focus in the community on the need to act on climate change and to drive sustainability principles within the community. Further engagement is required to better understand what exactly the community values, what local effects to climate change the community are facing today and how these values might be impacted by climate change in the future. This would mean that the programs Council run in the future can be better tailored to community needs.

Concern about climate change is growing and high in Australia with 80% of Australians reasoning we are already experiencing problems caused by climate change.^{vi} Studies by the Australian Institute suggest that 78% of Victorians think climate change is an issue that requires urgent action, with 4 out of 5 Victorians believing their actions can make a positive difference and are willing to act.^{vii}

In addition, research undertaken by Sustainability Victoria^{vii} has shown that in relation to climate change:

- 33% of Victorians feel “a lot” or “overwhelming” levels of frustration
- 26% of Victorians “a lot” or “overwhelming” levels of sadness
- 25% of Victorians “a lot” or “overwhelming” levels of outrage
- Young people have higher awareness of the impacts of climate change and are more likely to experience strong, negative emotions when thinking about climate change. For Victorians aged 15-24 years, with “a lot” and “overwhelming” levels of frustration, sadness and outrage increasing to 48%, 40% and 38% respectively.

Community participation is about inclusion, connection and empowerment of citizens. There has been a shift in community development and engagement practices towards those that

encapsulate community centred and led principles and process. Community centred frameworks have gained favour because of the associated social and natural capital created through participatory and collaborative democracy. Recent changes to the *Local Government Act* aim to increase community participation in Council planning processes, with deliberative engagement practises being applied to the development of the Community Vision, Council Plan, Financial Plan and Asset Plan. Council's Community Engagement Policy defines deliberative engagement as an approach which encourages community members to critically test, weigh up and consider a range of information, perspectives, inputs and evidence to reach a consensus or make recommendations. Council's deliberative engagement panel processes has been used to actively involve the community in the decision-making processes for Council's long-term community and recovery planning and will support the key principle of community-led recovery.

Public health and wellbeing

Climate change affects health both directly by the increased intensity and frequency of extreme weather events such as prolonged heatwaves, floods and bushfires, and indirectly through worsening air quality, changes in the spread of infectious diseases, risks to food safety and drinking water quality, and effects on mental health. In recent years, there has been considerable community focus on the link between climate change and health and wellbeing.

Extreme heat kills more Australians than any other form of natural disaster.^{ix} The Victorian Council of Social Services estimates that by 2050, there will be an additional 402 deaths in Victoria due to increasingly longer heatwaves and increasing number of hot days and hot nights, with heat already impacting Victorian's health and wellbeing.^{ix} The public health costs of climate change are expected to reach almost \$14.5 trillion a year by 2050, which is a fivefold increase, with higher temperatures increasing the risk of heat stroke, dehydration, respiratory problems, injuries and displacement from extreme weather, mental health issues from disruption and loss, and the spread of disease and illness.^x Research undertaken by Sustainability Victoria indicates that Victorian healthcare professionals are already seeing climate change related health conditions, such as thunderstorm asthma, and heat stress in their communities, with half of those surveyed also highlighting treating depression and severe anxiety related to climate change in patients.^x

Under the *Climate Change Act 2017*, Councils are required to have regard to climate change when preparing their Municipal Health and Wellbeing Plans in line with the *Public Health and Wellbeing Act 2008*. This recognises climate change as one of the leading threats to health and wellbeing, with the vulnerable members of the community being impacted to a greater degree from climate change. Within the Victorian Government's Public Health and Wellbeing Plan 2019-2023, the key strategic actions related to climate change are continued emphasis on understanding and assessing the risks of climate change to public health, promoting community adaptation to the public health risks associated with climate change, and assessing the health co-benefits of measures to reduce greenhouse gas emissions.^x The plan also contains recommendations for broader sustainability action around the promotion of active transport and physical activity.

There are many known public and individual health benefits from active, including that active people are less likely to develop chronic diseases, such as stroke, diabetes and respiratory diseases. Connected communities are more resilient to climate change than those who are

socially isolated because they are more likely to be able to access the information, resources, services and other support they need.^v These communities are also better able to support individual's health and wellbeing, making them less vulnerable to shocks and disasters, including climate change impacts.

Biodiversity decline

Biodiversity is in decline globally and locally. At the global scale, up to an eighth of the total number of animal and plant species on Earth are threatened with extinction, with over 500,000 of the world's estimated 5.9 million terrestrial species without enough remaining habitat for long term survival without habitat restoration.^{xi} The 2018 Victorian State of the Environment Report^{xii} tells a similar tale for Victoria:

“Victoria's biodiversity – the number of animal and plant species our environment supports – has seriously decreased over the past two centuries. The loss has come from land clearing, fire, pest plants and animals, land development, river regulation, water pollution, and more recently, reduced resilience under climate change. Many of our native species are now threatened, and native vegetation continues to be lost”.

Declines in biodiversity occur through the disappearance of species, communities, or genetic variants. Loss of species has been happening at varying rates in Maroondah ever since European settlers began clearing the land. It has also been happening on a more localised scale in each of Maroondah's patches of natural and semi-natural habitat. For further information see the comprehensive report [Biodiversity in Maroondah 2020](#)^{xiii}.

The Greener Spaces Better Places initiative suggests that Maroondah's green cover (tree and shrub canopy cover) and green space (tree, shrub, grass and bare ground cover) has decreased since 2016 by 3.2% and 2.3% respectively, with a corresponding increase in hard surface (e.g. pavement, roads and roofs) of 2.3%.^{xiv} In addition, over the next decade, our urban places will face very high challenges to maintain or grow green cover.^{xiv} Blue and green infrastructure, including living vegetation, water, and soils, provides multiple benefits for the economy, the environment and people. This includes reducing the risks from the key climate change impacts of heatwaves and capturing carbon, protecting, improving, extending and connecting natural habitats that support native plants and animals, providing diverse opportunities to access and connect to nature, and providing appealing places to recreate, exercise and relax, and providing appealing settings for retail and commercial areas that aid with attracting and retaining customers and employees, and appealing residential areas that can improve property values and reduce energy costs.

Urban intensification

Human settlements and urban design are intimately linked to sustainability goals. The link between urbanism and sustainability is primarily based on the effect of urban form on transport, water quality and recharge rates, habitat, equity concerns and pollution. Globally, cities contribute an estimated 71 to 76% of energy related global greenhouse gas emissions and over 70% of resource use.^{xv} However, an estimated 75% of global urban infrastructure that will exist in 2050 has yet to be built, which provides an opportunity to ensure the infrastructure we build today is low emission, resource efficient and resilient.^{xv}

The number of dwellings in the City of Maroondah is forecast to grow from 44,717 in 2016 to 60,162 in 2041, and it is forecast that by 2036, about half new dwellings constructed will be in Croydon and Ringwood.^{xvi} With a majority of building stock in the municipality more than 35 years old, it is anticipated that a large proportion of the new development in the future will be knocked down and rebuilt. Most of this is redevelopment of individual residential lots into smaller lots and apartments in the major activity centers (Croydon and Ringwood). There is a real opportunity to apply sustainable urban design principles, including the innovative Greening the Greyfields approach, to new builds, renovations, and building retrofits to ensure there are improvements in the urban realm and environmental performance.

There are two defining and distinct built form types within Maroondah that have shaped the way the municipality has developed, they are:

- The main commercial areas being the Ringwood Metropolitan Activity Centre, Croydon Major Activity Centre and Bayswater North Industrial precinct;
- The ridgeline areas defined by the Wicklow Hills Ridge and the Loughnan Waranwood Ridge.

Ringwood Metropolitan Activity Centre is a key activity hub in the eastern region with medium to higher density apartments, shopping precinct and office spaces. It is anticipated that the Centre will continue to grow as a hub attracting offices and provide quality built environment with pedestrian friendly streetscapes. Croydon Major Activity Centre is a key suburban activity hub with highly valued strip shopping experience bound by medium density residential areas. It is hub for local shopping, recreation and retail. Both these Centres have a railway station and its environs offer facilities and amenities. The Bayswater North Industrial precinct is a major industrial and economic hub where many national and international firms have established their headquarters. It aims to offer a high-quality industrial precinct and offers diverse and flexible business accommodation with ready access to major roadways and transport connections.

Buildings have significant energy and resource demands over their life time, from construction to operation and demolition. Intense and dense population and dwelling density has implications on the energy use at the building as well as at the neighbourhood level. In addition, the thermal quality of housing is being recognized as an area of increasing importance to health and wellbeing. Poor quality housing, such as living without efficient heating and cooling, is already a major health problem in Victoria, increasing vulnerabilities, and will become more important as the frequency of extreme weather events increases.^{ix} Another major source of emissions from buildings is the embodied energy contained within the materials. Embodied energy is the total energy required for the extraction, processing, manufacture and delivery of building materials to the building site.

The transport system is struggling to meet demand and support scales of development. Without significant boost in transport investment, mode shift and road reallocation mechanisms the issues will worsen in the future. Specific and targeted demand management technology and strategies can help shift traffic and crowds to other modes or times to ensure distribution across networks and services can most efficiently meet peak demands, maintain spare capacity to cope with disruption and deliver the customer experience. Well-built, higher density-built environment that has good street permeability can encourage walking and cycling, which can have a direct impact on reducing carbon emissions per capita. Zero and low carbon transport measures can help achieve various social and natural capital objectives including, improved mobility, urban amenity

improvements, service cost savings, consumer savings and affordability, safety and security, improved air and water quality, community resilience and public health gains.

A group of 28 Council Alliance for the Built Environment (CASBE) member councils, led by Moreland and Yarra City Councils, have recognized a need to raise the standard of best practice urban design and commenced a project called 'Elevating ESD Targets Planning Policy Amendment'. The project aims to build on the existing local ESD policies held by numerous Victorian councils and deliver revised and elevated ESD targets for new development, including targets for zero carbon development. This project demonstrates collaborative local government leadership towards resilient and zero-carbon buildings and urban places.



Case study: Design and Construction of Tarralla Creek Stormwater Harvesting Facility

This collaborative project, supported by the Victorian Government and Yarra Valley Water, will capture stormwater from over 200 hectares of Central Croydon for reuse as irrigation water for four sports fields. The water will be stored in a large underground tank located inside the Town Park athletics track, before being treated to remove litter, suspended solids, nitrogen, phosphorous and pathogens, and then be used for. The cleaner water will then eventually make its way into Tarralla Creek and then Dandenong Creek, improving the health of these waterways. The harvesting system has been designed to be relatively easily scaled up in the future to treat more stormwater and to irrigate more areas. This project is expected to be completed by mid-late 2022.

Sustainability benefits

This project will:

- reduce stormwater runoff and improve water quality
- provide an alternative water source to potable water for irrigation purposes, saving about 13 ML per year in potable water
- reduce the urban heat island effect
- support community physical activity and health

Opportunities for Maroondah

This project will demonstrate to the community how stormwater can be captured, treated and reused, deliver environmental benefits, and develop the confidence and capacity of Maroondah Council to deliver similar projects in other locations to provide alternatives to using potable water in a drying climate.



COVID-19 recovery

The COVID-19 pandemic is profoundly altering work and public life. Public health regulations are restricting participation in business, social, fitness activities and the mobility of people and goods. As trips shifted away from being long journeys to local ones, people switched some car and public transport trips to walking and cycling. Existing inequalities, such as gender, age, pre-existing health conditions, income level can lead to the pandemic having a disproportional impact on groups that were already in a situation of greater vulnerability.^{xvii} There is a clear opportunity to leverage cultural changes, promoting behavioural shifts and to deliver economic recovery from COVID-19 impacts in a way that improves public health, reduces inequality and addresses climate change with a transition to a low carbon economy.

During this time there has been a greater focus on the value and importance of “living locally” and 20-minute neighbourhood principles where people are able to meet most of their daily needs within a 20-minute walk from home. Increased community activation, such as a pop-up park, extra places to sit, and concerts, in the Croydon South precinct has been trying to seek social and economic recovery for the local community by attracting community interest in the area. This may initiate more local action on unmet social and community needs and provide an avenue to increase social resilience and cohesion. Living in walking distance of parks and in neighbourhoods with more green spaces has been linked to positive health outcomes, such as reductions in stress, improvements in mental wellbeing, reduced likelihood of being overweight.^{xviii} These outcomes highlight the importance of nature and access to open spaces, especially during COVID restrictions which meant that communities were reliant on local public green spaces in order to exercise, and as a means for socialisation during this time.

The pandemic has severely affected local economies with many small to medium sized businesses lacking the financial buffers necessary to withstand the impacts. Deloitte Access Economics estimates that over 30% of employed Australians are exposed to economic disruption and risk from the pandemic, climate change and unplanned economic transition as the world responds.^{iv} The current forecast for building activity in Victoria in a post-covid environment is that non-residential building activity, areas such as entertainment, short-term accommodation, recreation and culture, has stagnated, and high density housing such as apartments will be adversely affected from the fall in overseas migration.^{xix}

Economic recovery post-pandemic could also be used to build resilience to the economic impacts of a changing climate, by leveraging Australia’s abundant clean energy resources and emerging low-emissions technologies.^{xx} The Climate Change Authority recommends these six key areas that can provide recovery, resilience and prosperity; boosting jobs and reducing costs with energy production, transitioning to clean, reliable and affordable electricity, supporting the growth and competitiveness of our industries, investing in electric vehicles, enhancing agriculture and natural environments, and fostering innovation, technology, research and development.^{xx} At a local level this might include actions such as promoting and using local suppliers, installing electric vehicle infrastructure, buying renewable electricity, or supporting roof-top solar.

The importance of rebuilding our cities and economies in a way that improves public health, reduces inequality and addresses the climate crisis has been recognised by the C40 Cities through the launch of a Global Mayors COVID-19 Recovery Task Force. The green and just recovery proposed by the C40 seeks to bring about meaningful change in the way that we think about our societies and economies, beyond business as usual thinking.^{xxi}

Technological improvement and market forces

Market forces are a major player in industry shifts towards low carbon and sustainable business models. Companies are making considerable investments and innovations to the transition low carbon alternatives to future proof their business. Core to this transition is cost, supply chain security and corporate citizenship. Taking steps towards renewable power, resource recovery and reducing production waste is going to be cheaper, guaranteed supply chains and more profitable in the future. With heightened public opinion for corporations to be 'good citizens', corporations are ensuring their green and social credentials are evident to keep and attract investors and customers.

Transport pricing, government levies, subsidies, regulation and free parking distorts systems and market to incentives certain transport modes that influences consumer choice. There are certain transport services and technologies where free market deployment is enviable, e.g. connected vehicles, electric vehicles or on demand transport services. While there is limited scope for Council to alter the course of their development and the market in which they are sold, there are opportunities to support the uptake of these technologies through education, trialling the technology, and other incentives.

A survey by the Electric Vehicle Council has shown that consumer sentiment around electric vehicles is also changing, with 56% of those surveyed indicating that they would consider purchasing an electric vehicle as their next vehicle.^{xvii} Electric vehicle sales in Australia is being held back by the lack of policy support or incentives, higher upfront cost, limited electric vehicle types in Australia, and a small vehicle charging network. The uptake of electric vehicles, buses, trucks, scooters and bikes when linked to renewable electricity supply is an important pathway for zero emissions private, public and commercial transport by 2050. Vehicle automation also has enormous potential to change transport, land use and society by improving road safety, network efficiency, freight productivity, energy efficiency and community mobility, especially people with limited mobility.

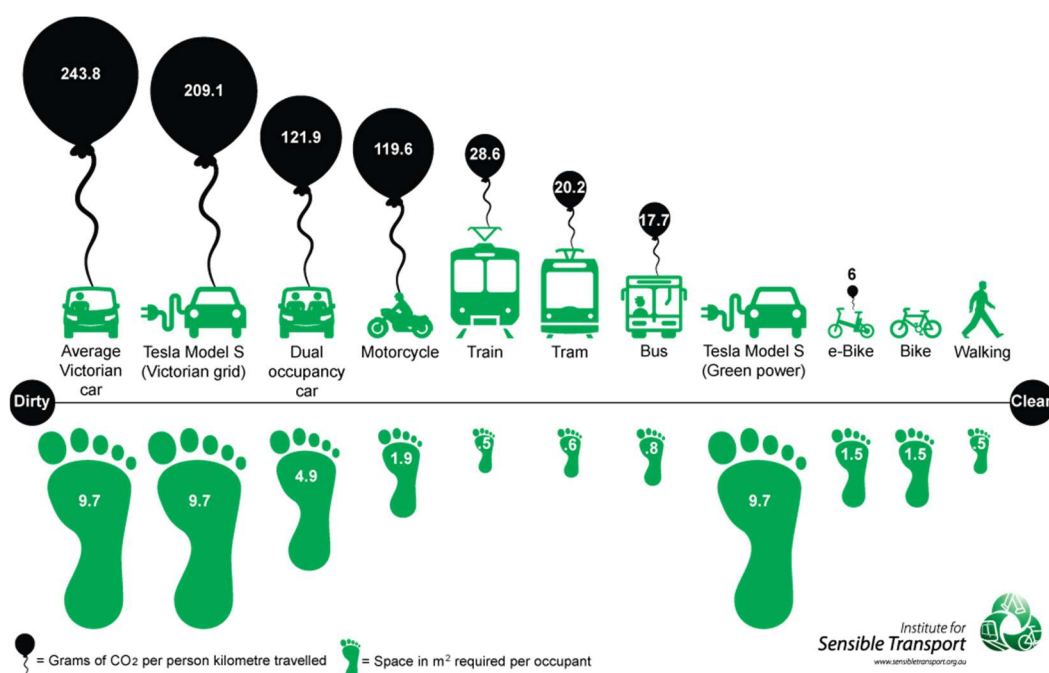


Figure: Carbon emissions (per person, per kilometre) and space (square metre, per person) taken up by different modes of transport (Adopted from <https://sensibletransport.org.au/project/transport-and-climate-change/>)

Two of the main challenges with producing zero carbon developments is the efficient use of electricity and storage. Efficient energy use is largely impacted by the heating and cooling requirements of a building which is why an efficiently designed building envelope incorporating solar passive design principles is crucial. Battery storage has also become more affordable and effective which is seeing an increased uptake in the smaller residential sector. Energy efficient building design, including rooftop design which optimizes solar capture, along with no new gas infrastructure can help to support a transition to zero carbon developments. Community based energy systems such as microgrids and virtual power plants also have a role to play. A microgrid, which as be powered by distributed generators, batteries, or renewable resources like solar panels and wind turbines, is a subset of the broader electricity network with all the necessary components to operate independently.^{xxiii} Microgrids can deliver power in remote or rural settings or within single precincts, including communities or commercial and industrial areas.

Supporting the Victorian Government's long-term transition to the gas sector to zero emissions future, is the consultation paper on Victoria's Gas Substitution Roadmap. It recognises the need to facilitate the achievement of emissions reduction targets, and that a mix of approaches are likely to be needed, including improving energy efficiency of buildings, appliances and equipment, reducing fugitive emissions that arise from gas production and transportation, switching from gas to renewable electricity sources, and adopting more sustainable gaseous fuels such as hydrogen and biogas.^{xxiv} While requiring further industry development, renewable hydrogen is produced when renewable electricity powers an electrolyser, which splits water molecules into its constituent parts – hydrogen and oxygen. Renewable hydrogen is captured and used in a range of applications. It has been suggested that there is an opportunity to decarbonise sectors such as the manufacture of steel, aluminium and cement, the chemical industry, shipping, and other heavy transport, which cannot easily be directly powered, or their emissions removed using renewable electricity by electrification or fuel-switching.^{xxv} Renewable hydrogen may also play a role in providing seasonal storage and peaking power to the electricity sector and some role in other transport and heating applications where direct electrification is not possible.^{xxv}

Divestment from fossil fuels refers to the transition financial investment practices away from those that are involved in fossil fuel investment projects, and seeks to align investments with organisation values, shape public policy and limit the influence of energy companies, potentially reduce financial risk, reallocate investment to companies leading the transition to a more sustainable economy. By divesting, organisations send a market-based signal and helps to drive demand for low-carbon investment options. A study undertaken by the Eastern Alliance for Greenhouse Action in 2017, showed at that time, 30 councils had adopted formal policies to divest from fossil fuels, which amounted to almost \$7 billion in investments of surplus council funds that were occurring in line with these policies without compromising on returns or legislative obligations.^{xxvi}

How might we respond?

Council has a variety of tools available to drive sustainability principles in the community. These mechanisms can include actions around the development and implementation of a new policy, education and training, advocacy, provision of incentive schemes and grants, the purchase and deployment of assets, monitoring and reporting. Council's level of influence varies depending on actions directed at Council's own operations, or whether the proposed actions are intended to influence change in the community. However, the Sustainability Strategy must be able to balance ambition within resource constraints.

When Council proposes to adopt a plan to provide services or implement initiatives they must ensure that the resources required for the plan are consistent with Council's Strategic Resource Plan. This means that any strategy or plan adopted by Council must only include priority actions and initiatives that are funded within Council's adopted budget or capital works program. Opportunities to leverage existing partnerships with external government agencies, institutions, businesses and the broader community are also important in delivering sustainability actions in the future.

Strengthening community leadership

Council has an important role in strengthening community consciousness, engagement and action on sustainability through a commitment to education, participation and partnerships. When done well, a sustained commitment to citizen participation and action can lead to several beneficial impacts and outcomes for Council and communities including:

- Shift in the community culture towards more sustainable attitudes and behaviours.
- Stronger connected, inclusive and resilient community.
- Local ideas, initiatives and innovations are tailored to local contexts.
- Expanded and diverse representation of citizens contributing to the decision-making process.
- Strengthened accountability, trust and confidence by communities.

Commonly the frameworks seek to establish support pathways for citizens to take and lead action in their local communities. It involves practitioners listening to community idea, adopting community responsive solutions, building positive community relationships based on trust, respect and natural benefits. In this way, it ensures the initiatives will meet the needs of the community, encourage community stewardship and have a greater legacy.

The City of Maroondah has several community groups that provide opportunities for citizen to take positive action towards sustainability. These include sixteen (16) groups dedicated to Landcare and waterways conservation, two (2) indigenous plant nurseries, computer recycling network & art supplies venue that are run almost entirely by volunteers, a Transition Towns group focused on addressing climate change, nine (9) Scout, and three (3) Rotary and Lions Groups. The volunteers of these groups contribute many hours to preservation, maintenance, cultivation of local natural environments and diversion of waste from the landfill. Council's Bushland Team provides support and advice to volunteers from 'Friends' groups, schools, and residents contributing to the protection, creation, enhancement and care of patches of natural vegetation in Maroondah.



The Maroondah Environment Advisory Committee (MEAC) was established in 2014 to inform and advise Council on environmental sustainability issues in Maroondah. The committee provides an important link between Council and the community, including the existing environmental groups, by providing guidance and technical expertise in the development of key policy directions and in advocating for sustainability projects within the community.

Existing partnerships such as with the Eastern Alliance for Greenhouse Action (EAGA), the Eastern Alliance for Sustainable Learning (EASL), Council Alliance for Sustainable Built Environment (CASBE), universities and state government agencies, continue to be important to delivering sustainability action. Through these partnerships, Council continues to leverage economies of scale, technical expertise, access to funding, and leadership opportunities to promote and facilitate our sustainability agenda.

Communities are a vital player in sustained action to make local places, spaces, business and living more sustainable. The practical approaches to strengthening community leadership involve improving communication, coordinating partnerships and building capacity of communities to come together and act. Nurturing and enhancing existing and new partnerships will assist in building capacity for sustainability and liveability throughout our community.

Case study: Local Sustainability Fair

The Central Ringwood Community Centre, in partnership with Transition Towns Maroondah, hosted its third annual Local Sustainability Fair in March 2021. It is a community led initiative, aided by local volunteers and supported by government grant funding, local business participation and local member of parliament involvement.

Sustainability Benefits

This special 'Living Local COVID Recovery' fair aimed to:

- enable the Centre to contribute to the local economy and support artists and entertainers who have been impacted by COVID-19,
- provide opportunities for local businesses and community groups to network and showcase their work around sustainability,
- empower the community to make environmentally conscious choices and support mental health and wellbeing, and
- connect the Community Centre with the wider neighbourhood to help build a resilient and sustainable community.

Opportunities for Maroondah

Maroondah City Council has supported the fair by hosting information stalls, giving guided tours of the regenerative bushland area at the site, and providing the community with additional resources to lead sustainable lifestyles and to promote community health and wellbeing. It provides a good opportunity to continue to strengthen relationships between Council and local community groups.

Strengthening community leadership options

To support a pathway forward to strengthen community leadership, the following measures will be considered:

- Increase our understanding about community opinions, attitudes, behaviours and action towards climate change, natural environment and sustainability to identify opportunities to empower.
- Apply community centred and led frameworks to broaden participatory opportunities for citizens, and specifically vulnerable community members, to regularly participate in the development of climate and sustainability strategies and actions. Partnerships to create new relationships and strengthen existing ones between Council and other agencies. Overtime, relationships can build the community's capacity, confidence, trust and capabilities.
- Explore alternative ways citizens can become involved and volunteer, such as engaging members of the community in discovering, learning about and valuing nature through citizen science programs. This can also promote inclusion, increase social resilience and wellbeing.
- Support community organisations, businesses and community leaders working in the sustainability space by partnering, promoting their work, and creating opportunities to learn from one another. This could include the development of a sustainable leaders capacity building training course, development of a community grants program targeting sustainable programs, hosting events and seminars.
- Actively foster existing and new partnership opportunities with government agencies, institutions, local businesses, and community groups that advance sustainability within Maroondah.

Action on climate change

Council acknowledges its role and is strongly committed to actions mitigating and adapting to climate change. This policy position is supported by key directions under Maroondah 2040, as well as the Carbon Neutral Strategy and Climate Change Risk and Adaptation Strategy. These strategies will continue as Council's main focal point for climate change action and will be reviewed during the second half of 2021 and throughout 2022. Adapting and building resilience to climate change and the overall health and wellbeing of the community are important issues for local government. Council's operations, assets and service delivery provided to the community is vulnerable to a range of climate hazards such as heatwaves and flooding.

Climate change hazards and risks are significant and foreseeable, so decision-makers are accountable for considering these matters in decision making as part of exercising their duty of care. When supporting place-based adaptation, there is a role for government to:

- understand the way natural and human systems interact at place, to influence climate change impacts, risks and vulnerabilities and to avoid maladaptive interventions
- work across all government levels to understand how cross-departmental and multi-level issues interact at place

- understand diverse perceptions regarding place-based community assets and values, how these may be affected by climate change, and capacity to respond
- develop quality and genuine processes that enable local organisations and community members to effectively participate in adaptation planning.^{xxvii}

In addition, in discharging duty of care, good decision-making is guided by the principle of acting in line with a 'reasonable person's' response, guided by law. To do this, Councils need to:

- be alert to the decisions they make where a duty of care will arise,
- ensure robust and transparent processes to assess risks and vulnerabilities when making decisions,
- undertake effective consultation with experts and community as to specific decisions being made at the time,
- ensure appropriate record keeping and risk management process are in place, and
- ensure the information that has led to a decision is made publicly available where possible.ⁱⁱ

A recent project undertaken by EAGA in assessing the region's emergency relief centres (ERCs) for building vulnerabilities to climate change risk, highlighted a number of opportunities for improvement to data and information recorded within existing asset management systems, particularly with regard to ongoing condition assessment and reporting. When a building is activated as an ERC it is generally occupied by community members that are more vulnerable, albeit temporarily or permanently. Council buildings, including those which are used as ERCs, can benefit significantly from the review of their climate vulnerability and implementation of the recommended climate resilience adaptation measures to manage these risks. The recommended works are likely to improve ERCs capacity to operate safely, more effectively and affordably, both in their primary use, and as ERCs when required. Using a Building Vulnerability Assessment framework as a more nuanced approach to existing building condition assessment processes can assist in the prioritisation of future works through a risk management lens.

Effective risk management practices can also be applied to financial investment activities. Divestment strategies undertaken by some Councils are used to ensure that the Council does not directly invest in any company for whom the extraction, production, refining, or distribution of fossil fuels forms a core part of their business strategy, nor in any company whose principal business involves providing infrastructure or services to companies previously mentioned. These strategies are used to align investments with organisation values, shape public policy and limit the influence of energy companies, potentially reduce financial risk, reallocate investment to companies leading the transition to a more sustainable economy. These practices can also support advocacy mechanisms to improve transparency and accountability of financial institutions.

Action on climate change options

In support of, and in addition to, Councils Carbon Neutral and Climate Change Risk and Adaptation Strategies, the following measures are considered:

- Consider the integration of the Carbon Neutral Strategy and Climate Change Risk and Adaptation Strategy into one Climate Action Plan when these documents are reviewed in 2021/22 to strengthen Council's commitment to climate change action.
- Build the capacity of Councillors and staff through training, such as the NAGA and DELWP Climate Risk 101, training to better understand climate change risk and responsibilities.
- Support a transition to a low carbon economy by developing a plan to purchase all electricity from 100% renewable energy sources, and transition Council assets from gas to all electric. Currently Council's large market electricity sites, such as Realm, the aquatic centres, and major sporting centres, are now powered by 100% renewable energy through the Victorian Energy Collaboration (VECO) project. It is recommended that at the end of each electricity contract (small market sites and streetlighting) these contracts are rolled into the Red Energy 100% renewables contract.
- Integrate Building Vulnerability Assessment methods into existing asset condition assessment processes and maintenance programs through a stage roll -out of assessments to enable a portfolio level of assessment of climate change risks to Councils building and to assist in the prioritisation of future works through a risk management lens.



Social sustainability

Citizen engagement and participation is considered essential to achieve many of the 17 Sustainable Development Goals (SDGs) of the United Nations Agenda for Sustainable Development, of which Australia is a signatory. The global goals aim to create a better world by 2030 by ending poverty, fighting inequality, and addressing the urgency of climate change. The strong focus is acknowledgement that creating sustainable cities, industry and communities is a shared aspiration and responsibility between, governments, private sector and communities. Communities are a vital player in sustained action to make local places, spaces, business and living more sustainable.

There has been a drive towards localising the SDGs as it provides a framework for local development policy and to how local and regional governments can support the achievement of the SDGs through action from the bottom up. A localised approach needs to take the community, its circumstances and its needs into account, as well as the needs of the more vulnerable sectors of the community. Existing disadvantage can be exacerbated or prolonged by a combination of factors including environmental, social and economic aspects, and can increase vulnerability to financial and other shocks, such as natural disasters, highlighting the importance of resilience and social inclusion.^{xxviii}

Localising the SDGs options

To support a pathway forward to localising the implementation of the SDGs, the following measures will be considered:

- Conduct a gap analysis and needs assessment to define priorities and localise the SDGs - The implementation of the SDGs should respond to local and regional needs. A needs assessment can assist in identifying the main needs, priorities, gaps and align to local policy with the SDGs. This way opportunities can be integrated into existing processes and reporting mechanisms rather than establishing new ones.
- Use Council's procurement practices to leverage social and sustainable outcomes for goods and services by basing decisions on lifecycle assessment, environmental and social risks, benefits and associated costs. This should include focusing on the goods and services within Council's carbon emissions boundary in order to choose goods and services with lower lifecycle costs to reduce Council's greenhouse gas emissions. The introduction of a buy local policy to drive the purchase of local goods and services would also support businesses in the municipality and at the regional level, and reduce emissions from transport of goods.

Facilitating a green economy

While the policy tools available at a local level might be limited, Council can have considerable influence in supporting the transition of Maroondah's economy to a green economy. The key principles of a green economy include one that is low carbon, prepares for adaptation to climate change, produces low impact goods and services, guides public and private consumption away from harmful practices, uses resources sustainably, reduces

environmental risks and ecological scarcity, and improves human health and wellbeing. A green economy in Maroondah could include:

- Facilitating actions to transition existing businesses in Maroondah to reduce the greenhouse gas emissions from their operations towards becoming low-carbon. This could include promoting energy efficiency measures such as solar PV system installation or changing over lighting to LED bulbs to improve building performance and reduce operating costs.
- Encouraging new businesses into Maroondah that provide “green” goods and services such as renewable energy technologies, energy storage technologies, electric vehicles, resource recovery and new materials, high performance buildings, intelligent transport systems, design and operation of smart grids.
- Facilitating the adaptation of other goods and services provided by existing Maroondah businesses to be more sustainable.

Green economy options

Through the Sustainability Strategy, Council can support Maroondah businesses and the wider region to transition to a green economy by :

- Developing a fossil fuel divestment strategy for financial investment activities, including understanding the impact of Council’s current investment strategies, options for investment into non-fossil fuel aligned financial institutions, and detailing the implications of such as strategy.
- Creating opportunities to support economic transition towards a low- carbon economy such as policies, responses and innovation that can change business prospects and opportunities.
- Exploring opportunities to assist Maroondah businesses to switch to renewable energy sources through programs such as group power purchasing agreements and solar PV installation, as well as implementing energy, water and waste efficiency programs.
- Providing education and capacity building opportunities to strengthen knowledge.

Low carbon transport

Council's responsibilities for transport planning, provision, management and regulation of transport is set by the *Transport Integration Act 2010* and *Road Management Act 2004*. These legislative obligations have shaped Council's roles in transport including those aspects identified below.

Research and planning	Construction and maintenance	Regulation and enforcement	Engagement and behaviour	Advocacy and partnerships
• Build the evidence base, determine project feasibility and investigate new technologies and ways to improve urban walkability and low stress cycling.	• Deliver and maintain well designed, financially and environmentally responsible pedestrian and cycling infrastructure and facilities.	• Apply relevant legislation and regulation to deliver and maintain a safe, equitable and efficient transport network.	• Support communities and businesses to understand needs, manage travel demand, encourage mode shift and build new skills and confidence so people walk and cycle for more journey types.	• Collaborate with others, including government and private sector partners to focus on key active travel projects and outcomes so can improve connectivity, accessibility and safety of the transport network

Figure: Role of Council in transport planning, provision, management and regulation

A transition to a low carbon transport system will require Council to continue in all these roles to certain extents, but there is an opportunity for Council to leverage the legislative, policy and planning controls to influences how the components are delivered, interact and consumed as an integrated low carbon transport system. Increasingly, this role will be concerned with enabling new transport services and technology.

Council is preparing a Transport Plan which will provide guidance on priority transport projects over the short-term (3 to 4 years). The Sustainability Strategy and Transport Plan will be complementary documents with a focus to achieve low carbon and sustainable transport objectives and outcomes. Where there are thematic area cross overs, the Sustainability Strategy will focus on the corporate domain and the Transport Plan the community domain. These areas include aspects such as active transport, and car share.



Low carbon transport options

Within the Sustainability Strategy, the following opportunities exist to facilitate a transition to a low carbon transport system:

- Influence how employees work, reach workplaces and make work trips to achieve emissions and sustainability goals. The initiatives can be framed within an Avoid, Shift and Improve Framework which promotes transport efficiencies and alternative transport solutions to manage transport demand and encourage behaviour change such as remote working and sustainable transport choices for work related travel.
- Transition to a lower emission fleet. Opportunities exist to improve the fuel efficiencies, performance and cost effectiveness of the fleet by setting an appropriate size and vehicle types to reflect operational requirements, environmental and sustainability goals. Council's fleet policy is the core mechanism governing the all aspects of the fleet operations.
- Promote and stimulate uptake of electric vehicles. Local government can indirectly influence electric vehicle uptake by changing parking policy and planning scheme amendments to favour electric vehicles and encourage private sector installation of charging stations. Partnerships can be investigated into the installation of electric vehicle and bike charging stations in key strategic locations across the municipality. Incentives to encourage home solar and battery installations will make electric vehicles more viable, competitive and enticing alternative.
- Work with community, school and business partners to encourage residents to increase levels of active transport travel and increase the use of low carbon and sustainable transport, such as public transport and car share.
- Expansion of 20-minute neighbourhoods initiative to activity centres that have the right disposition to be great hubs of sustainable transport activity, and work with developers to ensure new developments incorporate best practice sustainable transport outcomes

Enabling sustainable urban design principles

Enabling sustainable urban design will require a holistic approach, that considers the internal council approach in addressing the issues as well as applying the policy, guides and tools that mandate the provision of environmentally sustainable design (ESD) requirements. Council recognises the importance of adopting ESD and blue-green infrastructure practices at the building, street and neighbourhood level in both the private and public realm.

When ESD is considered at the early phases of a building design the quality of the built outcome is greatly increased and the planning process is a key stage to capture these aspects. Some of these fundamental aspects include; site layout and orientation to maximise passive solar design, good natural cross-flow ventilation, effective shading to the north, east and west, daylight to habitable rooms, open space with good access to sunlight and areas for canopy trees, building materials and thermal insulation. There is potential to reduce the emissions and waste output by using well-designed buildings with energy efficient building envelopes and construction practices which set a priority to reduce, reuse and recycled building materials with landfill being a last resort.

Regenerative design is about thinking ahead and designing to reverse the negative impacts of development and have a net-positive impact on the environment. This is seen as the next step beyond sustainability which is focused on the concept of minimal use of resources and reduced waste. When a building or precinct is designed with regenerative principles in mind the building can be used to sequester carbon on site, filter pollutants in stormwater runoff and filter air pollution within the building facade. Examples of regenerative design strategies include; green roofs and walls that sequester carbon and clean the ambient air, designing constructed wetlands that naturally capture stormwater which then replenishes the underground aquifer, on-site waste water treatment that is then reused onsite for irrigation and on-site waste-to-energy facilities, buildings become energy producers and not just energy users.

When equity and public health and well-being considered as part of urban design principles, it will help create safe, attractive, and complete neighbourhoods that support equitable opportunities for social connections and food security, access to protected natural environments, as well as accessible options for public and active transportation and housing. A focus on green and blue infrastructure can reduce the risks from heatwaves, droughts, storms and bushfires, building resilience to a changing climate, protect natural habitats that support native plants and animals, and provide opportunities to connect to nature, exercise and relax. By taking a proactive approach and considering the various tools available (e.g. Green Star) to sustainably led urban design, council can demonstrate to the community how this may produce a better built outcome and refocus urban design around people.



Enabling sustainable urban design principles options

To embed sustainable urban design principles the following options are to be considered:

- Drive towards zero carbon planning scheme and carbon neutral developments. Develop all electric buildings which are then powered by renewable energy is currently the most feasible and financially viable method for producing a zero-carbon building and reducing greenhouse gas emissions. Energy efficient building design, including rooftop design which optimises solar capture, along with no new gas infrastructure should be a key focus of the planning scheme amendments.
- Improve ESD outcomes of development projects by developing a system and resourcing model for checking and verifying as-built ESD compliance, and supporting the development industry to meet standards.
- Facilitate renewable energy uptake by exploring options for generating renewable energy on a precinct wide scale and high-intensity developments, for example through virtual power plants and microgrids. Opportunity to greatly increase uptake of solar and battery storage on residential developments, commercial buildings and council facilitates through incentivised schemes.
- Support water sensitive urban design by introducing a Stormwater Offset scheme to help address water volume and quality issues arising from developments, to create opportunities to divert stormwater to supply wetlands, elevate soil moisture and support swampy and aquatic vegetation.
- Develop an integrated strategy addressing issues of vegetation, water sensitive urban design and public open space.
- Trial the use of a blue-green infrastructure approach into Croydon Structure planning processes to demonstrate how this approach can be integrated into other Council planning processes such as Master Plans and asset design.
- Design and introduce a wildlife gardening program to assist private landowners in key locations to incorporate habitat features into their gardens. This should be informed by Vegetation Opportunities Mapping project which is expected to highlight important areas on

Case study: Green Factor Tool

The Green Factor Tool is an online green infrastructure assessment tool designed by the City of Melbourne to help landscape designers, architects, planners and developers design and construct new buildings that are environmentally friendly and incorporate green infrastructure.

Sustainability benefits

Buildings that achieve a high Green Factor score can:

- Provide urban cooling
- provide habitat and support biodiversity
- reduce stormwater runoff and improve water quality
- reduce building energy use
- support community mental wellbeing
- enable urban food production

Opportunities for Maroondah

Building projects, whether as part of a private development or a Council project can act as demonstration sites by incorporating green infrastructure and voluntarily trialling the use of the Green Factor Tool.

GREEN FACTOR TOOL

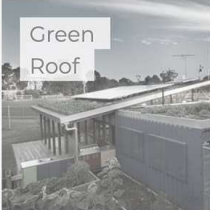
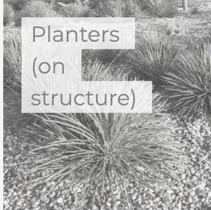
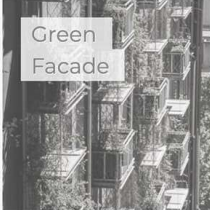
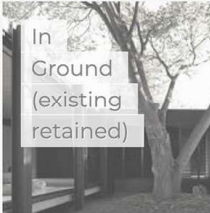


CITY OF MELBOURNE

Start here



Then specify your green infrastructure elements in these areas



When finished →

Save

Scorecard >>

Image from www.greenfactor.com.au

Appendix 1 - List of Projects

The following sustainability projects were initiated or completed since 2016:

- Continued to work with the Maroondah Environment Advisory Committee.
- Developed Council's first Climate Change Risk and Adaptation Strategy 2018/19 - 2021/22 which outlines how Council and partners will work together towards a more climate adapted future.
- Changing the Globe street light energy efficiency project saw over 6,000 inefficient mercury vapour and high-pressure sodium lights changed to efficient LEDs saving electricity, greenhouse gas emissions and money.
- The Realm Administration Building achieved 5-star Green Star certification by implementing a number of sustainable building features including high efficiency glazing, solar PV panels, and water tank to reuse rainwater runoff.
- Continued our membership to the Eastern Alliance for Greenhouse Action (EAGA), including hosting the Executive Officer and Solar Savers Program Coordinator. It is a formal collaboration of eight Councils committed to responding to the challenges of climate change through the delivery of programs that aim to reduce greenhouse gas emissions throughout the region, and provide support for regional adaptation to climate change impacts.
- Collaborated on the joint EAGA Energy Performance Contract project that saw energy efficiency upgrades to Aquahub, Aquanation, Federation, Realm and The Rings.
- Council has committed to participated in the Victorian Energy Collaboration (VECO) project to procure renewable energy from 2021/22 for some of Council's large energy use sites.
- Development of a Carbon Neutral Offset Policy to guide Council's commitment to become carbon neutral.
- Council operations were certified Carbon Neutral by Climate Active in December 2020.
- We installed of almost 1 MWh of solar PV on Council facilities
- Participated in a joint regional procurement process to establish a long-term contract for processing of garden organics.
- Participated in the Solar Savers Pilot Program which trialled the use of council rates as an underpinning finance mechanism to support low income households access solar. After the success of the program, Council again offered the program in 2020/21 to low income households, as well as offering a bulk-buy option available across the municipality.
- Offered a range of community resources and programs to redirect demand on private vehicle transport by redistributing journeys to other modes, retiming or avoiding travelling altogether, including Bike It!, Walk to School and Ride to Work Day.
- Developed and adopted the Maroondah Vegetation Strategy 2020-2030 which guides Council and the community's vision for protecting, enhancing, restoring, and creating vegetation in Maroondah's natural and urbanised areas.
- Partnered with the water industry whose key aim is to sustainably secure water for

our liveability in a water-challenged future. This included partnering with Melbourne Water, the Department of Environment, Land, Water and Planning and Yarra Valley Water to naturalise and enhance a section of Tarralla Creek in Croydon and surrounds.

- Commenced the process of preparing a planning scheme amendment to introduce a Local ESD Policy into the planning scheme complementing Council's existing policy that applies in the Ringwood Metropolitan Activity Centre.
- Implemented the pilot 20-minute neighbourhoods project in Croydon South in collaboration with the Heart Foundation, Victoria Walks, funded through the Department of Environment, Land, Water and Planning.
- Hosted the "Living Maroondah: a future for our plants animals and us" symposium bringing together the community and a range of expert speakers to discuss the value of vegetation.
- Adopted an Environmentally Sustainable Design in Council Buildings and Infrastructure Policy.
- Continued to participate in the Eastern Transport Coalition, whose main role is to advocate to Government to obtain better public transport options for the Eastern region.
- Council resolved to offer Maroondah businesses access to an environmental upgrade program to assist businesses improve their economic and environmental performance.
- Developed the Maroondah Digital Map is an online platform showing the complete transportation networks for the City of Maroondah.
- Continued our membership to the Council Alliance for Sustainable Built Environment (CASBE) which is an association of Victorian councils committed to the creation of a sustainable built environment within and beyond their municipalities.
- Council uses the Sustainable Design Assessment in the Planning Process (SDAPP) and Built Environment Sustainability Scorecard (BESS) to assess the sustainability of planning applications.
- Continued our membership to the Eastern Alliance for Sustainable Learning, which is a collaboration of five member councils (Knox, Manningham, Maroondah, Whitehorse and Yarra Ranges) who work with schools and early year providers to promote lifelong learning and action that improves the health, wellbeing and environmental sustainability of local communities.
- Accelerated the footpath construction improvement program and installed more than 9km of new sealed footpaths.
- Council continues community education and awareness raising during Earth Hour events.
- Council partnered with Melbourne Water, the Department of Environment, Land, Water and Planning (DELWP) and Yarra Valley Water to naturalise and enhance a section of Tarralla Creek in Croydon.
- Through the Victorian Government's Our Catchments, Our Communities initiative, a range of Living Links partners banded together to help transform the Dandenong Creek corridor into a world-class urban 'Living Link' through revegetation and weed control.

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Realm Service Centre
Maroondah Highway
Ringwood

Croydon Service Centre
Croydon Library
Croydon

Translating and Interpreter Service
13 14 50

National Relay Service (NRS)
13 36 77



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