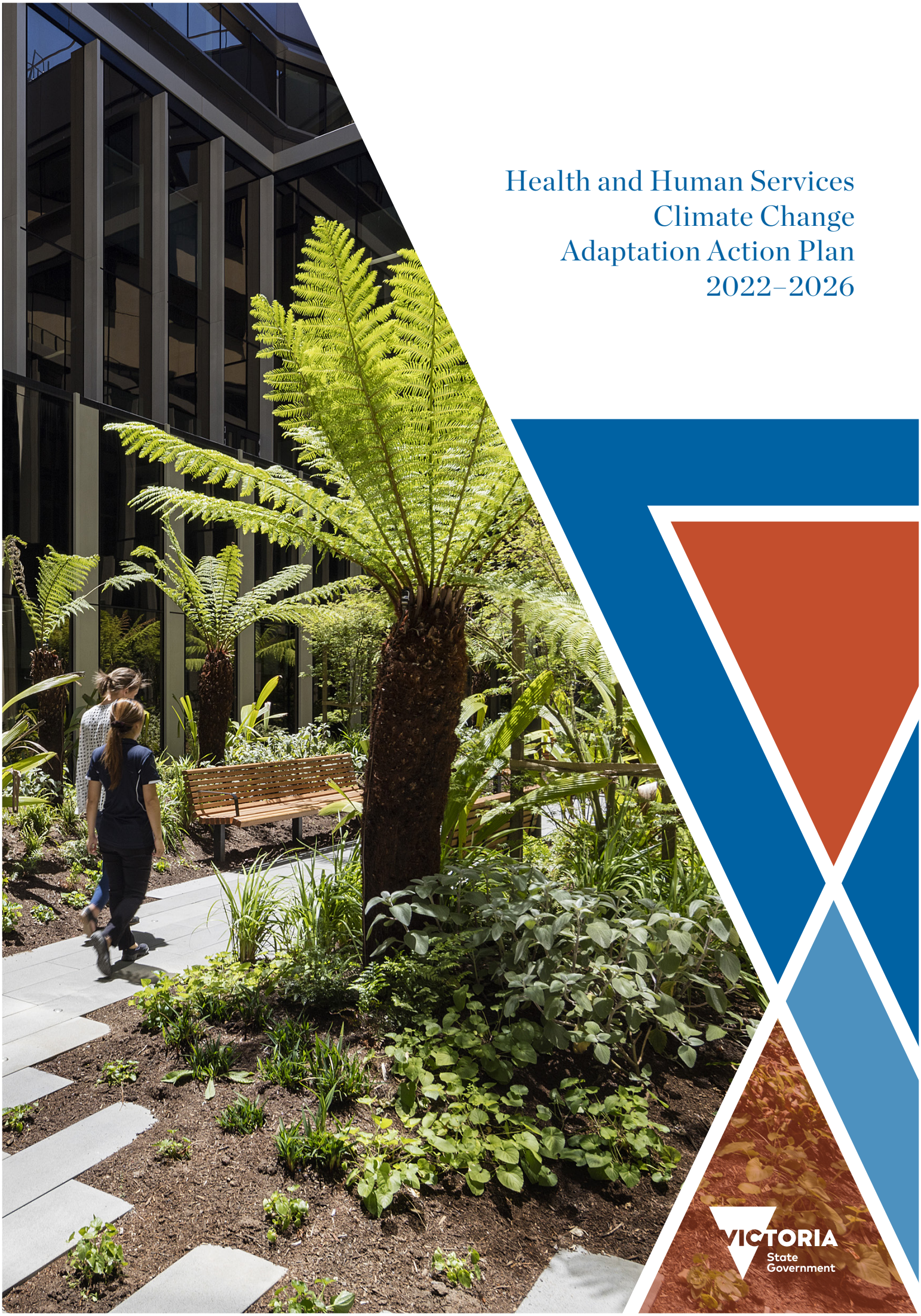

Health and Human Services Climate Change Adaptation Action Plan 2022–2026

VICTORIA
State Government

Acknowledgement

The Victorian Government proudly acknowledges Victoria's Aboriginal communities and their rich culture and pays respect to their Elders past and present. We acknowledge Aboriginal peoples 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. We embrace self-determination and reconciliation, working towards equality of outcomes and ensuring an equitable voice.

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Front cover image courtesy of Bendigo Health

Minister's foreword

Responding to climate change is everyone's responsibility.

We're already seeing how extreme heat, bushfires, drought, and floods impact our communities. Respiratory and heart disease, mental illness, allergies, injuries, food poisoning and poor nutrition are just some of the ways that a changing climate affects us all.

If we want to achieve our vision of Victorians being the healthiest people in the world, we must develop ways to respond and adapt to our changing environment.

The Health and Human Services Climate Change Adaptation Action Plan 2022-26 will help us deliver an effective health and human services system that is adaptable to change and provides targeted support, infrastructure, and systems for our community.

Improving the resilience of our existing health care infrastructure and developing health and wellbeing support tailored to meet the impact of climate change are just some of the 14 key strategic actions to be implemented over the next five years.

These actions lay the foundations for the change needed across the health and human services system. We will continue to look to world leaders to learn and improve the sustainability of our entire health and human services system and support the health and wellbeing of all Victorians in a changing climate. The next five years are vital for increased action on climate change action. The latest report from the Inter-governmental Panel on Climate Change highlights the need for rapid emission reductions and adaptation to climate impacts.

The strong foundations and lessons learned from the pilot Health and Human Services Adaptation Action Plan 2019-2021 have informed this plan's development.

Guided by Victoria's Climate Change Strategy, this plan focuses on preparing our health and human services systems as a whole and complements the six other adaptation action plans across State Government service delivery.

Ultimately, our plan acknowledges that our changing climate influences the health outcomes of Victorians. We are responding appropriately, so we can continue to enjoy the high quality-of-life Victoria provides.

I thank everyone who worked so hard on putting this plan together and helped shape this important work.

The Hon. Martin Foley MP
Minister for Health, Ambulance Services, and Equality

Contents

Minister's foreword **3**

Executive summary **5**

1. Introduction **8**

1.1 A systems approach to adaptation 8

1.2 Health and Human Services system scope 11

1.3 Adaptation and mitigation 13

1.4 Health and Human Services system and climate change 14

1.5 Health and Human Services system climate change adaptation action plan objectives 16

1.6 Critical cross-system connections and interdependencies 17

1.7 Partners, stakeholders, and cross-cutting policy areas 19

2. Governance, roles and responsibilities **23**

3. Climate change and the Health and Human Services system **26**

3.1 Climate change in Victoria 26

3.2 Impacts of climate change on the Health and Human Services system 28

4. Key climate change risks and opportunities for the Health and Human Services system **30**

4.1 Public health 30

4.2 Infrastructure 31

4.3 Sector capability 31

4.4 Cross-system risks and opportunities 32

5. Existing climate change adaptation policies, programs and projects, and gap analysis **34**

5.1 Existing policies, programs and projects 34

5.2 Gap analysis and opportunities for increased action 36

6. Climate change adaptation actions: 5-year (2022–26) plan **40**

7. Monitoring, evaluation, reporting and improvement **45**

Appendices **46**

Appendix 1. Development of this adaptation action plan 46

Appendix 2. Summary of existing policies, programs or legislation relevant to the Health and Human Services system 48

Appendix 3. Report on the implementation and effectiveness of the Pilot Health and Human Services Adaptation Action Plan 2019–21 51

Appendix 4. Key terms 54

Appendix 5. Cross-system risks intersecting with the Health and Human Services system 55

References 69

Executive summary

The *Climate Change Act 2017* (the Act) requires the Victorian Government to develop plans addressing the impacts of climate change. It identifies 7 key systems that each require an adaptation action plan (AAP), including the Health and Human Services system.

Together, the 7 plans will harness the opportunities and tackle the impacts of climate change, while caring for our environment and bolstering our economy. They will build upon significant work already underway, including measures to reduce emissions as outlined in Victoria's Climate Change Strategy.

Decisive action to adapt now will reduce current and future risks, build social and economic resilience, and ensure Victoria is best placed to take advantage of emerging opportunities.

THE VICTORIAN HEALTH AND HUMAN SERVICES SYSTEM MUST CONTINUE TO ACT TO ADAPT TO THE IMPACTS OF CLIMATE CHANGE

The Victorian Health and Human Services system spans health and social housing infrastructure, public health programs and services, and targeted support for vulnerable individuals and communities. More Victorian residents work in healthcare and social services than any other industry.[1]

Climate change has been described by the World Health Organization as the greatest threat to global health in the 21st century.[2] Extreme weather events such as heatwaves, heavy precipitation and droughts are increasing in frequency and/or intensity, together with associated hazards, including bushfires, severe storms, and floods.[3]

Climate change impacts on health and wellbeing are many and varied and critically, these impacts, along with impacts on the social determinants of health, will be felt earlier and will be most pronounced for vulnerable communities. The Health and Human Services system more broadly is already impacted by climate change through these more frequent and more intense extreme weather events. Overall warmer temperatures will continue to increase the vulnerability of the system's workforce, services and built assets to a wide range of risks.

1 Australian Bureau of Statistics, Healthcare and Social Assistance our largest industry, 2017, accessed 19 April 2021, <https://www.abs.gov.au/ausstats/abs@.nsf/mediareleasesbyReleaseDate/B611DFF5E8590F8ACA2581BF001F743B?OpenDocument>.

2 World Health Organization, WHO calls for urgent action to protect health from climate change – Sign the call, <https://www.who.int/news/item/06-10-2015-who-calls-for-urgent-action-to-protect-health-from-climate-change-sign-the-call>

3 Intergovernmental Panel on Climate Change. Summary for policymakers. In: Masson-Delmotte V, Zhai P, Pirani A, et al; editors. Climate Change 2021: the physical science basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, 2021. In Press. <https://www.ipcc.ch/report/ar6/wg1/>

CLIMATE CHANGE ADAPTATION WORK IS UNDERWAY, BUT FURTHER ACTION IS URGENTLY NEEDED

Building on the Pilot Health and Human Services Climate Change Adaptation Action Plan 2019–21, released in 2019, the Health and Human Services Climate Change Adaptation Action Plan 2022–26 outlines the Health and Human Services system's scope, governance, risks and opportunities and proposes short-, medium- and long-term objectives to address climate change impacts. The plan presents 14 strategic actions that Victoria's Health and Human Services system will take during the next 5 years to address current climate change impacts, reduce barriers to adaptation planning and action, and lay the foundations for transformational adaptation helping us to achieve our vision: Victorians are the healthiest people in the world.[4]

These 14 actions will ensure Victoria's Health and Human Services system is prepared to address the challenges posed by climate change and to continue service delivery. Of paramount importance, the disproportionate impact of climate change on vulnerable and disadvantaged groups, and the associated risks of increasing social and economic inequalities will be addressed as a priority across all 14 actions in this plan. Supporting vulnerable communities and partners to participate in key planning and policy development will be integral to the successful implementation of all actions.

Public consultation was a critical component of this plan's development – supporting the *Climate Change Act 2017*'s guiding principle of community engagement. The consultation process for this plan provided an important opportunity for community members and organisations to inform how the Health and Human Services system can best support adaptation to a changing climate. During public consultation the Department of Health and Department of Families, Fairness and Housing received 47 written submissions and 53 survey responses from engaged and informed stakeholders, enabling an improved final plan. The plan's 14 strategic actions are summarised in Figure 1. More detail is provided in Section 6 of this plan.

4 Our Operational Plan <https://www2.health.vic.gov.au/about/our-plan>

Figure 1. Strategic actions to be implemented by the Health and Human Services system to address climate change

Public and stakeholder engagement on climate resilience and health

- H1 - Engage the profile and leadership of the Chief Health Officer, other health professionals and broader trusted voices to deliver a climate change and health engagement program
- H2 - Improve the evidence base and monitoring of climate related health impacts now and in the future

Infrastructure resilience

- H3 - Actively manage and reduce climate hazards across the social housing asset base
- H4 - Transform the current social housing asset base for improved climate resilience
- H5 - Embed climate resilience in new social housing developments
- H6 - Transform the health asset base for improved climate resilience
- H7 - Develop options to manage the impacts of urban heat on health and social housing infrastructure and health and human services, and reduce health and social housing infrastructure's contribution to urban heat
- H8 - Develop options to secure climate-resilient health infrastructure
- H9 - Promote cross-portfolio consistency in adaptation processes, assessments, guidance and reporting within the sector

Sector capability

- H10 - Demonstrate organisational leadership in climate change adaptation and risk management actions at all levels and divisions across the departments
- H11 - Leverage the Health and Human Services delivery footprint to embed sector-wide climate change adaptation and risk management
- H12 - Support embedding of place-based adaptation in Whole of Victorian Government efforts by leveraging the Department of Health and Department of Families, Fairness and Housing's roles in precinct and public health and wellbeing planning
- H13 - Embed Aboriginal self-determination in our approach to climate change adaptation and seek guidance on Aboriginal adaptation knowledge
- H14 - Develop mental health and wellbeing support tailored to climate change impacts

1. Introduction

Under the *Climate Change Act 2017*, the Health and Human Services system is defined as: 'the services and assets primarily engaged in protecting human health from disease resulting from or associated with communicable disease, food, water or the environment', and as: 'the services and assets which provide human physical and mental health care, social support and assistance'. This adaptation action plan sets out the Victorian Government's proposed actions during the next 5 years to respond to climate change risks to the Health and Human Services system.

1.1 A SYSTEMS APPROACH TO ADAPTATION

The Victorian Government is taking strong and lasting action to reduce Victoria's greenhouse gas emissions (hereafter referred to as emissions) to net zero by 2050 and build resilient communities prepared to deal with the impacts of climate change.

Victoria was one of the first jurisdictions in the world to legislate a net-zero emissions target with the *Climate Change Act 2017* (Figure 2), and has set a strong foundation for future climate resilience with action under Victoria's Climate Change Adaptation Plan 2017–20. Victoria's Climate Change Strategy sets out the Victorian Government's current action on climate change and our next steps.

Reducing our emissions is critical to lessening the impact of climate change, but it will not prevent it – some degree of climate change is already locked in. Adapting to the impacts of climate change will reduce current and future risks, build social and economic resilience, and ensure Victoria is best placed to take advantage of opportunities.

Victoria's Climate Change Strategy sets our adaptation objectives for the next decade and our priorities for the next 5 years, consisting of priority focus areas to:

- address current climate change impacts (priority1 – P1)
- reduce barriers to adaptation (P2)
- lay the foundations for transformational adaptation (P3).

The strategy also outlines the enablers that will support action:

- capacity building and partnerships
- governance and strategic planning
- sustainable adaptation finance
- leadership and innovation.

Guided by Victoria's Climate Change Strategy, the Victorian Government is planning for climate impacts and delivering adaptation action at multiple scales.

- **Incremental adaptation** refers to action where the central aim is to maintain the essence and integrity of a system or process at a given scale.
- **Transformational adaptation** refers to action that changes the fundamental attributes of a system in response to climate and its effects.
- **Adaptive capacity** refers to the ability of systems, institutions, people, plants and animals to adjust to potential damage, take advantage of opportunities, or respond to the consequences of climate change.

Figure 2. Victoria's climate change policy context

Global context

COP21

Keep global temperature rise well below 2°C with aspirations to 1.5°C

SUSTAINABLE DEVELOPMENT GOALS

Good health and wellbeing
- ensure healthy lives and promote wellbeing for all at all ages

Climate action
- take urgent action to combat climate change and its impacts

Victorian context

Victorian Climate Change Act 2017

Net zero by **2050**

Victoria's Climate Change Strategy

Interim targets to reduce the state's emissions from 2005 levels

28-33%
by 2025

45-50%
by 2030

Sector emissions reduction pledges

- Agriculture
- Energy
- Industrial processes and product use
- Land use, land use change and forestry
- Transport
- Waste
- **Whole of Victorian Government**

Whole of Victorian Government emissions reduction pledge

This pledge includes emissions reduction initiatives such as all Victorian Government operations – including **public hospitals** and government offices – powered by 100% renewable electricity by 2025

5-yearly adaptation planning cycle

System-based adaptation action plans

- **Health and Human Services**
- Transport
- Natural Environment
- Water Cycle
- Built Environment
- Primary Production
- Education and Training

Community-led regional adaptation strategies

Barwon
South West
Grampians
Loddon Mallee
Hume
Gippsland
Port Phillip

Adaptation action plans: 7 systems

The Victorian Government has prepared the first set of 5-year adaptation action plans for 7 systems that are either vulnerable to climate change impacts or are essential to ensure Victoria is prepared. The 7 systems are: Health and Human Services; Built Environment; Education and Training; Natural Environment; Primary Production; Transport; and the Water Cycle (Figure 3).

This Health and Human Services Adaptation Action Plan is part of the first set of 7 plans.

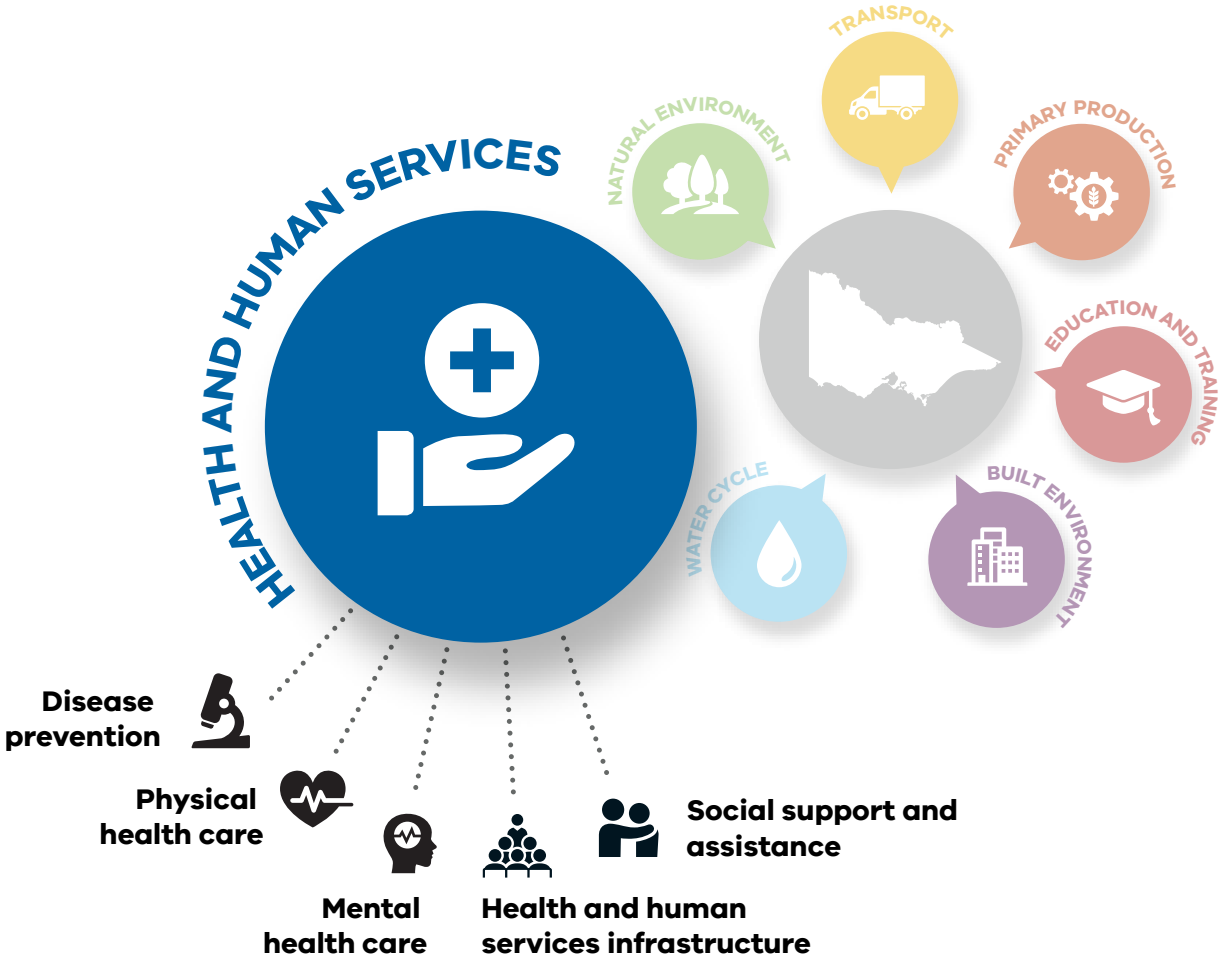
This approach to climate change adaptation enables a targeted response to climate change, which focuses on the unique characteristics and needs of each system while recognising that some issues require coordinated action across systems.

This plan is complemented by the development of Regional Adaptation Strategies – in partnership with regional communities – to identify, prioritise and deliver place-based action informed by local knowledge and needs. These strategies are being developed for Barwon South West, Gippsland, Grampians, Hume, Loddon Mallee and Port Phillip.

Work also continues with local governments and community groups to further understand and address the risks posed by climate change to local communities.

The Health and Human Services Adaptation Action Plan will guide adaptation efforts over the next 5 years, building on the strong foundations for adaptation and seizing opportunities to accelerate adaptation.

Figure 3. Adaptation action plans have been developed for 7 systems, including the Health and Human Services system



1.2 HEALTH AND HUMAN SERVICES SYSTEM SCOPE

Both the Department of Health and the Department of Families, Fairness and Housing are responsible for developing and delivering policies, programs and services that support the health, wellbeing and safety of all Victorians. The departments' focus is on outcomes that support all Victorians to be healthy and well, safe and secure, and able to participate in and connect to culture and community.

Under the *Climate Change Act 2017*, the Health and Human Services system is defined as, 'the services and assets primarily engaged in protecting human health from disease resulting from or associated with communicable disease, food, water or the environment', and 'the services and assets which provide human physical and mental health care, social support and assistance'.

The departments perform their responsibilities as stewards, system managers and agents. For example:

- as **stewards,** we implement and oversee policy
- as **system managers,** we provide funding, set standards, monitor performance and administer regulations
- as **agents,** we direct delivery of services, build capacity and exercise influence.

An overview of the departments' key areas of responsibility is shown in Figure 4.

Figure 4. Department of Health and Department of Families, Fairness and Housing areas of responsibility

Public health and wellbeing

The **Department of Health** and **Department of Families, Fairness and Housing** deliver a wide range of public health programs, including primary prevention measures, to:

- promote health and wellbeing
- prevent illness and hospitalisations
- address inequalities and underlying causes of ill health
- respond to public health threats and emergencies
- promote informed decision making through a foundation of research, policy and legislation.

A key public health focus is protecting and promoting the health and wellbeing of those most vulnerable or disadvantaged.

Health services and social housing infrastructure

The **Department of Health** manages more than $23 billion in health assets, including:

- 126 public hospitals and health services providing acute, sub-acute and mental health services and residential aged-care services
- 86 community health services
- 260 ambulance response stations, providing emergency and non-emergency ambulance services for all Victorians.

The **Department of Families, Fairness and Housing** provides housing assistance to Victorians experiencing disadvantage and works to reduce homelessness by increasing and improving the supply of crisis and long-term housing options in Victoria.

The department manages more than $26 billion in public housing assets, including just under 65,000 homes with more than 116,000 residents.

About 20,000 additional community housing assets are managed by other providers in the overall stock of about 85,000 social housing properties.

Health and human services: vulnerable community support services

The health and human services sector includes more than 2,000 funded agencies, including public hospitals, health services and human services addressing Victorians' housing, disability, youth, family and child services needs.

These services interface with each other, and often experience surge demand in times of crisis – times when people are at their most vulnerable.

Services that support vulnerable communities include:

- **Mental health services** Supporting Victorians experiencing or affected by mental health problems or substance misuse, and also supporting their families and carers.
- **Residential aged care services** Funding 179 public sector residential aged care services across Victoria, currently accounting for around 10 per cent of service system capacity.
- **Disability support services** Working in partnership with people with a disability, their families and carers to provide support, including managing the implementation of the National Disability Insurance Scheme (NDIS).
- **Child protection services** Working to meet the needs of children and ensure their safety in the family is a shared responsibility between individuals, the family, the community and government.
- **Low-income support services** Offering a variety of concessions and benefits to eligible cardholders to assist low-income Victorians during financial hardship, such as utility relief grants; deductions on council rates; and financial services through the Good Money program.

Aboriginal community-controlled health services are an important part of the health and human services sector and play a crucial role in Aboriginal self-determination and the delivery of health and human services.

1.3 ADAPTATION AND MITIGATION

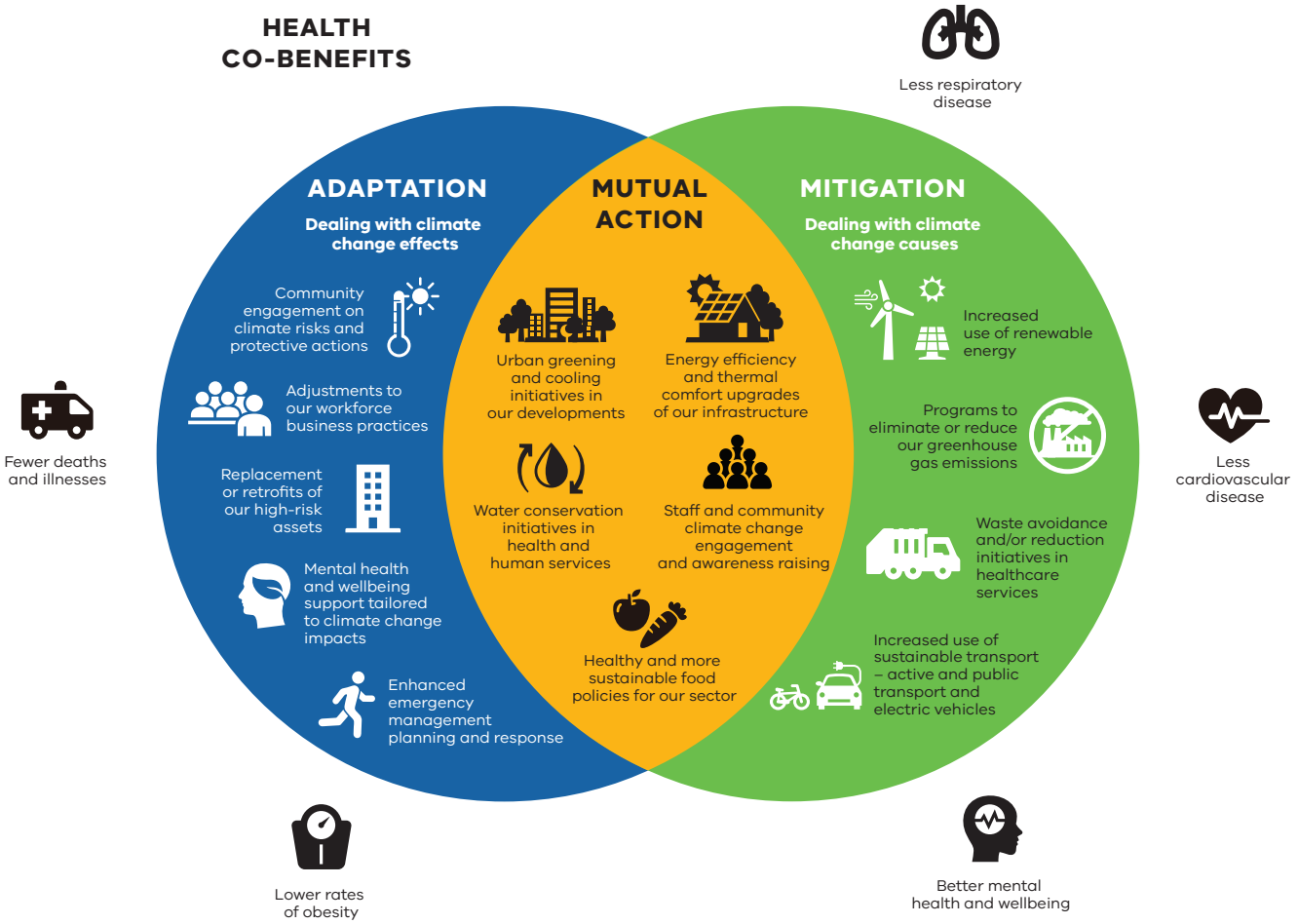
Climate change action is typically divided into 2 categories: adaptation and mitigation.

Adaptation is defined as the process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities.[5] Adaptation focuses on living and coping with the impacts of climate change already locked into our climate systems. Mitigation, also known as emissions reduction, focuses on addressing the causes of climate change by reducing global greenhouse gas emissions. Importantly, some climate change actions span both adaptation and mitigation (for example, urban forests and efficient cooling in buildings) and many actions have health co-benefits.

The World Health Organization (WHO) has recently highlighted that the public health benefits resulting from strong mitigation efforts would far outweigh their cost. WHO also highlighted that strengthening resilience and building adaptive capacity to climate change can lead to health benefits, including by protecting vulnerable populations from disease outbreaks and weather-related disasters, by reducing health costs and by promoting social equity.[6]

As an adaptation plan, this document focuses on those actions that will help the health and human services sector to better adapt to the changing climate. There are other plans and strategies dedicated to emissions reduction, such as increasing the renewable energy component of the Victorian grid and the government's emissions reduction pledges. For this reason,

Figure 5. Interconnectedness of climate adaptation and mitigation, and health co-benefits of climate action



5 https://www.ipcc.ch/report/ar6/wg1/

6 COP26 special report on climate change and health: the health argument for climate action. Geneva: World Health Organization, 2021 p4

this plan does not specify mitigation priorities or actions. It is, however important to acknowledge that emissions reduction is crucial to limiting the worst impacts of climate change in the medium and long term.

Emissions reduction activities for the health and human services sector will occur alongside and in conjunction with adaptation actions outlined in this plan. This includes the Victorian Government's commitment to use 100 per cent renewable electricity for all its operations from 2025, which will see public hospitals and the departments' offices eliminate their largest source of direct emissions.

Ongoing work on energy efficiency, on-site solar, transport and waste management will continue to reduce the sector's emissions. Where climate change actions can achieve both mitigation and adaptation outcomes they have been incorporated into the actions in this plan. Figure 5 (above) provides some examples of interconnections between adaptation and emissions reduction activities in the health and human services system and their associated health co-benefits.

For further details on Victorian climate emissions reduction actions, please refer to the documents listed below:

- Victoria's Climate Change Strategy
- Whole of Victorian Government Emissions Reduction Pledge

1.4 HEALTH AND HUMAN SERVICES SYSTEM AND CLIMATE CHANGE

Actions already implemented

The Health and Human Services system has been taking action on climate change – highlights of the system's key actions since 2007 are shown in Figure 6 below. These actions will provide a strong foundation for delivering the actions presented in this plan. Further details of existing adaptation policies, programs and projects that are already in place for the Health and Human Services system are detailed in Section 5.

The Victorian Health Building Authority updated its guidance on environmental management planning to align with the (then) Department of Health and Human Services' Environmental sustainability strategy (2018–19 to 2022–23), to help health services respond to climate change within their environmental management plans. A new template and supporting resources were published on the Department of Health's website in February 2020.

The Health and Human Services system is also reducing its own environmental footprint. Initiative highlights for 2019–20 are shown in Box 1.[7]

Box 1

Emission reduction initiative highlights in 2019–20

The (then) Department of Health and Human Services delivered a wide range of emission-reducing initiatives during 2019–20, including:

- Reducing annual reported greenhouse gas emissions in the public health sector by 5.8% or 50,139 tonnes of carbon-dioxide equivalent (CO^2-e) from the previous reporting year (2018–19).
- Over 5-years to 2019–20 the department reduced its annual office-based emissions by 24% or 7,125 tonnes CO^2-e (from the 2014–15 baseline).
- Upgrading the energy-efficiency of 1,500 low-rise public housing properties under the EnergySmart Public Housing program. Annual savings across the project are estimated at 2,036 tonnes CO2-e per annum. Progressing the Regional Health Solar Program, including installing 3,364 kW of solar panels at 35 health facilities across the Hume, Loddon Mallee and Grampians regions. Once completed, estimates indicate these arrays will generate around 5,000 MWh of electricity per annum and will reduce emissions by 5,150 tonnes CO^2-e per annum.
- Working with the office landlord at 71 Moreland St, Footscray to support building upgrades, including the installation of a 100-kW solar PV array for tenancy use. This solar installation is projected to generate 106 MWh per annum and will reduce the department's emissions by 119 tonnes CO^2-e per annum.

7 Department of Health and Human Services (a), Department of Health and Human Services 2019–20 Annual Report, State of Victoria, 2020.

Figure 6. Key actions taken by the Health and Human Services system to address climate change

2007	• K2 Apartments in Windsor completed with average 7.1-star NatHERS rating
2009	• Release of the first Victorian heatwave plan
2010	• Victorian Government passes the *Climate Change Act 2010*
2011	• Horsham Catalyst project designed and constructed, including four new public housing units trialling highly sustainable construction methods and materials
2012	• The Department of Human Services develops its first climate change strategy
2013	• Pathways to climate adapted and healthy low-income housing study commissioned regarding climate change and the impacts on housing tenants and infrastructure
2014	• The Department of Human Services commences its Environmental Data Management system to collect, manage and report on public health services' environmental data
2015	• The Department of Health begins the process of annual reporting on resilience of the health sector
2016	• West Gippsland Healthcare Group energy performance contract works completed resulting in reductions in electricity, gas and water use
2017	• Carlton Housing Redevelopment completed which provided new public parks and achieved a 7-star NatHERS rating • The Department of Health and Human Services commences assessing climate change risks to social housing infrastructure.
2018	• New public housing builds must meet minimum average 7-star NatHERS energy efficiency standard, and some large developments also meet the five-star Green Star standard • The Victorian Health Building Authority completes climate risk assessment of Victoria's public health infrastructure to climate-related hazards • Sustainability in Healthcare strategy 2018-19 to 2022-23 is released
2019	• Climate change included as a focus area in the Victorian Public Health and Wellbeing Plan 2019-2023 • Pilot Health and Human Services Climate Change Adaptation Action Plan 2019-2021 is released • Environmental sustainability innovation grant program funds 12 projects across health services
2020	• The Department of Health publishes new resources to support local councils to tackle climate change through municipal public health and wellbeing planning • EnergySmart Public Housing Project delivers upgrades to 1,500 public dwellings • The Victorian Health Building Authority releases sustainability in capital works and engineering guidelines for health services
2021	• Waste education in healthcare project delivers a reduction in waste and recoverable resources going to landfill • Regional Health Solar Fund program installs solar in 59 health facilities • Homes Victoria commences rollout of its Social housing energy efficiency program

1.5 HEALTH AND HUMAN SERVICES SYSTEM CLIMATE CHANGE ADAPTATION ACTION PLAN OBJECTIVES

The Health and Human Services system's climate change adaptation plan objectives aim to put climate change adaptation at the forefront of policy decision-making processes across the Health and Human Services system. These objectives, shown in Table 1, seek to progressively build infrastructure and community resilience through effective adaptation action – a key policy objective of the *Climate Change Act 2017* – and to support delivery of its guiding principles and the adaptation priorities set out in Victoria's Climate Change Strategy (Table 1).

Table 1. Health and Human Services system adaptation objectives

Timing	Objectives	
Short-term (2022–26)	Climate change adaptation is embedded across the Health and Human Services system	Engaging Victorians and our stakeholders on climate resilience and health by building on the lessons of our bushfire, storm and COVID-19 pandemic responses to encourage action to protect the health and wellbeing of the Victorian community. Building the climate change resilience of our social housing and health services to improve the health and safety of residents, patients, visitors and staff. Improving our sector capability and integrating adaptation into our governance to actively respond to and reduce climate risks across the sector.
Medium-term (2027–31)	Climate change adaptation is part of how the Health and Human Services system plans and delivers services	Victorians and our stakeholders are engaged and active in climate resilience and health, helping protect Victorians' health from climate risks. Our social housing and health services are substantively resilient to climate change, helping protect the health and safety of residents, patients, visitors and staff from climate risks. Adaptation to climate change is embedded in our approach to sector capability and governance, reducing climate risks across the sector.
Long-term (2032–50)	The Health and Human Services system is climate resilient	Our Health and Human Services system is resilient to climate change and ecologically sustainable, achieving the best health, wellbeing and safety for all Victorians so they will live a life they value.

1.6 CRITICAL CROSS-SYSTEM CONNECTIONS AND INTERDEPENDENCIES

The Health and Human Services system intersects with other systems preparing adaptation action plans under the *Climate Change Act 2017*. These cross-system connections and interdependencies are described in Table 2 below. All systems employ significant numbers of Victorians – and employment is a key social determinant of health and wellbeing.

Table 2. Health and Human Services system cross-system connections and interdependencies

System definition	Cross-system connections and interdependencies
Water The collection, storage, treatment, delivery and supply of water, including recycled water; sewerage services, including the collection, treatment and disposal through sewerage systems and treatment plants; drainage services including the operation of drainage systems; flood management and flood management services, including the operation and maintenance of infrastructure to mitigate floods.	Water services provide reliable, safe, high-quality drinking water, water for primary production and other critical uses, and wastewater treatment, all of which are essential for good public health and wellbeing.
Natural Environment The natural environment consists of land-based ecosystems such as grasslands and forests, aquatic ecosystems such as rivers and wetlands, and coastal and marine ecosystems such as mangroves and sea-grass meadows. These ecosystems contain more than animals and plants. They are also about the rocks and soil that support life, and the climatic, water and fire conditions that plants and animals have evolved in.	Human physical and mental health and wellbeing is dependent on the natural environment providing clean air and water, healthy soil, biodiversity (including pollination) and places which provide for rest and recreation.
Primary Production The primary production system includes agriculture, productive fisheries and plantation forestry, alongside the infrastructure, workforce and communities that support them. It includes water management within the boundaries of the system and on-farm forestry.	Primary Production provides various high quality, nutritious and affordable foods in a safe and quality-controlled environment. Animals are managed responsibly to ensure that they and their products are safe for human consumption, and that biosecurity risks are rapidly addressed. It also provides many raw materials for industry and indispensable products such as clothing.
Built Environment The built environment and how people interact with that system. The built environment means places and structures built or developed for human occupation, use and employment, including cities, building, urban spaces, housing and infrastructure.	Built Environment provides housing, workplaces and service infrastructure for health services, telecommunications, energy and water. The location and quality of housing, workplaces and the urban environment is a major determinant of physical and mental health and wellbeing.
Education and Training The services and assets primarily engaged in the planning, development, provision and support of education and training, including future workplace skills and needs.	Education and Training provide pathways to employment, personal development and social connectedness, which are major determinants of health and wellbeing. This system trains Health and Human Services practitioners to a high standard.
Transport All the components for the movement of persons and goods, namely physical components, including transport networks, facilities and vehicles; and services components, including passenger, freight, and other transport services to move persons and goods.	Victoria's Transport system comprises roads, rail, shared paths, ports and airport infrastructure underpinning much of the state's economic and social functioning, and providing access to employment, education, recreation and community services. Transport provides access to essential services such as hospitals, for patients, staff and suppliers. Transport disruption during emergencies can isolate communities, hinder people's ability to relocate or evacuate, reduce emergency services' access to at-risk communities and hinder energy, water and telecommunications agencies' ability to restore essential services.

1.7 PARTNERS, STAKEHOLDERS, AND CROSS-CUTTING POLICY AREAS

Cross-cutting policy areas, partners and stakeholders intersect with several adaptation action plan systems. In these instances, shared decision making and coordinated action is necessary to enable effective adaptation, and to avoid unintended consequences and duplication of services and actions.

Climate change is a threat to Country and the cultural determinants of Aboriginal health and wellbeing. Aboriginal self-determination was pivotal in minimising the impact of the COVID-19 crisis on vulnerable Aboriginal Victorians. The Victorian Government continues to work closely with Aboriginal communities to minimise the risk of transmission of COVID-19 and reduce the impact of mandatory restrictions on food security, mental health and wellbeing, and access to culturally safe health and human services. This approach, and its successful outcomes, demonstrate the strengths and benefits of Aboriginal self-determination on matters that impact Aboriginal Victorians.

The Aboriginal Community Controlled sector, while not a Traditional Owner representative body, is a critical Aboriginal health and human services partner. The connection of Caring for Country with self-determination and cultural safety establishes a strength-based approach to addressing the health impacts of climate change and climate change adaptation.

The other plan-wide policy areas and stakeholders that the Health and Human Services system will collaborate with most frequently are described in Table 3 below.

Table 3. Cross-cutting policy areas and stakeholders

Cross-cutting policy areas and stakeholders	Health and Human Services system interactions with cross-cutting policy areas and stakeholders
Local government	Local government, in addition to managing climate change risks to their assets, services, clients and staff, undertake regulatory functions focused on protecting public health from risks that are likely to be exacerbated by climate change. The Department of Health works closely with Victoria's 79 local governments, developing legislation and guidance to support regulation of food businesses under the *Food Act 1984,* and aquatic facilities and prescribed accommodation premises under the Public Health and Wellbeing Act 2008 and associated regulations. The Department of Health also works with local government to implement parts of the Victorian arbovirus program, and to support local government in tackling climate change and its impacts on health through municipal public health and wellbeing planning. Local governments also develop and implement municipal emergency management plans in accordance with the *Emergency Management Act 2013* and coordinate local relief and recovery activities for affected communities.
Vulnerable communities	Extreme events such as floods, droughts, heatwaves and bushfires place additional pressure on Victorian people and families, leading to physical harm and psychological distress due to the loss of loved ones or the loss of property and livelihoods. This in turn results in increased demand for supports for parenting, family, family violence, financial and mental health. For example, the Black Saturday bushfires increased the incidence and severity of family violence for more than 50 per cent of women interviewed in affected shires. The Vulnerable People in Emergencies policy facilitates emergency planning and establishes the need for local registers of people who are most vulnerable to support emergency evacuation planning. Health and Human Services agencies have a responsibility to support vulnerable clients to develop personal emergency plans and identify clients who meet the criteria to be listed on Vulnerable Persons Registers. Local councils coordinate these registers, as well as a list of facilities where vulnerable people are likely to be situated in an emergency. The departments and funded agencies have a responsibility to maintain service continuity wherever possible, and in accordance with public health directives and occupational health and safety requirements. Specific advice is provided to the sector where services must adapt their service delivery mode or cease specific activities. For example, during the COVID-19 pandemic, new ways of working with children, families and service providers emerged including the promotion of alternate contact modes between children and families.

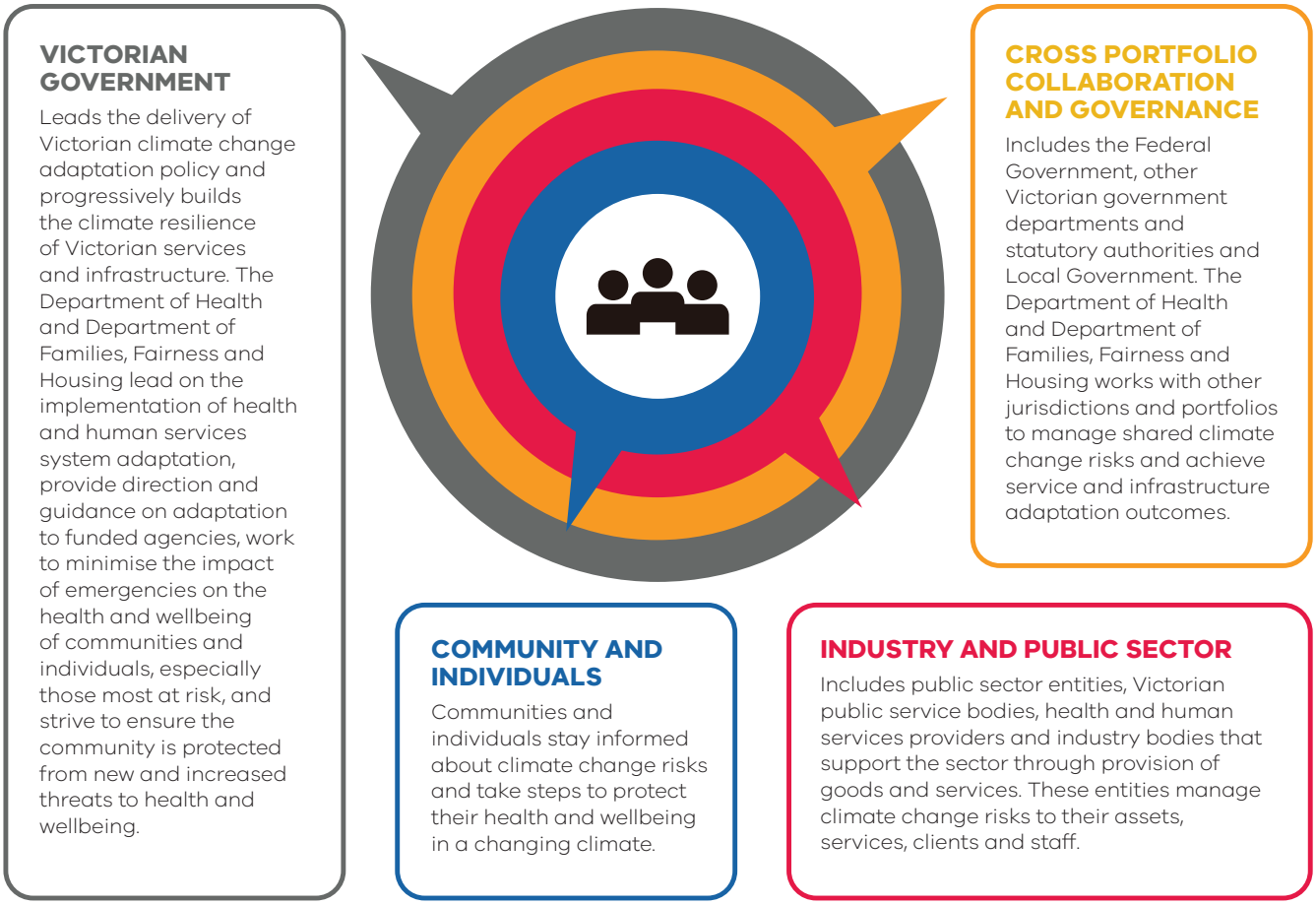
Cross-cutting policy areas and stakeholders	Health and Human Services system interactions with cross-cutting policy areas and stakeholders
Emergency management	Demand on the Health and Human Services system, including relief and recovery services, increases in times of emergency, particularly for the most vulnerable in the community. These demands can be long-lasting – they don't necessarily disappear when the emergency response is over, and can be compounded by emergencies that overlap. Emergency management is a shared responsibility across all systems and is coordinated under the leadership of Emergency Management Victoria and Victoria's State Emergency Management Plan (SEMP). The SEMP identifies the Department of Health as the control agency for health emergencies and support agency for other emergencies where this a health impact. The State Health Emergency Response Arrangements (SHERA) describe the arrangements for the management of health emergencies in Victoria. The State Health Emergency Response Plan (SHERP) is an integrated plan, with health emergency management responsibilities shared between the Department of Health, the emergency management sector, the health system and the community. The *Emergency Management Act 2013*, the *Public Health and Wellbeing Act 2008* and related public health legislation and regulations provide authority for control functions related to the management of public health emergencies. Victoria's Critical Infrastructure Resilience framework includes legislation and requirements for sectors providing essential services to the community to build sector resilience to emergency risks, regardless of service ownership. The Department of Families, Fairness and Housing is responsible, under the SEMP, for regional relief and recovery coordination, state-wide social recovery coordination, and coordination and delivery of relief and recovery services for financial assistance, emergency/temporary accommodation, and psychosocial supports. The Environment Protection Authority provides health advice in relation to smoke/air pollution, and/or poor recreational water quality, including during incidents and emergencies. Established under the *Emergency Management Act 2013*, the Inspector-General for Emergency Management (IGEM) is an independent statutory role providing assurance to government and the community on emergency management arrangements in Victoria and fostering their continuous improvement. Examples of recent IGEM work of relevance to Health and Human Services system include: the Inquiry into the 2020–2021 Victorian fire season and the Review of response to the thunderstorm asthma event of 21–22 November 2016.

Cross-cutting policy areas and stakeholders	Health and Human Services system interactions with cross-cutting policy areas and stakeholders
Energy	Victorian community members and businesses rely extensively on electricity and natural gas for essentials such as lighting, refrigeration, cooking, heating and cooling, and for access to water and communications. Some Victorian community members critically rely on energy for at-home life support equipment. Power outages, including those associated with heatwaves, floods, storms and bushfires, can pose serious risks to health and wellbeing. Health services are responsible for maintaining and operating energy infrastructure within their site boundaries. All health infrastructure has energy security of supply arrangements relative to their criticality, including additional grid feeders and on-site emergency generators. The resilience of the broader energy network is the responsibility of the Department of Environment, Land, Water and Planning (DELWP), energy regulators (Australian Energy Market Operator and Australian Energy Market Commission) and distribution companies.
Marine and coasts	Healthy marine and coastal environments promote resilience for communities and industries that rely on these resources for their liveability and livelihoods. Climate change will increasingly expose health services and social housing infrastructure in coastal areas to more severe storms and coastal flooding, and the associated risks to physical and mental health. Climate change is also posing increasing risks to coastal infrastructure, such as drinking water and wastewater treatment assets, that are essential for people's health. The Victorian Health Building Authority Guidelines for sustainability in capital works provides information on the implications of climate change for healthcare buildings and design responses. The guidelines require relevant risks, such as inundation and flooding, to be assessed and appropriate responses integrated during the design and delivery of health infrastructure

2. Governance, roles and responsibilities

The job of ensuring the Health and Human Services system successfully adapts to climate change is a shared one, as shown in Figure 7.

Figure 7. Roles for climate adaptation in the Health and Human Services system



Victorian Government

The Department of Health and the Department of Families, Fairness and Housing are leading actions to ensure the Health and Human Services system is resilient to climate change. Both departments do this through their roles as stewards, system managers and agents and by developing and implementing this plan.

Both departments are working to ensure climate change adaptation is incorporated into relevant policies, plans, guidelines and standards. They are also embedding climate change adaptation into the design and implementation of capital works, operations and services.

Department-funded agencies are responsible for managing climate change risks to their assets, services, clients, and staff.

A key focus throughout all these activities is the needs of individuals and communities who are most vulnerable. An equal partnership with the Aboriginal community-controlled health sector as an underlying principle of self-determination is also key. Aboriginal people hold extensive knowledge, wisdom and ways of doing about the wellbeing of the land and people. A shared governance role will ensure we are informed by the resilience knowledge of Aboriginal people during implementation of our adaptation actions..

Industry and public sector entities

Many industries impact our health and wellbeing, through their products and services, their use of resources and the waste they produce. The Health and Human Services system, in collaboration with other relevant systems, can work with industry to encourage climate change adaptation to protect health and wellbeing.

Industries regulated by the Department of Health and local government are required to manage potential risks to public health. For example, the *Safe Drinking Water Act 2003* and *Safe Drinking Water Regulations 2015* require Victorian water agencies to manage risks to the supply of safe drinking water. The *Food Act 1984* requires food businesses to ensure food for sale is both safe and suitable for human consumption.

Homes Victoria is building new social housing to above-regulation standards of sustainability, energy efficiency and thermal comfort. This leadership role will further develop the residential construction industry's capability in achieving higher standards of climate adaptation. Similarly, sustainability and climate adaptation are embedded in the design and construction of public health infrastructure, which is helping to further enhance the commercial building industry's capability. These examples are detailed further in Box 2 on page 25.

Community and individuals

Every Victorian community member has an important role to play in adapting to the health impacts of climate change. The Department of Health provides a range of resources to support the community to stay healthy in a changing climate.[8] This includes advice and services to help community members take action to survive the heat and to prepare for and respond to health risks associated with extreme weather events including floods and bushfires.

Cross-portfolio and cross-jurisdictional collaboration and governance

As described in Section 1.6 above, the Health and Human Services system intersects with, and depends on, other Victorian Government systems.

The Department of Health and the Department of Families, Fairness and Housing liaise regularly with other Victorian Government departments and agencies to ensure health and wellbeing are appropriately addressed in intersecting programs, initiatives and regulatory functions. This includes working collaboratively with the Environment Protection Authority which has a lead role in protecting human health from the impacts of pollution and waste, including providing public health advice on minimising exposure to bushfire smoke.[9] It also includes for example, working collaboratively with the Department of Jobs, Precincts and Regions which includes a key focus on sports and recreation and major events.

Departments also collaborate across jurisdictions in relation to climate change risks, for example through the Australian Health Protection Principal Committee (AHPPC) and associated expert standing committees. Climate change and environmental health are identified as strategic priorities in the AHPPC Strategic Plan 2019–2023 and Environmental Health Standing Committee (enHealth) Strategic Plan 2020–2023. See the example in Box 3 on page 25.

The Bureau of Meteorology also plays an essential role in supporting Victoria's health and human services climate change adaptation, for example, in relation to forecasting for epidemic thunderstorm asthma risk and the provision of weather information to inform planning and decision-making during extreme events such as fires, floods, heatwaves and storms.

Further examples of this collaborative approach are included in Appendix 5.

8 Department of Health, Climate change and health, Better Health Channel, 2019 https://www.betterhealth.vic.gov.au/health/healthyliving/climate-change-and-health

9 Environment Protection Authority, Protecting human health https://www.epa.vic.gov.au/about-epa/what-we-do/protecting-human-health

Box 2

Collaborating to improve climate resilience of health and social housing infrastructure

- The Victorian Health Building Authority is an active member of the Australasian Healthcare Infrastructure Alliance and chairs the environmentally sustainable design sub-group, comprising sustainability representatives from the health departments in Australia and New Zealand. This sub-group's objectives are to leverage existing state-based projects at the national level, share best practice between jurisdictions, pool resources to deliver projects of common interest, and provide a common and unified understanding of the sustainability and climate resilience of health infrastructure.
- Homes Victoria works closely with the Department of Environment, Land, Water and Planning regarding the evolution of standards for rental accommodation, and opportunities to improve energy efficiency and thermal comfort within the social housing stock.

Box 3

Collaborating across jurisdictions to develop nationally consistent air quality categories for fine particles in smoke

- Following the 2019–20 Black Summer bushfires, the Environmental Heath Standing Committee (enHealth) of the Australian Health Protection Principal Committee developed nationally consistent air quality categories and public health advice for fine particles in smoke. This is one of a suite of enHealth publications providing nationally agreed information and practical resources on environmental health matters.
- enHealth membership includes representatives from Commonwealth, state, and territory health departments, the National Health and Medical Research Council, the New Zealand Ministry of Health and heads of Environment Protection Authority Australia and New Zealand (HEPA). enHealth also engages regularly with other government departments and agencies, Australian local government associations, professional bodies, universities and non-government organisations.

3. Climate change and the Health and Human Services system

3.1 CLIMATE CHANGE IN VICTORIA

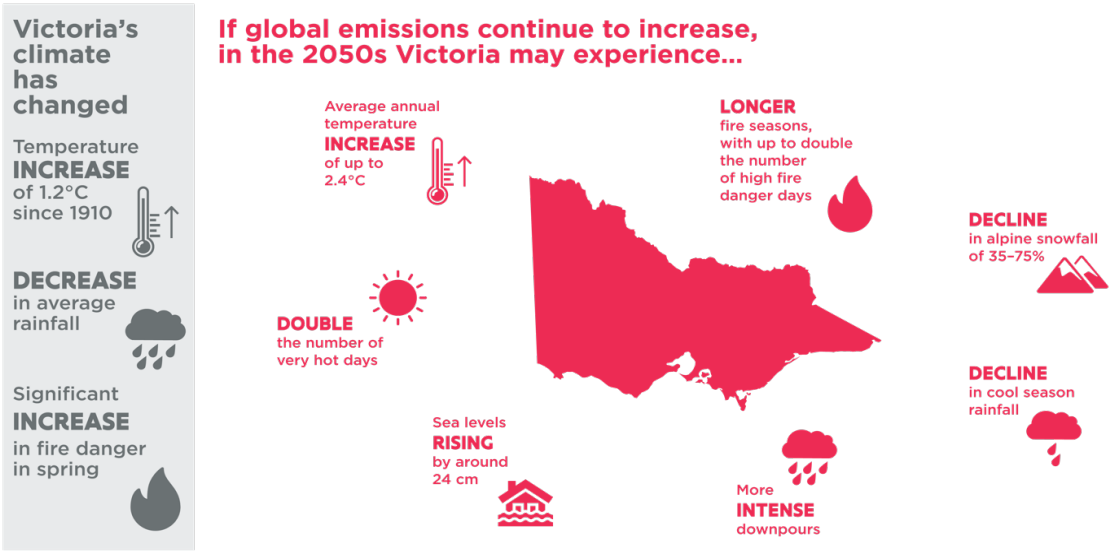
Long-term observed records show Victoria's climate is changing due to global warming. Since official records began in 1910, Victoria has warmed by 1.2 degrees Celsius.[10] In addition to this warming, Victoria is already experiencing:[11]

- a decrease in average rainfall, especially in cooler months
- an increase in the frequency of days of extreme heat
- an increase in dangerous fire weather and the length of the bushfire season.

Climate projections are combinations of future time horizons and emissions scenarios. They are used to understand impacts of climate change, and help manage the uncertainty and complexity associated with climate change impacts.

Understanding the drivers and impacts of these changes, and understanding what we can expect in the future, will help us plan and adapt. The climate trends and associated impacts Victoria has experienced during the last few decades are expected to continue (Figure 7, page 22).

Figure 8. Current and projected climate change impacts for Victoria under high emissions[12]



Under high emissions, compared to 1986–2005. Updated from Victoria's Climate Science Report 2019

10 CSIRO, Victorian Climate Projections 2019: Technical Report, Aspendale, Australia, CSIRO Climate Science Centre, 2019

11 Department of Environment, Land, Water and Planning, Victoria's Climate Science Report 2019

12 Department of Environment, Land, Water and Planning, 2021, Victoria's Climate Change Strategy, viewed 11 June 2021, https://www.climatechange.vic.gov.au/victorias-climate-change-strategy

The latest climate projections for Victoria suggest:

- By the 2050s, in a high emissions scenario, the State's average annual temperature may increase up to 2.4 degrees Celsius compared to the 1986–2005 average, and the number of very hot days is likely to double.
- Across Victoria, annual rainfall is projected to decrease, especially in the cool season. However, due to natural variability, extreme rainfall events will still occur and these are likely to be more intense, potentially increasing the risk of flash flooding in some locations.
- The number of high fire-danger days in Victoria is expected to increase, and potentially double.
- Sea levels will continue to rise. By the 2050s, sea level is projected to rise by around 24 cm (relative to 1986–2005) under both medium and high emissions scenarios.

To avoid the worst effects of climate change, the international Paris Agreement aims to limit the rise in global average temperature to between 1.5 and well below 2 degrees Celsius. To help achieve this goal, Victoria and joining governments across the world, have committed to net-zero emissions by 2050.

Victoria has also set a 45–50% reduction target for 2030 and will set interim reduction targets at 5-year intervals to achieve our net zero by 2050 goal to assist in limiting the worst impacts of climate change in the second half of this century.

However, even with ambitious global emissions reduction, there are likely to be unavoidable impacts we need to prepare for and adapt to. While reducing greenhouse gas emissions is the most effective strategy for reducing climate change impacts, if emissions are globally net zero by 2050, the climate will continue to warm for at least a few decades due to past and current emissions.

Planning for multiple possible futures based on modelled Shared Socio-economic Pathways (SSP) or Representative Concentration Pathways (RCP) strengthens organisational adaptive capacity and aligns with best-practice climate adaptation planning.

3.2 IMPACTS OF CLIMATE CHANGE ON THE HEALTH AND HUMAN SERVICES SYSTEM

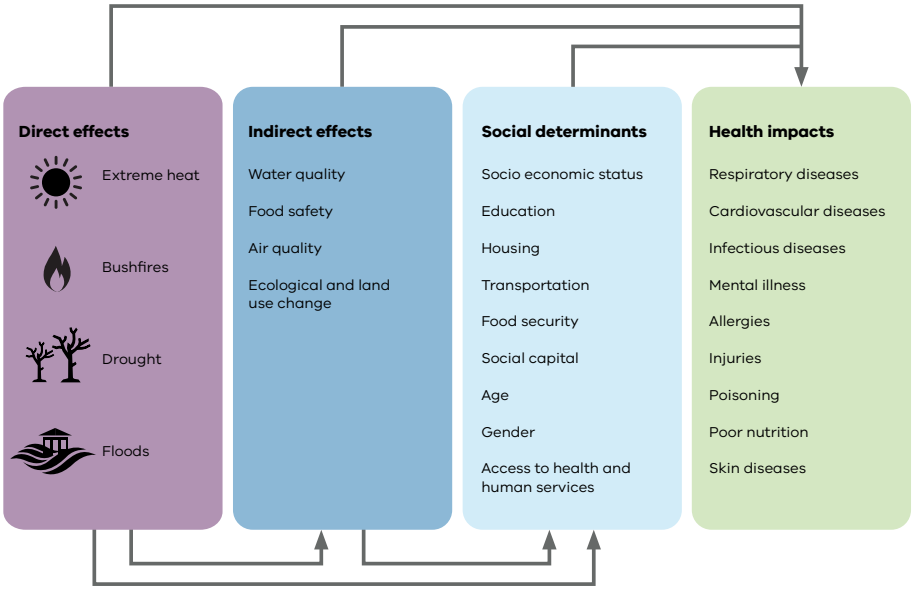
Climate change impacts on health and wellbeing are many and varied, and include direct and indirect effects, and impacts on the social determinants of health (Figure 9).

Direct effects of climate change associated with increased risk of bushfires, droughts, floods and heatwaves, can include hypo- and hyperthermia, heat stress, respiratory issues, injury, trauma and death.

Indirect effects and impacts, mediated through natural and human systems affected by climate change, include:

- vector-borne diseases (transmitted by vectors such as mosquitos to humans)
- zoonotic diseases (transmitted from animals to humans)
- water-borne diseases (such as exposure to harmful algae and pathogens affecting drinking water, recreational water, and water supplied for agricultural and domestic use)
- food-borne diseases (such as salmonellosis), contaminants (such as mycotoxins) or impacts on the micro and macro nutritional quality of food
- health impacts from reduced physical activity due to high outdoor temperatures, bushfire smoke, degradation of public open space and sporting and recreation grounds, storms, heavy rainfall and flooding

Figure 9. Direct and indirect effects and impacts of climate change on health and wellbeing[13]



- exacerbation of existing chronic diseases such as cardiovascular and respiratory diseases as a result of higher temperatures, poorer air quality and increasing airborne pollen.

These impacts, along with impacts on the social determinants of health, will be felt earlier and will be most pronounced for vulnerable communities including:

- children and young people
- pregnant women
- people over 65, including those living alone
- people experiencing homelessness or insecure housing
- people experiencing financial hardship
- Aboriginal communities
- people with a disability
- Culturally and Linguistically Diverse (CALD) communities and new migrants
- people with one or more chronic conditions
- LGBTQIA+ communities.

13 Watts N, Adger WN, Agnolucci P, Blackstock J, Byass P, Cai W, Chaytor S, Colbourn T, Collins M, Cooper A and Cox PM, 2015, Health and climate change: policy responses to protect public health, The Lancet, vol. 386, no. 10006, pp. 1861–1914, viewed 2 July 2019, http://dx.doi.org/10.1016/S0140-6736(15)60854-6 ; and Department of Health and Human Services 2020, Tackling climate change and its impacts on health through municipal public health and wellbeing planning: Guidance for local government, 2020, viewed 8 April 2021, https://www.health.vic.gov.au/publications/tackling-climate-change-and-its-impacts-on-health-through-municipal-public-health-and

Some climate-related health impacts also differ between genders. For example, mortality from heatwaves is higher in women, and male suicide rates have been found to increase faster with increasing heat.[14] In addition, women are disproportionately impacted by climate change, emergency and disaster situations. For example:

- Research indicates that after bushfires and other disasters, violence against women increases, intensifies and may be more likely to be excused or justified because of the stress and trauma experienced by perpetrators.
- Disasters also place pressure on people to conform to gender stereotypes[15] and exacerbate existing gender inequalities, causing unequal health, social and economic outcomes for people of all genders.

This highlights the importance of applying a gender lens to emergency and disaster planning, response and recovery.

The PRIDE community has also highlighted the importance of applying a LGBTQIA+ lens to emergency and disaster planning, response and recovery.

Environmental determinants of health and wellbeing

Human health depends on healthy and diverse ecosystems for clean water, air, soils, food and a habitable climate. Climate change is exacerbating worldwide habitat and biodiversity loss, posing a risk to human health.[16 17] This highlights the need to apply an environmental determinants lens in targeting the health challenges of human-induced global climate change and loss of biodiversity.

Environmental determinants recognises the importance of land and waterways and the environment as determinants of health for both Aboriginal and non-Aboriginal Victorians – but also as a cultural determinant on the health and wellbeing of Aboriginal Victorians.

14 Beggs PJ, Zhang Y, Bambrick H, Berry HL, Linnenluecke MK, Trueck S, et al. 2019, The 2019 report of the MJA–Lancet Countdown on health and climate change: a turbulent year with mixed progress. Medical Journal of Australia.211(11):490-1. e21.

15 Tyler, M & Fairbrother, P, 2013, 'Gender, masculinity and bushfire: Australia in an international context', Australian Journal of Emergency Management, vol. 28, no. 2, pp. 20-25.

16 Diaz S et al. 2019, Summary for policy makers of the global assessment report on biodiversity and ecosystem services, Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.

17 World Health Organisation 2015, Connecting global priorities: Biodiversity and human health, A state of knowledge review <https://www.who.int/publications/i/item/connecting-global-priorities-biodiversity-and-human-health> [accessed on 7 September 2021]

4. Key climate change risks and opportunities for the Health and Human Services system

The key climate change risks and opportunities for the Health and Human Services system fit into three broad categories:

- public health
- infrastructure
- sector capability.

The Health and Human Services system also intersects with risks and opportunities arising from other systems.

4.1 PUBLIC HEALTH

Key risks

The risks from climate change to public health in Victoria are significant. Climate projections suggest the risks of climate-related hazardous events such as heatwaves and days of extreme heat, bushfires, floods, coastal inundation[18] and time spent in drought[19] – are expected to further increase in Victoria in the future. These events, as well as overall warmer temperatures, are also increasing direct and indirect physical and mental health impact risks (as shown in Figure 9 above).

Negative impacts on the social determinants of health also risk entrenching and increasing existing social and economic inequality, with consequent adverse health outcomes.

Key opportunities

The COVID-19 pandemic has brought the importance of public health into sharp focus, in particular: reducing health service demand; the importance of health equity; and the critical role health professionals play in our communities. The current intensified interest in public health and health leadership can be leveraged to support increased action on climate change, including through expanded climate and health engagement programs. There are also opportunities to leverage the 'tackling climate change and its impacts on health' focus area within the Victorian public health and wellbeing plan 2019-2023 to drive adaptation action across the Health and Human Services system, and more broadly across government and a range of sectors.

The Victorian Government's response to the Inquiry into Tackling Climate Change in Victorian Communities fully supported Recommendation 10 of the inquiry which was to consider the contribution of climate change in its implementation of the recommendations outlined in the Royal Commission into Victoria's Mental Health System (RCVMHS).[20]

Identified initiatives that help address risks and impacts from climate change, particularly for regional and rural communities (Recommendation 39), and broader awareness and education campaigns through the proposed Promotions Office (Recommendation 2) are 2 recommendations with clear links for incorporating climate change into implementation. Other related initiatives include the Collaborative Centre (announced in the RCVMHS Interim Report), which will leverage contemporary research such as the range of climate change research, into new treatments and models of care to support and inform service delivery, policy and law making.

Strengthening public health surveillance systems and increasing climate change and health impact data availability will also provide opportunities to drive greater and more targeted investment in climate change adaptation and emissions reduction initiatives.

18 CSIRO 2019, Victorian Climate Projections 2019: Technical Report, Aspendale, Australia, CSIRO Climate Science Centre, <https://www.climatechange.vic.gov.au/adapting-to-climate-change-impacts/victorian-climate-projections-2019>.

19 Earth Systems and Climate Change Hub. 2020. Scenario analysis of climate-related physical risk for buildings and infrastructure: climate science guidance.

20 The Royal Commission into Victoria's Mental Health System, <https://finalreport.rcvmhs.vic.gov.au/>

4.2 INFRASTRUCTURE

Key risks

The Health and Human Services system's departments own or fund around $50 billion in public housing and health assets, all with varying levels of exposure and vulnerability to climate change. The climate-related risks to infrastructure are likely to further increase in the future and could include: increased risk of inundation due to sea level rise, riverine and inland flooding; soil contraction shifting foundations; bushfire and smoke damage; very hot days and heatwaves; Legionella growth; and amplification of other pathogens and microbes.

Climate change impacts can cause asset loss or damage, and reduced service and amenity operations (for example, air conditioning units, chillers and emergency generators may fail in extreme heat). If these risks are not addressed when locating, designing, building and maintaining assets, climate change impacts may reduce asset life, and may lead to unexpected asset failure and operational cost increases over the asset's lifecycle.

Key opportunities

The significant infrastructure investment being implemented to support the COVID-19 pandemic recovery represents a key health and human service climate change adaptation opportunity. We can 'build back better' and improve health outcomes for those most vulnerable to climate change impacts. For example, the 'Big Housing Build' is investing $5.3 billion to enable Homes Victoria to build 12,000 new affordable homes – including 9,300 social housing dwellings – supporting around 10,000 jobs per year for the next 4 years, and ensuring these new homes are thermally comfortable for residents. The Energy Efficiency in Social Housing Program is also boosting existing housing upgrade activity to improve energy efficiency and thermal comfort.

The Victorian Government has committed about $1.2 billion to upgrade existing health infrastructure and build more hospitals so our health services can deliver the highest quality of care for more Victorians and provide a foundation for health, social and economic recovery in Victoria. An estimated 2,400 jobs will be supported by this investment in health infrastructure projects under the 2021–22 Victorian State Budget. These investments will also enable employment participation by providing pathways for thousands of job-displaced Victorians (Working for Victoria Fund) and pathways for local businesses (Local Jobs First Policy).

These and other infrastructure initiatives provide opportunities to realise health co-benefits through adaptation measures that mitigate emissions and provide many additional social and economic benefits.

4.3 SECTOR CAPABILITY

Key risks

The Health and Human Services system's departments fund more than 2,000 organisations or service partners to deliver services. As climate change may impact the general underlying health conditions of Victorians, services will likely experience an overall increase in demand and more frequent demand surges due to climate-related hazards and events. Adequate surge staff recruitment and services preparation is essential to ensure responses during emergencies, including relief and recovery, will meet demand. Insufficient preparedness could have major consequences for clients, patients, and health and human services professionals.

Also as previously mentioned, more Victorian residents work in healthcare and social services than any other industry.[21] The health, safety and well-being of our workforce will be a key focus of our adaptation response.

Climate change poses risks to the ability of the Health and Human Services system to adequately prepare for and respond to emergencies. The potential for more frequent and more severe emergencies could mean that more staff and resources are required as the response duration of emergencies may extend beyond current planning, or multiple emergencies may occur simultaneously, stretching staff and resources. There is also the compounding risk that a community in recovery may face a subsequent emergency, testing the resilience of the Health and Human Services system and the Victorian community.

21 Australian Bureau of Statistics 2017, Healthcare and Social Assistance our largest industry, viewed 19 April 2021, https://www.abs.gov.au/ausstats/abs@.nsf/mediareleasesbyReleaseDate/B611DFF5E8590F8ACA2581BF001F743B?OpenDocument

Key opportunities

Victoria's significant Health and Human Services system can be leveraged to increase health and wellbeing resilience to climate change impacts. This opportunity encompasses the strategic influence and reach of both large and small organisations and of direct contact between service providers and their individual clients.

In many cases, health and human services are also 'anchor organisations' – that is, they are unlikely to move location, usually because their purpose and mission is intrinsically bound up in a specific area. They are embedded within and have significant stakes in their geographical areas.[22] Anchor health and human services organisations can play a significant role in supporting communities to adapt to climate change-related health and wellbeing risks and impacts.

Enhancing the health and human services sector's capability in performing these important roles (as advocates for resilience and support mechanisms during crisis) is a key climate change adaptation opportunity.

4.4 CROSS-SYSTEM RISKS AND OPPORTUNITIES

Key risks

The Health and Human Services system depends upon the good governance and functionality of other systems to reduce risks to public health. Working in partnership with other systems and agencies to reduce climate-related risks to health and human services is a priority for this (and all) adaptation action plans.

The system-based adaptation approach is critical to effectively identifying and avoiding intersecting climate change risks. Cross-system risks are risks that operate across multiple systems, and where risk management requires action from all impacted systems. These risks are particularly challenging as they may:

- be emerging risks (for example, rising sea levels)
- be de-prioritised as they only occur during particular climatic conditions (for example, algal events)
- be so large or complex they require multiple stakeholder groups' coordination, accountability and oversight (for example, bushfires)
- be subject to conflicts between values or goals between different systems (for example, water availability)
- require ongoing collaboration between systems to address these risks for the short-, medium- and long-term.

Key opportunities

There are significant opportunities to protect health and improve health and wellbeing outcomes through strengthened collaboration across systems. These include opportunities for strengthened governance, shared investment and complementary programs to address key risks, collaborative research and data sharing, and cross-portfolio community engagement.

Each climate change adaptation system will take the lead on specific systemic adaptation risks – championing the system-wide management of these specific risks. Risk champions are designated risks based on their primary portfolio responsibilities, or on the basis of available policy or legislative levers for coordinating and driving risk adaptation action in partnership with other linked systems. The departments associated with these lead systems will, in many cases, defer to the control agency stated in the Victorian State Emergency Management Plan.

The Health and Human Services system is best placed to serve as risk champion for the risks shown in Figure 10 (below). Appendix 5 contains further details on these risks and other cross-system risks that intersect with the system.

22 Health Foundation 2019, Building healthier communities: the role of the NHS as an anchor institution, viewed 4 May 2021, https://www.health.org.uk/publications/reports/building-healthier-communities-role-of-nhs-as-anchor-institution

Figure 10. Intersecting potential climate change risks and associated impacts championed by the Health and Human Services system

Food safety

Projected increases in extreme heat days, overall warmer temperatures and risk of flooding increase risks to food safety

Linked systems

- Primary Production
- Transport

Heat health

Projected increases in extreme heat days and overall warmer temperatures pose increasing risks to the health and wellbeing of the community

Linked systems

- Built Environment
- Education and Training
- Primary Production
- Transport
- Water Cycle

Drinking water quality

Projected increases in average temperature, and risks of bushfires, floods and droughts impact on drinking water treatment efficacy, quality, and costs, and pose increasing risks to public health

Linked systems

- Water Cycle
- Natural Environment
- Built Environment

Spread of diseases affecting people

Projected increases in the frequency and/or intensity of extreme weather events and overall warmer temperatures alter the risk of vector and zoonotic-borne disease transmission

Linked systems

- Natural Environment
- Primary Production
- Transport

5. Existing climate change adaptation policies, programs and projects, and gap analysis

5.1 EXISTING POLICIES, PROGRAMS AND PROJECTS

The Department of Health and the Department of Families, Fairness and Housing implement a broad range of policies, programs and projects that are already supporting adaptation to climate change across the Health and Human Services system.

These existing initiatives provide a solid foundation for building long-term systemic climate change adaptation in Victoria. Highlights of a few key initiatives are described in Boxes 4–7 below. Further initiatives are detailed in Appendix 2 and throughout this plan.

5.1.1 Pilot Health and Human Services Climate Change Adaptation Action Plan 2019–21

In 2019, the former Department of Health and Human Services published the Pilot Health and Human Services Climate Change Adaptation Action Plan 2019–21 (pilot plan). The pilot plan included actions in the domains of governance and regulation, communication and engagement, knowledge building, and asset readiness.

Progressive implementation of pilot plan actions will continue in 2021, and some actions are continued within this 2022–26 plan. See Appendix 3 for examples of completed and continuing actions.

Box 4

Public health: Supporting local government to tackle climate change and its impacts on health

The Department of Health published new resources in 2020. These resources, designed to support Victorian local governments in tackling climate change and its impacts on health, include:

- Tackling climate change and its impacts on health through municipal public health and wellbeing planning: Guidance for local government supports local governments in reducing emissions and in supporting community adaptation to health impacts of climate change.
- Supporting people when air quality is heavily impacted by bushfire smoke: Guidance for local government helps local governments plan for community respite to 'cleaner air' when local air quality is heavily impacted by smoke from large-scale or prolonged bushfire activity and provides enhanced guidance on the planning and development of cool spaces earmarked for respite during periods of extreme heat.

Box 5

Health infrastructure: Embedding climate resilience into health infrastructure

The Victorian Health Building Authority published updated engineering and sustainability guidelines for new health infrastructure design and construction. These guidelines include new requirements for building climate resilience into health infrastructure including:

- New hospital essential engineering guidelines incorporating fundamental design principles for emergency generators operations in multiple and extreme climate conditions. Now, facilities built in bushfire-prone areas must provide additional generating capacity, and remote and bushfire-prone areas with on-site fuel storage must address potential resupply delays.
- Establishing hospital climate change resilience as one of four key principles informing capital works sustainability. These guidelines provide information on the implications of climate change for healthcare facilities and design responses that need to be considered when designing and delivering healthcare facilities.

Box 6

Social housing infrastructure: Improving public housing energy efficiency

The EnergySmart Public Housing Project delivered efficient appliances (such as air conditioning and hot water system upgrades) and thermal shell upgrades to more than 1,500 public dwellings by the end of 2019–20.

Residents who received air conditioner upgrades (as well as draught sealing and ceiling insulation top-ups) saw substantial thermal comfort improvements, reduced energy bills and greenhouse gas emissions and self-reported health improvements.

Learnings from this project are informing investment thinking for the Energy Efficiency in Social Housing Program, and the Building Works Social Housing maintenance and upgrades package.

Box 7

Vulnerable community resilience: Designing an inclusive approach to emergency management planning

Research shows the disproportionate impact of emergencies on people with disability who are at higher risk of death, injury and loss of property. Recognising the importance of including people with disability in emergency management planning and decision making, the Department of Families, Fairness and Housing has engaged the University of Sydney to partner with Victorian disability advocacy organisations to design an inclusive approach to emergency management planning in Victoria.

The project is currently underway and aims to build capacity in the disability, community and emergency services sectors to work together to increase the resilience of people with disability, through peer-support advocacy and inclusive local emergency management planning.

5.2 GAP ANALYSIS AND OPPORTUNITIES FOR INCREASED ACTION

As detailed in Section 1, the Victorian Government's Climate Change Strategy has identified 3 priority focus areas for climate change adaptation during the next 5 years (Table 4).

Table 4. Victorian Government climate change adaptation priority focus areas 2022–26

Priority focus areas	P1	P2	P3
	Addressing climate change impacts that are already severely affecting Victoria	Reducing barriers to climate change adaptation planning and action	Laying the foundations for transformational adaptation

The gap analysis in Table 5 examines the 3 Victorian Government focus areas against existing Health and Human Services policies and programs and indicates opportunities for increased action within the 3 key Health and Human Services delivery domains:

- public health
- infrastructure resilience
- sector capability

Table 5 also references climate change adaptation actions (H1-H14) applicable to each existing policy and program types identified.

Table 5. Gap analysis of existing policies and programs against priority focus areas

Existing policy and program types	Current activities and issues	Gaps and opportunities for action	Action number	Priority focus areas
Expanding community engagement to improve public health and wellbeing	The Department of Health implements a broad range of public health programs to minimise health impacts associated with events that are becoming more frequent and intense as a result of climate change, including campaigns and education programs.	In collaboration with partners, expand public health engagement and increase community awareness of climate change risks and impacts. Risks and impacts are many and varied (for example, see Figure 9). Enable community-led actions to stay healthy in a changing climate. In 2020, Sustainability Victoria published research indicating 77% of surveyed Victorian community members would like to know more about the health impacts of climate change, and what behaviours will benefit health and mitigate against climate change.	H1	P1 P2
Continuing to build the evidence base to drive adaptation action	In line with the Public Health and Wellbeing Act 2008, the Department of Health conducts surveillance of infectious diseases and other specified conditions that are notified to the department. The department also makes this information available publicly online.	Expand existing surveillance to monitor climate-related health risk changes, vulnerabilities and health outcomes and to provide additional information to guide government and community responses.	H2	P1 P2
Improving existing social housing infrastructure resilience	Older social housing can expose residents to very hot day and heatwave event risks. A small amount of social housing requires additional risk management to reduce exposure to other extreme weather events. Social housing has established programs to address current climate change impacts and improve health outcomes for residents and staff. These include the recently completed EnergySmart Public Housing program and the High Rise Retrofit program.	Reduce social housing risk exposure over time and improve the health and wellbeing of residents by continuing to expand programs addressing vulnerability gaps in existing social housing infrastructure.	H3 H4 H7	P1

Improving existing health infrastructure resilience	Health infrastructure has programs in place to address current climate change impacts and improve health outcomes for patients and staff. This includes ensuring hospital energy supplies and communication infrastructure are secure and improving the thermal performance of hospitals. The relocation of buildings, assets and services is not always possible, so measures are required to adapt existing health infrastructure to climate hazards. Adaptations need to be weighed against costs, existing operation impacts and practicality.	Expand programs addressing vulnerability gaps in existing health infrastructure and improve overall climate-hazard resilience. Expand understanding of climate risks at specific sites. For example, heat is a risk to all buildings, but the severity of the risk is relative to the building type, age and location, as well as practical engineering and design considerations.	H6 H7 H8	P2 P3
Embedding climate adaptation standards in new health and social housing infrastructure developments	The Health and Families, Fairness and Housing departments have started embedding climate risk responses in policies, plans, operational procedures and capital investment decision making. This will ensure assets such as hospitals, health services and housing are adapted to climate change.	Planning for, and delivering, significant change to social housing and health infrastructure will require improved skills, knowledge and practices. Both departments must build and expand sector knowledge to better understand what is required to address climate change risks.	H5 H7 H8 H9	P2 P3
Increasing support for health and human services sector organisations and leveraging trusted voices	Health and human services sector organisations provide a wide range of services aimed at supporting Victorian community members to be healthy and well. Health and human services professionals are also often trusted voices within communities and will be increasingly called upon to support community adaptation to climate change impacts.	Enhance sector capability in managing and communicating climate risk and supporting community adaptation. For example, research shows most healthcare professionals believe the incidence of climate change-related health conditions will significantly increase during the next 10 years. However, only one third of healthcare professionals currently feel well-informed and confident in talking about these issues with their patients. Coupled with a desire from the public to learn more, this suggests healthcare professionals could have a greater role in communicating the health effects of climate change and the actions community members can take to stay healthy in a changing climate. Better support the health and wellbeing of essential workforces, including the specialist family violence workforce, during times of crisis/ emergencies.	H1 H10 H11	P2 P3

Supporting place-based climate change adaptation action	The Department of Health collaborates with many departments and agencies as part of the Victorian Government's priority precincts agenda, and on the state-wide implementation of the Victorian public health and wellbeing plan 2019–2023. This includes a range of policies and programs linked to key focus areas in the Victorian public health and wellbeing plan 2019–2023, including 'tackling climate change and its impacts on health', 'healthy eating' and 'active living.'	Precinct development and implementation, and public health and wellbeing planning, involve long-term planning and provide key opportunities to maximise the implementation of place-based climate change adaptation action. For example: • Precinct planning can be used to influence essential infrastructure projects within these precincts to adapt to both climate change and impacts such as urban heat. • Key focus areas in the Victorian public health and wellbeing plan 2019-2023 can be leveraged to support place-placed initiatives. These could include, for example, place-based models to protect and bolster healthy, sustainable and equitable food systems (such as healthy and local food procurement policies for governments and public facilities such as health services).	H12	P2 P3
Embedding Aboriginal self-determination in our approach to climate change	Climate change is a threat to Country and the cultural determinants of Aboriginal health and wellbeing. The Korin Korin Balit-Djak: Aboriginal health, wellbeing and safety strategic plan 2017–27 aims to realise the vision for Aboriginal self-determination by achieving positive outcomes in a variety of domains, including system reform across the health and human services sector.	Continue working with Aboriginal health and human services to enable both government and Aboriginal-led services to better understand and respond to climate change impacts on Aboriginal health and wellbeing. Proactively embed Aboriginal self-determination in climate change adaptation initiatives as they are designed and implemented. The Victorian Aboriginal Community Controlled Health Organisation's (VACCHO) policy forum has been identified as a key mechanism for embedding of Aboriginal self-determination in climate change adaptation approaches. The VACCHO policy forum will engage with the Department of Health to discuss important health issues and priorities including climate change and health protection.	H10 H13	P2 P3
Supporting the mental health of people impacted by climate change	The Royal Commission into Victoria's Mental Health System considered how climate change and extreme weather events impact Victorians' mental health and wellbeing and identified opportunities to consider climate change in the implementation of its recommendations.	Build on and embed the knowledge and practices learned and implemented over the last 12 years in supporting disaster-affected communities as part of Victoria's response to catastrophic bushfires. This includes a focus on trauma-informed disaster recovery, which will be important in supporting communities through future climate-related events. Incorporate indicators and measures of climate change impacts on individuals' wellbeing as part of the new Mental Health and Wellbeing Outcomes and Performance framework.	H11 H14	P1 P2 P3

6. Climate change adaptation actions: 5-year (2022–26) plan

Building on climate change adaptation actions implemented under the pilot plan, the Department of Health and the Department of Families, Fairness and Housing will develop additional opportunities for climate change adaptation action by: engaging with the public; leveraging existing and planned investment; and working with stakeholders to build sector capability.

The Health and Human Services Climate Change Adaptation Action Plan 2022–26 includes 14 actions which address the gaps and opportunities identified in section 5.2 across the 3 domains of Health and Human Services delivery: public health, infrastructure resilience and sector capability (see Table 6).

Recommendations received during public consultation have been used by the Department of Health and the Department of Families, Fairness and Housing to refine and finalise these actions and will be further considered during this plan's implementation. See Appendix 1 for more information about the development of this plan.

Table 6. Actions: Health and Human Services Climate Change Adaptation Action Plan 2022–26

Domain	Action		Lead/s	Desired outcome
Public and stakeholder engagement on climate resilience and health	H1	Engage the profile and leadership of the Chief Health Officer, other health professionals and broader trusted voices to deliver a climate change and health engagement program. Building on the current interest in public health and the disproportionate impacts of the COVID-19 pandemic on more disadvantaged groups, engage the profile and leadership of the Chief Health Officer, as well as other health professionals and trusted voices to: • establish, in collaboration with partners, a climate and health engagement program sharing learning and successes of practical actions communities can take to stay healthy in a changing climate • support health and other sectors in taking action to protect Victorians' health and wellbeing in a changing climate.	Department of Health	Increase in Victorian community members taking action to stay healthy in a changing climate. Increase in health and other sectors' action to protect the health and wellbeing of Victorians from the risks posed by climate change.

	H2	Improve the evidence base and monitoring of climate related health impacts now and in the future. To support engagement and improve understanding of current and future health impacts: • report on current and future impacts of climate change on the health of Victorians and on health service demand, under various climate and intervention scenarios • implement an ongoing surveillance program which brings together data on changes in climate-related health hazards, vulnerabilities, and population health outcomes in Victoria.	Department of Health	Increase in publicly available data on current and likely future impacts of climate change on health. Increase in data-driven adaptation responses.
Infrastructure resilience	H3	Actively manage and reduce climate hazards across the social housing asset base.	Department of Families, Fairness and Housing	Reduced asset and resident risk exposure through considered management of high-risk stock. Develop and maintain a risk assessment framework for social housing assets.
	H4	Transform the current social housing asset base for improved climate resilience. Upgrade existing social housing to adapt it to the range of Victoria's possible future climates and improve thermal safety for residents.	Department of Families, Fairness and Housing	Improved thermal safety, improved heating and cooling energy efficiency, and affordability for social housing residents. Complete 35,000 energy efficiency and thermal comfort upgrades of social housing stock under the Energy Efficiency in Social Housing Program. This includes targeting heat risk in the state's hottest climate zone.

	H5	Embed climate resilience in new social housing developments. Secure a climate-resilient future social housing system by specifying a climate resilience standard in all new social housing developments.	Department of Families, Fairness and Housing	Enhanced new-build social housing climate adaptation, with: • all newly constructed homes meeting a minimum average 7star NatHERS energy efficiency standard • many larger developments meeting the Five-Star Green Star standard, representing a national leadership level of sustainability and including requirements for climate adaptation outcomes • all new Homes Victoria developments on Director of Housing Land being all-electric in specification, including reverse-cycle air conditioning and solar photovoltaic systems where feasible • social housing development occurring in locations providing good access to services and facilities and where the long-term climate risks are managed.
Infrastructure resilience	H6	Transform the health asset base for improved climate resilience. Drive transformation of health assets through: • preparing and distributing a health technical advice note on how to make health infrastructure climate resilient • embedding climate-resilience into the department's response to the Asset Management Accountability Framework (AMAF) • monitoring capital projects' adaptation initiative implementation • disseminating best-practice case studies.	Department of Health	Increased understanding in health services and the design community of how to make health infrastructure climate resilient through the publication of technical advice and best-practice case studies.
	H7	Develop options to manage the impacts of urban heat on health and social housing infrastructure and health and human services and reduce health and social housing infrastructure's contribution to urban heat. Increase sector understanding of urban heat effect through a review of existing resources, adaptation – where necessary – for health and social housing infrastructure, and promotion to key stakeholders.	Department of Health Department of Families, Fairness and Housing	Increased sector understanding of how health and social housing infrastructure contributes to urban heat, its impact on users and the local community, and practical measures that can be applied to reduce urban heat.
	H8	Develop options to secure climate-resilient health infrastructure. Increase the climate-resilience of existing health infrastructure by specifying climate resilience standards for all health infrastructure grant programs.	Department of Health	Increased support for, and implementation of, climate adaptation initiatives in existing health infrastructure through the department's grant programs.

	H9	Promote cross-portfolio consistency in adaptation processes, assessments, guidance and reporting within the sector. Maximise impact and foster consistency through housing and health infrastructure guidelines aligning adaptation and emissions reduction goals.	Department of Health Department of Families, Fairness and Housing	Aligned and consistent health and housing infrastructure guidelines balance the needs of climate change adaptation, emissions reduction and service delivery.
Sector capability	H10	Demonstrate organisational leadership in climate change adaptation and mitigation actions at all levels and divisions across the departments. Ensure the Department of Health and Department of Families, Fairness and Housing demonstrate leadership in climate change adaptation action at all levels and divisions by: • establishing a climate change staff engagement program that focuses on outcomes, reports on progress and celebrates success • requiring consideration of climate change impacts into reviews or development of legislation. This action leverages Action H1: Engage the profile and leadership of the Chief Health Officer.	Department of Health Department of Families, Fairness and Housing	Establishment of a positive staff and sector partner culture of engagement and accountability on climate change adaptation. Incorporation of climate change adaptation considerations is business-as-usual for department staff.
	H11	Leverage the Health and Human Services' delivery footprint to embed sector-wide climate change adapta-tion and risk management. Embed sector-wide climate change adaptation and risk management by: • partnering with health services, Victorian Council of Social Service, and other peak community service organisations to support the health and community service sector's climate change adaptation • supporting smaller funded organisations (including Aboriginal Community Controlled Organisations) by: o developing or promoting workable, localised and targeted climate change training, tools, initiatives and resources for health and human services professionals to increase their capacity and resilience to respond to the impacts of climate change as they appear in their clients o delivering climate change risk management resources for health service and funded agency boards • requiring responses to climate change risks in larger funded organisations, all independent agencies, statutory authorities and advisory bodies.	Department of Health Department of Families, Fairness and Housing	The health and human services sector has the capability to embed climate change adaptation and risk management actions into its operations and service delivery.

	H12	Support embedding of place-based adaptation in Whole of Victorian Government efforts by leveraging the Department of Health and Department of Families, Fairness and Housing's roles in precinct and public health and wellbeing planning. Support place-based climate change adaptation action by leveraging the departments' roles in precinct and public health and wellbeing planning.	Department of Health Department of Families, Fairness and Housing	Increased implementation of place-based adaptation action to deliver improved health and wellbeing outcomes.
	H13	Embed Aboriginal self-determination in our approach to climate change adaptation and seek guidance on Aboriginal adaptation knowledge. Embed Aboriginal self-determination in climate adaptation by ensuring that Aboriginal Elders and community voices are listened to and prioritised in addressing climate change adaptation, particularly in relation to health and wellbeing resilience. Seek guidance from Aboriginal Elders on Aboriginal adaptation knowledge and ensure Aboriginal culture is incorporated into our adaptation responses.	Department of Health Department of Families, Fairness and Housing	Health responses to climate change adaptation are guided by Aboriginal knowledge and culture. Community-defined actions for reducing climate change impacts on health are identified and implemented. Self-determination is an ongoing, iterative process and will continue throughout this plan's timespan.
	H14	Develop mental health and wellbeing support tailored to climate change impacts. Support programs to include climate change mental health and wellbeing needs, and research areas of need to identify vulnerable populations and best practice. Through the Collaborative Centre, make explicit connections to other opportunities for co-benefits between action on climate change, mental health and wellbeing and other State health priorities. Enact the RCVMHS recommendations that help address regional and rural communities and their ability to respond and adapt to mental health impacts from climate change.	Department of Health	Increased support to protect and promote positive mental resilience, recognising the effects on social and emotional wellbeing during and after extreme weather events, and anxiety and concern about future climate change projections.

7. Monitoring, evaluation, reporting and improvement

Adaptation is a complex, iterative and ongoing process, and it can be difficult to measure progress. Success in adaptation often means avoiding or reducing negative impacts which makes it difficult to match outcomes to avoidance and reduction measures taken. There can also be a significant time lag between an intervention and measurable impacts, making it difficult to evaluate the effectiveness compared to other types of initiatives such as emissions reduction. It can also be difficult to attribute health outcomes to a particular adaptation action alongside societal, technological, and economic changes that may be happening at the same time.

Effective climate change adaptation actions depend on the local context and diverse processes across states, regions, sectors and organisations, as well as the level of community and business responses. These attributes mean there is no off-the-shelf approach to monitoring and evaluating adaptation. However, the Government is committed to developing a robust, tailored system of monitoring and evaluation to help ensure that its adaptation initiatives are effectively reducing risks to the community, infrastructure, economy and environment.

A monitoring, evaluation, reporting and improvement framework will guide the implementation of this Health and Human Services Adaptation Action Plan. The development of the monitoring and evaluation framework includes:

- finalisation of the framework scope
- finalisation of the program logic for evaluation, including identification of inputs, outputs and outcomes
- development of indicators, measures, baseline and targets for each action and other areas of evaluation interest
- setting of appropriate reporting channels and frequency.

These measures will ensure progress towards the delivery of the desired outcomes identified in Table 6 above.

Evaluation is an important element of the policy and program cycle, because it creates an opportunity for departmental learning and evidence-informed decision making.

When developing evaluation questions, the Health and Human Services system will focus on the appropriateness, effectiveness and efficiency of the action implemented. For the department, the use of evidence is key to achieving 'the best health, wellbeing and safety of all Victorians so they can live a life they value and be the healthiest people in the world.' At a minimum, progress on the adaptation actions will be provided via the departments' annual reports and will feed into Victoria's Climate Change Strategy evaluation framework.

Appendices

APPENDIX 1. DEVELOPMENT OF THIS ADAPTATION ACTION PLAN

This plan builds on the successes and lessons drawn from development and implementation of the Health and Human Services system's Pilot Health and Human Services Climate Change Adaptation Action Plan 2019–21. This plan has also been developed with input from key program areas across the Department of Health and the Department of Families, Fairness and Housing.

A critical component of this plan's development has been public consultation. Consultation supports the guiding principle of community engagement in the Climate Change Act 2017. The consultation process for this plan provided an important opportunity for community members and organisations to inform how the Health and Human Services system can best support adaptation to a changing climate.

During public consultation, the Department of Health and Department of Families, Fairness and Housing received 47 written submissions and 53 survey responses from engaged and informed stakeholders. Nearly a quarter of the written submissions received were from health and human service sector peak bodies and more than a fifth were from local government. The remaining submissions were from a mixture of other government entities, non-government organisations, research bodies, health and human service funded agencies, industry groups, unions and individuals. More than two thirds of the survey responses received were submitted by individuals. Nearly half the individuals who responded were aged 50 years and above. The remaining individual survey responses encompassed representation from every other age group.

Responses from stakeholders showed a high level of concern for the impacts of climate change on public health and the Health and Human Services system. Overall, stakeholders were supportive of the Victorian Government approach to system-based adaptation and there was consistent endorsement of the proposed objectives and actions contained in the consultation draft of this plan. Many stakeholders drew attention to the broad suite of health and wellbeing impacts associated with climate change, including the impact of climate change on mental health, the need for the Health and Human Services sector to reduce emissions and the need to monitor and evaluate implementation of adaptation actions. Where relevant, the response to issues raised by stakeholders has been incorporated into the objectives, actions and text of the final plan.

The following principles capture key themes or values identified through the public consultation process. These have guided finalisation of the Health and Human Services action plan and will continue to guide implementation of the plan:

- **Financial and broader capacity support**: For adaptation across the health and human services sector including for health and community service organisations, local government and the community housing sector.
- **Respect Traditional Owner and Aboriginal Victorian knowledge**: Incorporate the knowledge of Traditional Owner groups and Aboriginal Community Controlled Organisations in adaptation decision making.
- **Mitigation (emissions reduction) and co-benefits for health**: The relationship between mitigation and adaptation and emphasising the health co-benefits of actions associated with both.
- **Continual stakeholder engagement and transparent reporting of progress**: Involve the community and peak bodies in setting policy directions, priorities and co-designed solutions and ensure monitoring, evaluation and reporting on progress is regular and transparent.
- **Equity**: Acknowledge that climate change impacts disproportionality affect already marginalised and vulnerable communities. Ensure a continued strong focus on reducing social disadvantage.
- **Human rights**: Implement adaptation in accordance with the Victorian Charter of Human Rights and Responsibilities by being inclusive and respectful of the rights of people affected by climate change.
- **Immediate response and increased level of ambition**: Recognise the urgency required in responding to climate change.
- **Nature-based**: Ensure natural processes and impacts on the natural environment are carefully and respectfully evaluated in adaption responses to offer long-term environmentally sustainable benefits.

Beyond contributing to refinement and finalisation of the plan, the many detailed recommendations received during the public consultation process will provide valuable information for consideration during planning and implementation of projects or programs for individual actions.

As an example, for action H1 (implementation of a climate and health engagement program), feedback included informal expressions of interest from organisations interested in partnering with the Department of Health, as well as a wealth of advice around effectively communicating with and engaging vulnerable communities, and ensuring a holistic approach to delivering the program.

Similarly, for action H2 (improving the evidence base and monitoring of climate-related health impacts), feedback included: detail around climate and health data needs for councils preparing municipal public health and wellbeing plans; calls for research (including up-to-date modelling) in relation to climate change risks to public health and health and human services; and the inclusion of measures related to the social determinants of health in monitoring and surveillance programs.

APPENDIX 2. SUMMARY OF EXISTING POLICIES, PROGRAMS OR LEGISLATION RELEVANT TO THE HEALTH AND HUMAN SERVICES SYSTEM

Public health	
Policies and plans	***Public Health and Wellbeing Act 2008, Safe Drinking Water Act 2003* and *Food Act 1984*** Legislative frameworks administered by the Department of Health and Department of Families, Fairness and Housing to manage health risks across areas including food safety, drinking water quality, and infectious disease prevention and control (including mosquito-borne and zoonotic diseases).
	Environment Protection Act 2017 The Act modernises the Environment Protection Authority Victoria's (EPA) governance and provides a regulatory framework focused on preventing the harmful effects of pollution (including bushfire smoke) and waste.
	Victorian public health and wellbeing plan 2019–2023 'Tackling climate change and its impacts on health' and 'Increasing healthy eating' are key focus areas of this plan.
	Tackling climate change and its impacts on health through municipal public health and wellbeing planning: Guidance for local government Supports Victorian local governments in taking action to reduce emissions and to support community adaptation to the health impacts of climate change.
	Healthy kids, healthy future – Victoria's five-year action plan to support children and young people to be healthy, active and well Brings government departments and partners together to lay the foundations for better health and wellbeing for Victorian children and young people. Includes priority actions to creating healthier food environments in schools, early years services, sport and recreation facilities, clubs and across government agencies, including delivery of a healthy and more sustainable food procurement policy across government departments.
	Supporting people when air quality is heavily impacted by bushfire smoke: Guidance for local government Helps local governments in planning for community respite to 'cleaner air' when local air quality becomes heavily impacted by smoke from large-scale or prolonged bushfire activity.
	Heat health plan for Victoria – Protecting health and reducing harm from extreme heat Outlines actions the Department of Health, local government, health services and individuals should take in preparing for and responding to extreme heat and heatwaves.
	Nationally consistent air quality categories Following the 2019–20 Black Summer bushfires, the Australian Government's Australian Health Protection Principal Committee's Environmental Health (enHealth) Standing Committee developed nationally consistent air quality categories and public health advice for fine particles in smoke.
Programs and projects	**Survive the heat, Beat the Bite! and other public health campaigns** The Department of Health delivers a broad range of public health campaigns relevant to staying healthy in a changing climate.
	Smoke and your health The Environment Protection Authority Victoria delivers this public health advice about the impacts of smoke (including bushfire smoke) on health.

Health infrastructure	
Policies and plans	**Building climate resilience into health infrastructure** In 2020, the Department of Health updated the Victorian Health Building Authority's engineering and sustainability guidelines for designing and building new health infrastructure, including new requirements on building climate resilience into health infrastructure.

Health infrastructure	
Programs and projects	**Protecting hospital electricity supplies** The Victorian Health Building Authority is implementing a comprehensive works program to ensure emergency diesel generators in Victorian hospitals will: operate automatically in response to a grid outage; operate in parallel with other emergency generators where applicable; and provide increased reliability during peak summer demand periods.
	Climate risk hazard mapping The Victorian Health Building Authority has completed a climate risk hazard mapping assessment for public health infrastructure.
	Piloting a regionally relevant climate resilient greening initiative (South West Healthcare) This pilot program is designed to reduce the urban heat island effect around Warrnambool Hospital by planting vegetation. The program is funded with a Department of Health environmental sustainability innovation grant.
	Health Sector Resilience Plan The Department of Health reports annually, in line with this plan, on the resilience of the Victorian health sector. This plan is prepared in collaboration with key health sector stakeholders and informs the development of *Victoria's Critical Infrastructure All Sectors Resilience Report*.

Social housing infrastructure	
Programs and projects	**Social housing infrastructure climate-related hazard risk assessments** Assessment outcomes inform strategic asset management decisions.
	Minimum average 7-star NatHERS energy efficiency standard for most new-build homes This Homes Victoria program is improving social housing residents' thermal comfort and reducing energy bills.
	High-Rise Retrofit Program Upgrades public housing high-rise units to significantly increase energy efficiency, improve thermal performance and reduce greenhouse gas emissions.
	Climate adapted housing project Trialling 3 2-bedroom dwellings designed to maintain safe thermal comfort during heatwaves, during winter and under changing climate conditions.
	From Homelessness to a Home Providing 1,845 households with access to stable medium- and long-term housing and support packages to people experiencing homelessness who are residing in emergency accommodation due to the COVID-19 pandemic. This initiative will make a significant, lasting impact on homelessness and rough sleeping in Victoria.
	2019–20 EnergySmart Public Housing Project Delivered thermal shell upgrades and efficient appliances, (including air conditioner and hot water system upgrades) to more than 1,500 public dwellings.

Building capability in responding to emergencies	
Policies and plans	**Health Sector Emergency Management Policy** Statement aims to ensure the health sector is prepared for, and can respond to, emergencies such as bushfires, storms and extreme heat.
	Human Services Sector Emergency Management Policy Aims to ensure the human services sector is prepared for, and can respond to, emergencies such as bushfires, storms and extreme heat.
	Early detection, monitoring, and response to acute public health events The Department of Health has a range of systems providing early intelligence around potential emerging public health events. For example, the real-time hospital emergency monitoring system (RHEMS) provides the department with real-time data on patient presentations to the state's 38 public hospitals. This system alerts the department of surges in hospital demand, enabling more timely and effective responses to emerging public health events. The department also has a range of communications capabilities available to provide early advice and information to critical stakeholders including health services during potential and actual emergencies.

Building capability in responding to emergencies	
Programs and projects	**Personal Hardship Assistance Program** Provides financial aid to people experiencing financial hardship due to a single house fire or a natural-disaster-related emergency such as a bushfire, flood, or severe storm.
	Emergo Train System Conducts hospital exercises to test and refine agency emergency plans and procedures and build working relationships across the health, emergency management and critical infrastructure sectors.
	Initiatives to support the delivery of food relief for Victorians in need The Victorian Government funds initiatives that support emergency food relief, strengthen the food relief supply chain and ensure a coordinated approach to meeting increased demand for food relief during emergencies.
Building resilience within vulnerable communities	
Policies and plans	**Korin Korin Balit-Djak: Aboriginal health, wellbeing and safety strategic plan 2017–27** This plan aims to realise the Victorian Government's vision for Aboriginal self-determination by achieving positive outcomes across social, cultural, health and wellbeing domains.
	Balit Murrup: Aboriginal social, emotional and wellbeing framework The Balit Murrup vision sees Victorian Aboriginal people, families and communities achieving and sustaining the highest possible standard of social emotional wellbeing and mental health. A key framework goal is reducing the suicide, mental illness and psychological distress health gap between Aboriginal Victorians and the general population.
	Mana-na woorn-tyeen maar-takoort: Every Aboriginal Person has a home The Victorian Aboriginal Housing and Homelessness Framework This Framework provides a 20 year agenda to guide work in meeting the housing needs for Aboriginal Victorians**.**
	Disability Act 2006 Work on a new 4-year plan is underway. Recognising the many ways the COVID-19 health emergency has disproportionately affected the wellbeing and economic and social participation of people with disability, this plan will focus on COVID-19 recovery.
	Second Action Plan for implementation of Free from violence – Victoria's strategy to prevent family violence Now in development, this strategy is expected to consider primary prevention in the context of emergencies and disasters (focusing on COVID-19 and bushfire recovery).
	Designing for Diversity This framework embeds diversity responsiveness into the earliest stages of policy reform and service design processes. The framework comprises an approach and resources for use in highlighting diversity considerations and for identifying gaps in the design process where diversity may not have been adequately addressed.
Programs and projects	**Designing an inclusive approach to emergency management planning** Now underway, this program aims to build collaborative capacity in the disability, community and emergency services sectors with the goal of increasing the resilience of people with disability. Peer-support advocacy and inclusive local emergency management planning are key tools in this process (see Box 4 above).
	Neighbourhood House and Men's Sheds These community organisations often serve as shelters and community touchpoints during crisis events.

APPENDIX 3. REPORT ON THE IMPLEMENTATION AND EFFECTIVENESS OF THE PILOT HEALTH AND HUMAN SERVICES ADAPTATION ACTION PLAN 2019–21

Statutory requirement

The *Climate Change Act 2017* requires a report on the implementation and effectiveness of any previous adaptation action plan to be included in this plan. The former Department of Health and Human Services participated in a pilot program to develop an adaptation action plan in advance of statutory requirements, recognising the risks of climate change to public health and the Health and Human Services system and the value of sharing lessons from that experience with other systems prior to the development of mandatory adaptation action plans. The Pilot Health and Human Services Climate Change Adaptation Action Plan 2019–21 [pilot plan] was released in December 2019. The pilot plan outlines the climate change risks to public health and the Health and Human Services system and articulates 21 actions under 4 action domains: governance; knowledge building; engagement and communication; and infrastructure resilience. View the Pilot Adaptation Action Plan here.

Domain 1: Governance and regulation	Status
Action 1: Support cross-jurisdictional work to protect community health and wellbeing from the impacts of climate change through the Australian Health Protection Principal Committee and its subcommittees.	Ongoing
Action 2: Contribute to Whole of Victorian Government planning to ensure the impacts of climate change on public health are considered and opportunities to protect the community are identified.	Ongoing
Action 3: Review the Health services strategic planning guidelines to ensure health services' strategic plans address climate change risks.	In progress
Action 4: Advise health service boards to ensure they understand and manage the risks of climate change.	In progress
Action 5: Include climate change in Regional and Local Area Health Partnership planning and policy development.	Not started
Action 6: Review and update the Municipal public health and wellbeing planning: having regard to climate change guidelines to promote and strengthen consideration of climate change and its impact on health by local government in their planning and implementation of municipal public health and wellbeing activities.	Complete
Action 7: Survey councils to assess the extent to which actions to address the health impacts of climate change have been included in their municipal public health and wellbeing plans in accordance with their requirements under the *Climate Change Act 2017.*	Complete
Action 8: Incorporate additional climate change indicators into the Victorian public health and wellbeing outcomes framework.	To be considered through implementation of action H2
Action 9: Review and update the Water quality guidelines for public aquatic facilities: managing public health risks, and the aquatic facility provisions in the Public Health and Wellbeing Regulations 2009 to ensure they reflect a risk-based approach to regulation.	Complete

Domain 2: Communication and engagement	
Action 10: Provide information to senior Victorians about climate change and health and wellbeing.	Complete
Action 11: Raise staff awareness in clinical mental health services regarding climate change and how to plan for resilience.	Rolled over to this plan
Action 12: Implement public health campaigns relevant to staying healthy in a changing climate, including implementing campaigns related to healthy swimming, food safety, vector-borne disease prevention and mitigation and travel health.	Ongoing
Domain 3: Knowledge building	
Action 13: Analyse the cost of health impacts caused by climate change effects on Victorian housing.	Complete
Action 14: Develop vulnerability maps of exposed regions, places, at-risk groups and vulnerable populations.	In progress
Action 15: Investigate how food-borne and water-borne pathogens and contaminants (for example, Salmonella in food and opportunistic pathogens in water supplies), are influenced by climate factors such as extreme weather events, particularly high temperatures and humidity.	Ongoing
Domain 4: Asset readiness	
Action 16: Prepare guidance to inform health services of potential climate risk to infrastructure.	Complete
Action 17: Integrate climate adaptation into business cases, guidelines for sustainability in healthcare capital works, hospital essential engineering services guidelines and health service environmental management planning.	Complete
Action 18: Collect and analyse data on the energy security of public health facilities.	Complete
Action 19: Advocate for changes to hospital design standards to actively consider climate change.	Ongoing
Action 20: Incorporate climate change into policies, plans and processes and embed a response to climate change in operational procedures.	In progress
Action 21: Develop a climate change transition plan for public housing to achieve adaptation and emission reduction outcomes.	In progress

Pilot plan success examples

Examples of pilot action success are provided as case studies in Section 5 (above) and in Box 8.

Box 8

Pilot action case studies

Pilot action 16. Prepare guidance to inform health services of potential climate risk to in-frastructure

New hospital essential engineering guidelines were prepared in 2020–21. The new guidelines incorporate fundamental design principles informing the design and operation of emergency generators in a wider range of climate conditions. The guidelines also require designers to consider the potential effects of climate change and assess the potential risks posed to the project.

Hospital facilities built in designated bushfire-prone areas must now provide generating capacity beyond the standard requirements for that category of hospital. In remote or bushfire-prone areas, the design of on-site fuel storage must address potential delays to fuel supply replenishment under emergency conditions.

New sustainability guidelines for capital works provide information on the implications of climate change, and require these implications to be assessed, and appropriate responses integrated, during the design and construction of healthcare buildings.

Pilot action 17. Integrate climate adaptation into business cases, guidelines for sustainability in healthcare capital works, hospital essential engineering services guidelines and health service environmental management planning.

The Victorian Health Building Authority updated its guidance on environmental management planning to align with the Environmental sustainability strategy (2018–19 to 2022–23) to help health services respond to climate change within their environmental management plans. A new template and supporting resources were published on the department's website in February 2020.

Further outcomes of the pilot plan

The pilot plan has initiated the first practical steps towards climate change adaptation in the Victorian Health and Human Services system. Its development and implementation has advanced the discourse and socialisation of climate change as a health concern and highlighted the need for adaptation as a mainstream practice in public health, service delivery and asset management. The pilot plan has placed the Department of Health and Department of Families, Fairness and Housing on a sound footing for preparation and delivery of the mandatory plan.

Lessons of the COVID-19 pandemic

Victoria's response to the COVID-19 pandemic is a case study in human adaptability and presents an opportunity to draw lessons for Victoria's response to climate change adaptation. Victoria has demonstrated an impressive capacity to marshal expertise, human and material resources and the goodwill of Victorians to suppress the spread of the virus and save lives. Victorians continue to demonstrate a high level of support for action on climate change and the state has a significant capacity for adaptation.

A report by the Inter-governmental Panel on Climate Change released in August 2021 shows the continued increase in global heating driven by human activity and the urgent need for action.[23] The challenges presented by both climate change and the pandemic highlight the dependency of human health on the natural environment and how we might better manage and safeguard our natural habitats to better protect the health and wellbeing of Victorians.

This adaptation action plan provides the scope and direction for planned investment and capacity building from the short- to long-term so that Victorians can enjoy a Health and Human Services system that is resilient to climate change, ecologically sustainable, and achieves the best health, wellbeing and safety for all Victorians so they will live a life they value.

23 IPCC 2021, Climate Change 2021, The physical science basis, Summary for policy makers IPCC_AR6_WGI_SPM.pdf [accessed on 3 September 2021]

APPENDIX 4. KEY TERMS

Term	Definition	Source
(Climate change) adaptation	Any process of adjusting to actual or expected climate and its effects that in human systems, seek to moderate or avoid harm or exploit beneficial opportunities in natural systems, may be facilitated by human interventions	*Climate Change Act 2017*
Adaptive capacity	The ability of systems, institutions, humans, and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences.	IPCC AR5
Capacity building	The practice of enhancing the strengths and attributes of, and resources available to, an individual, community, society, or organisation to respond to change.	IPCC AR5
Climate change	A change of climate attributed directly or indirectly to human activity that alters the composition of the global atmosphere and is in addition to natural climate variability observed over comparable time periods.	*Climate Change Act 2017*
Co-benefits	The positive effects that a policy or measure aimed at one objective might have on other objectives, irrespective of the net effect on overall social welfare. Co-benefits are often subject to uncertainty and depend on local circumstances and implementation practices, among other factors.	IPCC AR5
Disaster	Severe alterations in the normal functioning of a community or a society due to hazardous physical events interacting with vulnerable social conditions, leading to widespread adverse human, material, economic, or environmental effects that require immediate emergency response.	IPCC AR5
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.	IPCC AR5
Greenhouse gas emissions	Emissions of (a) carbon dioxide, methane, nitrous oxide or sulphur hexafluoride or (b) a hydrofluorocarbon or perfluorocarbon that is specified in regulations made under the National Greenhouse and Energy Reporting Act 2007 of the Commonwealth.	*Climate Change Act 2017*
Hazard	The potential occurrence of a natural or human-induced physical event or trend or physical impact 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. In this report, the term hazard usually refers to climate-related physical events or trends or their physical impacts.	IPCC AR5
Likelihood	The chance of a specific outcome occurring, where this might be estimated probabilistically.	IPCC AR5
Representative Concentration Pathways (RCP)	Scenarios that include time series of emissions and concentrations of the full suite of greenhouse gases (GHGs) and aerosols and chemically active gases, as well as land use/land cover (Moss et al., 2008). The word representative signifies that each RCP provides only one of many possible scenarios that would lead to the specific radiative forcing characteristics. The term pathway emphasises that not only the long-term concentration levels are of interest, but also the trajectory taken over time to reach that outcome (Moss et al., 2010)	IPCC AR5
Shared Socioeconomic Pathways (SSP)	Currently, the idea of shared socio-economic pathways (SSPs) is developed as a basis for new emissions and socio-economic scenarios. An SSP is one of a collection of pathways that describe alternative futures of socio-economic development in the absence of climate policy intervention. The combination of SSP-based socio-economic scenarios and Representative Concentration Pathway (RCP)-based climate projections should provide a useful integrative frame for climate impact and policy analysis.	IPCC AR5

APPENDIX 5. CROSS-SYSTEM RISKS INTERSECTING WITH THE HEALTH AND HUMAN SERVICES SYSTEM

Cross-system risk champion	Cross-system risk, hazard, hazardous event or issue	Description	Health and Human Services system impacts	Existing actions	2022–26 adaptation action alignment
Natural Environment	Bushfire risk	Climate change is likely to further increase the risk of more severe and frequent bushfires. This will have direct and indirect impacts on the natural environment and human systems. This includes increased impacts on settlements with associated potential for loss of life, interrupted delivery of essential services (such as water and sewerage), and the financial impact of rebuilding. Increased fire risk is highly likely to affect the long-term viability of some settlements in their current location. Increased frequency, severity and extent of bushfires or controlled burns results in more frequent smoke pollution, longer periods where smoke pollution is present and increased health impacts for affected populations. Large-scale ecosystem changes are likely. Smoke also impacts visibility, affecting road safety and tourism experiences.	Direct and indirect health and wellbeing impacts, including through damage to social housing and health service infrastructure.	The Department of Health and Department of Fairness, Families and Housing consider bushfire risk when locating new infrastructure and build to bushfire standards. The departments also support Victorians to prepare for and respond to health and wellbeing impacts associated with bushfires, and to recover from such events. The Department of Health works collaboratively with the Environment Protection Authority Victoria, in its role as the lead authority that protects human health and the environment from the harmful effects of pollution and waste, including providing public health advice on minimising exposure to bushfire smoke. Following the 2019–20 Black Summer bushfires, through the Australian Health Protection Principal Committee's Environmental Health (enHealth) Standing Committee, Victoria contributed to the development of nationally consistent air quality categories and public health advice for fine particles in smoke.	H1 Engage the profile and leadership of the Chief Health Officer, other health professionals and broader trusted voices to deliver a climate change and health engagement program. H2 Improve the evidence base and monitoring of climate related health impacts now and in the future. H3 Actively manage and reduce climate hazards across the social housing asset base. H4 Transform the current social housing asset base for improved climate resilience. H5 Embed climate resilience in new social housing developments. H6 Transform the health asset base for improved climate resilience. H8 Develop options to secure climate-resilient health infrastructure. H11 Leverage the Health and Human Services delivery footprint to embed sector-wide climate change adaptation and risk management. H12 Support embedding of place-based adaptation in Whole of Victorian Government efforts by leveraging the Department of Health and Department of Families, Fairness and Housing's roles in precinct and public health and wellbeing planning. H14 Develop mental health and wellbeing support tailored to climate change impacts.
Loss or damage to culturally significant sites		Climate change impacts and adaptation responses to them enhance the barriers to practicing culture on Country by Traditional Owners and Aboriginal Victorians, as well as pose additional challenges to protecting places of cultural significance. Victorian Traditional Owners and First Nations have cultural, spiritual and economic connections to land, water and resources through their associations and relationship with Country. Transport routes are closely related to Song Lines – traditional trade routes and ceremonial places. As climate change further increases the risks of extreme weather events, spiritually important species or objects (totems) may be lost, cultural sites of significance may be damaged, and cultural practices may be impacted. All of these impacts will affect sites which are important to the health and wellbeing of Traditional Owners and Aboriginal Victorians.	Health and wellbeing impacts, due to loss or damage to cultural heritage sites and cultural practices.	The Aboriginal Health and Wellbeing Partnership Forum (AHWPF) is co-chaired by the Minister for Health and the Victorian Aboriginal Community Controlled Health Organisation (VACCHO) and representing the voice of the Aboriginal community-controlled health sector (not Traditional Owner Groups or registered Aboriginal Parties). In March 2021, the AHWPF established key priorities to drive improvements in the health and wellbeing of Aboriginal Victorians. Existing departmental actions include implementation of the Aboriginal and Torres Strait Islander cultural safety framework, self-determination priorities, and investment in IT infrastructure and telehealth.	H1 Engage the profile and leadership of the Chief Health Officer, other health professionals and broader trusted voices to deliver a climate change and health engagement program. H2 Improve the evidence base and monitoring of climate related health impacts now and in the future. H11 Leverage the Health and Human Services delivery footprint to embed sector-wide climate change adaptation and risk management. H12 Support of embedding place-based adaptation in Whole of Victorian Government efforts by leveraging the Department of Health and Department of Families, Fairness and Housing's roles in precinct and public health and wellbeing planning. H13 Embed Aboriginal self-determination in our approach to climate change adaptation and seek guidance on Aboriginal adaptation knowledge. H14 Develop mental health and wellbeing support tailored to climate change impacts.

Cross-system risk champion	Cross-system risk, hazard, hazardous event or issue	Description	Health and Human Services system impacts	Existing actions	2022–26 adaptation action alignment
Water	Nuisance and harmful algal blooms	Projected increases in average temperatures, temperature extremes, and decline in rainfall, increase the risk of nuisance and harmful algal blooms. Algal blooms occur naturally in many of Victoria's catchments and river systems. While some are harmless, others can make water unsafe for drinking, or aesthetically unacceptable. Algal blooms can also: pose risks to health for people using waterbodies and systems for recreation; impact the quality and usability of water for irrigation and stock; and affect our waterway ecosystems through toxicity, loss of oxygen and fish deaths. In recent decades, harmful and nuisance algal blooms are becoming more common and may be occurring in new waterbodies during cooler months of the year, that have never seen blooms or similar species before. The likelihood, severity, and impact of these algal blooms are linked to both climate factors (such as increased temperatures and reduced water inflows), and non-climate change factors (such as an increase in nutrients from agricultural run-off).	Increasing risks to public health (including through recreational, drinking water and food exposure pathways), and impacts on drinking water treatment efficacy, increased risks associated with the supply of aesthetically unacceptable drinking water.	The Department of Health is supporting a research project managed by Water Research Australia, focused on understanding the economic impacts of algal blooms on the Australian water industry. Impacts being assessed include: • costs of catchment monitoring and operational responses to blooms • increased water treatment requirements to mitigate algal bloom impacts on water quality • interruptions to drinking water supplies • required infrastructure upgrades to meet the increased treatment requirements of algae-affected raw water. Enhanced understanding of these costs will assist the water industry to project future costs of mitigating the impacts of harmful and nuisance algae on drinking water.	H1 Engage the profile and leadership of the Chief Health Officer, other health professionals and broader trusted voices to deliver a climate change and health engagement program. H2 Improve the evidence base and monitoring of climate related health impacts now and in the future. H12 Support embedding of place-based adaptation in Whole of Victorian Government efforts by leveraging the Department of Health and Department of Families, Fairness and Housing's roles in precinct and public health and wellbeing planning.
	Water availability	Risk of reduced access and reliability of water supplies to various water users. A warmer, drier future poses availability and reliability challenges for Victoria's climate-dependent water resources such as surface water and groundwater. Reduction in water availability increases competition for its use to support different community values, such as producing food, supporting jobs, maintaining a healthy natural environment, supplying places of recreation, cooling and greening the urban environment including shared paths and roadsides, caring for Country, and providing essential services to maintain human health. Balancing supply with demand may require significant new investments, changes in practices and shifts in community mindsets.	Reduced availability of water for critical health and human services (including for drinking water, and irrigation of public open space and sports grounds that provide health and wellbeing benefits).	The Department of Health liaises regularly with the Department of Environment, Land, Water and Planning (DELWP) on drinking water and other water issues, including water availability. The department also collaborates with DELWP and EPA Victoria on various projects, including through the DELWP-led Water Quality Program Control Board.	H1 Engage the profile and leadership of the Chief Health Officer, other health professionals and broader trusted voices to deliver a climate change and health engagement program. H2 Improve the evidence base and monitoring of climate related health impacts now and in the future. H12 Support embedding of place-based adaptation in Whole of Victorian Government efforts by leveraging the Department of Health and Department of Families, Fairness and Housing's roles in precinct and public health and wellbeing planning.
	Flash flooding	Increased risk of flash-flooding incidents in some locations pose a safety risk to people and can damage built assets and infrastructure, soils and natural environment. Flash flooding can occur if drainage and/or flood-mitigation structures are overwhelmed. Concerns during floods include human health and safety near flood waters, sewage overflows and runoff from farms entering the surrounding environment (including waterways). Flooding can interrupt critical services, transport routes and damage natural and built structures, with cascading impacts on the community. Flooding may also cause the loss of valuable topsoil. Infrastructure may be increasingly difficult or expensive to insure in the future, as flood risk increases under climate change.	Direct and indirect health and wellbeing impacts, including through impacts on social housing and health infrastructure.	The Department of Health and Department of Fairness, Families and Housing consider flash flooding when locating new infrastructure. The departments also support Victorians to prepare for and respond to health and wellbeing impacts associated with floods, and to recover from such events.	H1 Engage the profile and leadership of the Chief Health Officer, other health professionals and broader trusted voices to deliver a climate change and health engagement program. H2 Improve the evidence base and monitoring of climate related health impacts now and in the future. H3 Actively manage and reduce climate hazards across the social housing asset base. H4 Transform the current social housing asset base for improved climate resilience. H5 Embed climate resilience in new social housing developments. H6 Transform the health asset base for improved climate resilience. H8 Develop options to secure climate-resilient health infrastructure.

Cross-system risk champion	Cross-system risk, hazard, hazardous event or issue	Description	Health and Human Services system impacts	Existing actions	2022–26 adaptation action alignment
					H11 Leverage the Health and Human Services delivery footprint to embed sector-wide climate change adaptation and risk management. H12 Support embedding of place-based adaptation in Whole of Victorian Government efforts by leveraging the Department of Health and Department of Families, Fairness and Housing's role in precinct and public health and wellbeing planning. H14 Develop mental health and wellbeing support tailored to climate change impacts.
Water	Water quality	Non-climate related declines in water quality and ecological health may be exacerbated directly by climate change through increases in bushfire, floods, drought, and warmer average temperatures, or indirectly through use of fertiliser and pest control chemicals that may enter waterways. Poor water quality can impact Aboriginal cultural sites of significance, irrigation, native ecosystems and species, recreation, tourism, and other values and activities that involve the use of waterways. Treatment outages due to hazard events can pose a risk to the health of communities and residents, disrupt business and create widespread inconvenience.	Deterioration of water quality in catchments and decreased drinking water treatment efficacy; increased risks of exposure to chemicals and pathogens for people recreating in Victorian water bodies.	The Department of Health liaises regularly with the Department of Environment, Land, Water and Planning (DELWP) on drinking water and other water quality issues. The department also works collaboratively with DELWP and EPA Victoria on a range of projects, including through the DELWP-led Water Quality Program Control Board.	H1 Engage the profile and leadership of the Chief Health Officer, other health professionals and broader trusted voices to deliver a climate change and health engagement program. H2 Improve the evidence base and monitoring of climate related health impacts now and in the future. H12 Support embedding of place-based adaptation in Whole of Victorian Government efforts by leveraging the Department of Health and Department of Families, Fairness and Housing's roles in precinct and public health and wellbeing planning.
Water	Alternative water supplies	Projections of continued reduced rainfall and increasing risk of drought condition will drive diversification of water sources that must maximise benefits while keeping risks appropriately low. Diversification of water sources such as stormwater and recycled water for appropriate uses will be increasingly needed to meet demands for food production, household use, recreation, urban cooling and other purposes. If not appropriately managed, the use of alternative water supplies has the potential to expose community members to pathogens and chemicals.	Increased morbidity associated with the use of alternative water supplies if not managed appropriately.	The Department of Health works collaboratively with the Environment Protection Authority and the DELWP to support the safe use of alternative water supplies, including recycled water schemes, in Victoria. The department also supports water saving initiatives in Victorian health care facilities and public housing projects. For example, in 2009, the department published Guidelines for water reuse and recycling in Victorian health care facilities, covering non-drinking applications to support the safe use of alternative water supplies and other water savings initiatives.	H1 Engage the profile and leadership of the Chief Health Officer, other health professionals and broader trusted voices to deliver a climate change and health engagement program. H2 Improve the evidence base and monitoring of climate related health impacts now and in the future. H12 Support embedding of place-based adaptation in Whole of Victorian Government efforts by leveraging the Department of Health and Department of Families, Fairness and Housing's roles in precinct and public health and wellbeing planning.
Transport	Transport supply chain and service delivery disruptions	Projected increases in frequency and/or intensity of extreme weather events, may increase damage to transport assets and infrastructure, and disruptions to transport services, impacting critical supply chains and service delivery. Climate change projections suggest increases in the frequency and intensity of extreme weather events, which are likely to damage transport assets and infrastructure, and transport services are likely to be disrupted with increased frequency. During emergencies, a range of impacts may occur, including: access and evacuation routes from affected areas may be affected; emergency vehicle access may be affected; supply of food and essential goods may be impacted; access to provide humane treatment to livestock may be affected; and care of threatened species may be impacted. Other systems may have difficulty accessing and repairing pipes, pipelines, poles, cables and wires co-located along roads. Transport disruptions may impact supply chains, critical industries and services, especially those in rural and regional locations. Affected communities may experience difficulties accessing the supplies and markets they require. Damage to transport infrastructure, such as roads and bridges, may also impact access to other critical infrastructure, such as drinking water and wastewater treatment plants.	Delays in the supply of critical health supplies and potential interruption of critical health and human services (including hindered access to drinking water treatment facilities and the supply of relief and recovery services to communities' post-emergencies such as bushfires).	The Department of Health collaborates with the transport sector through the Critical Infrastructure Resilience Sectors Forum. This forum promotes consistent approaches and builds shared understanding of cross-sectoral dependencies and emergency risks, to improve the resilience of the state's critical infrastructure and services, including for climate change risk. The forum reports to the State Crisis and Resilience Council. The resilience of the transport sector is the responsibility of the Department of Transport, and owners and operators of transport infrastructure and services.	H1 Engage the profile and leadership of the Chief Health Officer, other health professionals and broader trusted voices to deliver a climate change and health engagement program. H11 Leverage the Health and Human Services delivery footprint to embed sector-wide climate change adaptation and risk management. H12 Support embedding of place-based adaptation in Whole of Victorian Government efforts by leveraging the Department of Health and Department of Families, Fairness and Housing's roles in precinct and public health and wellbeing planning.

Cross-system risk champion	Cross-system risk, hazard, hazardous event or issue	Description	Health and Human Services system impacts	Existing actions	2022–26 adaptation action alignment
Transport	Public and active transport disruption	Projected increases in frequency and intensity of extreme weather events, and overall warmer temperatures, are likely to disrupt public and active transport. Increased average temperatures, very hot days, heatwaves and floods as a result of climate change pose multiple risks to the transport system, including public transport, and to active transport options such as walking or cycling. The elderly, people on low incomes and others who rely on public or active transport as their primary means of getting around are likely to be impacted to a greater extent and may have difficulty accessing key services and their place of employment or study, leading to further inequities. Public transport disruptions may also make seeing friends and family and accessing other social activities more difficult for people who do not drive. Increasing temperatures, heatwaves and very hot days may also pose risks to people using public or active transport if: • transport corridors, tram or bus stops do not provide sufficient shade • trains, trams, buses or stations do not provide sufficient cooling • potable water is not available. These risks may be compounded if climate or weather hazards delay or interrupt services. People who may be at a higher risk of adverse health outcomes during hot weather are also likely to be at increased risk of social isolation, including older people and people with a disability. Disrupted transport services will likely increase this risk, especially in rural and regional areas.	Health and wellbeing impacts (including through reduced active transport opportunities and increased social isolation).	The Department of Health works collaboratively with the Department of Transport on a range of active transport initiatives. These initiatives focus on improving public health and wellbeing outcomes. They also provide co-benefits in terms of emissions reduction.	H1 Engage the profile and leadership of the Chief Health Officer, other health professionals and broader trusted voices to deliver a climate change and health engagement program. H2 Improve the evidence base and monitoring of climate related health impacts now and in the future. H11 Leverage the Health and Human Services delivery footprint to embed sector-wide climate change adaptation and risk management. H12 Support embedding of place-based adaptation in Whole of Victorian Government efforts by leveraging the Department of Health and Department of Families, Fairness and Housing's roles in precinct and public health and wellbeing planning.
Primary Production	Food security	Extreme events (including floods, droughts, storms and bushfires) and changing seasonal conditions may impact harvest and production of adequate, affordable, safe and nutritious food. Food security means access to adequate, affordable, safe and nutritious food. It is a particular concern for vulnerable communities and lower socio-economic groups. Rural and regional communities are among those with the least reliable food security. Climate change impacts may include shifts in the extent and severity of extreme events; pest and disease outbreaks; reduced predictability of seasons; plant and animal heat stress; and changes to regional suitability of certain production systems. These short- and long-term impacts will increasingly impact supply, equitable access to, and affordability of fresh, healthy food. Extreme events may impact the transport supply chain, both inputs and market outputs.	Increases in food costs, and reduced and less equitable access to fresh healthy foods, will contribute to health and wellbeing impacts, most significantly impacting those on low incomes.	The Department of Families, Fairness and Housing, through the $3.5 million Building Regional Food Relief Networks program, will increase capacity at a network of food distribution hubs in regional areas. This will, by strengthening the link between supplies and people experiencing food insecurity, ensure healthy food gets where it is needed. The department is also establishing a Food Relief Taskforce, to bring together representatives from all tiers of government, food relief providers, peak bodies and logistics experts to ensure food relief supply and distribution is coordinated and targeted to areas most in need.	H1 Engage the profile and leadership of the Chief Health Officer, other health professionals and broader trusted voices to deliver a climate change and health engagement program. H2 Improve the evidence base and monitoring of climate related health impacts now and in the future. H11 Leverage the Health and Human Services delivery footprint to embed sector-wide climate change adaptation and risk management. H12 Support embedding of place-based adaptation in Whole of Victorian Government efforts by leveraging the Department of Health and Department of Families, Fairness and Housing's roles in precinct and public health and wellbeing planning.

Cross-system risk champion	Cross-system risk, hazard, hazardous event or issue	Description	Health and Human Services system impacts	Existing actions	2022–26 adaptation action alignment
Built Environment	Inundation and erosion of coastal assets and	The combination of sea level rise and increases in storm weather events is leading to an increase in coastal flooding that is projected to increase over coming decades. This will affect future settlement patterns and require responses across existing suburbs and towns subject to these impacts. Buildings and infrastructure located near the coast, such as roads and rail lines, bridges, ports, drains and recreational assets, such as boating infrastructure, will be at risk. The character and physical location of the shoreline will change in some locations. Where shoreline recession occurs sandy swilling beaches may be difficult to maintain, disappear completely or retreat inland. These changes can have property law implications. Coastal defence systems including 'soft' ecosystem-based coastal protection may play an increasing role. Marine infrastructure may be impacted by increasing ocean acidity and rising sea levels. Inundation (flooding) of low-lying coastal areas is projected to increase over coming decades, associated with sea level rise and changing weather patterns. Some coastal areas may also be increasingly prone to short- or long-term erosion. This will affect future settlement patterns, and require responses across existing suburbs and towns, to avoid and manage impacts. Inundation and erosion risk may increase for buildings and infrastructure located near the coast, such as roads and rail lines, bridges, ports, drains, and recreational assets such as boating infrastructure. The character and physical location of the shoreline may also change in some locations. Sea level rise and associated changes in tidal extent, combined with other changes in coastal processes such as coastal erosion, will influence the future shoreline position. These changes can have property law implications. Marine infrastructure may also be impacted by increasing ocean acidity and rising sea levels. Coastal inundation and erosion risk for the built environment can be mitigated through a range of planning and adaptation responses, in accordance with a pathways planning approach (Marine and Coastal Policy 2020). This includes an increasing role for nature-based methods.	Damage to coastal public hospital and social housing infrastructure and interruptions to the delivery of critical health and human services (for example, supply of safe drinking water).	The Department of Health and Department of Fairness, Families and Housing consider coastal flooding when locating new infrastructure. The departments also support Victorians to prepare for and respond to health and wellbeing impacts associated with floods, and to recover from such events.	H1 Engage the profile and leadership of the Chief Health Officer, other health professionals and broader trusted voices to deliver a climate change and health engagement program. H2 Improve the evidence base and monitoring of climate related health impacts now and in the future. H3 Actively manage and reduce climate hazards across the social housing asset base. H4 Transform the current social housing asset base for improved climate resilience. H5 Embed climate resilience in new social housing developments. H6 Transform the health asset base for improved climate resilience. H8 Develop options to secure climate-resilient health infrastructure. H11 Leverage the Health and Human Services delivery footprint to embed sector-wide climate change adaptation and risk management. H12 Support embedding of place-based adaptation in Whole of Victorian Government efforts by leveraging the Department of Health and Department of Families, Fairness and Housing's roles in precinct and public health and wellbeing planning. H14 Develop mental health and wellbeing support tailored to climate change impacts.

Cross-system risk champion	Cross-system risk, hazard, hazardous event or issue	Description	Health and Human Services system impacts	Existing actions	2022–26 adaptation action alignment
Health and Human Services	Drinking water quality	Projected increases in average temperature, and risks of bushfires, floods and droughts may impact on drinking water treatment efficacy, quality, and costs, and pose increasing risks to public health. Warmer average temperatures and the increased risk of intense rainfall, drought, bushfires and are expected to pose increasing challenges to drinking water treatment systems, and increase the risk of poor drinking water quality and water supply interruptions. Challenges include impacts associated with: • harmful algal blooms • water-borne pathogens (including through the expanded distribution and increased prevalence of emerging water-borne pathogens in the Victorian environment due to increased average temperatures) • chemicals that have the potential to impact on health • floods and bushfires: o leading to poor water quality in drinking water catchments due to direct microbial or chemical contamination, or after bushfires through reduced vegetation in riparian zones, which act as a natural filter for water that passes through it o potentially damaging water infrastructure o impacting water quality in private drinking water supplies, such as rainwater systems through chemical or microbial contamination.	Increased health and wellbeing impacts associated with drinking water pathogens and other hazards.	The Department of Health administers the *Safe Drinking Water Act 2003* and associated regulations, including a risk-based approach to regulating the quality of drinking water supplies in Victoria. The department is also investing in research to support better understanding and management of risks posed by climate change to Victoria's drinking water supplies. This includes supporting a collective research program managed by Water Research Australia focused on understanding drinking water quality risks under low and variable water levels. The outcomes of the research will guide future strategies for managing the water quality impacts of declining water levels in drinking water dams and reservoirs. The Department of Health has developed resources to provide advice for the management of private drinking water supplies, including after fires and floods.	H1 Engage the profile and leadership of the Chief Health Officer, other health professionals and broader trusted voices to deliver a climate change and health engagement program. H2 Improve the evidence base and monitoring of climate related health impacts now and in the future. H12 Support embedding of place-based adaptation in Whole of Victorian Government efforts by leveraging the Department of Health and Department of Families, Fairness and Housing's roles in precinct and public health and wellbeing planning.
Health and Human Services	Food safety	Projected increases in extreme heat days, overall warmer temperatures and risk of flooding increase risks to food safety. Increased average temperatures, days of extreme heat, heatwaves, and floods as a result of climate change, all pose multiple risks to food safety. For example, increased average temperatures and elevated CO^2 concentrations associated with climate change may stimulate growth of some mycotoxigenic fungal species (for example, in grains), especially under water stress. Increased temperature also leads to increased pathogen growth and better pathogen survival. Increased average temperatures and heatwaves may also cause distress in livestock, resulting in increased excretion of microorganisms. Microbial contamination of food is also likely to increase as a result of increasing temperatures, flooding events and loss of refrigeration from peak-demand power outages.	Increased morbidity and mortality associated with food-borne pathogens and other hazards.	Food policy is cooperatively made by a forum of ministers from Australian and New Zealand government jurisdictions: the Australia and New Zealand Ministerial Forum on Food Regulation. The forum is supported by the Food Regulation Standing Committee, comprising representatives from both the Victorian Department of Health and the Department of Jobs, Precincts and Regions. Together, these bodies ensure a coordinated cross-portfolio approach to food regulation. In Victoria, various legislative frameworks are administered to support the production and supply of food in accordance with quality and safety requirements, including the *Food Act 1984, Meat Industry Act 1993, Seafood Safety Act 2003* and *Victorian Dairy Act 2000*. These legislative frameworks are, in turn, administered by various departments and agencies. In addition to its legislative responsibility for administering the *Food Act 1984*, the Department of Health also leads the response to food-borne illnesses notified under the *Public Health & Wellbeing Act 2008* and provides food safety information and advice to the community and industry.	H1 Engage the profile and leadership of the Chief Health Officer, other health professionals and broader trusted voices to deliver a climate change and health engagement program. H2 Improve the evidence base and monitoring of climate related health impacts now and in the future. H12 Support embedding of place-based adaptation in Whole of Victorian Government efforts by leveraging the Department of Health and Department of Families, Fairness and Housing's roles in precinct and public health and wellbeing planning.

Cross-system risk champion	Cross-system risk, hazard, hazardous event or issue	Description	Health and Human Services system impacts	Existing actions	2022–26 adaptation action alignment
Health and Human Services	Heat health	Projected increases in days of extreme heat and heatwave, as well as overall warmer temperatures pose increasing risks to the health and wellbeing of the community. Extreme heat increases the incidence of illness, most commonly in the form of heat cramps, heat exhaustion, heat stroke, and dehydration. Extreme heat can exacerbate pre-existing medical conditions, including heart (cardiac) and kidney (renal) disease, asthma and other respiratory illnesses. Extreme heat conditions can also significantly restrict day-to-day activities including work, outdoor sport and recreation and active transport. The design of buildings and the broader built environment has a significant influence on health outcomes associated with days of extreme heat and heatwaves.	Increase in morbidity and mortality associated with days of extreme heat and heatwaves, and increased health system demand.	Addressing the risks of extreme heat for the health of the Victorian community is a shared responsibility across multiple Victorian government portfolio areas, including the Department of Families, Fairness and Housing and the Department of Health. This is reflected in the State Extreme Heat Subplan of the State Emergency Management Plan (SEMP), which provides a coordinated, state-wide approach to extreme heat with the Emergency Management Commissioner as the Control Agency. The Heat health plan for Victoria outlines actions the Department of Health, local government, health services and individuals should take to prepare for and respond to extreme heat and heatwaves. The plan provides for the issuing of heat health alerts – giving early notification of forecast extreme heat to subscribers – as well as the Survive the Heat campaign and associated collateral to promote consistent community heat health messages. Heatwave planning and initiatives are also undertaken by local councils in accordance with the SEMP and numerous health and community service providers. The Energy Efficiency in Social Housing Program is in part targeting public housing exposed to elevated heat risk through the provision of reverse-cycle air conditioning in the hottest climate zone within the state across the north and northwest. The program will contribute to improved thermal performance for a substantial proportion of the social housing stock In addition, the scheduled high-rise flat upgrade program includes standard items such as wall insulation and thermally improved windows to mitigate heat risk. New build social housing is being constructed to 7-Star NatHERS, with air conditioning as standard to mitigate heat risks for residents.	H1 Engage the profile and leadership of the Chief Health Officer, other health professionals and broader trusted voices to deliver a climate change and health engagement program. H2 Improve the evidence base and monitoring of climate related health impacts now and in the future. H3 Actively manage and reduce climate hazards across the social housing asset base. H4 Transform the current social housing asset base for improved climate resilience. H5 Embed climate resilience in new social housing developments. H6 Transform the health asset base for improved climate resilience. H8 Develop options to secure climate-resilient health infrastructure. H11 Leverage the Health and Human Services delivery footprint to embed sector-wide climate change adaptation and risk management. H12 Support embedding of place-based adaptation in Whole of Victorian Government efforts by leveraging the Department of Health and Department of Families, Fairness and Housing's roles in precinct and public health and wellbeing planning. H13 Embed Aboriginal self-determination in our approach to climate change adaptation and seek guidance on Aboriginal adaptation knowledge. H14 Develop mental health and wellbeing support tailored to climate change impacts.
Health and Human Services	Spread of vector and zoonotic-borne diseases affecting people	Projected increases in the frequency and/or intensity of extreme weather events and overall warmer temperatures alter the risk of vector and zoonotic borne disease transmission. Climate change has already caused profound and often complex changes in the prevalence or severity of some infectious diseases. However, many knowledge gaps remain in understanding how climate change affects the distribution of vector and zoonotic-borne diseases. The impact is likely to be complex and hard to generalise; for instance, when temperatures are warmer, development speeds up with faster completion of life cycles, but pathogens and vectors can also die faster. Climate change also interacts with other factors in complex ways to impact on disease distribution.	Increase in morbidity and mortality associated with vector and zoonotic-borne diseases.	The Department of Health, the Office of the Chief Veterinary Officer (Department of Jobs, Precincts and Regions), WorkSafe, the Environment Protection Authority, local government and the state's public health reference laboratories work collaboratively to manage vector and zoonotic-borne disease investigations through the lens of interconnected human, animal and environmental health (OneHealth approach). The Department of Health also plays a lead role in Victoria in conducting surveillance on communicable diseases and other notifiable conditions to identify, manage and respond to outbreaks to prevent the spread of disease and further exposure. This includes the surveillance and investigation of vector and zoonotic-borne diseases reported under the *Public Health and Wellbeing Act 2008* and associated regulations, and coordination of the Victorian Arbovirus Disease Control Program which manages arbovirus disease risk across the Victorian community.	H1 Engage the profile and leadership of the Chief Health Officer, other health professionals and broader trusted voices to deliver a climate change and health engagement program. H2 Improve the evidence base and monitoring of climate related health impacts now and in the future. H12 Support embedding of place-based adaptation in Whole of Victorian Government efforts by leveraging the Department of Health and Department of Families, Fairness and Housing's roles in precinct and public health and wellbeing planning.

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