



# Climate Change

## City of Port Phillip Health Profiles

In recent years, recognition of the local effects of climate change has grown. The impacts of worsening heatwaves, floods and droughts on physical and mental health are extensive and residents report feeling unprepared for the effects of climate change. Tackling climate change and its impacts on health is a key priority for the World Health Organisation and the Victorian health plan.

### What is climate change?

*Climate change encapsulates long-term changes that have been observed in the Earth's weather patterns. It includes global warming, increases in sea levels, sea temperatures, air temperatures, and decreases in polar ice sheets and glacier volumes. Changes in the Earth's climate since the early 20<sup>th</sup> century have primarily been driven by human activities. In particular, fossil fuel burning has increased heat-trapping greenhouse gas levels in the Earth's atmosphere, raising Earth's average surface temperature (a process known as global warming or heating) (NASA, 2020).*

Climate change is having substantial impacts on the Australian climate. According to the Bureau of Meteorology:

- Australia's climate has warmed on average by  $1.47 \pm 0.24$  °C since national records began in 1910, leading to an increase in the frequency of extreme heat events.
- In the south-east of Australia, there has been a decrease of around 10 per cent in April to October rainfall since the late 1990s.
- Oceans around Australia are acidifying and have warmed by around 1 °C since 1910, contributing to longer and more frequent marine heatwaves.
- 2022 was Australia's equal-22<sup>nd</sup>-warmest year on record, with the mean national temperature being 0.50 degrees Celsius above the 1961-1990 average.
- 2022 was Australia's ninth-wettest year on record, with the nationally-averaged rainfall being 26 per cent above the 1961-1990 average of 587.8 mm.
- Sea levels are rising around Australia, including more frequent extremes that are increasing the risk of inundation and damage to coastal infrastructure and communities.
- There has been an increase in extreme fire weather, and a longer fire season, across large parts of the country since the 1950s (Bureau of Meteorology, 2023).



## What do we know about how climate change can impact on health and wellbeing?

- The World Health Organisation expects that climate change will cause approximately 250 000 additional deaths per year between 2030 and 2050, due to malnutrition, malaria, diarrhoea and heat stress alone. Health damage costs are estimated between US\$2-4 billion per year by 2030 (World Health Organisation, 2023).
- Direct impacts on health include heat stress, injury, trauma, increased exposure to vector-borne, waterborne or foodborne diseases and death caused by exposure to more frequent extreme weather events such as floods and heat waves.
- Indirect impacts on health can be driven by reductions in water quality, food security and access to safe shelter and clean air, as well as the exacerbation of chronic diseases such as cardiovascular and respiratory disease as a result of higher temperatures, poor air quality and airborne pollen.
- There is increasing evidence of the mental health impacts of climate change. This includes symptoms of post-traumatic stress disorder following one or multiple consecutive climate change-related events, impacts of heat waves on human behaviour, and depression and anxiety about a climate change affected future.
- Climate change is predicted to have an adverse impact on the economy, which could lead to unemployment, stress, social exclusion and increases in food insecurity.

We also know that addressing climate change has been an urgent issue embraced by young people across the globe. They see future generations under threat and are the generations likely to witness Earth's deterioration unless adequate steps are taken at an international level to resolve this issue.

## How is climate change affecting the health and wellbeing of the Port Phillip community?

- Significant climate change-related events can have devastating impacts on Victorians and Port Phillip residents, for example the 2009 and 2014 Victorian heatwaves, with the 2009 heatwave occurring shortly before the Black Saturday bushfires.
- A study of the 2009 Victorian heatwave compared health data for the week of the heatwave, 26 January to 1 February 2009, with the same period in previous year(s) and revealed the substantial morbidity and mortality impact of the heatwave (Department of Human Services, 2009). Specifically:
  - Ambulance Victoria metropolitan emergency reported a 25 per cent increase in total emergency cases and a 46 per cent increase over the three hottest days as well as a



- 34-fold increase in cases with direct heat-related conditions (61 per cent in those aged 75 years or older) and a 2.8-fold increase in cardiac arrest cases.
- Locum GP attendances increased almost fourfold increase in attendances for direct heat-related conditions (65 per cent in those aged 75 years or older) and saw an almost twofold increase in calls to attend a deceased person.
- Emergency department presentations increased 12 per cent overall, with a greater proportion of acutely ill patients and a 37 per cent increase in those aged 75 years or older. ED presentations saw an eightfold increase in direct heat-related presentations (46 per cent in those aged 75 years or older) and an almost threefold increase in the number of patients dead on arrival (69 per cent being 75 years or older).
- Overall, there were 374 excess deaths over what would be expected – a 62 per cent increase in total all-cause mortality. The total number of deaths was 980 compared with a mean of 606 for the previous five years. The greatest number of deaths occurred in those aged 75 years or older, representing a 64 per cent increase.
- Port Phillip is already experiencing impacts of climate change.
  - A survey of 124 residents in 2019 found 71 per cent had felt the impacts of heatwaves, 52 per cent had felt the impact of high wind and storm events and 47 per cent had felt the impact of drought.
  - The same survey identified that many residents do not feel prepared for the impacts of climate change, particularly for events such as flooding, disruption to transport services and electricity supply.
- In January 2020, Melbourne’s air quality dropped to hazardous levels as a result of bushfires in Gippsland. Ambulance Victoria callouts for breathing issues increased, reduced visibility also posed further risks.
- Victorian healthcare professionals are already seeing climate change-related health conditions in communities such as thunderstorm asthma, heat stress or heatstroke, pollen-related allergies, and lung conditions from increased air pollution. Depression or severe anxiety related to climate change has also been noted, as have insect-borne diseases and illnesses caused by contaminated food or water (Sustainability Victoria, 2020).
- In the future, we can expect increased flooding of coastal properties and public facilities, damage to infrastructure, beach erosion, decreased water quality and security of water supply, reduced summer outdoor activities and hotter urban spaces.
- Lower rainfall levels and extended dry periods mean our street trees, parks, gardens, reserves, and recreational spaces may struggle to support regular use without additional Council intervention.



## How does climate change impact different groups in our community?

Different population groups and individuals may be more sensitive to climate-related hazards.

- Climate change disproportionately impacts on vulnerable and economically disadvantaged people, and people experiencing homelessness.
- Young children and older people are more susceptible to extreme heat events.
- Children, young people and Indigenous peoples are disproportionately affected by climate anxiety.
- There is evidence that health impacts differ between genders. For example, mortality from heatwaves is higher in women, particularly those in an older age group (Windisch, 2019).
- Public housing tenants are at particularly high risk from climate change-related health impacts due to the poor thermal quality of Victoria's housing, and this will become a more significant problem as the effects of climate change increase (Sustainability Victoria, 2020).
- Victorians rank health as their top priority, yet 90% of Victorians have not thought about how health is affected by climate change. A person who is not aware of an issue is not going to plan for it, so communicating these health issues to the community is an important part of planning for them (Sustainability Victoria, 2020).

## Current impacts on climate change?

- With working from home becoming commonplace in the current 'COVID-normal' era of the pandemic, people's energy usage has changed. Many people are commuting less to work now, however their energy usage at home has increased due to being home more often. However, these habits are unlikely to have a significant impact on greenhouse gas emissions.
- 'Greenwashing' is an ongoing problem, which refers to organisations or corporations using marketing and public relations strategies to appear as they are contributing towards being environmentally friendly, however in reality they are not. Superficial policies, advertising or programs mean that little to no actual action is taken in battling climate change and its impacts.

## What is the role of other levels of government?

Broadly, responses to climate change are usually categorised as either **mitigation** or **adaptation**.

- **Climate Change Mitigation** refers to efforts to reduce or prevent emission of greenhouse gases (UN Environment Programme, 2020).



- **Climate Change Adaptation** refers to efforts to prepare for the adverse effects of climate change (UN Environment Programme, 2020).

The Federal Government is responsible for leading Australia's Climate Change strategy including responsible for national policies to reduce Australia's greenhouse gas emissions and meet our international obligations.

The Victorian Government is responsible for preparing Victoria for the impacts of climate change and driving Victoria's transition to a net zero emissions, climate resilient community and economy. Additionally, the Victorian Government has introduced legislation requiring local government authorities to be responsible for responding to climate change and inform communities of climate change impacts.

## What is the City of Port Phillip's role in climate change?

As a local government, Council exists within the larger system. We are directly affected by the action or inaction that occurs in other municipalities and at the state and federal levels. Through collaboration and partnerships, we play a role in moving toward a system-wide approach to sustainability. Currently, Council is mandated to:

- Consider climate change when preparing a municipal public health and wellbeing plan (*Climate Change Act 2017*).
- Coordinate, deliver and support emergency activities from prevention through response to recovery (*Emergency Management Act 2013*).
- Promote the economic, social and environmental sustainability of the municipal district, including mitigation and planning for climate change risks and priority to achieving the best outcomes for the municipal community, including future generations (*Local Government Act 2020*).
- Take into account regional and national plans and policies during strategic planning (*Local Government Act 2020*).

The majority of Victorians believe that all levels of government should be acting on health and climate change, with just over half of Victorians believing that their local government should be leading action on this issue (Sustainability Victoria, 2020).

Over the next four years Port Phillip can address the drivers of poor health outcomes resulting from climate change by:

- Promoting green buildings by applying environmentally sustainable design planning policy and guidelines



- Investing in renewable energy and energy efficiency measures in Council buildings and in the Melbourne Renewable Energy Project, a group purchasing model to drive investment in renewable energy
- Increasing the permeability of ground surfaces across public streets and spaces, and working with the community to achieve greater permeability on private property.
- Planning and delivering water sensitive urban design interventions to reduce contaminants in water entering Port Phillip Bay
- Planning and implementing urban greening and cooling strategies to increase tree canopy cover and vegetation, green walls, green roofs, green corridors and public open space
- Incorporating climate impacts, exposure and vulnerability across strategic planning processes that also address the determinants of health (i.e. transport, roads, parks and open space, waste, land use, housing and urban planning)
- Partnering with the community and local organisations to deliver projects and programs that address climate change and make community members more resilient to its impacts
- Providing opportunities to build emotional and psychological wellbeing and resilience including community connectedness, support and positive action programs
- Supporting vulnerable community members during extreme weather events including heat waves
- Embedding sustainability into Council's procurement and investment policies and practices, including minimum sustainability performance requirements for suppliers
- Making it easier to walk and ride a bike, and access public transport
- Enabling the creation of '10-minute neighbourhoods' that allow residents to access all of their most basic, day-to-day needs within a 10-minute walk of their home
- Support the Victorian Government-led Coastal Hazard Vulnerability Assessment and develop an implementation strategy and action plan to help protect the City of Port Phillip against sea level rise and inundation
- Planning for and enabling increased food security for residents, focusing on shortening the food supply chain
- Supporting circular economy principles and delivering services and programs to divert food and organic waste from landfill

### Who are our partners?

The key to creating a sustainable Port Phillip is working with others. Our community, local and Victorian Government partners, research organisations and private industry all have a critical role



to play. Across Port Phillip there are already hundreds of organisations, businesses and individuals showing leadership, implementing solutions and making sustainability a part of everyday life.

Some of our key partners include:

- Department of Energy, Environment and Climate Action (formerly Department of Environment, Land, Water and Planning)
- Melbourne Water
- Department of Health (formerly part of the Department of Health and Human Services)
- Parks Victoria
- Fishermans Bend Taskforce
- South East Councils Climate Change Alliance
- Council Alliance for a Sustainable Built Environment (CASBE)
- Neighbouring councils
- Project delivery partners and Housing associations
- Port Phillip EcoCentre
- Environment-focused community groups.

### What may change over the next five years?

- Projected impacts include more extreme conditions and severe weather. This will impact on our community's health and particularly our most vulnerable and economically disadvantaged people.
- There may be storm damage to buildings and other infrastructure impacting use by the community. Public spaces used for active and passive recreation may also be impacted by severe weather, causing clubs to be disadvantaged.
- Increased incidence of climate change anxiety.
- Changes to disaster mitigation strategies – mass sheltering and population evacuation – which increase the risk of viral transmissions by gathering people close together.
- A large portion of the City of Port Phillip is adjacent to or includes water in the form of the ocean, canals and Albert Park Lake. Therefore, it is at an increased risk of climate change-related problems such as rising sea levels and flooding. In particular, flooding could become more common and continue to cause issues for residents in the next five years, as has been seen in times of heavy rainfall.



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