

Tackling climate change and its impacts on health through municipal public health and wellbeing planning

Guidance for local government 2024



Department of Health



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Authorised and published by the Victorian Government, 1 Treasury Place, Melbourne.

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In this document, 'Aboriginal' refers to both Aboriginal and Torres Strait Islander people. 'Indigenous' is retained when part of the title of a report, program or quotation.

ISBN 978-1-76131-693-7 (online/PDF/Word)

Available at the department's [municipal public health and wellbeing planning and climate change webpage](https://www.health.vic.gov.au/environmental-health/municipal-public-health-and-wellbeing-planning-and-climate-change) <<https://www.health.vic.gov.au/environmental-health/municipal-public-health-and-wellbeing-planning-and-climate-change>>.

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Acknowledgments

The Victorian Government proudly acknowledges Victoria's Aboriginal communities and the richness and depth of the world's oldest living culture and pays respect to Elders past and present. We acknowledge Aboriginal people as Australia's First peoples and as the Traditional Owners and custodians of the land and water on which we live, work and play. We recognise and value the ongoing contribution of Aboriginal people and communities to Victorian life and how this enriches our society more broadly.

This guidance has been prepared by the Department of Health with input from an advisory group including representatives from the Department of Energy, Environment and Climate Action, Sustainability Victoria, the Municipal Association of Victoria and several Victorian councils. It also includes input received through a survey of Victorian councils, broader council engagement, and input from additional state government departments, public health stakeholders, and researchers. This input has been crucial to the development of this guidance.

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Executive summary

Climate change is both the greatest threat to public health of the 21st century and the greatest global health opportunity.¹

The earth is warming at an unprecedented rate because of increasing concentrations of greenhouse gases in the atmosphere. Victoria's climate has changed over recent decades, becoming hotter and drier, and these trends are projected to continue. Victoria is already seeing direct and indirect health and wellbeing impacts associated with events such as floods, fires and heatwaves, which are occurring with greater frequency and intensity due to climate change. Ambitious action to mitigate climate change is critical to lessening the impacts, and adaptation action must occur at the same time because a certain amount of climate change is locked in due to greenhouse gas emissions already trapped in the atmosphere. Efforts need to occur at a pace and scale that ensures climate change impacts remain within adaptive capacity limits of health and health-supporting systems.² Without urgent and accelerated action, impacts will continue to spread – populations worldwide and future generations will all experience its multiple, increased risks, and its many and varied impacts.^{3,4}

Local government is identified in the *Climate Change Act 2017* as a decision-maker that must consider climate change when preparing a municipal public health and wellbeing plan (MPHWP). Tackling climate change and its impacts on health is also one of ten priority areas in the *Victorian public health and wellbeing plan 2023–2027* and, under the *Public Health and Wellbeing Act 2008*, councils are required to have regard to the state plan when preparing a MPHWP.

The purpose of the *Tackling climate change and its impacts on health through municipal public health and wellbeing planning: guidance for local government, 2024* (the guidance) is to assist councils in meeting these legislative obligations. This guidance builds on the department's previous guidance and supplements existing guidance on municipal public health and wellbeing planning by providing information on how climate change can be incorporated in each stage of planning.^{5,6,7} It also recognises that planning is not a linear process and that councils have strategic engagement processes that will inform the development of MPHWP.

The guidance seeks to encourage and accelerate action to tackle climate change and its impacts on health through municipal public health and wellbeing planning. It recognises the important role that councils play and includes a range of strategies and council case studies to support and inspire action.

Introduction and purpose

Climate change has been described as the greatest threat to public health in the 21st century.¹ At the same time, tackling climate change has been described as the greatest global health opportunity.¹

Addressing the threat and realising the opportunity to improve health requires global action at all levels and will only be achieved in close collaboration with the community. Victorian councils are already taking significant action to tackle climate change and its impacts on health. This includes delivering initiatives within Victorian communities that are both health-promoting and emissions-reducing, such as those focused on increasing active transport and increasing healthy eating. However, further work is needed to ensure that action is delivered at the scale and pace required to prevent the most significant impacts that could arise as a result of climate change.

The *Climate Change Act 2017* recognises that Victoria's climate is changing and requires certain decision-makers to have regard to climate change and to consider its potential impacts and contributions to greenhouse gas emissions.⁸ Local government is identified as a decision-maker that must consider climate change when preparing a municipal public health and wellbeing plan (MPHWP).

The *Public Health and Wellbeing Act 2008* requires councils to prepare a four-year MPHWP within 12 months after each general election of the council and for councils to have regard to the state public health and wellbeing plan when preparing a MPHWP.⁹

The purpose of the *Tackling climate change and its impacts on health through municipal public health and wellbeing planning: guidance for local government, 2024* (this guidance)

is to assist councils to meet their legislative obligations and to deliver actions in relation to the 'tackling climate change and its impact on health' priority in the *Victorian public health and wellbeing plan 2023–2027*.¹⁰ It further describes local governments' responsibilities under relevant legislation and how climate change can be considered in MPHWPs.

This guidance provides information on how climate change can be incorporated at each stage of planning.⁶ It also recognises that planning is not a linear process and that councils have strategic engagement processes that will inform the development of MPHWPs.

This guidance draws on the current scientific understanding of climate change and its impacts on health and councils' experiences to date. It highlights opportunities for councils to protect and improve the health and wellbeing of their communities through climate change action and showcases the significant work that councils are already delivering across Victoria. Acknowledging that council resources vary widely, this guidance seeks to encourage and embed consideration of climate change into municipal public health and wellbeing planning.

Context

'The scientific evidence is unequivocal: climate change is a threat to human wellbeing and the health of the planet. Any further delay in concerted global action will miss a brief and rapidly closing window to secure a liveable future.'^{11p3}

Intergovernmental Panel on Climate Change

Climate change in Victoria

The earth is warming at an unprecedented rate as a result of increasing concentrations of greenhouse gases in the atmosphere. The Bureau of Meteorology and CSIRO's State of the Climate 2022 report states that Australia's climate has warmed by an average of 1.47 ± 0.24 °C since national records began in 1910.¹² Human activities, such as unsustainable energy use, land use and land-use change, lifestyles and patterns of consumption and production have unequivocally contributed to these greenhouse gas emissions.⁴ Even under a very low greenhouse gas emissions scenario, it is expected that global warming is more likely than not to reach 1.5°C in the near term (2021–2040).^{4,13} Therefore, future emissions will have a major effect on the trajectory of climate change in the second half of the 21st century. In Australia, emissions are not declining at a sufficient rate to achieve benchmarks consistent with limiting global warming to 1.5°C.¹⁴ Climate change is a threat to planetary and human health and wellbeing.⁴ Without urgent action from all levels of society to mitigate and adapt to climate change, it is evident that the health, safety and wellbeing of Victorians, particularly those most vulnerable, is at risk now and into the future.³

Every increment of global warming has seen widespread and rapid changes in hazards, such as extreme weather events, that have resulted in extensive loss and damage to nature and people in every region of the world.⁴ Further, in coming decades, Australia is projected to experience an increased risk of compound extremes, where multiple extreme events occur concurrently or in sequence, and thereby having compounding impacts.¹² In recent years, the evidence base attributing these global changes to human influence has strengthened, and it identifies human influence as a likely driver of the increased chances of compound extreme events occurring, such as heatwaves and droughts.⁴

In Victoria the impacts of climate change are already being felt and are expected to increase. The state's climate has already changed over recent decades, becoming hotter and drier, with an overall increase in the frequency of unusually hot days (extreme heat events), a decline in cool season rainfall and a greater number of very high fire danger days in spring.^{15,a}

While it is expected that the timing and extent of climate changes will vary across regions, future climate modelling indicates that Victoria will continue to get hotter and drier and experience longer fire seasons, with increased severity and frequency of bushfires.^{16,17} Victoria's future will include an overall decrease in total rainfall, contributing to longer and more severe droughts; however, it is expected that individual rainfall events and storms will become more intense with a greater risk of flash flooding.¹⁵ Despite some of these changes being inevitable and in some cases also irreversible, these impacts can be limited with deep, rapid and sustained global reductions in greenhouse gas emissions.⁴

^a Note a climate science report is required every 5 years under Victorian legislation, with the next report due in late 2024.

Public health impacts of climate change

The World Health Organization describes climate change as the defining issue for public health in the 21st century.¹⁸ Our health is dependent on the health of our environment. However, climate hazards are threatening human health and survival, and increasingly contributing to a growing number of adverse health outcomes.^{19,20} Many impacts of climate change pose multiple threats to health and wellbeing and can occur at the same time, resulting in cascading or compounding impacts.²⁰ Climate change also risks compounding historical injustices and disrupting cultural and spiritual connections to Country that are central to the health and wellbeing of Aboriginal people.²¹ All of these impacts represent an unacceptably high risk to public health.¹

Climate change leads to or exacerbates disease across every physiological system in indirect and direct ways.²² Direct impacts, caused by exposure to more frequent and intense extreme weather events such as bushfires, droughts, floods and heatwaves, include hypo- and hyperthermia, heat stress, injury, trauma and death. Indirect impacts mediated through natural and human systems affected by climate change, include:

- vector-borne diseases (those transmitted from vectors such as mosquitos to humans)
- zoonotic diseases (those transmitted from animals to humans)
- water-borne diseases (resulting from exposure to harmful algae and pathogenic microorganisms affecting drinking water, recreational water, including aquatic facilities, and water supplied for agricultural and domestic use)
- food-borne diseases (such as salmonellosis)
- exposure to contaminants such as mycotoxins in food

- impacts on the micro and macro nutritional quality of food
- exacerbation of existing chronic diseases such as cardiovascular and respiratory diseases as a result of higher temperatures, poorer air quality, airborne pollen and other aeroallergens.^{1,3,20}

In addition to effects on physical health, climate change can also adversely affect mental health and wellbeing.²³ Extreme weather events such as floods, droughts and bushfires can lead to psychological distress, including PTSD, anxiety, depression, vicarious trauma, substance abuse and suicidal ideation. Climate change can also exacerbate pre-existing mental health illnesses and problems, due to trauma, illness, loss of loved ones, loss of livelihoods and culture, destruction of property and displacement, and disruption of communities, goods and services.²³⁻²⁵ Climate or ecological anxiety or grief is the existential fear of the likely future health of the earth and its inhabitants in the face of unmitigated climate change. Climate anxiety can impact wellbeing and lead to long-term emotional distress, despair and hopelessness. This disproportionately affects children and young people and people who rely on the land and land-based activities for their livelihood and wellbeing such as Indigenous peoples and farmers.^{23,26,27}

There is also an association between an increase in the frequency and severity of events such as bushfires, floods and droughts due to climate change and an increase in family violence.^{28,29} Natural disasters, crises and emergencies can produce a series of social stressors, including disrupted social networks, social isolation and limited or no access to support services. This can weaken prosocial norms and behaviours and increase the likelihood and prevalence of violence against women, children and young people, including those with disabilities and those living in disadvantaged circumstances.³⁰ Applying a gender lens to emergency management and response planning for

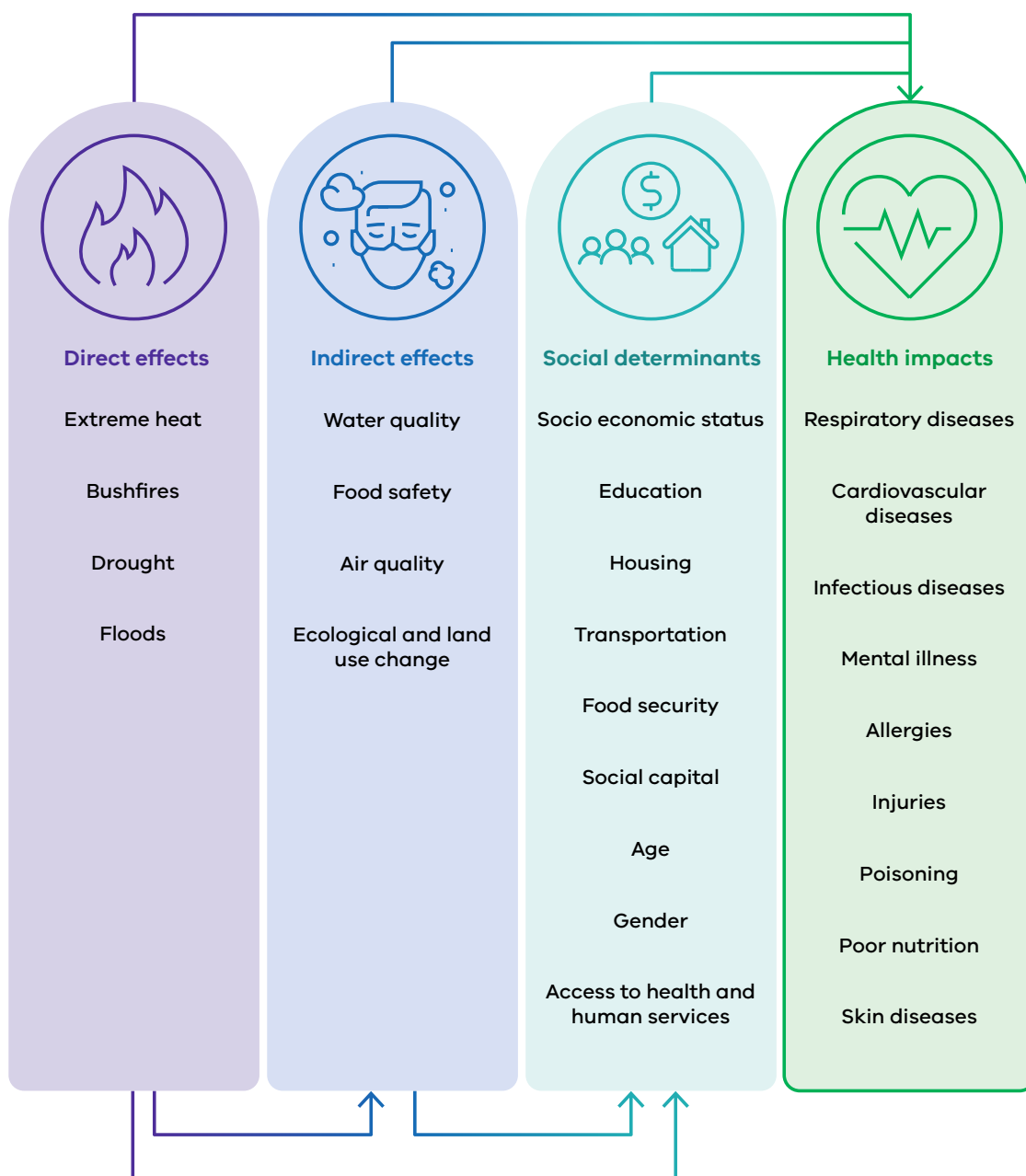
natural disasters and crises can help address the increased likelihood and prevalence of family violence and violence against women, ensure such events do not worsen existing inequalities, and increase community resilience over the long term.³⁰

Climate change can also impact the wider social determinants of health.

Higher outdoor temperatures increase indoor temperatures, and extreme weather events

can affect transport, employment and health and human services, each affecting community health and wellbeing. Climate change can have an adverse impact on the economy, which could lead to unemployment, stress, social exclusion and increases in food insecurity.³¹ **Figure 1** describes the categories of health and wellbeing impacts, including those that are direct, indirect and those that affect the social determinants of health and wellbeing.

Figure 1: Direct and indirect effects of climate change on health and wellbeing



Adapted from Watts et al. 2015, The Lancet, Health and climate change: policy responses to protect public health¹

Box 1

Climate change and health impact attribution^{32-35, 36}

In climate science, 'extreme event attribution' involves estimating the change in likelihood of a severe weather-related event due to underlying specific mechanisms, including climate change. In recent years, extreme event attribution studies have begun to calculate the climate change-related health impacts of certain weather events. These studies typically include statements that indicate the degree to which anthropogenic climate change is thought to have increased the risk of morbidity or mortality. For example, it is estimated that climate change accounted for at least a 30 per cent increase in the risk of fire weather associated with the 2019–20 Eastern Victorian bushfires, largely driven by an increase in temperature extremes.

However, this field is still in its infancy and is complex, particularly because most climate-sensitive health impacts have many causal factors in addition to climate and because the causal relationships between climate change and public health can be indirect and non-linear. A number of technical questions remain unresolved, such as which physical climate models to employ, how to measure impacts and how to suitably merge these respective fields in standardised approaches for effective attribution. Nevertheless, early work undertaken to date in this area shows great potential.

Table 1 provides examples of potential changes in hazards and hazardous events associated with a changing climate and potential direct and indirect health impacts.

Table 1: Potential health effects associated with climate change-related hazards and hazardous events

Hazardous event category	Examples of potential environmental changes	Examples of potential health impacts
Higher temperatures and heatwaves	<ul style="list-style-type: none"> • More frequent, severe and longer heatwaves • Overall warmer weather and increases in the number of days of extreme heat • Reduced quality of recreational and drinking water due to microbial and algal growth promoted by higher temperatures • Increased air pollution from higher levels of ground-level ozone • Increased production of pollens and spores, including as a result of longer pollen seasons 	<ul style="list-style-type: none"> • Higher incidence of heat-related impacts such as exhaustion and heatstroke and related effects such as falls • Increases in premature deaths • Exacerbation of existing health conditions including respiratory, cardiovascular and kidney diseases • Increases in food-, water- and vector-borne diseases due to the altered distribution of vectors (including mosquitos), increases in climate-sensitive food and water-borne pathogens and toxin-producing algal species and associated health impacts. • Higher incidence of allergies caused by pollen • Higher incidence of mental health impacts, including exacerbation of existing mental illness • Higher incidence of family violence • Health impacts from reduced physical activity due to high outdoor temperatures • Health impacts from poor quality / insufficient sleep
Bushfires	<ul style="list-style-type: none"> • Increased fire danger weather and an increase in the length of the fire season. Increased intensity and frequency of fires • Increased air pollution due to particulate matter (the pollutant of greatest concern) in bushfire smoke • Reduced drinking and recreational water quality due to contaminants associated with bushfires 	<ul style="list-style-type: none"> • Injuries, burns and death • Health impacts associated with the displacement of populations and crowding in emergency relief centres • Exacerbations of heart and lung conditions, including asthma and increased eye, nose and throat irritation, due to exposure to bushfire smoke • Increased food- and water-borne illness due to contamination or disruption to essential services such as electricity, water and sewerage • Higher incidence of mental health impacts, trauma and longer-term disruptions to social systems – for example, due to lost income and property damage or loss • Higher incidence of family violence • Health impacts from reduced physical activity due to bushfire smoke

Hazardous event category	Examples of potential environmental changes	Examples of potential health impacts
Drought and overall decreased average rainfall	<ul style="list-style-type: none"> Increased drought in some areas, affecting water supplies and agricultural production and contributing to increased bushfire risk Increased frequency of dust storms due to a drying landscape Reduced recreational and drinking water availability and quality Longer duration and intensity of drought 	<ul style="list-style-type: none"> Higher incidence of mental health impacts and longer-term disruptions to social systems – for example, due to lost income Exacerbations of heart and lung conditions including asthma – for example, due to exposure to dust storms Health impacts associated with food or water shortages including reduced access to fresh, healthy and affordable food due to reduced food yield Increase in illnesses related to drinking water and recreational water – for example, due to increases in blue-green algae Higher incidence of mental health impacts – for example, due to lost income due to primary production impacts associated with drought Health impacts from reduced physical activity due to degradation of public open space and sporting and recreation grounds
Flooding, heavy rainfall events	<ul style="list-style-type: none"> More frequent and intense thunderstorms Increased heavy rainfall events causing flooding Increased contamination of drinking and recreational water due to run-off from heavy rainfall and flooding 	<ul style="list-style-type: none"> Injuries, drowning and other accidental deaths – for example road accidents and electrocution Health impacts associated with the displacement of populations and crowding in emergency relief centres Increased food- and water-borne illness due to contamination or disruption to essential services such as electricity, water and sewerage Increases in mosquito-borne diseases due to increased breeding following flooding Increased respiratory illness due to greater exposure to moulds Higher incidence of mental health impacts, trauma and longer-term disruptions to social systems – for example, due to displacement, lost income and property damage or loss Higher incidence of family violence Health impacts from reduced physical activity due to heavy rainfall and flooding

Sources: Lee and Romero, IPCC 2023¹³, Portner et al. (eds), IPCC 2022,²⁰ Shukla et al. (eds), IPCC 2022,³⁷ IPCC 2018,³⁸ IPCC 2014,³⁹ Ebi et al. 2016,⁴⁰ Beggs et al. 2019,³² Mason et al. 2022,⁴¹ Obradovich et al. 2017,⁴² Stanke 2013,⁴³ Health Canada 2022,⁴⁴ Masson-Delmotte et al. 2021,⁴⁵ Department of Health and Aged Care 2020.⁴⁶

Health and wellbeing impacts in Victoria

Victoria is already seeing direct and indirect health and wellbeing impacts associated with events such as floods, fires and heatwaves, which are occurring with greater frequency and intensity as a result of climate change. A few examples are highlighted in Boxes 2–6.

Box 2

Extreme heat and heatwaves

Hot weather and extreme heat events can harm human health through morbidity and mortality. They are associated with increased risks of heat exhaustion and heat stroke, can worsen health risks from chronic conditions (including cardiovascular, mental, respiratory and diabetes-related conditions), cause acute kidney injury, and increase emergency department presentations, hospital admissions, adverse pregnancy and birth outcomes, and healthcare costs.⁴⁷

Heat-related deaths due to increased hot days and heatwaves are likely to be one of the most significant health impacts of climate change, with the bulk of increased impacts experienced in temperate cities.⁴⁸ In Victoria during the 2009 and 2014 heatwaves, there were 374 and 167 excess deaths^b respectively.^{49,50} It is estimated that there may be an extra 402 deaths per year in Victoria by 2050 due to heatwaves if no adaptation measures are taken.⁵¹

A Victorian study exploring heat-related illness on days of and the day after heat health alerts were issued has found the odds of presenting to emergency departments compared to days where heat health alerts were not issued, were greatest for those aged 65 years and older and for Aboriginal and Torres Strait Islander people.⁵² Further, the odds of people aged 65 years or older presenting to emergency departments with volume depletion (dehydration), heat or sunstroke, chronic obstructive pulmonary disease, diabetes-related conditions, organic mental disorders or acute renal failure were higher on days of and the day after a heat health alert.⁵³

^b Excess deaths: the number of deaths more than would be expected in a given time period. Expected deaths are derived from pooled deaths data from previous years.

Box 3

Extreme heat and food-borne disease⁵⁴

Salmonellosis is a leading cause of foodborne illness outbreaks globally and is the second-most commonly notified gastrointestinal disease in Australia. It also incurs a substantial health and economic burden. Weather can impact infectious disease transmission, particularly for heat-sensitive pathogens such as *Salmonella*, and therefore climate change creates a public health concern for the transmission and distribution of salmonellosis.

A study estimating the associations between sporadic (non-outbreak) notifications of salmonellosis with both temperature and rainfall in metropolitan Melbourne for the period of 2000–2019 demonstrated warmer temperatures were associated with an increased risk of notifications. Warmer weather may therefore create a more favourable environment for the survival of *Salmonella* and therefore its proliferation in food, food producing animals and the environment. This may potentially increase pathogen loads in warmer months creating higher risks of foodborne transmission.

The understanding of salmonellosis-weather relationships is important in informing public health prevention and control strategies to mitigate the health consequences of infection.

Box 4

Harmful or nuisance algae

Climate change is threatening the quality of Victoria's water, resulting in increased risks to human health. This includes warmer temperatures contributing to an increased risk of harmful algae, prolonged algal blooms, expansion of the range of previously climatically restricted pathogens, and emerging pathogens. Select harmful algal species can produce toxins that have serious health implications for humans, animals, birds and livestock if they are consumed, inhaled or come into contact with the skin.^{3,55}

For example, toxin-producing *Nodularia spumigena* blue-green algal blooms have affected Victoria's Gippsland Lakes on a number of occasions over many years. These events have led to restrictions on fishing operations, public warnings to avoid eating fish and seafood from the lakes due to the bioaccumulation of toxins and advice to avoid contact with the affected water, impacting the region's tourism, recreational and commercial fishing industries.⁵⁶

Climate change and warmer temperatures are likely to result in more frequent harmful algal blooms in the future, creating challenges for managing recreational water bodies and drinking water supplies.

Box 5

Family violence

The family disruption including displacement, damage and loss of property, unemployment, social isolation, psychological trauma and financial pressure associated with extreme weather events and disasters, means people often struggle to cope both during and long after a disaster has occurred. The emotional toll of these impacts has the ability to place pressure on household dynamics, weaken prosocial norms and behaviours, and increase the likelihood and prevalence of family violence and violence against women.^{30,57}

For example, an increased incidence and severity of family violence was recorded for more than 50 per cent of women interviewed in affected shires following the Black Saturday bushfires.⁵⁸ Women at risk of family violence and uprooted by the 2019-20 Black Summer Bushfires also faced heightened protection risks where there was a likelihood of encountering former partners at evacuation centres, or where they were forced to rely on former partners for accommodation and other support. Displacement from these bushfires also separated some women and children from their sources of protection such as family members and friends. This highlights the need to consider tailored displacement support during extreme weather events.²⁴

Box 6

2019–20 Victorian bushfires⁵⁹

The impacts of 2019-20 Eastern Victorian bushfires were broad and devastating. Five lives were lost, more than 120 communities were impacted, 313 homes were destroyed or damaged, and thousands of people were displaced (including almost 2,000 people evacuated from the Mallacoota foreshore by air or sea). While each of these impacts had implications for health and wellbeing, the most widely reported health impacts were associated with air pollution caused by bushfire smoke. Analyses of short-term health impacts associated with the fires identified significant increases in hospitalisation and emergency department presentation rates in Victoria during periods of significant fire activity or air pollution. This included, for example:

- 95% increase in hospitalisations for asthma and a 125% increase in emergency department presentations with a principal diagnosis of asthma in the week beginning 12 January 2020
- 120 excess deaths (any cause).

Legislative and policy context

Victorian public health and wellbeing plan 2023–27

The *Victorian public health and wellbeing plan 2023–2027* sets out a comprehensive approach to delivering improved public health and wellbeing outcomes for all Victorians.

The plan has 10 public health and wellbeing priorities including ‘tackling climate change and its impact on health’, which aims to:¹⁰

- increase action to reduce greenhouse gas emissions across systems at the scale and pace required to reduce the impacts on health and wellbeing and realise associated health co-benefits.
- create resilient and safe communities that can adapt to the public health impacts of climate change.
- accelerate action to support communities to adapt to climate change and its impacts on health.
- share successes and promote good practice examples of climate action.

This key priority provides an important lever for strengthened action on climate change and health in MPHWP.

Sustainable development goals

While local councils serve the needs of their communities, they also operate in a global context that acknowledges that local action has broader implications, including for the planet as a whole.⁶⁰ These acknowledgements are increasingly taking the form of international agreements such as the 2030 Agenda for Sustainable Development, which includes at its heart the United Nations Sustainable Development Goals (SDGs).^{60,61} The SDGs recognise that human health and prosperity must go hand in hand with planetary health.^{61,62} While not legally binding, the SDGs can act as a powerful lever for action, and sustainable development, with its emphasis on integrating social, economic and environmental goals, can provide a comprehensive approach to the pursuit of planetary and human health.³⁷ All of the 17 SDGs are interlinked, but some are more relevant to tackling climate change and its impacts on health through MPHWP.⁶¹ These include:

- **Goal 3: Good health and wellbeing** – Ensure healthy lives and promote wellbeing for all at all ages
- **Goal 6: Clean water and sanitation** – Ensure availability and sustainable management of water and sanitation for all
- **Goal 7: Affordable and clean energy** – Ensure access to affordable, reliable, sustainable and modern energy for all
- **Goal 11: Sustainable cities and communities** – Make cities and human settlements inclusive, safe, resilient and sustainable
- **Goal 12: Responsible consumption and production** – Ensure sustainable consumption and production patterns
- **Goal 13: Climate action** – Take urgent action to combat climate change and its impacts.

Key legislation

Figure 2 below provides a summary of some of the key legislation supporting climate change decisions by local government in Victoria.

Figure 2: Summary of key legislation^{8,9,63,64}

Public Health and Wellbeing Act 2008

The *Public Health and Wellbeing Act* is central to Victoria's public health legislation.

In achieving the objectives of the Act, regard should be given to the guiding principles set out in sections 5 to 11 of the Act. These include evidence-based decision making, collaboration, the precautionary principle and primacy of prevention. In particular, the principle of collaboration asserts that public health and wellbeing can be enhanced through collaboration between all levels of government, industry, business, communities and individuals.

Section 26 of the Act requires councils to prepare a MPHWP within 12 months after each general election of the council and for councils to have regard to the state public health and wellbeing plan when preparing an MPHWP. A council may be granted an exemption from complying with s. 26 if it includes public health and wellbeing matters in its council plan or a strategic plan, as outlined in section 27 of the Act.

Local Government Act 2020

Section 8 of the Act states that a Council is considered to provide 'good governance' where it performs its role in accordance with overarching governance principles and supporting principles. These principles are defined in section 9 and state that a council must in the performance of its role give effect to the overarching governance principles. Several of these principles create obligations for councils in the context of climate change, including:

- priority is to be given to achieving the best outcomes for the municipal community, including future generations.
- the economic, social and environmental sustainability of the municipal district, including mitigation and planning for climate change risks, is to be promoted.
- regional, state and national plans and policies are to be taken into account during strategic planning.
- decisions, actions and information are to be transparent.

Climate Change Act 2017

Section 17 of the *Climate Change Act* requires certain decision-makers to have regard to climate change. The specified decision or action that creates an explicit obligation for local government is the preparation of a MPHWP by a council under the *Public Health and Wellbeing Act*. The duty to have regard to climate change explicitly requires consideration of the potential:

- biophysical impacts
- long- and short-term economic, environmental, health and other social impacts
- beneficial and detrimental impacts
- direct and indirect impacts
- cumulative impacts.

In relation to the decisions or actions taken, the Act requires consideration of potential:

- short- and long-term greenhouse gas emissions
- direct and indirect greenhouse gas emissions
- increases and decreases in greenhouse gas emissions
- cumulative impacts of greenhouse gas emissions.

Additional legislation

A range of other legislation is also applicable to local government climate change responsibilities in Victoria including the *Planning and Environment Act 1987*, the *Environment Protection Act 2017* and the *Wrongs Act 1958*, as well as common law principles and case law. Refer to the Local government climate change adaptation roles and responsibilities under Victorian legislation: guidance for local government decision-makers and [EPA Victoria](https://www.epa.vic.gov.au/about-epa/laws/climate-change-legislation) <<https://www.epa.vic.gov.au/about-epa/laws/climate-change-legislation>> for further information.

Key concepts, principles and enablers

'Climate-resilient development means systems thinking.'

Intergovernmental Panel on Climate Change

This section provides an overview of some key concepts, principles and enablers to support local government planning and action to tackle climate change and its impacts on health.

Key concepts

Figure 3 below provides an overview of the key concepts of adaptation, mitigation, climate resilient development, and the health co-benefits of climate action. Refer also to the 'Municipal scanning' section of this document, which discusses the concept of risk associated with climate variability and change, including consideration of hazards, exposure and vulnerability (including sensitivity and adaptive capacity), and the glossary, which includes other key terms and concepts.

Figure 3: Key concepts: adaptation, mitigation, climate resilient development and health co-benefits^{20,65-68}



Adaptation

Changes made to natural or human systems to prepare for actual or expected changes in the climate in order to minimise harm, act on opportunities or cope with the consequences.

Adaptation plays a key role in reducing vulnerability, exposure and risks associated with climate-sensitive hazards. Sustainable development facilitates adaptation by expanding capacity to reduce vulnerability and risks.



Mitigation

A human intervention to reduce emissions or enhance the sinks of greenhouse gases.

Limiting atmospheric greenhouse gas concentrations reduces climate-sensitive hazards. The ultimate goal of mitigation is to preserve a biosphere which can sustain human civilisation and the ecosystem services that surround and support it.



Climate resilient development

The process of implementing mitigation and adaptation together in support of sustainable development for all.

Implementing mitigation and adaptation together can maximise impact, help to avoid maladaptation, and deliver multiple benefits for human health and wellbeing, ecosystem and planetary health.



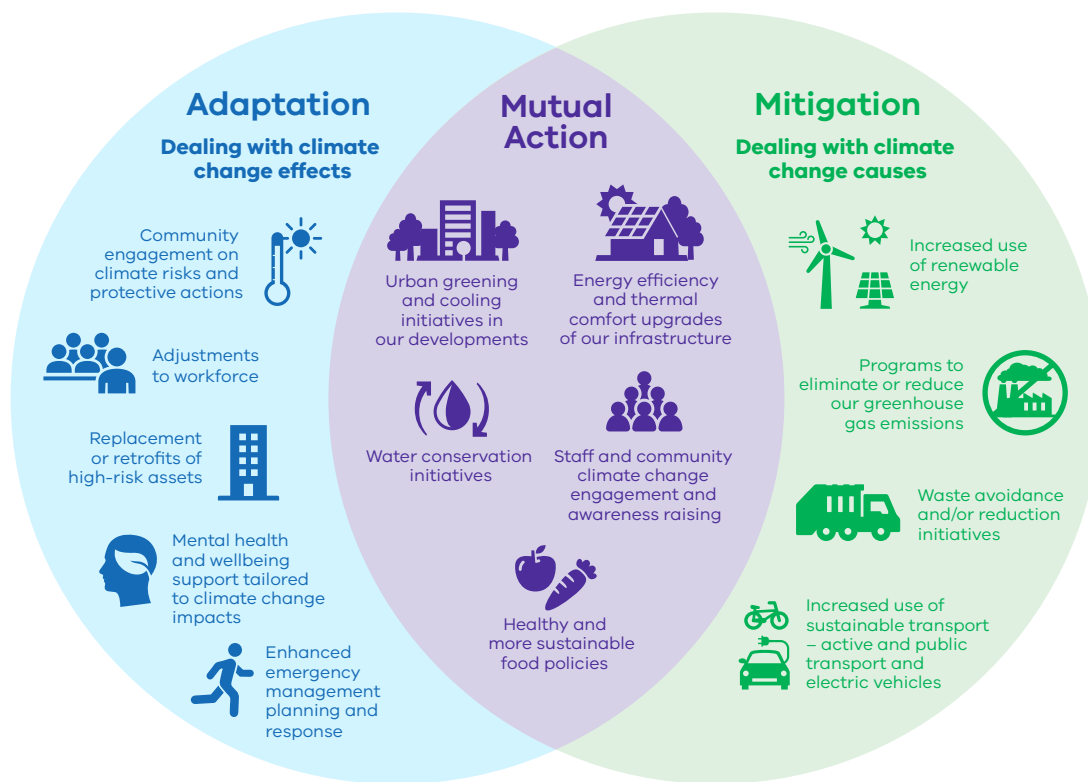
Health co-benefits

Implementation of climate policies that lead to improvements in health.

Both mitigation and adaptation-focused activities can lead to health co-benefits. For example, initiatives to improve active transport can help to reduce the number of trips by car and reduce emissions and can also produce health co-benefits through improvements to air quality and increasing opportunities for physical activity.

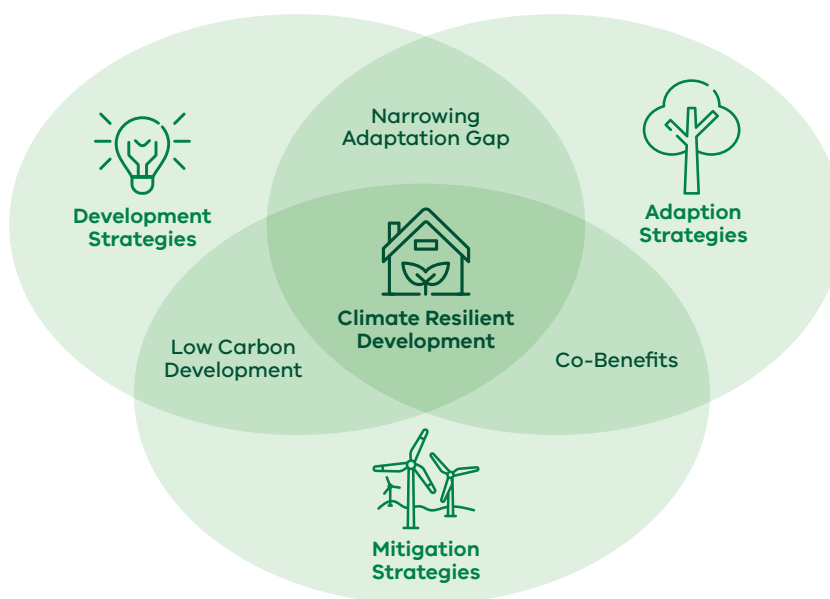
Figure 4 below provides some examples of interconnections between adaptation and emissions reduction activities, while **Figure 5** demonstrates the interconnections between adaptation, mitigation and climate resilient development.

Figure 4: Interconnectedness of climate adaptation and mitigation⁶⁹



Adapted from Department of Health, 2022, Health and human services climate change adaptation action plan 2022-2026. State Government of Victoria: Melbourne.⁶⁹

Figure 5: Climate resilient development⁷⁰



Adapted from Figure 8.13 in Birkmann, et al, 2022: Poverty, Livelihoods and Sustainable Development. In: Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.⁷⁰

There are a range of tools and resources which can be used to understand climate change and health co-benefits, and which provide compelling evidence for increased investment in initiatives that reduce emissions, support adaptation and contribute to improved health outcomes. For example, research has shown that:

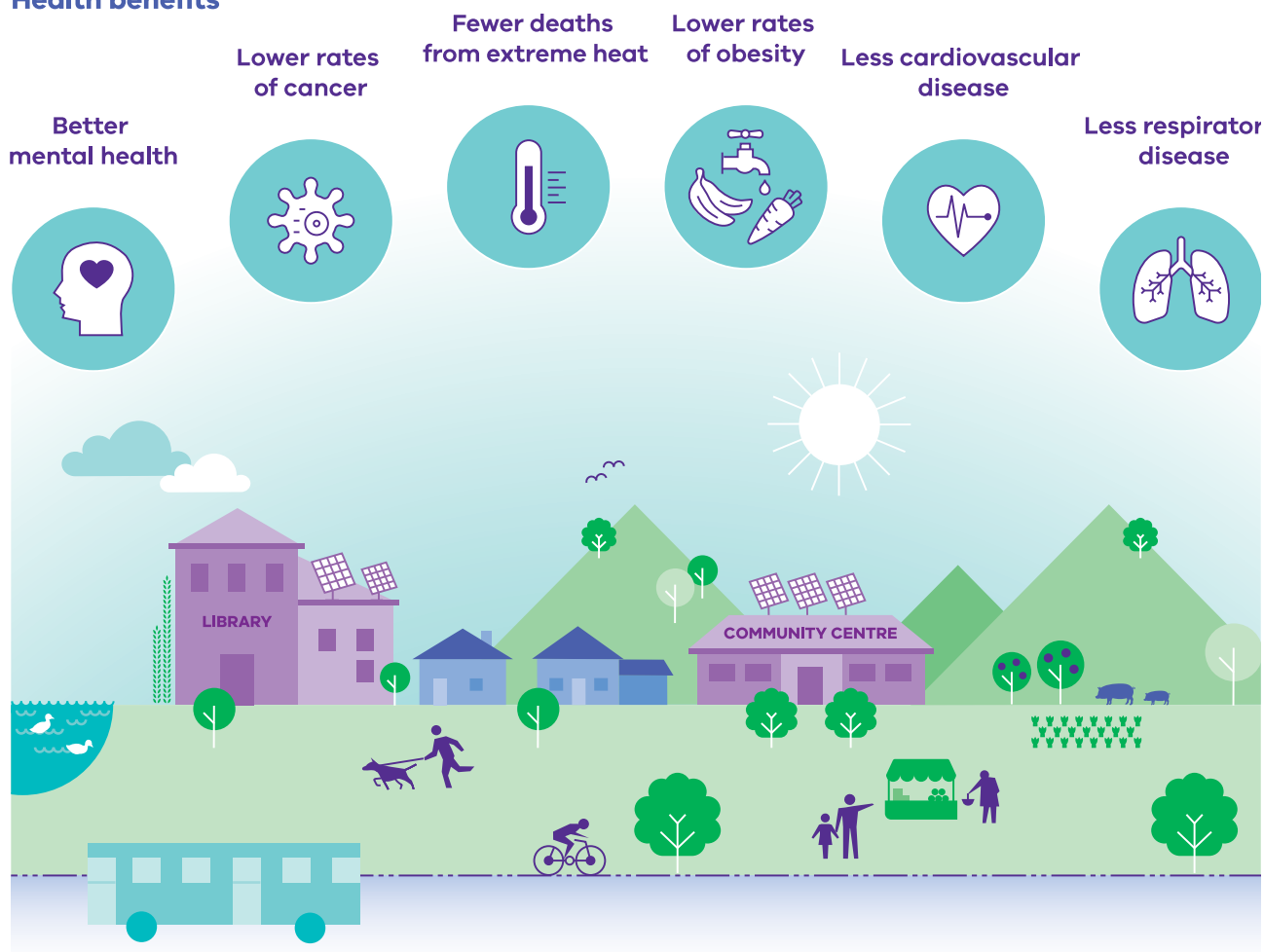
- replacing 10% of car trips with cycling in New Zealand could result in \$308 million USD in savings in health costs⁷¹
- increasing vegetative cover by 10% in Washington DC could reduce deaths during heat waves by an average of 7% compared to previous events, saving approximately 20 lives every 10 years.^{72,73}



Figure 6 below demonstrates some examples of climate change mitigation and adaptation interventions and health co-benefits.

Figure 6: Climate change and health co-benefits^c

Health benefits



Interventions

Use renewable energy and increase energy efficiency

Expand and promote active and public transport

Increase blue-green infrastructure

Implement healthy and sustainable food system initiatives

Co-benefits

Fewer fossil fuels
 Reduced damp and humidity
 Thermal comfort
 Less noise

Improved air quality
 Reduced heat in urban areas
 Lower CO₂ emissions
 Reduced UV radiation exposure

Less deforestation
 Reduced livestock production
 Fewer methane emissions

Adapted from BMJ 2016, Health and climate: co-benefits⁷⁴

^c This figure provides a few examples of interventions that provide climate change and health co-benefits, however there are many more. For example, promoting anti-idling (including around sensitive settings like schools and early childhood centres) can reduce emissions, improve local air quality and deliver health co-benefits. Further examples are also included in other sections of this guidance, including the ‘built and natural environment’ section.

Box 7

Stealth interventions as a pathway to improved health

Addressing behaviours such as poor diet and insufficient physical activity that lead to overweight and obesity and in turn lead to risk factors for chronic diseases including cardiovascular disease, diabetes and stroke, has proved difficult. Many existing behavioural health interventions have short-term positive results but have not been successful in achieving improved long-term outcomes.⁷⁵ In a search for sustainable changes in health behaviour, researchers are exploring the potential of stealth interventions.⁷⁵ Stealth interventions seek to harness intrinsic motivators such as commitment to social movements – which often embrace values to make the world a better place – to realise health benefits without explicit reference to changing health behaviour.⁷⁵

A number of social and environmental movements have values and behavioural goals that connect and overlap with a healthy diet and physical activity. Research suggests that social movements with environmental sustainability and climate change goals can encourage changes in individual behaviour such as: eating more fruit and vegetables, less packaged and more local foods, less use of private vehicles and more walking and cycling, and spending more time in natural environments.⁷⁵

A desire to improve community amenity and neighbourhood quality of life can also serve as a motivator for healthy behaviours such as participating in gardening, home and neighbourhood improvement, outdoor recreation and neighbourhood social activities.⁷⁶ Such movements could be effective in realising environmental and health co-benefits, as well as offering further rewards such as social cohesion and a sense of community.

Key principles and enablers

'Climate resilient development is enabled when governments, civil society and the private sector make inclusive development choices that prioritise risk reduction, equity and justice, and when decision-making processes, finance and actions are integrated across governance levels, sectors and timeframes.'^{20p29}

'There is no climate-resilient development without healthy ecosystems and increased social justice.'^{77p23}

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In seeking to tackle climate change and its impacts on health in a wholistic way, local government could consider the principles and enablers in **Figure 7**.

Figure 7: Key principles and enablers^{20,22,78-81}



Box 8

Greater Bendigo Climate Collaboration

The Greater Bendigo Climate Collaboration (the Collaboration) was codesigned by 20 Bendigo organisations in 2019. Each organisation recognised that individual action was not going to create a zero emissions city and that the city would be much better off on all fronts with collective action.

The funding, governance and operations were organised over 2021 and the Collaboration launched in 2022 with two years of research, expert input and community engagement with more than 1,000 people to develop a roadmap to zero emissions for Greater Bendigo and a regional zero emissions roadmap with the Central Victorian Greenhouse Alliance.

What the Roadmap engagement found is threefold:

- **Collaboration is crucial.** A decade of serious collaboration, advocacy and investment is needed that builds on the great work happening already at all levels of government, in business and in the community. While progress is being made in every sector, it is not progressing fast enough to reach zero emissions by 2030.
- **There must be a focus on an equitable transition.** This was a unanimous view across Greater Bendigo. Transport, energy and food choices need to be available to everyone and these choices can lower the cost of living.
- **A zero emissions city is better in every way; it is a social and economic investment in a better future.** If we invest now, we will be healthier, happier, more socially connected, more economically prosperous and more able to adapt to climate changes that are already locked in.

The Collaboration is setting up projects to:

- develop a community owned solar farm
- deliver energy retrofits to 10,000 low wealth homes
- develop an implementation plan for zero emissions transport
- deliver a home energy education program for residents
- continue a business program that is supporting small businesses to reduce power bills and create their own roadmap to zero emissions.

For more information visit the [City of Greater Bendigo's Greater Bendigo Climate Collaboration website](https://www.bendigo.vic.gov.au/community-services/environment/greater-bendigo-climate-collaboration) <<https://www.bendigo.vic.gov.au/community-services/environment/greater-bendigo-climate-collaboration>>.

Incorporating climate change into the planning cycle

The *Guide to municipal public health and wellbeing planning* describes six stages of planning.⁶ **Table 2** provides a summary of how climate change can be incorporated into these stages of planning. How climate change could be considered and addressed in these planning cycle stages is further explored in the sections that follow.

Table 2: Incorporating climate change into the MPHWP cycle

Planning cycle stage	How climate change features
<p>Pre-planning Creates the broad processes required to plan effectively and builds the leadership and partner support necessary to develop and implement the MPHWP.</p>	Place the need to tackle climate change and its impacts on health and wellbeing on the agenda. Make the responsibility of local government clear by identifying the legislative requirements under the <i>Climate Change Act</i> and the ‘tackling climate change and its impact on health’ focus area in the <i>Victorian public health and wellbeing plan 2023–2027</i> in briefings to council or senior management.
<p>Municipal scanning Provides a preliminary understanding of the health and wellbeing status of the community and the determinants that contribute to this status.</p>	<p>Identify evidence of the current or potential impacts of climate change on health and wellbeing and present this in the profile of health and wellbeing challenges facing the municipality.</p> <p>Include consideration of exposure, sensitivity and adaptive capacity indicators when considering how to frame the particular climate change challenges in the municipality and to inform potential priority areas of focus.</p>
<p>Engagement Involves internal and external stakeholders and the community in further understanding the health and wellbeing needs and strengths of the community. This stage applies these additional perspectives to the information from the municipal scan to create a fuller picture of the challenges confronting the community.</p>	<p>Present climate change or specific climate issues as a health and wellbeing priority for the municipality.</p> <p>Incorporate relevant community, stakeholder and council perceptions, experiences and activities into the health and wellbeing profile.</p>
<p>Planning decisions Involves addressing those areas where the municipal scan and engagement indicate a need for change. The change sought will focus on long-term benefits and is expressed as a goal. Once the goals are identified strategies are selected to pursue the change based on the available evidence of what works.</p>	<p>Present climate change or specific climate issues as a health and wellbeing priority for the municipality to council decision-makers.</p> <p>Identify strategies and actions that could be taken to tackle climate change and its impacts on health and wellbeing.</p> <p>Consider the impact of climate change on other priorities identified in the MPHWP. Identify strategies and actions that should be taken, including aligning with and building on other activities occurring across the organisation and in partner organisations that have co-benefits for these areas to ensure integrated climate change planning</p>

Planning cycle stage	How climate change features
Implementation Involves putting the MPHWP into practice.	As per other MPHWP priorities and strategies (refer to the department's guidance on municipal public health and wellbeing planning). Implement actions and programs to tackle climate change and its impacts on health and consider a climate change lens when implementing actions related to other MPHWP priorities.
Evaluation Involves demonstrating accountability for investing resources in health and wellbeing action and for learning more about what does and does not work.	As per other MPHWP priorities and strategies (refer to the department's guidance on municipal public health and wellbeing planning). Incorporate indicators and measures to track progress on actions to tackle climate change and its impacts on health.

Pre-planning

Pre-planning includes placing the need to tackle climate change and its impacts on health and wellbeing on the agenda at all levels within council. This can be initiated by clearly identifying responsibilities under all relevant legislation and including this in briefings to councillors and senior management. Pre-planning is an important stage to connect with partners and other stakeholders to promote early buy-in and ensure meaningful participation through planning and implementation. The 'Planning decisions and implementation' section of this guidance provides examples of business areas within councils that may play a role in delivering strategies to tackle climate change and its impacts on health, and that could be engaged in the pre-planning phase to realise opportunities to deliver strengthened action.

The consideration of climate change and its impacts on health and wellbeing is equally important in standalone MPHWP's and where health and wellbeing matters are integrated into a council plan or other strategic plan. The department has prepared advice to support councils on seeking an exemption to include health and wellbeing matters in the council plan for the 2025–2029 planning cycle.⁷

In addition, some councils also have separate dedicated climate change action, adaptation action, emission reduction, emergency and business continuity plans. All relevant plans should be cross-referenced to help align and integrate actions across business areas within the organisation.

Municipal scanning

'Climate change is a multiplier of existing health vulnerabilities...the most effective measures to reduce vulnerability in the near term are programmes that implement and improve basic public health.'^{20p1048}

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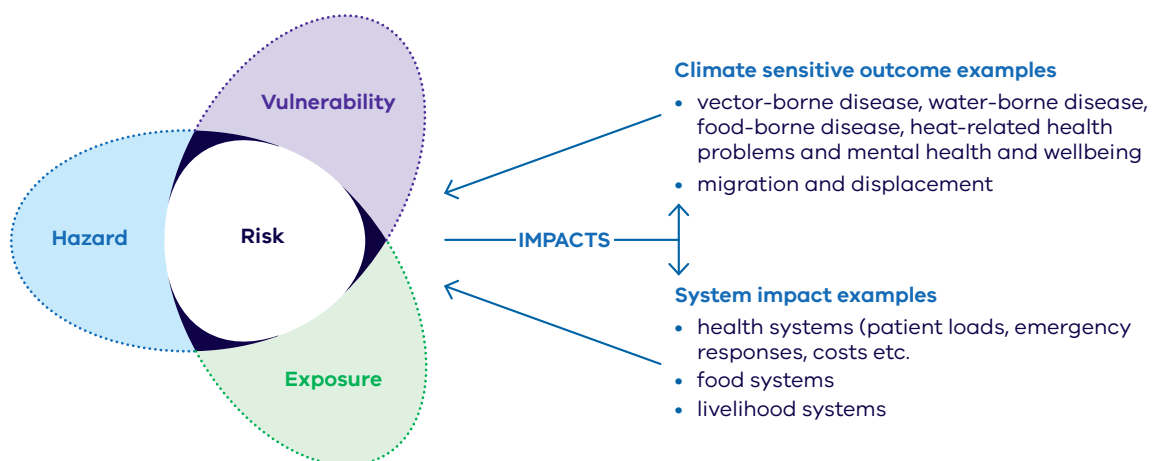
When conducting municipal scanning, it is important to consider how climate change has or will alter hazards in the municipality, whether exposures are likely to change with increasing climate change, how risks to the community may be affected, and whether there are particular groups more at risk.

The magnitude and pattern of health risks associated with climate variability and change are a function of the:

- hazards resulting from a changing climate
- the exposure of populations to those hazards
- the vulnerability of exposed populations.

This relationship is shown in **Figure 8**.

Figure 8: Interactions between hazard, exposure and vulnerability



Adapted from IPCC 2022, Climate change 2022: impacts, adaptation, and vulnerability²⁰

Climate projections show that it is highly likely that multiple climate hazards will occur at the same time, increasing impacts and risks, compounding overall risks and generating new sources of vulnerability.²⁰

Exposure and vulnerability to hazards

In considering potential health impacts, it is important to understand how community members may be exposed to hazards and what influences their vulnerability. **Exposure** can be defined as the degree to which a person or place comes into contact with a climate hazard.⁸² The **vulnerability** of exposed populations is informed by two main factors:

- **sensitivity** – the degree to which populations are affected by climate variability or change²⁰
- **adaptive capacity** – the capability of populations to adjust to change, to minimise harm, to act on opportunities or to cope with the consequences.⁸³ Adaptive capacity refers to both actual and potential features, and it captures both current coping ability and the strategies that expand future coping ability.

Considering adaptive capacity in the context of municipal public health and wellbeing planning will help to identify community strengths and opportunities, as well as to prioritise areas of focus.

Vulnerability assessments can be useful in this context to identify where a community's susceptibilities to injury or disease exist due

to their distance and sensitivity to climate-related environmental exposures or hazards. Understanding more about communities with multiple or complex vulnerabilities can help prioritise efforts and interventions developed to protect communities from the impacts of climate change.⁸⁴

There are many population groups or individuals who may be more sensitive to climate-related hazards, and climate change also has consequences for growing health inequalities.^{85,86} Health impacts tend to be unevenly distributed across populations and susceptibility is also exacerbated by historical and ongoing patterns of inequity. Some climate change-related health impacts also differ between genders. For example, mortality from heatwaves is higher in women,⁸⁷ and male suicide rates have been found to increase faster with increasing heat.³² Considering these differences and inequalities at the local level, and building equity into health actions can enable the reduction of vulnerability. Reducing vulnerability is also a prerequisite for climate justice.²⁰

Table 3 provides some examples of exposure, sensitivity and adaptive capacity indicators that could be considered as part of the municipal scan when considering how to frame the particular climate change challenges in the municipality, and to inform potential priority areas of focus.

Table 3: Example exposure, sensitivity and adaptive capacity indicators^d

Example exposure indicators	Example sensitivity indicators	Example adaptive capacity indicators
<p>Historic heat health alerts^{88,89}</p> <p>Projected heatwaves⁹⁰</p> <p>Projected number of extreme heat days⁹⁰</p> <p>Households in designated bushfire-prone areas</p> <p>Percentage of population living in areas experiencing drought</p> <p>Percentage of population living in coastal areas that may be exposed to sea level rise</p> <p>Percentage of population living in flood-prone areas</p>	<p>Percentage of population aged 14 years or younger⁹¹</p> <p>Percentage of population aged 65 years or older⁹¹</p> <p>Percentage of older adults who live alone⁹²</p> <p>Percentage of population with one or more chronic conditions (for example, asthma, chronic obstructive pulmonary disease, cardiovascular disease)^{92,93}</p> <p>Proportion of people living in households below the poverty line⁹⁴</p> <p>Proportion of adults who ran out of food and could not afford to buy more⁹²</p> <p>Proportion of population who require someone to help them or be with them for self-care, body movement and/or communication activities⁹³</p> <p>Proportion of adults unable to raise \$2,000 within two days in an emergency⁹²</p> <p>Percentage of population experiencing homelessness or insecure housing or accessing support from specialist homelessness services⁹⁵</p> <p>Rate of incidents of family violence recorded by police⁹⁶</p> <p>Percentage of new migrants (for example, who may experience language barriers or have limited knowledge of local warning systems, health and social services)⁹³</p> <p>Percentage of Aboriginal and/or Torres Strait Islander people⁹³</p> <p>Proportion of residents receiving home and community care services</p> <p>Proportion of population without a mobile phone that they can receive calls on⁹²</p> <p>Number of residents who are active National Disability Insurance Scheme participants⁹⁷</p>	<p>Percentage of areas covered by impervious surfaces</p> <p>Percentage of dwellings within 400 m of public transport with regular 30 minute weekday service (7am – 7pm)⁹⁸</p> <p>Number of cool refuge centres (for example, leisure centres, libraries and community centres) within municipality</p> <p>Proportion of population without internet connection⁹²</p> <p>Proportion of population who volunteer or support community programs⁹³</p> <p>Proportion of adults who 'usually or always' get the emotional and social support they need⁹²</p> <p>Proportion of adults who report high or very high life satisfaction⁹²</p> <p>Number of aged care facilities⁹⁹</p> <p>Number of general practitioners per x number of people</p> <p>Number of community service organisations per x number of people</p>
<p>Integrated indices</p>	<p>Liveability index score^{98 e}</p> <p>Walkability index score^{98 f}</p> <p>Heat-health risk index or heat vulnerability index rating^{100-102 g}</p>	

^d In-text citations in the above table correlate to potential data sources for each indicator where available. The direct link to the data source webpages can be found in the reference in the bibliography linked to the in-text citation.

^e The Liveability Index is a composite score based on measures related to aspects of liveability including Social Infrastructure, Walkability, Public Transport, Public Open Space, Housing Affordability, and Local Employment. For more information visit [Australian Urban Observatory: Livability](https://auo.org.au/portal/metadata/urban-liveability-index/) <https://auo.org.au/portal/metadata/urban-liveability-index/>.

^f The Australian Urban Observatory's Walkability Score is a sum of standardised scores of local neighbourhood attributes including street connectivity, dwelling density and the index of access to services of daily living. For more information visit [Australian Urban Observatory: Walkability](https://auo.org.au/portal/metadata/walkability/) <https://auo.org.au/portal/metadata/walkability/>.

^g These indicators combine exposure, sensitivity and adaptive capacity measures (including vegetation cover) and are available from the Australian Climate Service and the Department of Transport and Planning, respectively.

While the exposure indicators included in **Table 3** focus on direct exposures associated with extreme events, councils could also consider indirect exposures such as the number of blue-green algal blooms in council-managed recreational water bodies, exposure to fine particles in bushfire smoke etc.

Children are particularly sensitive to the impacts of climate change. **Box 9** below provides some examples of why this is the case.¹⁰³

Box 9

UNICEF: A threat to progress - Confronting the effects of climate change on child health and wellbeing

The interplay of physiological, psychosocial and behavioural factors and dependence on caregivers renders children uniquely susceptible to the impacts of climate change and sets them apart from the health challenges faced by adults. For example:

- physiologically, in-utero exposure to climate related hazards can impact perinatal and childhood development
- developing organs and immune systems mean children have a reduced capacity to handle climate-related stressors
- children's limited exposure and incomplete vaccination schedules lead to reduced immunity to certain diseases
- children exposed to climate and environmental hazards during key developmental stages have a greater risk of developing chronic health issues that may last a lifetime.

Climate change hazards can also compromise the ability of caregivers to provide consistent and effective care, which can threaten the physical safety, emotional and psychological development of children. Disruptions to food and water sources, loss of homes and displacement due to climate change-related hazards can also have wide-ranging implications for a child's health and wellbeing.

In 2023, the United Nations Committee on the Rights of the Child affirmed children's right to a clean, healthy and sustainable environment. As efforts towards climate action are strengthened, children's needs and rights to survive and thrive also need to be placed at the forefront.

Case Study

City of Banyule – Climate Risk Vulnerability Assessment¹⁰⁴

Banyule City Council has created a heat vulnerability Geographic Information System (GIS) dataset, that displays geographic areas that are more or less susceptible to heat. Heat vulnerability in this dataset can also be viewed alongside additional data layers such as community vulnerability, infrastructure, open space and environmental assets to understand the potential impacts of heat. This internal dataset is used by council staff to inform the delivery of services and recent applications of the dataset include:

- informing City of Banyule’s Urban Forest Strategy 2023–2033, where strong canopy cover targets have been set for the most heat-stressed areas to buffer the impacts of heat on health and wellbeing outcomes, whilst also building community resilience
- informing biodiversity conservation and integrated water management
- currently informing the development of the Council’s new Climate Change Adaptation Framework which will seek to identify and manage climate risks such as urban heat.

By monitoring this dataset across time, City of Banyule aims to identify effective strategies and actions to reduce heat vulnerability within the council area through data-driven decision making. This project was enabled through collaboration between several areas within the council such as Environment, Community Wellbeing, Parks and Natural Environment, Open Space Planning, Strategic Planning and Delivery and Assets teams.

For more information visit Banyule City Council’s [Climate Adaptation Framework webpage](https://shaping.banyule.vic.gov.au/ClimateResponse/Adaptation) <<https://shaping.banyule.vic.gov.au/ClimateResponse/Adaptation>>.

Engagement

Community, stakeholder and cross-organisational engagement may reveal perceptions, experiences and activities that could further inform the way in which climate change is presented within the health and wellbeing profile. Engagement assists in identifying what is important to the community, what is already happening and where there is a need or opportunities for further action.

In engaging across the organisation and with broader stakeholders and the community, it may be useful to include examples of actions that are being (or could be) taken to adapt to the health and wellbeing impacts of climate change in the municipality and of actions that provide co-benefits both in terms of mitigating climate change and improving health outcomes.

Questions that could be posed as part of this engagement include:

- What changes in climate or in the frequency and intensity of extreme weather events have been observed in the municipality or region?
- Have impacts of these changes on health and wellbeing been noted or observed in the municipality? Consider direct and indirect impacts and impacts on the built, economic, social and natural environments.
- What actions are already being taken to adapt to and mitigate these impacts? What additional or different action is required?
- What are the community's strengths (such as skills and knowledge, including local Aboriginal knowledge) that can facilitate accelerated climate change action, and how can they best be deployed?

- What is the current level of understanding of climate change and health risks within the municipality? What are the main areas of concern?
- What is the perception and experience of the current impacts of climate change on health and wellbeing in the municipality?
- What is the perception of the importance of adapting to the current or predicted health and wellbeing impacts of climate change and mitigating emissions in the municipality?
- Where do opportunities exist to deliver mitigation and adaptation together in support of climate resilient development?

Victorian research on community perceptions of climate change and health may be useful in informing community and stakeholder engagement activities – for example, Sustainability Victoria's research on the awareness and knowledge of Victorian health professionals and the community on the health impacts of climate change¹⁰⁵ and the *State of Sustainability Report 2023*, which is a new multi-year study measuring 'sustainable living' among Victorians.¹⁰⁶ The report reflects the attitudes, behaviours and actions of a sample of 2,510 Victorians and what they are doing to live a more sustainable life. This study will track Victoria's progress over the next few years.¹⁰⁶ Some of the key findings of this research are in **Figure 9**.

Figure 9: Victorian community perceptions of climate change and health



67% of Victorians are concerned about climate change

83% of Victorians have experienced at least one extreme weather event in the past 5 years



68% want more information on how to protect health as climate change impacts increase

72% want to know more on actions they can take that will benefit health, and reduce climate change at the same time

67% think climate change requires urgent action now

69% think it is cheaper to act on climate now than pay the price later



A wide range of actions are expected of local government such as:

17% transitioning more urgently towards renewables

14% offering incentives/rebates to adopt energy efficient systems

11% promoting and providing more advice on making sustainable choices



Adapted from Sustainability Victoria, State of Sustainability Report 2023¹⁰⁶

Strategic planning and community engagement principles under the *Local Government Act 2020* may also be useful in informing community and stakeholder engagement as part of the development of MPHWP. More information is provided in **Box 10**.

Box 10

Community engagement and strategic planning principles under the *Local Government Act 2020*

The *Local Government Act* is underpinned by five principles including community engagement and strategic planning.

The principle of community engagement seeks to better engage the community to achieve long-term and sustainable outcomes, processes, relationships, discourse, decision making or implementation. To be successful, it must encompass strategies and processes that are sensitive to the community context in which it occurs.

The Act establishes community engagement principles and requires all councils to adopt a community engagement policy that must be used in developing legislated plans including the community vision and the council plan. To support this, Local Government Victoria has provided community engagement resources, including examples of community engagement policies and frameworks, which are available on the [Engage Victoria website](https://engage.vic.gov.au/) <<https://engage.vic.gov.au/>>.

The Act also establishes strategic planning principles that apply to preparing council plans and other strategic plans. The strategic planning principle works with the community engagement principle to ensure communities are involved in strategic planning and decision making.

Councils are encouraged to apply these principles when developing their MPHWP.



Planning decisions and implementation

The planning decisions and implementation phase involves addressing those areas where the municipal scan and engagement indicate a need for change. Councils have long played an important role in protecting and improving health and wellbeing and implementing policies and initiatives to influence many determinants of health.

Climate change is not just an environmental issue, and a climate change lens should be applied to all areas of council plans and municipal public health and wellbeing plans.¹⁰⁷ Coordinating this planning across the organisation, instead of in silos, will ensure that climate and health action is seen as the role and responsibility of every area of council. Ongoing strategic and implementation governance groups, made up of executive sponsors, key policy makers and staff champions from each council service area, will facilitate collaborative planning and implementation.¹⁰⁷

Council and health priorities, policies and initiatives will be affected by the changing climate, and action across them provides opportunities to reduce emissions, support adaptation to climate change impacts and improve health at the same time. Consideration of what opportunities there are to take action on climate change and improve outcomes in other areas should be taken.

Sustainable and climate resilient development, such as greenhouse gas (GHG) emission reductions through clean energy and transport; climate-resilient urban planning; sustainable food systems that lead to healthier diets; access to health and social support systems; wide-scale adaptive capacity building; and achievement of

the SDGs can also have substantial co-benefits for, and reduce the climate change impact on, health and wellbeing.²⁰ 'The transformational changes will be more effective if they are responsive to regional, local and Indigenous knowledge and consider the many dimensions of vulnerability, including those that are gender- and age-specific.'^{20p1044}

This section provides examples of strategies across a number of theme areas that could be taken by councils to tackle climate change and its impacts on health and wellbeing, as well as a number of case studies of strategies that Victorian councils have implemented. Many strategies and case studies have benefits across multiple areas.

The theme areas covered in this 'Planning decisions and implementation' section are:

- council corporate and community activities
- communication, engagement and capacity building
- emergency management and disaster risk reduction
- environmental health services, surveillance and control
- built and natural environments
- healthy, sustainable and equitable food systems
- improving mental health and wellbeing
- preventing all forms of violence.

Council corporate and community activities

Councils can address climate change by reducing emissions from their own corporate activities and by modelling strategies that the community as a whole can adopt to mitigate climate change and tackle its impacts on health.

Victorian councils have demonstrated action in tackling climate change for many years and are ideally placed to contribute to locally relevant, integrated and long-lasting climate action. Many have made significant progress

in reducing greenhouse gas emissions within their own operations and implementing actions to support adaptation to climate change impacts, as well as implementing initiatives to support action by businesses and the broader community in their municipalities. 'Transitioning towards equitable, low-carbon societies has multiple benefits for health and wellbeing.'^{20p1047}

Examples of business areas and strategies that could be implemented in the theme area of council corporate and community activities are included in **Table 4**.

Table 4: Examples of council corporate and community activities strategies

Example business areas	Example strategies
<ul style="list-style-type: none"> • Mayors and councillors • Sustainability • Building and asset management • Traffic and civil engineering • Health and wellbeing • Corporate and human resource services • Environment • All other council business areas 	<ul style="list-style-type: none"> • Implement a whole-of-council governance approach and enabling policy frameworks to integrate climate considerations and action across all relevant organisational policies, plans and strategies • Include climate change in the organisation's risk assessment and management activities including embedding climate-related risks in organisational risk registers • Develop and implement strategies to reduce council greenhouse gas emissions to net-zero • Build collaborative partnerships and facilitate action to drive emissions to net zero across the community and support adaptation to climate change • Embed climate adaptation approaches across council works, strategies and policies including in the design, building and management of council infrastructure and assets • Establish and implement procurement policies that prioritise the purchase of low-emission, sustainable services and products to shift the market towards greater sustainability • Support local community groups and businesses with practical and financial support focused on emissions reduction, adaptation and climate resilient development. Ensure that those more vulnerable to impacts are prioritised • Complete the Achievement Program's Climate and Health pathway and support relevant organisations in your community to complete it^h • Encourage and support council employees to participate in climate change and health planning and implementation, and in professional development opportunities • Encourage employees to use public and active transport during the commute to and from work including investment in end-of-trip facilities and for other travel within the workday

^h Visit the [Achievement Program website](https://www.achievementprogram.health.vic.gov.au/) <<https://www.achievementprogram.health.vic.gov.au/>>.

Case Study

City of Ballarat – Carbon Neutrality and 100% Renewables Action Plan and Ballarat Net Zero Emissions Plan¹⁰⁸

Action is being taken to reduce greenhouse gas emissions from the City of Ballarat's facilities and operations, and by the Ballarat community.

In its Carbon neutrality and 100% renewables action plan 2019–2025, the City of Ballarat articulates its vision to achieve zero net carbon emissions from its own corporate activities. The plan provides a pathway for the council to address climate change by reducing its own emissions and that the community can adopt to mitigate climate change. The plan includes five key areas for achieving its targets including: integrating a culture of sustainability, maximising energy resource efficiency, 100% renewable energy City of Ballarat operations, reduced emissions from waste, and community carbon emissions reduction.

While the focus of the action plan is on reducing corporate greenhouse gas emissions, it also provides community support to achieve carbon emission reductions, including the development of Ballarat Net Zero Emissions Plan in 2022. The Ballarat Net Zero Emissions Plan was sponsored by the City of Ballarat, in consultation with the Regional Sustainability Alliance Ballarat group and included extensive community engagement and involvement. The recommendations within the Net Zero Emissions Plan rely heavily on cross-sectoral collaboration and confirm the shared vision of a net zero future, as well as alignment between council and community priorities.

Implementation of both plans will deliver many benefits to Ballarat residents, including cost savings, environmental benefits, community education, and health co-benefits associated with increased opportunities for sport and active living, improved air quality and improved thermal comfort of housing.

Achieving the ambitious target of net zero emissions by 2030 will require substantial action by all levels of government, as well as from the Ballarat community.

Both Plans will be reviewed in 2025.

For more information visit the [City of Ballarat Climate Action webpage](https://www.ballarat.vic.gov.au/city/strategic-planning/sustainability/climate-action) <<https://www.ballarat.vic.gov.au/city/strategic-planning/sustainability/climate-action>>.



Communication, engagement and capacity building

Councils, in collaboration with the community, can raise awareness about the impacts of climate change on health and support action within their municipalities to mitigate and adapt to impacts.

Because of their strong connections to the community and local knowledge, councils play an important role in working with communities to prepare for the current and projected health impacts of climate change and to support action to reduce emissions across their municipalities. Working together, councils and their communities can raise awareness of the actions that can be taken to build resilience and stay healthy in a changing climate while also reducing their impact.

Effective community engagement can strengthen council climate change and health programs and policies in many ways.

By enabling broad and deep community input, mutual opportunities can be created for councils and community members to:

- develop an understanding of local risks, strengths, capabilities and assets to reduce risk and improve resilience
- inform locally owned and tailored actions to tackle risks
- promote wellbeing and achieve positive health outcomes
- strengthen networks and partnerships within the community
- empower communities to lead, plan and implement initiatives
- organise rapid and cohesive responses, whilst reducing health impacts and minimising broader social and economic impacts^{109,110}

Examples of business areas and strategies that could be implemented in the theme area of communication, engagement and capacity building are included in **Table 5**.

Table 5: Examples of communication, engagement and capacity building strategies

Example business areas	Example strategies
<ul style="list-style-type: none"> • Communications and community engagement • Health and wellbeing, health promotion • Community services • Youth services • Sustainability • Environmental health • Economic development • Urban design and planning • Family and children’s services 	<ul style="list-style-type: none"> • Engage with the community, especially children and youth, and those more vulnerable to impacts, to understand their experiences, key concerns, and opportunities for action • Engage, empower and mobilise communities to prepare for, adapt to and mitigate the effects of a changing climate, including to raise awareness about climate change and its impacts on health, and proactive actions that can be taken to address climate change and support communities to stay healthy in a changing climateⁱ • Develop, implement and support programs that increase awareness of, and participation in, health-promoting and emissions-reducing activities including active transport and healthy eating • Engage trusted community leaders to reach culturally and linguistically diverse community members, and those that may be more vulnerable to climate change impacts • Engage with and learn from Aboriginal communities

ⁱ Resources on Victoria’s Better Health Channel provide information that would be useful in informing such work.

Case Study

Whitehorse Manningham Libraries

– ‘Healthy me, healthy planet’^{111,112}

Healthy me, healthy planet was an evidence-informed program designed to promote the health co-benefits of climate action by empowering participants with the skills and knowledge to improve personal health and wellbeing outcomes while contributing to a resilient and sustainable community.

Community members were invited to join a challenge, choosing from ten monthly actions to make simple, healthy and sustainable lifestyle changes and track their progress through a gamified app with prize incentives. Challenge participation was supported by free public health promotion and education sessions delivered in various formats, in-person, virtual, and at partner venues, catering to diverse knowledge levels and cultural needs.

Deakin University’s Health Nature Sustainability Research Group provided expertise for program design, evaluation and research. A mixed-method approach assessed outcomes before, during, and after the program with a combination of quantitative and qualitative analyses.

The evaluation found that *Healthy me, healthy planet* enhanced participants’ health and wellbeing and climate/environmental knowledge and attitudes. The program increased participants’ confidence to make healthy lifestyle changes and motivation to promote the health co-benefits of climate action. It also showed that libraries are effective venues for health promotion due to their trusted, supportive position and strong community networks.¹¹²

‘Because of this program I realised...Oh, I can do more within my area, my community. I can do more from a sustainability and environmental perspective.’ – program participant

‘From a health and wellbeing perspective, I really enjoy being involved in Community events and meeting some lovely people. So, for me it was more about that sense of belonging and being with like-minded people.’ – program participant

This program was made possible by the Libraries for *Health and Wellbeing Innovation Grants* program; however, this model is adaptable for many public libraries by utilising existing resources and programming expertise from libraries, council sustainability departments and community partners.

To find out more see [Healthy Me, Healthy Planet: Evaluation of a pilot planetary health library program](https://onlinelibrary.wiley.com/doi/10.1002/hpja.882) <<https://onlinelibrary.wiley.com/doi/10.1002/hpja.882>>.

Case Study

Macedon Ranges Shire Council – Cool Changes Program¹¹³

The *Cool Changes* program, Macedon Ranges Shire Council, is based on the principle of community-led planning, where local members shape the action plan so are more likely to take ownership and implement its actions. Project plans were developed through a facilitated community forum, providing the Council with a valuable opportunity for in-depth engagement on local perspectives regarding climate change solutions.

The program has generated multiple community projects to date, including the Riddells Creek Enviro Energy Expo, community-led residential development drainage basin re-design, the Food Swap program, the household solar bulk buy program and the plant-based dish awards competition with local cafes and restaurants.

A key challenge during the program was transitioning from project planning to implementation, as the success of these community-led and -owned projects relied on residents taking on leadership roles. To address this, residents were encouraged to join established community groups, such as Landcare groups and the Macedon Ranges Sustainability Group. This approach enabled them to leverage the expertise of other community members for project implementation. Funding challenges were also encountered but were resolved by establishing a dedicated *Community Climate Action Grants* program, which supported the implementation of actions and projects outlined in the community plans.

The program has fostered a high level of trust between participating residents and Council staff, leading to mutual support and laying a strong foundation for future community engagement. It has also identified emerging community leaders who may champion future programs and projects.

For more information visit Macedon Ranges Shire Council's [How you can take climate action webpage](https://www.mrsc.vic.gov.au/Live-Work/Environment/Climate-Change/How-you-can-take-climate-action) <<https://www.mrsc.vic.gov.au/Live-Work/Environment/Climate-Change/How-you-can-take-climate-action>>.

Case Study

Macedon Ranges Shire Council – Bridging the Divide – Climate Conversations Project¹¹⁴

Action on climate change can come in many forms, and ‘conversation’ offers a simple, inclusive and inspiring gateway. Supported by the former Central Victorian Primary Care Partnership, Macedon Ranges Shire Council delivered the Climate Conversations Project, aimed at bridging intergenerational divides to create a stronger, more resilient community. This project also involved input from the council’s Environment, Youth Services and Healthy Ageing Units, and externally, from Sunbury Cobaw Community Health.

Residents of 55+ years old and youth were asked about their perspectives on climate change. The questions spanned a range of topics, from why they love the nature of the Macedon Ranges to what they believe other generations should be doing to ensure a safe and flourishing future.

The project has generated fact sheets, conversation cards and a short film:

- **Conversation Cards:** Designed to facilitate discussions about climate change, these cards help guide conversations and reduce anxiety about the topic while increasing support networks throughout the shire. They will be used in facilitated sessions with local Libraries and have been donated to schools to support classroom discussions. The Council plans to use them in future community discussion groups or workshops.
- **Short Film:** This film features interviews with both young and older residents sharing their experiences and views on climate change. It has been shown at community events like the Macedon Range’s Youth Awards. <<https://www.youtube.com/watch?v=PCso2dE5VtI>>

For more information visit Macedon Ranges Shire Council’s [How you can take climate action webpage](https://www.mrsc.vic.gov.au/Live-Work/Environment/Climate-Change/How-you-can-take-climate-action) <<https://www.mrsc.vic.gov.au/Live-Work/Environment/Climate-Change/How-you-can-take-climate-action>>.

Box 11

10 top tips of climate-health communication

The World Health Organization's *Communicating on climate change and health – Toolkit for health professionals* is intended to be used by any health professional.¹¹⁵ It can support health professionals to effectively communicate about climate change with their communities in order to help them understand how climate change will affect their health, how to protect themselves, and the benefits that come with implementing climate solutions. Tips provided in the toolkit include:

- keeping messages simple and repeating them often
- focusing on human health
- understanding your local context
- avoiding using jargon
- empowering people to make good decisions about their health
- talking about the health benefits of climate action
- tell stories to connect with people
- avoid polarizing language
- talk about climate change during extreme weather events
- don't debate the science.¹¹⁵

The Monash Climate Change Communications Research Hub's *A literature review of best practice communication of climate science and impacts: guide for policy makers*, identifies key recommendations for communicating climate science.¹¹⁶ These include the need to:

- formulate clear messages that are repeated often by trusted sources
- keep climate change information local rather than focusing on national and global information
- consider enlisting not only climate scientists to communicate the science and impacts of climate change but also farmers, firefighters, paramedics, doctors, nurses and weather presenters, who have been identified as highly trusted sources.

Framing climate change around health makes the impacts of climate change more immediate, important and tangible and, as a consequence, action is more likely.¹¹⁷



Emergency management

Councils can incorporate climate change and its impacts on health into all emergency management and planning strategies and policies.

Councils play a critical role in preventing, preparing for, responding to and supporting recovery from impacts associated with emergencies such as bushfires and floods.

As the intensity, severity and duration of these and other events in Victoria rise, councils will increasingly be called upon to manage the consequences, including public health impacts, and to support community recovery.

Examples of business areas and strategies that could be implemented in the theme area of emergency management are included in **Table 6**.

Table 6: Examples of emergency management strategies

Example business areas	Example strategies
<ul style="list-style-type: none"> • Emergency management • Environmental health • Sustainability • Health and wellbeing • Health planning 	<ul style="list-style-type: none"> • Ensure new and updated emergency management plans and strategies consider projected changes in Victoria’s climate and climate-related health risks (for example, municipal emergency management plans, municipal fire management plans, heatwave plans), including impacts on assets and the provision of essential health and community services • Review emergency management planning documents and processes to ensure that climate risk considerations and any additional requirements for people with a disability, older adults, and other community members at greater risk are accounted for • Engage with the community to raise awareness about the projected impacts of climate change on the frequency and intensity of events including bushfires, storms, floods and heatwaves in the municipality, the potential for direct and indirect health impacts and what actions can be taken to prevent impacts • Plan for and invest in cooler and cleaner air spaces to provide community respite to ‘cleaner air’ when local air quality becomes heavily impacted by smoke from large-scale or prolonged bushfire activity and during periods of extreme heat^j

^j Guidance is available from the Department of Health website: [Guidance for local government – Supporting people when air quality is heavily impacted by bushfire smoke](https://www.health.vic.gov.au/publications/supporting-people-when-air-quality-is-heavily-impacted-by-bushfire-smoke-guidance-for) <<https://www.health.vic.gov.au/publications/supporting-people-when-air-quality-is-heavily-impacted-by-bushfire-smoke-guidance-for>>.

Case Study

City of Melbourne – The Heat Lab (Evaluation)¹¹⁸

To address extreme heat risk in urban neighbourhoods the City of Melbourne ran 'The Heat Lab' - a twelve-month project testing community focused and place-based heat resilience solutions. Solutions were developed by combining council, business, public health, and community leader expertise.

An evaluation of The Heat Lab was completed to identify what worked well and inform future work. The evaluation involved reviewing project documentation, and data collection and analysis. Data collection methods included acquittal reports, surveys, and stakeholder interviews.

The 'lab' model was an effective way to design and deliver risk reduction activities as it enabled experimentation, collaboration, and flexibility to adapt to changing circumstances. Some of the tangible outcomes of 'The Heat Lab' included:

- provision of 1255 cool kits
- distribution of information via 4000 heat safe brochures, 11 heat smart sessions and over 435,000 social media impressions
- surface treatment and shading infrastructure trials
- trial of a heat risk platform to aid council operations
- provision of ten 'Cool Places' for community members – accessed by approximately 847 people.

Collection of monitoring and evaluation data from community members engaged in the interventions, particularly from CALD communities, older adults and international students, proved challenging - indicating a need to improve the accessibility of the online surveys.

A major factor contributing to the successful delivery of the project was leveraging existing relationships, processes, facilities such as council buildings, programs and communication channels. This is particularly important in an environment where resources are limited, and community expectations are high.

The project aligned with objectives of other divisions within council including:

- Homes Melbourne – providing tailored and targeted place-based support to those sleeping rough and experiencing chronic homelessness.
- Community Wellbeing – enhancing the delivery of Cool Kits by expanding items and distribution points.
- Community Development – aligning with the Community Grants and Partnerships program which funds community initiatives and events.
- Creative City – further promoting libraries as valuable community infrastructure that provide a place of connection for communities, particularly the most vulnerable.

For further information go to [City of Melbourne Heatwaves webpage](https://www.melbourne.vic.gov.au/heatwaves) <<https://www.melbourne.vic.gov.au/heatwaves>>.

Environmental health services, surveillance and control

Councils can incorporate consideration of climate change and its impacts on health into environmental health management and planning strategies, policies and programs, including surveillance and control.

Environmental health teams in councils are already responding to the public health impacts of climate change in their day-to-day work and will increasingly be called upon to respond to a range of impacts because of projected changes. For example, this may include increases in blue-green algal blooms in council-managed recreational water bodies (due to lower water levels and increased temperatures), cryptosporidium outbreaks in public aquatic facilities because of increased patronage during heatwaves, mosquito management (particularly following flood events), and food-borne disease outbreaks because of increases in climate-sensitive pathogens.

Environmental health teams in councils also play a leading role in emergency management preparedness, response and recovery associated with events such as bushfires and floods, which are increasing in frequency and intensity due to climate change. For example, following bushfires, this role typically includes:

- secondary impact assessments for damaged properties (including onsite wastewater systems and private drinking water supplies)

- assessing risks to and from temporary accommodation, regulated premises such as food businesses and prescribed accommodation
- providing health protection services at relief and recovery centres, including provision of public health information, food safety assessment of donated foods and food prepared on site, and investigation and supervision of control measures for gastrointestinal disease outbreaks.

There is also growing recognition that 'Environmental Health Officers (EHOs) are an untapped source of knowledge and skills that can contribute to climate change adaptation planning.'^{119p1} EHOs are at the coalface of the community, possess valuable scientific knowledge and skills in environmental health, risk assessment, and preventative health strategies, alongside a deep understanding of relevant legislation and social determinants affecting community health.^{119,120} EHOs widely agree they have a role in proactively supporting their communities to adapt to health risks and impacts of climate change.¹²¹

Examples of business areas and strategies that could be implemented in the theme area of environmental health services, surveillance and control are included in **Table 7**.

Table 7: Examples of environmental health services, surveillance and control strategies

Example business areas	Example strategies
<ul style="list-style-type: none"> • Environmental health • Sustainability • Health and wellbeing • Health planning • Council and community facilities 	<ul style="list-style-type: none"> • Consider how climate change will affect environmental health teams and services (including the delivery of surveillance, regulatory and emergency management functions) • Adapt environmental health services to reflect the level of community risk including during higher risk periods (for example through enhanced inspection and surveillance activities) • Ensure climate change and its impacts on health are considered in relevant environmental health policies, plans and procedures • Support community engagement activities to raise awareness about potential impacts of climate change on public health in the municipality and what actions can be taken to improve preparedness and resilience • Facilitate opportunities for environmental health officers to engage with councils' climate change planning processes, including climate change and health risk, vulnerability and adaptation assessments

Box 12

Disaster and emergency management for environmental health practitioners: a guide for environmental health practitioners in managing disasters and emergencies in an Australian setting¹²²

enHealth's *Disaster and emergency management for environmental health practitioners* guide recognises that with the frequency and magnitude of disasters intensifying, in part due to the impact of climate change, disasters such as bushfires, floods and cyclones are an increasingly major public health problem for Australia. It recognises that environmental health plays a role in disaster and emergency management by being both strategic and practical, bringing together a multidisciplinary skill set that is consistent with the preventative nature of the all-hazards approach.

The guide is a resource that assists a range of environmental health practitioners in planning for and responding to disasters and emergencies. It aims to connect the fields of emergency management and environmental health and provide a baseline for environmental health practitioners in developing disaster response competencies.

For more information visit the [Commonwealth Department of Health and Aged Care website](https://www.health.gov.au/resources/publications/enhealth-guidance-disaster-and-emergency-management-for-environmental-health-practitioners?language=en) <<https://www.health.gov.au/resources/publications/enhealth-guidance-disaster-and-emergency-management-for-environmental-health-practitioners?language=en>>.



Built and natural environments

Councils can support sustainability, climate change and health considerations through planning and design of the local built and natural environment.

Councils can provide an important influence over enhancing the resilience and sustainability of the built and natural environment in their municipalities. Climate change poses significant challenges and risks to communities, but it also presents opportunities to make improvements to these environments that will benefit health and wellbeing as well as the environment. These might include, for example, initiatives designed to increase access to active and public transport, adoption of nature-based solutions such as greening of urban areas or water-sensitive urban design (WSUD) or encouraging incorporation of Environmentally Sustainable Design (ESD) principles in new developments.^k

For example, strategies designed to support active and public transport can reduce reliance on private car travel and reduce carbon emissions and air pollution, with associated benefits to health. Improving access to safe, shaded, and connected pedestrian and cycling infrastructure around public transport and key

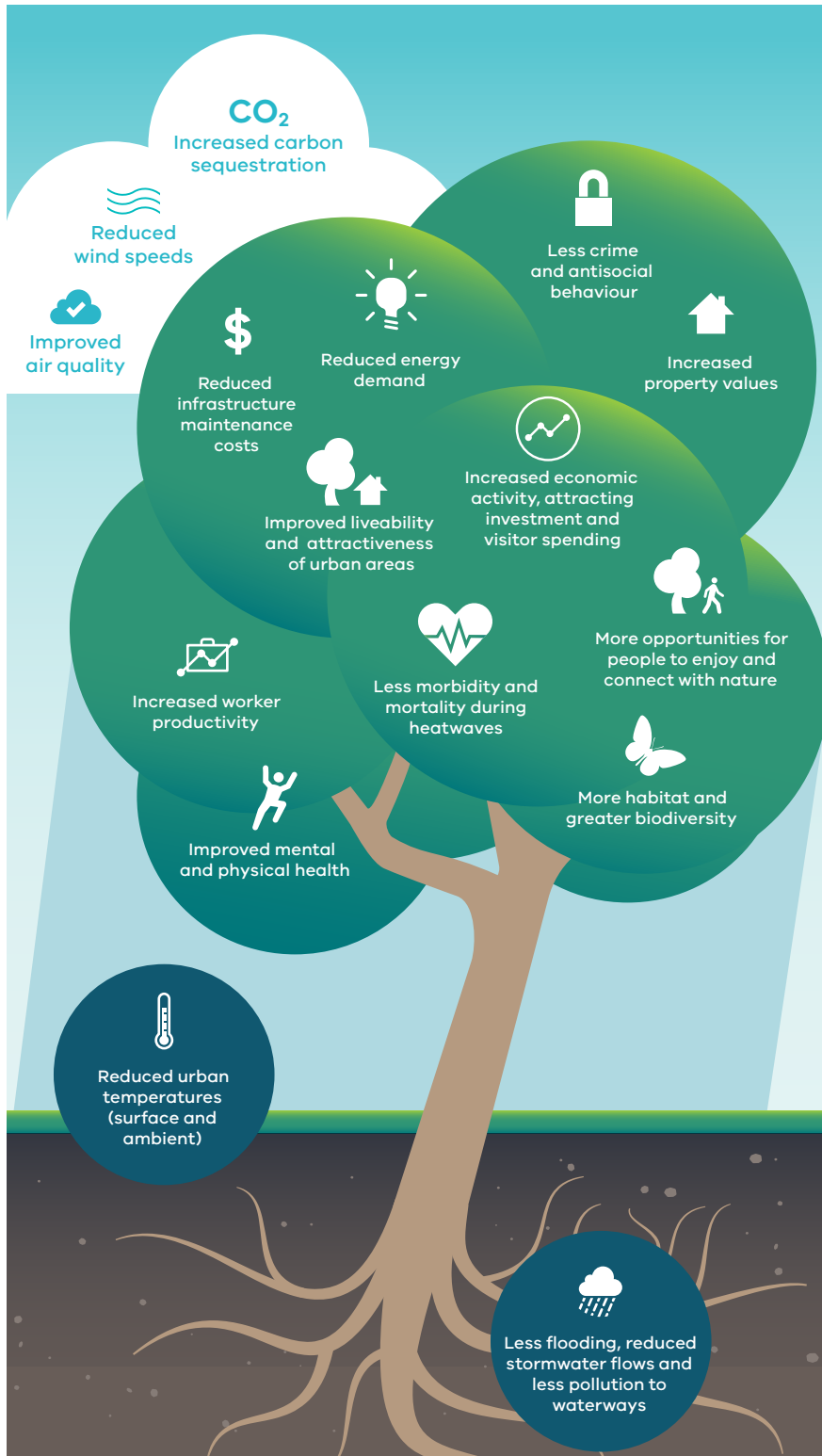
service precincts, encourages active transport and promotes local living, social equity, and inclusion.^{123,124} These strategies also support the *Victorian Public Health and Wellbeing Plan 2023–2027* priority of 'increasing active living.'¹⁰

In addition, provision of urban green and blue spaces such as public parks, nature reserves and street trees can help reduce the impact of urban heat islands on health, reduce exposure to air pollution, provide shade and protection from ultraviolet radiation (UV), support physical activity, provide opportunities to connect with nature, and support physical and mental health, cultural, and social wellbeing. Furthermore, green and blue infrastructure and natural area conservation in cities are widely considered 'low-regret measures for disaster risk reduction and climate change adaptation'.^{20p948} In implementing urban greening and cooling initiatives (including enhancing local waterways and providing water features), it is however important that potential public health risks (for example related to blue-green algal blooms, water safety, aeroallergens and mosquitoes) are appropriately considered and managed.²⁰

Figure 10 below provides some examples of health, environmental and other benefits of urban greening.

^k Many Victorian councils already have a specific Environmentally Sustainable Development policy in their planning schemes, requiring consideration of a range of environmentally sustainable design strategies for new developments. Some councils also provide energy efficiency and thermal comfort upgrades for existing homes in their municipalities – typically targeted support for low-income households or those with existing chronic health conditions. The Victorian Government also provides the Victorian Energy Upgrades for homes program and the Residential Efficiency Scorecard that rates home energy use and comfort and provides tailored recommendations for improvements.

Figure 10: Benefits of urban greening



Adapted from Department of Environment, Land, Water and Planning. Plan Melbourne 2017–2050. Victoria, Australia: DELWP; 2017²⁵

Examples of business areas and strategies that could be implemented in the theme area of built and natural environments are included in **Table 8**.

Table 8: Examples of built and natural environment strategies

Example business areas	Example strategies
<ul style="list-style-type: none"> • Urban design and open space planning (both strategic and permit approvals) • Community planning • Asset management • Traffic and civil engineering • Transport • Urban agriculture • Sustainability • Environmental health • Health and wellbeing, health promotion • Local laws 	<ul style="list-style-type: none"> • Improve the safety, quality, accessibility and connectivity of pedestrian and cycling infrastructure to encourage active and public transport, particularly near activity and neighbourhood centres. Consider shading, speed limit reductions, zebra crossings, separated cycling lanes, traffic calming measures, road space reallocation, and car share and bicycle parking targets • Provide public infrastructure for electric vehicle charging • Upgrade public lighting, such as lights on main roads, residential streets and in parks, to the most energy-efficient technology • Implement urban greening and cooling strategies to increase tree canopy cover and vegetation, green walls, green roofs, green corridors and public open space (prioritising areas where heat vulnerability and risk are highest)²⁰ • Implement a local environmentally sustainable design (ESD) planning policy and/or participate in state-wide ESD policy. • Implement a water sensitive urban design (WSUD) policy in new community and public infrastructure projects • Incorporate WSUD approaches in the design and retrofit of neighbourhoods (for example the use of alternative water supplies such as stormwater for irrigation) • Develop and implement, or support, programs that improve energy efficiency and thermal comfort, maintain safe indoor temperatures and reduce bill stress in homes in the municipality (for example, through energy efficiency programs focused on vulnerable households) • Support community and business led initiatives to reduce emissions (for example Power Purchasing Agreements (PPAs) bulk buys, energy efficiency programs, and community energy projects)¹⁰⁷ • Add climate risks (for example, flooding, storm surge and bushfire risks) to local land use plans and urban development policies to ensure development doesn't happen in high-risk areas • Build climate sensitive environments, including policies for 'building back better' after emergencies • Support sporting clubs to upgrade active sports fields to warm season grasses that require less watering to allow the fields to be used by the community for more of the year

Box 13

Co-benefits of heat mitigation through shade

Shade is key to climate-related heat mitigation and provides multiple co-benefits including reducing UV radiation exposure which helps reduce UV-related harms such as eye damage, skin damage (sunburn, tanning, ageing) and skin cancer.

Effective shade design considers thermal comfort (including air temperature, humidity, air movement and radiated heat) and reducing direct and indirect UV.

Shade has been shown to reduce overall UV radiation exposure by between 75%¹²⁶ to 90%.¹²⁷ It can also reduce surface temperature by 20 °C in playgrounds with the lowest air and surface temperatures consistently recorded under tree canopies.¹²⁸

For most of the day there is as much scattered UV from the sky as there is from the direct sun.¹²⁷ Building large structures near existing structures and using multiple methods of shading in the form of built shade, portable shade, or natural shade such as trees with wide dense canopies and low-reflective green spaces, will reduce temperature and UV exposure.¹²⁹

For further information see [SunSmart's Advice for local government](https://www.sunsmart.com.au/advice-for/local-government) <<https://www.sunsmart.com.au/advice-for/local-government>> and [MAV's Skin cancer prevention](https://www.mav.asn.au/what-we-do/policy-advocacy/public-health-safety/skin-cancer-prevention) <<https://www.mav.asn.au/what-we-do/policy-advocacy/public-health-safety/skin-cancer-prevention>>.

Case Study

Greening the West¹³⁰

Greening the West is a regional partnership with a vision to 'enable sustainable, liveable, healthy communities through urban greening'.¹³⁰ Since its launch in 2013, Greening the West has generated multi million dollars' worth of green and blue infrastructure projects that have delivered benefits to the environment and to the health and wellbeing of local communities. Urban greening is a low-cost strategy that brings high-impact results to existing and established suburbs to mitigate pollution and heat stress while creating a resilient urban environment that supports the community through shocks from climate change events and pandemics.

Greening the West has partner organisations from local government, state government, universities, industry, various agencies and the community that share knowledge and promote and seek solutions for greening in the western municipalities of Brimbank, Hobsons Bay, Maribyrnong, Melton, Moonee Valley and Wyndham. This partnership has resulted in several industry awards, including a 2020 National Landscape Architecture Award: Parks and Open Space for Sunvale Community Park, Brimbank City Council.¹³¹

Greening the West's strategic plan identifies eight key goals including goals focused on maximising urban greening, improving the quality and functionality of green space, improving the health and social wellbeing of residents and maximising sustainable water supplies to establish and maintain green space that will contribute to a greener and healthier west.¹³⁰

For more information visit the [Greening the West website](https://greeningthewest.org.au/) <<https://greeningthewest.org.au/>>.

Case Study

Walk, cycle Greater Bendigo strategy¹³²

Through engagement with the community, the City of Greater Bendigo established that walking and cycling were the community's most simple forms of independent transport and popular recreation. These are accessible activities with significant physical and mental health as well as environmental benefits. Walking and cycling, as alternatives to using private vehicles, are zero-emission forms of travel and have benefits for improving air quality, urban congestion, social interaction, equity and the health of the society.

A key outcome of the Strategy was the development of a prioritised walking and cycling infrastructure plan, which was finalised in early 2023 and referred to as the Protected Walking and Cycling Network. Development of the plan was a cross-organisation project with involvement from four separate units across three different Directorates of the organisation (Engineering, Strategic Planning, Climate Change & Environment, and Active & Healthy Communities). The plan identifies key gaps in the existing network and prioritises how the city invests in the network by considering three key factors:

- **Equity** - This looks at the self-reported health benefits and prioritises those areas with poorer health outcomes.
- **Connections** - This looks at how many key sites the path will connect (schools, places of employment, community facilities, etc.) with increased priority given to where schools are connected.
- **Catchment** - This considers how many potential pedestrians and bike riders will use the proposed paths/connections.

The strategy is closely integrated with other key plans, the *Greening Greater Bendigo strategy 2020–2070*, the *Greater Bendigo public space plan* and the *Bendigo city centre plan*. *Greening Greater Bendigo strategy* is Bendigo's first urban forest strategy, and it aims to increase tree cover and improve tree health across urban areas and townships of Greater Bendigo. The other two plans encompass linked strategies to protect and develop parks, gardens, creek corridors, bushland and sporting reserves, as well as urban spaces. Together these strategies deliver improved environmental health and community health and wellbeing outcomes.

For more information visit the [City of Greater Bendigo website](https://www.bendigo.vic.gov.au/about-us/plans-strategies-and-documents/walk-cycle-greater-bendigo-strategy) <<https://www.bendigo.vic.gov.au/about-us/plans-strategies-and-documents/walk-cycle-greater-bendigo-strategy>>.

Box 14

Built Environment Sustainability Scorecard (BESS) & Sustainable Design Fact Sheets¹³³

In addition to the requirements in all planning schemes relevant to climate change, amenity and wellbeing, the Built Environment Sustainability Scorecard (BESS) provides a dedicated tool in Victoria for assessing sustainable design at the planning permit stage. BESS supports the Sustainable Design Assessment in the Planning Process framework and ESD Local Planning Policies. BESS assesses projects against established benchmarks in nine environmental categories, including: water, energy, stormwater quality, indoor environment quality, transport, waste, urban ecology, building management to support these, and innovation.

The Sustainable Design Fact Sheets provide guidance for the development community and the community generally on how to consider and incorporate sustainable design strategies into new buildings.

BESS is now used in over 30 councils across Victoria. In these subscriber councils, planning permit applicants can prepare a BESS report for a development located within that municipality. BESS can also be used by any member of the community to assess the design of their home and find ways to make it more sustainable. BESS is owned by the Municipal Association of Victoria (MAV) and operated by the Council Alliance for a Sustainable Built Environment (CASBE) on behalf of its member councils.

For more information visit the [BESS website](https://factsheets.bess.net.au/) <<https://factsheets.bess.net.au/>>.

Healthy, sustainable and equitable food systems

Councils, as providers of services, programs and facilities, can take action in a number of areas to support equitable access to safe, healthy, affordable food, and a more sustainable food system.

Food systems face unprecedented pressure due to a wide range of factors, including climate change. These factors reduce the capacity of food systems to remain productive, threaten food security and impact the ability of communities to access healthy and affordable food.¹³⁴ For example, the 2005–2007 Australian drought was identified as the primary contributor to increased fruit and vegetable prices (33 per cent and 43 per cent respectively).¹³⁵ At the same time, food systems are also key contributors to greenhouse gas emissions, environmental degradation, and land-use changes.¹³⁴

The Australian dietary guidelines recommend eating a diet rich in foods such as fruit, vegetables, nuts, seeds and whole grains and limiting intake of foods containing saturated fats such as processed meat.¹³⁶ When coupled with an active lifestyle a plant-rich diet can play an

important part in reducing obesity and lowering cholesterol and blood pressure. Eating fresh, local produce also reduces carbon emissions compared with highly processed food. A shift towards sustainable food systems that provide healthy, affordable, diverse and plant-rich diets with moderate quantities of animal protein can substantially reduce greenhouse gas emissions and bring health co-benefits, especially in high income countries and where ill health related to overconsumption of animal-based products is prevalent.²⁰

Councils play an important role in tackling food system challenges and leading initiatives that support healthy, sustainable and equitable food systems. For example, councils in Victoria are already delivering a wide range of actions to promote sustainable local food production, reduce food waste, and raise awareness within the community of food system issues.¹³⁷ These strategies and actions can also support the *Victorian public health and wellbeing plan 2023–2027* priority of ‘increasing healthy eating’.¹⁰

Examples of business areas and strategies that could be implemented in the theme area of healthy, sustainable and equitable food systems are included in **Table 9**.

Table 9: Examples of healthy and sustainable food system strategies

Example business areas	Example strategies
<ul style="list-style-type: none"> • Health and wellbeing, health promotion • Early years, youth, aged and social planning • Urban agriculture • Open space planning and design • Community services • Community facilities • Sustainability 	<ul style="list-style-type: none"> • Engage with the community to raise awareness about the benefits of healthy and sustainable food choices and practices on mitigating climate change and staying healthy at the same time • Promote and support participation in home gardening activities and community gardens • Expand spaces to grow food locally, including new community gardens • Develop programs and partnerships with local food providers to encourage environmentally sustainable business practices and to improve community access to healthy and sustainable food choices • Consider the impacts of climate change and sustainability in food waste management – for example, through education programs and diversion of food waste away from landfill • Develop and implement a healthy and sustainable food procurement policy for food and drinks purchased for council meetings, functions and events (see Box 16) • Develop a comprehensive food system policy to ensure strategic and coordinated action on health, food system sustainability and equity. • Strengthen community programs such as farmers markets and local food share initiatives

Box 15

Healthy and more sustainable food procurement for meetings, functions and events

The Victorian Department of Health has developed a healthy and sustainable food procurement model policy and guide, to shift the way food and drinks are ordered for staff meetings, functions and events. The policy and guide can be adapted by Victorian councils and other organisations to promote healthy eating and benefit the environment and the wider Victorian community. The model policy and guide are available from: [Healthy and more sustainable food procurement](https://www.health.vic.gov.au/site-4/public-health/healthy-and-more-sustainable-food-procurement) <<https://www.health.vic.gov.au/site-4/public-health/healthy-and-more-sustainable-food-procurement>>.

The department has also supported the Healthy Eating Advisory Service to develop the Catering for Good Directory, to help Victorian workplaces access healthier and more sustainable catering. The directory is available from: [Healthy Eating Advisory Service: Catering for good](https://heas.health.vic.gov.au/catering-for-good/) <<https://heas.health.vic.gov.au/catering-for-good/>>.



Case Study

Healthy Loddon Campaspe – Mount Alexander Shire Council¹³⁸

Mount Alexander Shire Council (MASC), as part of the *Healthy Loddon Campaspe* initiative (involving City of Greater Bendigo and the shires of Campaspe, Central Goldfields, Loddon, Macedon Ranges and Mount Alexander), has been working with its community to activate place-based projects aimed at increasing healthy eating and addressing health inequities around food. Guided by the Flourish strategic framework, the initiative aims to ensure access to sufficient, safe, nutritious and culturally appropriate food whilst simultaneously creating a sustainable food system that supports biodiversity, healthy farming practices and reconnects communities with healthy, seasonal and local food sources.

The following key projects have emerged as part of this initiative:

- The *Support Our Own. Choose Locally Grown* campaign promotes the consumption of locally grown fruit and vegetables. It offers a Healthy Recipe Hub, purchasing information and local grower profiles to educate and empower the community.
- *Healthy Schools* promotes healthy eating in school communities through, for example, the creation of kitchen gardens, supporting healthy food policies and through the school curriculum. It generates learning opportunities by partnering with community health services, local farmers and growers and programs like the Stephanie Alexander Kitchen Garden Foundation.

- The *Food Links* network offers workshops, resources, seasonal gatherings, volunteer opportunities and network communications between community members and those working in the local food system to build confidence and skills in growing food and healthy eating.
- The *Edgy Veg Mt Alex* project will showcase vegetable-rich meals at local cafes and restaurants celebrating local food, scrumptious regional flavours and sharing meals that give back to the community. The *Edgy Veg* trail will promote delicious local fare. Through working with partners, the project will focus on equity and supporting those least supported in the community to make healthy choices.

In addition to direct health-related benefits, these projects have also supported the local circular economy and generated a stronger sense of community connection for MASC residents.

The following elements have been critical to the success of these place-based projects: support from *Healthy Loddon Campaspe* initiative and Mount Alexander Shire Council, strong governance, stakeholder and wider community input (supported by regular consultation), and collaboration between multiple portfolios across the council.

For further information visit the [Healthy Loddon Campaspe website](http://www.healthyloddoncampaspe.au) <www.healthyloddoncampaspe.au>.

Case Study

My Smart Garden¹³⁹

My Smart Garden (MSG) is an established, award-winning partnership program that supports local councils to increase and develop the sustainable gardening skills and knowledge of their residents to create healthy, biodiverse and productive cities.¹

MSG teaches 'smart' gardening across five core themes – food, shelter, waste, water and habitat – with additional focus on benefits to health and cost-of-living. The program offers a range of events and workshops on topics such as edible gardens, summer and winter vegetable gardening, healthy fruit trees and composting and worm farming. The program website also offers downloadable guides and resources and access to monthly newsletters.

Established in 2013, the program is governed by a Memorandum of Understanding and made possible through partner councils' commitment to resourcing and delivering workshops, and co-contributions to central funding. The program is run by councils, for councils, to support residents with a very high-quality program achieved with lower resourcing and designed to positively contribute to a broad range of council policies and objectives.

The program improves access to healthy, local and sustainably produced food and fosters community connection. It recognises that 'as our climate changes, our approach to gardening must change too.'¹⁴⁰

'Brilliant program. A great effort towards helping people prepare for the impact of ongoing climate change - especially in the area of food security' – program participant

MSG was evaluated in 2022 to understand and document the program's impacts and to identify lessons and improve its delivery for the future.¹⁴⁰ The evaluation found:

- The program has been highly successful in delivering a large number and variety of workshops to residents throughout the year, both in-person and online.
- Participants reported positive social connections, increased physical activity and improved mental health.
- The program has been greatly enhanced by cross-council collaboration. The ability to draw from a collective pool of resources and expertise has improved efficiencies and increased workshop variety and offerings for participants.
- MSG has also had a demonstrable impact on a broad range of environmental outcomes.¹⁴⁰

Partners include Brimbank City Council, City of Boroondara, City of Glen Eira, City of Moonee Valley, City of Port Phillip, City of Stonnington, City of Yarra, Hobsons Bay City Council, Maribyrnong City Council, Merri-Bek City Council and Wyndham City.

For more information visit the [My Smart Garden website](http://www.mysmartgarden.org.au) <<http://www.mysmartgarden.org.au>>.

¹ Recent awards include Keep Australia Beautiful Tidy Towns and Cities Sustainability Awards, 2023 - Winner, Education category; Premier's Sustainability Awards, 2023; Winner, Thriving Environment category.

Case Study

Drinking Fountain Project – Cardinia Shire Council¹⁴¹

Through a partnership with South East Water (SEW), Cardinia Shire Council's Drinking Fountain Project aims to help its community stay active, healthy and hydrated, whilst also protecting the environment by reducing single-use plastic bottle use. In 2023–24, SEW donated 7 drinking water fountains to the project, with an additional 3 fountains purchased and all fountain installation funded through the Department of Families, Fairness and Housing.

These drinking water fountains were installed in locations identified as having a high-risk to heat exposure, particularly during extreme heat/weather events and emergencies. Locations were also prioritised based on climate-health impacts for community members participating in outdoor activities and people experiencing homelessness. Council worked with local reserve committees to ensure the fountain locations maximised accessibility for the primary site users.

These drinking water fountains can be used with or without a water bottle and are equipped with a wheelchair-accessible fountain arm, a digital sensor that measures how many plastic bottles have been saved from landfill due to re-filling, and a dog bowl. These contemporary fountains are part of the Choose Tap® initiative, a coalition of water retailers, including SEW, and councils across Australia. SEW acknowledged that key factors contributing to the success of the partnership was Cardinia Shire's commitment to protecting community

health in high heat stress areas and their flexible approach whereby installations were included as part of public area upgrades.

Cardinia Shire Council is currently mapping all public drinking fountains across the Shire, in the [My Mizu App and Website](#) to allow community members and visitors, to plan ahead, and to stay healthy and hydrated. This project aligns with Cardinia Shire's Council Plan, Liveability Plan – 'Outcome 4: Increase Healthy Eating and Active Living' and supports objectives under the council's *Municipal Emergency Management Extreme Heat Sub Plan, Access and Inclusion Disability Strategy and Action Plan, Fair Access Policy and Waste and Resource Recovery Strategy*.

Cardinia Shire's Liveability Plan 2017–2029 adopts a partnership approach, with 68 organisations collectively leading implementation, monitoring, and evaluation of the plan. The partnership approach between council and SEW, was critical to the delivery of this project, through shared resources and a shared vision to foster healthy and inclusive communities, while progressing climate-change mitigation and adaptation efforts. Cardinia Shire's Liveability Partnership will continue to advocate and identify opportunities to deliver climate-health co-benefits through projects within the Liveability Plan.

For more information visit [Cardinia Shires Councils' Liveability Plan webpage](https://www.cardinia.vic.gov.au/info/20031/liveability_health_and_wellbeing/985/our_liveability_plan) <https://www.cardinia.vic.gov.au/info/20031/liveability_health_and_wellbeing/985/our_liveability_plan>.

Box 16

A menu for change

A menu for change: using behavioural science to promote sustainable diets around the world is a useful resource that makes the case for a global shift towards more sustainable and healthier diets.¹⁴² It uses well-evidenced behavioural science and offers routes through which governments and others can help to deliver a healthier and more sustainable food system.

It encourages policies and programs that promote healthy and sustainable diets as appealing, normal and easy by using positive messages and ensuring that sustainable and healthy options are readily available.

For more information visit the [Behavioural Insights Team website](https://www.bi.team/publications/a-menu-for-change/) <<https://www.bi.team/publications/a-menu-for-change/>>.





Improving mental health and wellbeing

Councils, as experts in their own community and providers of services, programs and facilities, can support mental health and wellbeing in the community in a variety of areas including through supporting referral to mental health and wellbeing services and delivery and coordination of supports following extreme weather events.

The *Victorian Public Health and Wellbeing Plan 2023–2027* includes improving wellbeing as a priority.¹⁰ *Wellbeing in Victoria* – a strategy to promote good mental health (Wellbeing Strategy), expected for release in 2024–25, will be a subset of the *Victorian Public Health and Wellbeing Plan*, and will provide a vision and long-term plan for improving mental wellbeing across the state. Councils play a critical role in promoting mental wellbeing as well as supporting communities to recover from climate related disasters. This includes council's role in building recovery capital within their local community across social, cultural, political, human, built, financial and natural recovery capitals.¹⁴³ Councils build community resilience through the work they do to promote mental wellbeing and to create socially inclusive and connected communities, including through the delivery of Social Inclusion Action Groups (established/establishing in ten councils to date).

The risks and impacts of climate change on mental health and wellbeing are rapidly increasing, and actions need to be taken to tackle the problem in a holistic manner. Effective adaptation options for reducing mental health risks associated with climate change include

supporting connected, inclusive and resilient communities, monitoring psychosocial impacts from extreme weather events to inform targeted support, improving health equity, improving access and funding to culturally relevant mental health care and practitioners familiar with climate-related anxiety and grief.²⁰ These actions will also support increased resilience of mental health systems as climate change continues.²⁶

Collective climate action can instil a sense of hope, connectedness, optimism and resilience. It can minimise feelings of being powerless and perceptions of lack of skills or agency to mitigate and adapt to climate change, which are associated with climate and eco-anxiety. Despite climate change being one of the biggest threats to global mental health, tackling this threat presents a significant opportunity to shape future mental health and wellbeing of individuals and communities due to the health co-benefits associated with transitioning to more sustainable ways of living.^{23,26}

Many of the climate change related mental health impacts could be perceived as being 'indirect', making it challenging to quantify the true magnitude and cost of climate change on mental health. It is important these hidden costs and impacts and conversely the benefits of climate action in improving mental health outcomes are meaningfully considered in local planning.²⁷

Examples of business areas and strategies that could be implemented to improve mental health and wellbeing are included in **Table 10**.

Table 10: Examples of improving mental health and wellbeing strategies

Example business areas	Example strategies
<ul style="list-style-type: none"> • Health and wellbeing, mental health promotion • Early years, youth, aged and social planning • Community services • Community facilities • Emergency management • Sustainability 	<ul style="list-style-type: none"> • Promote and support conversations about climate change with the community, especially with children and youth, including about proactive action that can be taken to address climate change and its impacts on health • Promote and support programs and spaces for the community to increase connection with nature and take part in preserving nature, which can provide a sense of personal investment and help people overcome feelings of hopelessness and anxiety, as well as foster social connection and improve mental wellbeing (e.g. friends groups, community gardens, outdoor recreation areas and green spaces) • Promote and support opportunities for social connection in communities, building resilient communities with strong networks and equitable social capital • Promote and support mental health services for people who may be affected by extreme events such as bushfires and floods • Offer community training on coping strategies and stress management (e.g. psychological first aid, e-CPR)



Preventing all forms of violence

Councils, as providers of services, programs and facilities, can promote health and wellbeing in the community in a variety of areas including violence prevention services and supporting frontline workers to address the challenges posed by climate change. Family violence and violence against women and children increases during and after a natural disaster or crisis such as bushfires or floods.¹⁴⁴ The public health system needs to address the determinants of violence at a structural level. Actions should be taken to promote gender equality, diversity and inclusion, positive attitudes towards ageing, and the right for all Victorians to be treated with respect and dignity. These are crucial for preventing all forms of violence, and will benefit all Victorians, regardless of age, race, ability, sex or gender. A community-wide approach, and strengthening statewide and local partnerships, will deliver better outcomes in preventing family violence.¹⁰

A range of Council services are also prescribed under the Multi-Agency Risk Assessment and Management (MARAM) Framework and Information Sharing Scheme and would need to ensure organisational alignment.

The *Victorian public health and wellbeing plan 2023–2027* includes preventing all forms of violence as a key priority.¹⁰ The department has updated its supporting guidance for local government on *Family violence and municipal public health and wellbeing planning*.¹⁴⁵ It provides examples of practical measures councils can take to reduce family violence and respond to the needs of victims, as well as resources and case studies to support councils when preparing a MPHWP.

Examples of business areas and strategies that could be implemented to prevent all forms of violence are included in **Table 11**.

Table 11: Examples of preventing all forms of violence strategies

Example business areas	Example strategies
<ul style="list-style-type: none"> • Health and wellbeing, health promotion • Early years, youth, aged and social planning • Community services • Community facilities • Emergency management 	<ul style="list-style-type: none"> • Undertake prevention work and develop programs to assist individuals who may be at increased risk of family violence and abuse during and after emergencies and disasters • Make culturally safe supports and services that are free from stigma, racism and discrimination accessible to Victorians experiencing violence during and after emergencies and disasters • Work with men and boys to change attitudes and behaviours that can lead to violence and engage all Victorians in practical and creative ways to learn about respectful, safe and equitable relationships • Include family violence prevention resources in community emergency response packs • Make family violence bystander and response training available to emergency services and community groups



Evaluation

‘Evaluation as routine practice brings the ability to generate knowledge and learning, providing opportunities to question assumptions, test theories, and improve practices that can move communities toward improved health and climate resilience.’^{146p18}

The importance of evaluation, and evaluation approaches

Evaluation generates critical evidence about the effectiveness of health-focused climate change mitigation and adaptation initiatives, about what does and does not work, and how to improve the quality of initiatives.¹⁴⁶ Importantly, evaluation can influence future policy and funding decisions.^{146,147} Evaluation is most effective when designed early in the planning cycle and when councils work with their communities, agencies and services to plan, identify actions for, implement and evaluate the MPHWP.

There are many challenges to undertaking evaluations in a climate and health context; attribution is especially challenging in climate change adaptation due to the multifaceted and long term set of influences outside of a single program or policy.¹⁴⁶ However despite these challenges, there are a range of evaluation approaches and frameworks which can be used, and examples of good practice evaluation available both in Australia and internationally. Refer to the further content in this section and the ‘Resources’ section for examples.

Indicators, targets and measures

Evaluation requires consideration of relevant indicators, targets and measures, which can track progress that has been made and highlight when and where changes would increase the effectiveness of climate change programs.¹⁴⁸ The *Victorian public health and wellbeing outcomes framework* defines indicators, targets and measures as follows:

- **indicators** – define the direction of change needed to progress towards an outcome
- **targets** – are the specific result to be achieved by a specific time
- **measures** – provide an objective and standardised qualification of the size, amount or degree of the desired condition.¹⁴⁹

Measures can include, for example:

- **process measures** which indicate whether programs or activities are being implemented as intended. This would include indicators of strategies implemented to prevent and manage climate-sensitive health outcomes (including implementation of strategies detailed in MPHWP and integrated council plans, as well as those detailed in any linked climate change adaptation and mitigation plans), such as the number of program participants or the number of resources distributed to community members.
- **outcome measures** which measure program effectiveness in the target population by assessing the progress and achievement of goals and objectives and the extent to which the program contributed to the desired change, such as changes in community members’ behaviours or self-reported changes in awareness of health risks.

Climate change and health indicators have been developed by researchers and organisations within Australia and internationally and are

typically grouped into several categories or domains. These include groups of indicators related to exposure and vulnerability (including adaptive capacity), indicators related to climate change impacts on health (often termed climate-sensitive 'health outcome' measures or indicators), and indicators associated with specific adaptation and mitigation actions.^{32,35,148,150,151}

As outlined in the 'Municipal scanning' section above, indicators of exposure and vulnerability (including sensitivity and adaptive capacity) can be useful in undertaking vulnerability assessments to determine key risks and to identify and prioritise interventions. Indicators associated with vulnerability can also be useful to consider in evaluating the effectiveness of interventions focused on reducing vulnerability (and associated health and wellbeing impacts).

Evaluation in action

At the local government level, councils have adopted a range of indicators, targets and measures to track progress against actions to tackle climate change and its impacts on health. These include measures focused on evaluating:

- integration of climate change consideration and action into relevant plans, policies, and programs
- impacts of climate change on assets, service delivery, budgets and finance
- the effectiveness of initiatives specifically focused on reducing emissions associated with climate change and increasing community adaptation to the health impacts of climate change.

The 'How well are we adapting?' framework also provides a useful reference for monitoring, evaluating and reporting on climate change adaptation performance (Box 16).¹⁵²

Box 17

'How well are we adapting?' framework¹⁵²

How well are we adapting? is a tool and program for monitoring, evaluating and reporting on climate change adaptation performance that has been developed for councils by the Western Alliance for Greenhouse Action (WAGA) in partnership with the Centre for Urban Research, RMIT University, with support from the Victorian Government. It is intended to build the capacity of councils to respond to and manage climate change impacts and risks and includes indicators to monitor adaptive capability and capacity in relation to four theme areas:

- protecting our local parks and sports fields
- planning, building and regulation
- assets and infrastructure
- strengthening community

An internal reporting section helps local government staff track the impacts on council services and assets and evaluate responses over the long term to understand how well they are adapting to climate change. The internal reporting tool is provided through a subscription service that supports a facilitated community of practice for local government adaptation response. An [Adaptive Capacity Checklist](#) provides an organisational scan of adaptation 'readiness' for local governments and is freely available for any local government to complete as a self-assessment to help inform their adaptation response planning.

For more information [email the How Well Are We Adapting team](#) <howwellareweadapting@gmail.com> or visit the [program's website](#) <<https://adapt.waga.com.au/>>. ^m

Several case studies featured in this guidance have publicly available evaluation reports, which may provide useful insights into evaluation approaches, indicators and data sources that could be used. These include, for example, My

Smart Garden¹³⁹, Whitehorse Manningham Libraries – 'Healthy me, healthy planet'^{111,112} and The Heat Lab delivered by the City of Melbourne.¹¹⁸ There are also many examples included in the international literature.^{146 n}

^m 'How well are we adapting?' and the Adaptive Capacity Checklist will be adjusted for use with the Victorian Climate Resilient Councils (VCRC) program, and an interim website for the VCRC program will be released in November 2024.

ⁿ For example, in 2023, representatives from the United States Centers for Disease Control and Prevention published 'Evaluating public health strategies for climate adaptation: Challenges and opportunities from the climate ready states and cities initiative.'

Resources

Department of Health resources

Victorian public health and wellbeing plan

<<https://www.health.vic.gov.au/victorian-health-and-wellbeing-plan>>

Requirements of municipal public health and wellbeing planning

<<https://www.health.vic.gov.au/population-health-systems/requirements-of-municipal-public-health-and-wellbeing-planning>>

Climate change and health – Health.Vic

<<https://www.health.vic.gov.au/environmental-health/climate-change-and-health>>

Climate change and health – Better Health Channel

<<https://www.betterhealth.vic.gov.au/health/HealthyLiving/climate-change-and-health>>

Broader Victorian tools and resources

Climate Change in Victoria – Department of Energy, Environment and Climate Action

<<https://www.climatechange.vic.gov.au/>>

State of Sustainability Report 2023 – Sustainability Victoria <<https://www.sustainability.vic.gov.au/research-data-and-insights/research/state-of-sustainability-report-2023>>

Community engagement resources – Local Government Victoria and Engage Victoria <<https://engage.vic.gov.au/local-government-act-2020/community-engagement-workshop-feedback-themes>>

How well are we adapting? – Western Alliance for Greenhouse Action <<http://adapt.waga.com.au/>>

Embedding action on climate change in your council plan – Northern Alliance for Greenhouse Action
< <https://www.naga.org.au/council-plans.html>>

Trees for cooler and greener streetscapes: Guidelines for streetscape planning and design – Department of Transport and Planning <<https://www.planning.vic.gov.au/guides-and-resources/guides/all-guides/trees-for-cooler-and-greener-streetscapes>>

Victoria Planning Provisions: Building design – Department of Transport and Planning <<https://planning-schemes.app.planning.vic.gov.au/Victoria%20Planning%20Provisions/ordinance/15.01-2S>>

Victoria Planning Provisions: Integrated water management – Department of Transport and Planning
<<https://planning-schemes.app.planning.vic.gov.au/Victoria%20Planning%20Provisions/ordinance/19.03-3S>>

Built Environment Sustainability Scorecard (BESS) & Sustainable Design Fact Sheets

<<https://factsheets.bess.net.au>>

National and international climate change and health resources

Climate Change and Health – World Health Organization

<<https://www.who.int/teams/environment-climate-change-and-health/climate-change-and-health/capacity-building/toolkit-on-climate-change-and-health>>

Climate change and health: Vulnerability and adaptation assessment – World Health Organization

<<https://www.who.int/publications/i/item/9789240036383>>

Compendium of WHO and other UN guidance in health and environment, 2024 update – World Health Organization (Refer to Chapter 7. Climate change)

<<https://www.who.int/publications/i/item/9789240095380>>

Communicating on climate change and health: Toolkit for health professionals – World Health Organization

<<https://www.who.int/publications/i/item/9789240090224>>

A framework for the quantification and economic valuation of health outcomes originating from health and non-health climate change mitigation and adaptation action – World Health Organization - World Health Organization <<https://www.who.int/publications/i/item/9789240057906>>

COP26 Special Report on Climate Change and Health: The health argument for climate action – World Health Organization <<https://www.who.int/publications/i/item/9789240036727>>

The Lancet Countdown on Health and Climate Change <<https://www.thelancet.com/climate-and-health>>

Climate and Health Program – United States Centers for Disease Control and Prevention

<<https://www.cdc.gov/climateandhealth/>>

Australian Indigenous HealthInfoNet <<https://healthinonet.ecu.edu.au/>>

Healthy Active by Design – Designing for heart health – Heart Foundation

<<https://www.healthyactivebydesign.com.au>>

Evaluation resources

Monitoring, Evaluating and Learning for place-based approaches: A toolkit for the Victorian Public Service <<https://www.vic.gov.au/sites/default/files/2023-03/VPS-place-based-Measurement%2C-Evaluation-and-Learning-toolkit.pdf>>

The Practical Guide on Evaluation – World Health Organization

<https://cdn.who.int/media/docs/default-source/evaluation-office/final_the-practical-guide-on-evaluation-2023.pdf?sfvrsn=19b002e_3&download=true>

The environmental attitudes inventory: A valid and reliable measure to assess the structure of environmental attitudes – Milfont & Duckitt, 2010

<<https://www.sciencedirect.com/science/article/abs/pii/S0272494409000565?via%3Dihub>>

Australian Centre on Quality of Life – ‘Personal Wellbeing Index’ <<https://www.acqol.com.au/instruments>>

What is RE-AIM? – RE-AIM <<https://re-aim.org/learn/what-is-re-aim/>>

Case study resources

How well are we adapting? – Western Alliance for Greenhouse Action <<http://adapt.waga.com.au/>>

Pathfinder Initiative Climate & Health Evidence Bank <<https://climatehealthevidence.org/case-studies>>

VicHealth Local Government Partnership health promotion module –

‘Supporting health and climate resilient communities’

<<https://www.vichealth.vic.gov.au/resources/vichealth-local-government-partnership/modules>>

Healthy Active by Design case studies – Heart Foundation

<<https://www.healthyactivebydesign.com.au/case-studies>>

Greening the West website - Projects <<https://greeningthewest.org.au/>>

My Smart Garden - Case Studies <<https://mysmartgarden.org.au/case-studies/>>

Glossary of key terms

The following table defines key terms and definitions used in this guidance. These definitions have been described within the context of climate change and MPHWP.

Term	Definition
Adaptation	Changes made to natural or human systems to prepare for actual or expected changes in the climate in order to minimise harm, act on opportunities or cope with the consequences.
Climate	The average weather experienced at a site or region over a period of at least 30 years.
Co-benefits and health co-benefits	<p>Co-benefits: The positive effects that a policy or measure aimed at one objective might have on other objectives, thereby increasing the total benefits for society or the environment. Co-benefits are often subject to uncertainty and depend on local circumstances and implementation practices, among other factors. Co-benefits are also referred to as ancillary benefits.</p> <p>Health co-benefits: Implementation of climate policies that lead to improvements in health. For example, many climate change mitigation measures that reduce greenhouse gas emissions in various sectors, including housing, transportation and energy, have co-benefits that lead to substantial health gains and reduced health risks.</p>
Direct and indirect impacts	<p>Direct impacts occur at the same time and place as a weather event. For example, floods can cause immediate injury and death.</p> <p>Indirect impacts caused by climate change occur later in time or further removed in distance. Indirect health impacts may result from changes to the social, built, economic and natural environments. For example, drought may cause changes to the social and economic environments, resulting in increased anxiety and depression.</p>
Equity	The principle of being impartial and fair, and a basis for understanding how the impacts and response to climate change, including benefits and costs, are distributed by and in society in equal ways.
Exposure	The presence of people; livelihoods; species or ecosystems; environmental functions, services and resources; infrastructure; or economic, social, or cultural assets in places and settings that could be adversely affected.
Extreme weather	A weather event that is rare at a particular place and time of year. Definitions of rare vary, but an extreme weather event would normally occur less than 10 per cent of the time.
Global warming	Increase in global surface temperature relative to a baseline reference period, averaging over a period sufficient to remove interannual variations (e.g., 20 or 30 years).

Term	Definition
Greenhouse gases	Gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of radiation emitted by the Earth's ocean and land surface, by the atmosphere itself and by clouds. This property causes the greenhouse effect. Water vapour (H ₂ O), carbon dioxide (CO ₂), nitrous oxide (N ₂ O), methane (CH ₄) and ozone (O ₃) are the primary GHGs in the Earth's atmosphere. Human-made GHGs include sulphur hexafluoride (SF ₆), hydrofluorocarbons (HFCs), chlorofluorocarbons (CFCs) and perfluorocarbons (PFCs); several of these are also O ₃ -depleting.
Hazard	The potential occurrence of a natural or human-induced physical event or trend that may cause loss of life, injury or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, ecosystems and environmental resources.
Impacts (consequences, outcomes), beneficial and detrimental impacts	The consequences of realised risks on natural and human systems, where risks result from the interactions of climate-related hazards (including extreme weather and climate events), exposure and vulnerability. Impacts generally refer to effects on lives; livelihoods; health and wellbeing; ecosystems and species; economic, social and cultural assets; services (including ecosystem services); and infrastructure. Impacts may be referred to as consequences or outcomes and can be adverse (detrimental) or beneficial.
Inequality	Uneven social positions and opportunities, and processes of discrimination within society or a group, based on ethnicity, age, (dis)ability, gender, or class, often resulting from uneven development.
Maladaptation	Actions that may lead to an increased risk of adverse climate-related outcomes, including via increasing or shifting vulnerability to climate change, increased greenhouse gas emissions, more inequitable outcomes, or diminished welfare.
Mitigation	A human intervention to reduce emissions or enhance the sinks of greenhouse gases.
Planetary health	The health of human civilisation and the state of the natural systems on which it depends. It is a transdisciplinary field focused on addressing the impacts of disruptions to the planet's natural systems on all life on earth.
Resilience	The capacity of social, economic and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganising in ways that maintain their essential function, identity and structure while also maintaining the capacity for adaptation, learning and transformation.
Risk	The potential for consequences where something of value is at stake and where the outcome is uncertain. Risk is often represented as a probability of occurrence of hazardous events or trends multiplied by the consequences if these events occur.
Transformational adaptation	Adaptation that changes the fundamental attributes of a social-ecological system in anticipation of climate change and its impacts.
Vulnerability, sensitivity and adaptive capacity	<p>The degree to which a system, sector or social group is susceptible to the adverse effects of climate change; vulnerability depends on the nature of the climate changes to which the system is exposed, its sensitivity to those changes and its adaptive capacity.</p> <p>Sensitivity: The degree to which populations are affected by climate variability or change.</p> <p>Adaptive capacity: The capability of populations to adjust to change, to minimise harm, to act on opportunities or to cope with the consequences.</p>

Definitions are sourced from DELWP 2019¹⁵, DELWP 2016¹⁵³, IPCC 2018¹⁵⁴, IPCC 2022²⁰, and Whitmee et al. 2015⁷⁹.

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