City of Melton
Climate Change Adaptation Plan
2020-2030

June 2020

Climate Change Adaptation Plan

Executive Summary

City of Melton is already experiencing the impacts of climate change. In the future, we can expect further changes – hotter summers, drier winters, longer bushfire seasons and more frequent extreme weather events. All of these changes directly impact the way Council delivers services, manages assets such as roads, drains and buildings, and assists vulnerable residents.

Council has been responding to climate change, attempting to reduce its own contribution, through reducing emissions via energy efficiency upgrades and on-site renewable energy, and will continue to cut emissions to achieve net zero emissions by 2040 as set out in the *Environment Plan 2017-2027*. Despite these reductions, a certain amount of climate change is already locked in due to the length of time that greenhouse gases remain in the atmosphere.

The *Climate Change Adaptation Plan* (the Plan) represents Council's response to these current and anticipated future changes. While Council is already managing many of these impacts, this Plan provides a formal and coordinated climate change adaptation framework and action plan for the future.

Actions are organised across five themes:

- Community Wellbeing and Emergency Management
- Open Space and Water Security
- Assets and Infrastructure
- Planning, Buildings and Regulations
- Governance and Risk

There are a number of issues that cross through most or all of these themes and represent priority action areas for Council. These are:

- A focus on **urban greening** and **heat relief actions** to reduce the impact on our community from extreme heat,
- the need for **improved and simplified communication** on climate projections and best practice adaptation within Council as well as with the community, and,
- the need to **update existing strategies, policies and processes** as they are reviewed to embed climate change adaptation considerations.

This plan has been developed in collaboration with Councillors, Executive and internal business units.

Acknowledgment of Country

Melton City Council acknowledges the local Aboriginal Australians, recognising the people of the Kulin Nation as the original custodians of the land now known as City of Melton. On behalf of the municipality, Council pays respect to their Elders, past, present and future.

Council works towards Traditional Owner partnerships with a shared vision, knowledge and understanding. As one of the oldest continuing world cultures, with strong connections to land and water, Council acknowledges that Aboriginal people have knowledge that has sustained the wildlife and habitat of this country for thousands of years.

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What is climate change adaptation?

Nearly all sectors of society and the economy are likely to be impacted by climate change. Many impacts are already being felt and observed across Australia and the world. Even if emissions were reduced drastically today, due to the length of time that greenhouse gases remain in the atmosphere, some of these impacts are unavoidable and our communities must prepare to deal with them.

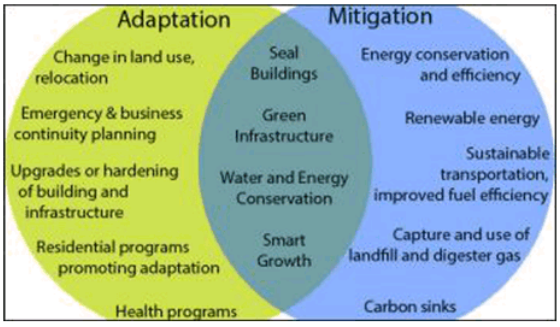
Adaptation is the means by which to strengthen communities and systems to reduce vulnerability to climate change impacts. It is a process that involves identifying risks, and then developing priorities and actions to minimise the risks.

Adaptation is action taken to prepare for actual or expected changes in the climate, in order to minimise harm, act on opportunities or cope with the consequences. *Climate Change Act 2017*

Adaptation and Mitigation are complementary

- *Adaptation* is *adjustment* to climatic effects (actual or expected), managing for preparedness, responsiveness, recovery, resilience, or to use opportunities
- *Mitigation* is *minimising* climatic effects (actual or expected) by reducing sources of, or enhancing sinks for, greenhouse gases

Many actions address both, and these are the actions that should be prioritised. For example, retrofitting a building with solar panels can provide energy security for reliable cooling in extreme heat events (adaptation), while reducing emissions through renewable energy substitution (mitigation).



Benefits of adaptation

The organisational benefits of climate change adaptation include: reducing financial loss, identifying and leveraging opportunities, and reducing exposure to reputational and legal risk. Other co-benefits include: reducing risk to life and property, reducing risk to the natural environment and reducing impact on vulnerable communities.

Successful adaptation is a *proactive* and *long-term* process that encompasses:

- improved awareness and understanding of trends, hazards and risks
- responsiveness through changed practices and policies; and
- monitoring and review to enable learning and continued adaptation.

A *partnership approach* is essential in adaptation, reflecting the shared and complementary responsibilities of local and state governments, business, community organisations and individuals.

Adaptation principles

Climate change affects all levels of decision-making. In order to deliver a cohesive organisational response to climate impacts these principles should be used to inform current and future policy, service and operational decisions that relate to climate resilience.

Effective adaptation is:

Informed, integrated and complementary

- Accounting for uncertainty by considering multiple scenarios
- Based on best available evidence
- Adjustable to changes in circumstances and available information
- Providing maximum net benefit (social, economic, environmental)
- Embedded across all decision-making mechanisms
- Building on past experience, complementing existing and planned adaptation actions
- Compatible with or contributing to mitigation actions to reduce greenhouse gases

Risk focused

- Considering the present and short-, medium- and long-term future
- Considering long-term interaction between climate and non-climate (social and economic) factors
- Being addressed by those best-placed to manage them
- Taking into account costs of climate change effects
- Adapting early for avoided costs and maximum non-financial benefits
- Designed to avoid unintended consequences
- Recognising costs, limits and trade-offs
- Supporting long-term adaptive capacity

Community focused

- Fair and equitable, with intra- and inter-generational equity
- Actively involving the community in setting directions and priorities
- Valuing and respecting knowledge and perspectives of Traditional Owner groups and Aboriginal Victorians

Aim for this plan

The aim of this Plan is to manage the risks of a changing climate to **maximise positive outcomes** and **build the resilience** of the City of Melton.

To achieve this, Council will:

- Support the actions already being undertaken by Melton City Council with regards to climate risk.
- Identify and implement additional adaptation actions to maximise positive outcomes and build resilience.
- Integrate and strengthen adaptation actions across all aspects of Council planning and operation.
- Improve organisational understanding of climate change risks and adaptation.
- Improve community understanding of climate change risks and build adaptive capacity of residents.
- Work with stakeholders to develop partnerships and clarify roles and responsibilities around managing climate risk.
- Monitor and evaluate how well Council is adapting to climate change over time.

Climate change: What can we expect?

Climate change is caused by an accumulation of greenhouse gases in the atmosphere. Greenhouse gases act as a blanket which keeps the sun's heat close to the Earth's surface, warming it. This is a natural process, but human activities are increasing the amount of greenhouse gases in the atmosphere, resulting in increasing temperatures and altering the Earth's climate patterns.

Global climate future

The annual global average temperature is about 1 degree Celsius hotter than pre-industrial levels. Although this may seem small, the rate at which the warming is occurring is faster than the Earth can adjust to. Climate change has already resulted in devastating impacts across the planet.

Under a high emissions scenario based on the International Panel for Climate Change (IPCC) reports, expected global changes will include:

- Global temperature increases of up to 4 degrees Celsius
- Loss of more than 50% of the planet's plant and animal species
- Disruption to agricultural production and increased food insecurity
- Increased human exposure to natural hazards including floods, storms, wildfires and heatwaves

Local climate future

Climate change is already affecting Melbourne, including the City of Melton. Droughts, extreme fire weather and heatwaves are already being experienced at greater rates. Experts agree that these are not only going to occur more often, but that they will also become more intense.

City of Melton future

According to data from the Bureau of Meteorology, City of Melton will experience hotter summers, drier springs, longer bushfire seasons and more frequent extreme weather events.

Temperature

- Has increased 1.2°-1.4°C since 1950 for the Melton area, and will continue to increase in all seasons.
- Annual average temperature rise in period 2020-2039 to be 0.9°C; in 2060-2079 to be 1.5°C to 2.6°C.
- Fewer frost days, but possibly increased risk of frost in springtime.
- More and longer hot spells - more days above 35°C; currently 8 per annum, projected to be 12 in the period 2020-2039 and 14 to 18 in the period 2060-2079.

Rainfall

- Declined since the 1950s, especially in autumn; decreased 100-200mm for Melton area.
- Expect decreased annual rainfall and increased evaporation.
- (Beyond natural variability) less rainfall in winter and spring; uncertain changes in summer and autumn (possible decrease in autumn).
- More frequent and more intense extreme rainfall events.
- Increased duration of drought periods.

Fire weather

- More frequent days of very high & extreme fire danger (a combination of fuel dryness, and hot, dry windy conditions); by 2050: 4 or 5 times more often.
- Melbourne region currently experiences catastrophic fire days once every 33 years on average; may increase to once every 2.4 years.

What do these changes mean?

During increasing dry times, stream flows and water supply for residential, business and industry use will be reduced, at the same time as water demand increases for cooling, irrigation, and agriculture. This places overall **pressure on water security**, accompanied by a declining ability to meet community expectations of open space and reserve amenity and maintenance. Reduced flows and flushing will also increase drain blockages.

Extreme rainfall events will lead to **increased episodic runoff, flash flooding and significant flooding** in low lying areas, with reduced ability for stormwater systems to cope. These events will bring flood damage, increased maintenance costs and disruption to services, with closures on major roads disrupting transport and supplies. Temperature rises after intense wet spells may bring increased insect- and water-borne diseases and illnesses.

Extreme heat (hotter for longer) will bring a complex collection of impacts, through increased vulnerability to **fire hazard** over a larger area, and also to **urban heat island effects**. There will be increasing heat exposure risk for all outdoor workers, for pedestrians, for users of open space and outdoor facilities, and for participants in outdoor and sporting events.

Extreme heat will impact on service delivery, and in particular will strain capacity for community care.

There will be risk of increased **heat-related deaths and hospitalisations**, particularly among the elderly and disadvantaged who may not be able to access cool refuges and may have limited alternatives to walking in extreme heat. These impacts will be felt particularly strongly in City of Melton due to relatively high levels of disadvantage.

Those who seek to avoid such conditions may experience **reduced levels of physical activity, and reduced levels of community connectivity and social inclusion**, with flow-on adverse effects on health and wellbeing. This includes mental health effects of increased fear and uncertainty, and reduced resilience and confidence in the future. In turn, heatwaves can increase alcohol abuse and family violence.

Extreme heat will also have an impact through direct **damage to materials in infrastructure**. This is likely to bring with it: increased power failures (with effects on water supply and wastewater treatment); increased asset degradation with reduced lifespan; increased operating and maintenance costs for buildings; increased pressure on road infrastructure from flooding, heat loading and extreme events, with consequent road closures; increased damage to underground infrastructure by soil movement from combined effects of overall drying and extreme rainfall events; and reduced performance of railway lines, with increased disruption to services. Overall, it is likely to mean a declining ability to meet community expectations of asset and infrastructure maintenance and increased costs to maintain levels of service.

Taken together, the climate projections indicate: **increased demands on health and emergency services;** activation of emergency plans, more frequently and for more complex events; disrupted use of community facilities and recreational spaces when used for emergency responses or refuges; increased pressure on public transport and road network in evacuations; and potential for health risks from greater volumes of waste disposal after extreme events.

A range of impacts can be expected to affect **plants and animals,** with implications for biodiversity conservation and primary production. Climate projections indicate a potential, or perhaps a need, to diversify primary production enterprises e.g. with different crop varieties and with different sowing times, while there is great uncertainty about impacts on pollinators, flowering times and aquatic systems. Existing threats to biodiversity will be amplified and some habitat conditions will fundamentally change, placing increased pressure on some species and communities. Competition and pressure will also change through changing dynamics and distributions of invasive species (plants and animals), and arrival of new pest species.

Climate projections also point to: potential conflicts between objectives for community safety, environmental protection and economic development; increased liability risk in assessing development applications for flood- and fire-prone areas; and changes in land value and insurance costs in areas facing increased flood, fire or wind hazards.

Setting the scene for adaptation action

While Council has taken the lead in preparing this Plan, it has been developed with reference to Victorian and Australian Government policy, the latest available climate science and community values. A summary of key global, Commonwealth, state and local government policies is found below:

International Policy

At the international scale, climate change is recognised as a global threat. The United Nations Framework Convention on Climate Change (UNFCCC) acknowledges that adaptation efforts are just as important as reducing greenhouse gas emissions. In 2016, the UNFCCC Paris Agreement came into force recognising the critical role of cities and towns to reduce emissions, but also to adapt to through building resilience and decreasing vulnerability to the actual and expected adverse effects of climate change.

Australian Government

The Australian Government's *National Climate Resilience and Adaptation Strategy* sets out how Australia is managing climate risks. It identifies principles to guide adaptation practice and resilience building, and sets a vision for future adaptation practice.

Victorian Government

Victoria's Climate Change Adaptation Plan 2017-2020 provides a blueprint for action to help Victoria meet the challenges and act on the opportunities of climate change.

The *Climate Change Act 2017* is a key statute to manage climate change risks and maximise opportunities that arise from decisive action. The Act identifies councils as one of the decision-makers that must consider the impacts of climate change, specifically during the preparation of a Municipal Health and Wellbeing Plan.

The Melbourne Metropolitan Planning Strategy (*Plan Melbourne 2017-2050)* identifies that the Melbourne of 2050 needs to have become a low-carbon city designed to cope with the effects of climate change. In particular, Direction 6.2, Reduce the Likelihood and Consequences of Natural Hazard Events and Adapt to Climate Change, specifically states the Strategy runs parallel with actions developed as part of *Victoria's Climate Change Adaptation Plan 2017-2020* and builds on the work of local government and emergency management agencies to build safer and more resilient communities. It includes:

- Policy 6.2.1, Mitigate exposure to natural hazards and adapt to the impacts of climate change.
- Policy 6.2.2, Require climate change risks to be considered in infrastructure planning.

Regional Initiatives

The Western Alliance for Greenhouse Action (WAGA), of which Melton City Council is a member, undertook a regional risk assessment and developed the Climate Change Adaptation Strategy 2013-2020 to respond to the priority climate change risks for the region. Other relevant regional initiatives include Greening the West and the Resilient Melbourne Strategy.

Local Government

In Victoria the *Local Government Act 1989* requires councils to act in the long-term interest of its local community. This includes addressing the viability and sustainability of key economic, social and environmental issues. Council has also been a key project partner in the development of WAGA's How Well Are We Adapting tool, an evaluation framework that seeks to monitor how well Victorian local governments are responding to climate change (see Monitoring and Evaluation, page 29).

City of Melton Policies

In 2017, the City of Melton committed to developing a climate change adaptation strategy through the adoption of the Environment Plan 2017-2027, as well as through becoming a signatory to the Global Covenant of Mayors for Climate and Energy, the Paris Agreement and the Victorian Governments' Take 2 Pledge.

Climate change will affect most areas of council operations, services and functions. It is important that climate change is embedded in relevant strategies and plans as they are updated and new ones are developed. The figure below shows a selection of the Council plans and strategies that already consider climate change. Moving forward Council will seek to further integrate climate change where appropriate.

Priority action areas for City of Melton

Theme 1: Community Wellbeing and Emergency Management

Strategic Outcome:	Our community is prepared and resilient in the face of climate change
Strategic Priority:	Communication to raise awareness and understanding, and empowerment to take collective action, with particular attention paid to vulnerable populations

Theme 2: Open Space & Water Security

Strategic Outcome:	Our green spaces and natural environment are resilient, and continue to support our health and wellbeing as climate changes
Strategic Priority:	Provision and renewal of green infrastructure with design and forms that are matched to climate hazards and risks

Theme 3: Assets & Infrastructure

Strategic Outcome:	Our built assets and infrastructure are resilient, and continue to support our health and wellbeing as climate changes
Strategic Priority:	Provision of public infrastructure that will withstand future climate change impacts, and renewal of built assets and infrastructure with design and materials that are matched to climate hazards and risks

Theme 4: Planning, Building & Regulation

Strategic Outcome:	Climate change projections and risks inform, and are embedded in, all aspects of Council planning, regulation and operations
Strategic Priority:	Work through state and local planning and regulatory mechanisms to facilitate a more climate resilient City

Theme 5: Governance & Risk

Strategic Outcome:	Council identifies and responds to climate-related exposure to increased costs, expanded liability risks and insurance claims
Strategic Priority:	Work with other councils and levels of government to understand the financial and legal risks and responsibilities of local government in a changing climate

Theme 1: Community Wellbeing & Emergency Management

City of Melton context

Climate change will have a particularly high impact on vulnerable communities including the elderly, the very young, those that live alone, those experiencing low-socioeconomic circumstances, and culturally and linguistically diverse people. The interaction of age, illness, income and social integration is a strong determinant of vulnerability to climate change. Due to high levels of disadvantage, the City of Melton has a relatively high number of residents that will be particularly exposed to climate change impacts.

Though the impacts on vulnerable people are likely to be more severe, climate change will affect the whole City of Melton community. Extreme weather events such as heatwaves can impede people's ability to sleep, floods may restrict mobility, and urban heat may limit outdoor activity leading to flow on impacts on health and wellbeing. Climate change will increase the frequency and severity of those events, putting pressure on emergency management processes.

Council plays an important role in emergency management through its legislated responsibility in developing and maintaining a Municipal Emergency Management Plan (MEMP). The purpose of the MEMP is to protect communities and assist them to recover from the impacts of emergency situations such as floods, fires and storms, all of which will be more frequent as the climate changes.

Hazards and risks: What are we most worried about?

Climate change results in:

- Reduced ability to maintain mobility across the municipality
- Extreme weather events occur more frequently
- Increased negative impact on City of Melton's vulnerable people
- Increased pressure on emergency response services

Current responses: What we are already doing?

Several Council strategies address issues of community climate change resilience. In Council's most recent Council and Wellbeing Plan consideration was given to climate change adaptation, identifying actions that would assist the community in adapting to climate change. Council will seek to strengthen this integration in future iterations. To help residents manage extreme weather, Council has worked with partner Positive Charge to disseminate a booklet that outlines low cost ways to ensure their homes stay comfortable during heat events while saving money on energy bills.

In the emergency management space Council's Municipal Emergency Management Plan acknowledges that climate change is making weather patterns less predictable and more extreme, and outlines responses to extreme weather events including bushfire, floods and heatwaves. Designated relief and recovery centres are listed along with communications procedures for the public.

Adaptation in action

LEADS energy efficiency community training program

The award-winning LEADS community education program provided training to low income and culturally diverse communities to better understand and reduce their energy bills while keeping their home a pleasant temperature.

Healthy Homes Program: Improving the climate resilience of homes

City of Melton is working with Sustainability Victoria to provide free home energy upgrades to Victorians living with complex healthcare needs and low incomes. These upgrades will make their homes more comfortable, energy efficient, and resilient to extreme weather conditions.

New adaptation actions

New adaptation actions will seek to enhance the resilience of communities through engagement and build on the emergency management planning procedures already in place.

Action
Engage with our community on climate change adaptation • Define and improve understanding of climate change vulnerable communities • Develop and disseminate graphic rich, culturally appropriate communication material targeting the most vulnerable communities
Further embed climate change into the next iteration of the Council and Wellbeing Plan • Engage with councils and the state government to further understand requirements under the *Climate Change Act 2017* • Improve future plans by leveraging new materials and guidance prepared by the State government
Enable communities to more effectively respond • Investigate developing a program similar to the Community Fireguard to plan for extreme weather events including flooding and heatwaves, and identify a high risk neighbourhood to trial. • Investigate options to strengthen community connection including 'Know Your Neighbour' days as a tool to build community capacity and resilience
Increase accessibility for communities to heat relief • Investigate piloting flexible hours for Council services • Assess adequacy of cooling centres and heat refuges (including availability, accessibility, trigger points for use, communication about and resourcing of)
Improve ability of Council to respond • Benchmark emergency response volunteer numbers against other councils • Develop actions to increase number of emergency response volunteers in the municipality

An Implementation Plan has been prepared to support the delivery of these actions and is contained as an appendix to this Plan.

Theme 2: Open Space & Water Security

City of Melton context

City of Melton is located in a low rainfall area which will become increasingly dry with climate change. Reduced rainfall and more frequent heatwaves and droughts will put stress on the City's green spaces, affecting parks and gardens, street trees, grasslands and wetlands. At the same time, these spaces will be increasingly important for their role in providing relief for residents as temperatures become more extreme and backyards continue to shrink. In order to keep key spaces cool and green Council will be required to be more efficient with water use.

These areas are key spots for supporting biodiversity, place-making, and enhancing health and wellbeing of our residents. As the City continues to develop, open space will become increasingly critical for the liveability of the municipality, and an ongoing challenge for Council will be to balance water use with reducing the urban heat island effect.

Hazards and risks: What are we most worried about?

Climate change results in:

- Increasing pressure on water supplies.
- Declining ability to meet community expectations of open space/reserve amenity and maintenance.
- Increasing pressure on natural environment and green spaces.
- Increased negative impact on City of Melton's vulnerable people.

Current responses: What we are already doing?

Council has made many improvements to the way it manages to the water cycle. In 2018, Council adopted an Integrated Water Management Plan to facilitate a multiple benefits approach to water management. Council has also been improving the water efficiency of its sports ovals through upgrading to warm season grasses and trialling other innovative techniques.

Adaptation in action

Cooler, greener streets through passive watering of trees

Council worked with Alluvium Consulting and the University of Melbourne to design an innovative and cost-effective passive irrigation systems to capture stormwater from the road to irrigate street trees. Trees receiving stormwater will be more resilient to warmer, drier conditions and enable healthier, greener and cooler neighbourhoods.

Harvesting stormwater for healthy open spaces

Council currently has two stormwater harvesting systems and will seek to identify opportunities to develop more. These systems capture stormwater and use it to irrigate ovals, reducing pressure on potable water supplies and keeping ovals cool and green for the community.

New adaptation actions

New adaptation actions will focus on balancing Council's water use with mitigating the urban heat island effect through healthy blue-green infrastructure.

Action
Conserve water and diversify sources • Deliver actions from the Integrated Water Management Plan • Continue to seek opportunities to harvest stormwater and access other alternative supplies to displace potable water use
Assess vegetation selection to ensure it is appropriate for City of Melton's climate future • Investigate tools such as the CSIRO Climate Analogues Tool to determine the resilience of current planting species selection • Update Council's street tree list and streetscape planting guide if required • Ensure a future Biodiversity Strategy incorporates climate refugia for plant and animal communities and links to connectivity approaches of neighbouring councils

An Implementation Plan has been prepared to support the delivery of these actions and is contained as an appendix to this Plan.

Theme 3: Assets & Infrastructure

City of Melton context

Melton City Council is responsible for the development, management and maintenance of a large portfolio of built infrastructure including roads, buildings and drainage. Depending on their location, these assets will potentially be exposed to the impacts of climate change through extreme weather events such as floods, storms, and bushfires, as well as through long term impacts such as soil erosion. These impacts will result in increased vulnerability to damage and reduced lifespans. As these assets are built to last several decades, it will be important that changing conditions are acknowledged in the planning and construction of new assets and major upgrades, as well as in their long-term management.

Hazards and risks: What are we most worried about?

Climate change results in:

- Increased deterioration of roads
- Council buildings are damaged or experience reduced lifespans
- Increased urban heat island effect
- Increased negative impact on City of Melton's vulnerable people

Current responses: What we are already doing?

Council has been improving the environmental performance of its building stock for many years. For example, showing leadership in climate adapted built form through building two green star accredited buildings.

Adaptation in action

Environmentally Sustainable Design (ESD) Guidelines for Council buildings

Council is developing guidelines to ensure that new community buildings are built to reduce impact on the environment and be resilient to a changing climate. The policy and guidelines will incorporate a Climate Resilient Infrastructure checklist which aims to build in resilience to future-proof new and upgraded assets and infrastructure.

Green Star buildings – Western BACE and Melton Library and Learning Hub

Council has built two Green Star rated community buildings. The Melton Library and Learning Hub was the first 5-star Green Star accredited library in Australia, boasting features to ensure it is ready for a changing climate, including solar panels and water tanks. The Western BACE, a business incubator also achieved a 5-star Green Star rating.

New adaptation actions

New adaptation actions will focus on strengthening the resilience of our new infrastructure while assessing the vulnerability of existing assets.

Action
Address urban heat island effect through built form • Prioritise tree planting around buildings • Increase blue-green infrastructure around high priority areas
Monitor and mitigate climate change impacts on roads • Work with other councils and VicRoads to better understand how roads will be affected by climate change • Develop best practice approaches to manage these effects
Improve resilience of infrastructure to extreme weather events • Conduct a vulnerability assessment across assets • Ensure Climate Resilient Infrastructure Checklist is incorporated into Council's Environmentally Sustainable Design (ESD) guidelines

An Implementation Plan has been prepared to support the delivery of these actions and is contained as an appendix to this Plan.

Theme 4: Planning, building and regulation

City of Melton context

City of Melton is experiencing significant growth. With a current population of 161,000, the municipality is expected to house over 400,000 residents by ultimate build out. In order to accommodate this growth, a significant number of new homes, along with other infrastructure including roads, footpaths and drainage will be constructed over coming decades bringing additional challenges for councils adapting to climate change. This growth also presents an opportunity to ensure that development occurs in such a way that promotes climate resilience and liveability, which will require coordination between local and state governments, and strengthened mechanisms that regulate planning and building.

Hazards and risks: What are we most worried about?

Climate change results in:

- Increased deterioration of roads
- Council buildings are damaged or experience reduced lifespans
- Increased urban heat island effect
- Increased negative impact on City of Melton's vulnerable people

Current responses: What we are already doing?

Council has expanded its emergency management response, focusing on increasing the organisation's preparedness for emergency events and disseminating emergency information from Emergency Management Victoria to our local community. Our emergency management seeks to build on the strong community development work action we are already facilitating.

Adaptation in action

Climate adaptation in the Municipal Strategic Statement

A Municipal Strategic Assessment (MSS) contains the strategic planning, land use and development objectives of the municipality and the strategies for achieving them. In 2018, Council adopted a new MSS that acknowledges the impact of a changing climate on the City. The MSS refresh notes that increased extreme weather events will be experienced resulting in more frequent fire, storm, drought and flood events, affecting both the health and safety of the community and the integrity of infrastructure and assets. The MSS sets an objective to develop a City well-adapted to climate change, and outlines a number of strategies to achieve it.

New adaptation actions

New adaptation actions will focus on strengthening private realm infrastructure through updating planning controls and advocating for stronger state and national policies.

Action
Strengthen planning controls that relate to climate change adaptation • Review opportunities to strengthen planning controls that relate to climate change adaptation, including bushfire and flooding overlays
Advocate for a strengthened National Construction Code • Work with Municipal Association of Victoria to advocate for improved building standards that are adequate for future climate conditions
Improve consideration of climate change adaptation in the development of land use planning documents • Identify climate resilience opportunities when undertaking planning for activity centres, precincts and other strategic land use planning processes

An Implementation Plan has been prepared to support the delivery of these actions and is contained as an appendix to this Plan.

Theme 5: Governance and Risk

City of Melton context

Local governments are responsible for making a broad range of decisions that are affected by considerations of climate change, including land use planning and development approvals. These decisions expose councils to potential legal and financial liabilities. Integrating climate change into day-to-day processes and decision-making is recognised as a tool to support effective adaptive decision-making to reduce risks.

Hazards and risks: What are we most worried about?

Climate change results in:

- Increasing exposure to financial risk
- Increasing exposure to legal risk
- New or expanded insurance claims

Current responses: What we are already doing?

This is an emerging area for Council and the current focus in on building understanding. To this end, Council has been working with other councils, in particular the Western Alliance for Greenhouse Action, to understand climate change-related exposure to increased costs, new or expanded liability risks, and insurance claims.

Council has also been consulting across the organisation to better understand what climate risk means for Melton City Council, and integrate climate considerations into everyday practises.

New adaptation actions

New adaptation actions focus on building Council's capacity to understand and respond to legal and financial exposures and integrating climate change adaptation into policies, plans and processes.

Action
Improve understanding of climate change related exposure to legal and financial risk • Collaborate with other councils to understand, identify and respond to changing risk exposure • Seek guidance from the State government on how to respond to changing risk exposure • Build capacity internally to understand and respond to climate exposure
Integrate climate change considerations in relevant plans, policies and processes as they are developed and updated • Prepare and provide relevant and up-to-date climate change information as required to appropriate teams in Council to inform plans, policies and processes
Monitor climate change impacts on Council service delivery and operations • Use the How Well Are We Adapting tool to understand long-term trends and inform the development of appropriate adaptation actions

An Implementation Plan has been prepared to support the delivery of these actions and is contained as an appendix to this Plan.

Appendix 1: Implementation Plan

The Climate Change Adaptation Plan provides a 10-year framework supported by a rolling three-year Action Plan. The Action Plan is organised into the five themes of the Plan:

1. Community Wellbeing and Emergency Management
2. Open Space and Water Security
3. Assets and Infrastructure
4. Planning, Buildings and Regulations
5. Governance and Risk

Ongoing priorities are those that may already be occurring and are expected to continue into the future. Short-term priorities are those that are of highest urgency, or those that are relatively simple and inexpensive to implement. Medium- and long-term priorities are those that may be less urgent, or rely on securing longer term financial planning. They also may be more complicated to implement due to dependency on external stakeholders, or on the completion of multiple steps or projects.

Timing:	Short	0-3 years
	Medium	4-6 years
	Long	7+ years

Resourcing: E – Funded within existing budgets
S – Subject to approval by Council as part of annual budget process

Theme 1: Community Wellbeing and Emergency Management

Strategic Outcome: Our community is prepared and resilient in the face of climate change

Strategic Priority: Communication to raise awareness and understanding, and empowerment to take collective action, with particular attention paid to vulnerable populations

Action	Rationale and opportunities	Responsibility	Timing	Resourcing
Develop and deliver community education and information on the impacts of climate change, with targeted engagement approaches for vulnerable communities as needed.	Residents that are particularly vulnerable include the elderly, the very young, lower socio-economic residents and those that are socially isolated. Culturally and linguistically diverse groups may also be at greater risk. Consideration should be given to defining vulnerable communities, and developing of graphic-rich, culturally appropriate communication material. Opportunities include using the successful LEADS model (Lead, Educate, Advocate, Demonstrate Sustainability) of train-the-trainer to reach a wide audience, and utilising existing community networks.	Environment and Waste; Community Planning	Short	E/S
Further embed climate change mitigation and adaptation into the next iteration of the Council and Wellbeing Plan.	The *Climate Change Act 2017* requires that municipal public health and wellbeing plans "have regard to climate change". Council should work with other councils and the state government to further improve the application of this legislative requirement.	All Business Units	Short	E
Review adequacy of Council-run facilities and services that are used by the community to seek relief during extreme weather events including heat waves.	Review facilities for availability, accessibility, trigger points for increased hours, communication about, and resourcing of. Investigate piloting flexible hours for Council services.	Risk and Performance	Short	E
Build the capacity for communities, particularly those that are isolated, to respond to extreme weather events through strengthening community connection and preparedness.	Investigate facilitating a program similar to the Community Fireguard to plan for extreme weather events including flooding and heat waves and identify a high risk neighbourhood to trial. Consider options to strengthen community connection, a known tool to increase community	Risk and Performance; Community Planning	Medium	S

	capacity and resilience, for example through supporting 'Know Your Neighbour' events.			
Improve ability to respond to extreme weather events through understanding current emergency response capacity. Actions may include benchmarking emergency response volunteer numbers against other councils and developing actions to increase these numbers.	Increased frequency and intensity of extreme weather events will place pressure on council's already stretched emergency response capacity.	Risk and Performance	Medium	E

Theme 2: Open Space & Water Security

Strategic Outcome: Our green spaces and natural environment are resilient, and continue to support our health and wellbeing as climate changes

Strategic Priority: Provision and renewal of green infrastructure with design and forms that are matched to climate hazards and risks

Action	Rationale and opportunities	Responsibility	Timeline	Resourcing
Continue to seek opportunities to harvest stormwater and access other alternative supplies that displace potable water use in line with Council's Integrated Water Management Plan.	As the climate changes water resources and rainfall patterns will become increasingly unreliable, while at the same time becoming increasingly critical for their role in mitigating urban heat island effect. Investment in alternative water supplies will enhance water security and enable Council to better maintain its cooling blue-green assets.	Engineering Services; City Design and Strategy; Environment and Waste	Ongoing	S
Assess planting selections to ensure they are appropriate for City of Melton's climate future. Update Council's street tree list and streetscape planting guide if required, and ensure a future Biodiversity Strategy incorporates findings, climate refugia, and links to connectivity approaches of neighbouring councils.	Climate change will impact the ability of species to thrive. In order to protect and enhance our ecological assets we will need to adapt out land and vegetation management practices. Using modelling tools such as the CSIRO Climate Analogue Tool or other, council can better understand the impact on species selection to inform decision-making.	Environment and Waste	Medium	S

Theme 3: Assets & Infrastructure

Strategic Outcome: Our built assets and infrastructure are resilient under a range of climate scenarios and continue to support our health and wellbeing as climate changes

Strategic Priority: Provision of public infrastructure that will withstand future climate change impacts, and renewal of built assets and infrastructure with design and materials that are matched to climate hazards and risks

Action	Rationale and opportunities	Responsibility	Timeline	Resourcing
Address urban heat island through identifying tree planting and green infrastructure opportunities around high priority areas (including to shade buildings, existing and new).	Urban heat island can most effectively be mitigated through the inclusion of green infrastructure such as trees, green roofs and green walls, in conjunction with building orientation and design. Co-benefits include stormwater management, habitat creation and enhanced amenity.	Operations; City Design and Strategy; Waste and Environment	Short	S
Improve understanding of the impacts from extreme heat and soil movement on roads, and work with VicRoads to implement best practice approaches to manage climate-related impacts on roads and related infrastructure.	Extreme weather will impact on the performance and condition of the road network, affecting the safe and reliable movement of goods and people.	Engineering Services; Operations	Short	S
Improve the climate resilience of Council infrastructure including buildings and drainage through investigating conducting vulnerability assessments using best available climate scenario modelling.	Changing climate trends will impact the performance and lifespan of Council's infrastructure. Opportunities include employing existing tools such as the *Building Vulnerability Assessment* tool developed by the Northern and Eastern Alliances for Greenhouse Action (NAGA and EAGA).	Engineering Services	Medium	S

Theme 4: Planning, Building & Regulation

Strategic Outcome: Climate change projections and risks inform, and are embedded in, all aspects of Council planning, building and regulation

Strategic Priority: Work through state and local planning and regulatory mechanisms to facilitate a more climate resilient City

Action	Rationale and opportunities	Responsibility	Timeline	Resourcing
Review opportunities to strengthen planning controls that relate to climate change adaptation, including regular review of bushfire and flooding overlays informed by current climate scenario modelling.	Council should continuously review where climate risks can be considered within the Planning Scheme. Monitor data collected for the Planning, Building and Regulation theme of How Well Are We Adapting for indicators for climate risks that should be considered for future planning scheme amendments or overlays. Advocate to the state government for improved planning controls and regulations for private development.	City Design and Strategy	Ongoing	E/S
Advocate to the Australian Building Commission for improved building standards that incorporate long-term local impacts of climate change.	The National Construction Code (NCC) provides the minimum standard for construction of new buildings, and will be next reviewed in 2022. Partner with the Municipal Association of Victoria (MAV) to advocate for improved building standards that are adequate for future climate conditions.	Engagement and Advocacy	Short	E
Improve consideration of climate change adaptation in the development of land use planning documents including Precinct Structure Plans (PSPs) and Urban Design Frameworks (UDFs).	Climate change adaptation is best considered as early in the land use planning process as possible. An analysis of climate risk should be used to inform the development of land use planning documents.	City Design and Strategy	Ongoing	E

Theme 5: Governance & Risk

Strategic Outcome: Council identifies and responds to climate-related exposure to increased costs, expanded liability risks and insurance claims

Strategic Priority: Work with other councils and levels of government to understand the financial and legal risks and responsibilities of local government in a changing climate

Action	Rationale and opportunities	Responsibility	Timeline	Resourcing
Improve understanding of climate change related exposure to legal and financial risk, including impacts on insurance, through collaboration with other councils and the state government.	As a relatively new consideration for Council, investigate engaging professional services to provide training to staff, including Councillors and leadership teams. Engage with the state government and other councils on how to respond to potential legislated changes (including the *Local Government Bill 2019*), which will require consideration of climate change, and to understand the changing insurance landscape	Legal and Governance; Risk and Performance; City Design and Strategy; Environment and Waste	Short	E/S
Integrate climate change considerations and adaptation principles into relevant plans, policies and processes as they are developed and updated.	Climate change will impact a broad range of Council's services and operations, and specific issues can best be addressed through the relevant plans, policies, or procedures. See page 9 for a non-exhaustive list of policies that currently consider the impacts of climate change.	All relevant business units	Ongoing	E
Establish a process and responsibilities for monitoring, evaluating and reporting of climate change impacts on Council service delivery and operations.	The Western Alliance for Greenhouse Action (WAGA)-developed tool How Well Are We Adapting provides a framework to monitor the impacts of climate change and council progress in adaptation. Collecting this data over time will enable monitoring of this plan (see page 29) while building internal understanding of how climate change is affecting Council services and operations.	Environment and Waste	Ongoing	E

Monitoring and evaluation

Monitoring progress

Climate change is complex, and its effects differ considerably across regions and over time. Variables including the global emissions trajectory followed in coming decades will additionally affect how impacts will be felt. Some changes may occur more quickly than predicted. To ensure ongoing decision-making is locally appropriate and responsive to emerging risks and opportunities, a monitoring and evaluation framework needs to not only assess the progress of adaptation actions, but also monitor how climate change is impacting Council services, infrastructure and community wellbeing.

How Well Are We Adapting

The How Well Are We Adapting (HWAWA) framework developed by the Western Alliance for Greenhouse Action (WAGA) councils has been designed to monitor the impacts of climate change on local governments, while over time evaluating how well councils are adapting. Through the collection of qualitative and quantitative data on how impacts are being experienced across four themes, councils can better understand the long-term trends associated with a changing climate to inform effective responses.

The Melton City Council Climate Change Adaptation Plan has been developed in alignment with the HWAWA tool, with the first four themes corresponding to the themes of How Well Are We Adapting. An additional theme, Governance and Risk, has been added to respond to the emerging issues related to changes in climate-related exposure. The HWAWA tool will be used to inform new responses, while monitoring the efficacy of existing actions.

Monitoring of the Plan will comprise of:

1. Annual monitoring via the How Well Are We Adapting tool.
2. Review of the Action Plan every three years and updated as required informed by the How Well Are We Adapting tool.
3. The Plan will be reviewed at 5 years and updated as required.
4. The Plan will be fully reviewed at 9 years. New Plan to be developed by 10 years (2030).