

State Emergency Management Plan

Extreme Heat Sub-Plan

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Acknowledgment of Country

EMV acknowledges Aboriginal and Torres Strait Islander people as the Traditional Custodians of the land. EMV also acknowledges and pays respect to the Elders, past and present, and is committed to working with Aboriginal and Torres Strait Islander communities to achieve a shared vision of safer and more resilient communities.

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1. Introduction

1.1 Purpose

This [State Emergency Management Plan](#) (SEMP) Extreme Heat Sub-Plan contextualises the current arrangements, roles and responsibilities for planning, mitigation, preparedness, response (including relief) and recovery from all extreme heat events, regardless of their duration.

For the purposes of this Sub-Plan, extreme heat events include low-intensity, severe and extreme heatwaves (three or more consecutive days of high temperatures), or one or two days of abnormal high temperatures which would impact the general population and include consequences for essential services, energy and water supply, health and wellbeing and the environment.

The metric for defining heatwaves is the Excess Heat Factor (EHF), which correlates to one of three heatwave levels: low-intensity, severe or extreme heatwaves (see section 2).

Operational activities of agencies or businesses are covered within their respective operational plans. Agency specific operational or business continuity plans may be enacted to manage the impacts or consequences of extreme heat events, without state level arrangements being triggered.

1.1.1 Audience

This Sub-Plan recognises that emergency management—supporting communities to be safer and more resilient—is the shared responsibility of all Victorians, not just the emergency management sector.

The audience for this plan is targeted at government departments and agencies with a role in emergency management.

1.1.2 How to read this document

This plan should be read in conjunction with the [SEMP](#), and where applicable the relevant Regional Emergency Management Plan/s (REMP), Municipal Emergency Management Plan/s (MEMP), and any extreme heat sub-plans at each level of emergency management planning, and where relevant any department, agency or council specific plans.

Acronyms

A list of acronyms referenced throughout this Sub-Plan is included at **Appendix A**.

Hyperlinks

This Sub-Plan refers to a range of existing extreme heat and heatwave resources, including documents and websites. This Sub-Plan does not seek to duplicate information contained in these resources and instead provides links to where further information can be obtained.

[Joint Standard Operating Procedures](#) (JSOPs) are readily available to the public.

1.1.3 Plan Preparation, Approval, and Review

This is the third version of a State-level extreme heat sub-plan and the first in the form of a SEMPP Extreme Heat Sub-Plan that is prepared under the reformed emergency management planning arrangements outlined in the *Emergency Management Act 2013* (EM Act 2013), as amended by the *Emergency Management Legislation Amendment Act 2018*.

This Sub-Plan aligns with the SEMPP and was prepared with regard to the [Guidelines for Preparing State, Regional and Municipal Emergency Management Plans](#). It was endorsed by the State Crisis and

Resilience Council (SCRC) on 4 November 2022. This sub-plan was published and took effect in November 2022.

The Sub-Plan was current at the time of publication and remains in effect until modified, superseded or withdrawn.

The Sub-Plan will be reviewed and updated at least every three years in accordance with the [Guidelines for Preparing State, Regional and Municipal Emergency Management Plans](#). Consideration will be given to an earlier revision if the Sub-Plan has been applied in a major emergency or an exercise or substantial change to the relevant legislation or arrangements.

1.1.4 Plan Activation

Arrangements in this SEMP Extreme Heat Sub-Plan apply on a continuing basis and do not require activation.

The Emergency Management Commissioner as the control agency for heat will consider escalating the arrangements in this Sub-Plan when heat or heatwave conditions are abnormally high and have the potential for profound consequences for the general population, including consequences for essential services, energy and water supply, health and wellbeing and the environment.

1.1.5 Concurrent Emergencies

In the case of a concurrent emergency (e.g. an energy disruption), the arrangements detailed in this Sub-Plan may need to be adjusted as required.

1.2 Legislative Framework

The following legislation, while not an exhaustive list, is the principal legislation for extreme heat management in Victoria:

- *Emergency Management Act 2013* (EM Act 2013)
- *Emergency Management Act 1986*
- *Public Health and Wellbeing Act 2008* which references the powers of the Chief Health Officer
- *The Meteorology Act 1955* and the *Water Act 2007* defines the Bureau of Meteorology's functions and the powers of the Director of Meteorology.
- *Planning and Environment Act 1987* which fosters better planning of the built environment to withstand the impact of a range of likely emergencies, including extreme heat events
- *Prevention of Cruelty to Animals Act 1986* which outlines the responsibility of animal owners to protect the health of their animal from unreasonable pain or suffering
- *Climate Change Act 2017* whereby Adaptation Action Plans are prepared. [Adaptation Action Plans](#) guide government action and help institutions, businesses, and individuals to respond to Victoria's changing climate (including any extreme heat events). The Act also requires the development every 5 years of Victoria's Climate Science Report, which provides a summary of the best available scientific information on future climate for the state.

1.3 State Emergency Management Plan

Under the EM Act 2013, the [Emergency Management Commissioner](#) (EMC) is required to arrange for the preparation of the SEMP. The SEMP provides for an integrated, coordinated, and comprehensive

approach to EM at the State level. It contains provisions for the mitigation of, response to and recovery from emergencies (before, during and after), and specifies the roles and responsibilities of agencies in relation to EM.

1.3.1 Class 2 emergencies and heat

Heat events are class 2 emergencies. The arrangements for managing a class 2 emergency are detailed in the [SEMP](#).

1.3.2 Control Agency

The EMC is the control agency for heat.

1.3.3 SEMP sub-plans

The [Guidelines for Preparing State, Regional and Municipal Emergency Management Plans](#) provides more information about the requirements relating to SEMP sub-plans; they are developed to define more complex or specific arrangements than those contained in the SEMP. This plan adds further detail about the specific arrangements for the management of extreme heat events in Victoria other than what is outlined in the SEMP.

1.3.4 This Sub-Plan and other key documents

The below table indicates key documents for the state's extreme heat events.

Table 1: Related plans and arrangements

Item	Description
SEMP sub-plans	SEMP sub-plans are developed to define more complex or specific arrangements than those contained in the SEMP, generally about a particular emergency type. The sub-plans likely to be most related to this Sub-Plan are the: <ul style="list-style-type: none">• SEMP Public Transport Disruption Sub-Plan• SEMP Energy Sub-Plan• SEMP Bushfire Sub-Plan• SEMP Health Emergencies Sub-Plan¹
Ambulance Victoria Emergency Response Plan	This agency-specific plan describes the planning, preparedness, and recovery activities of AV, and enacts a whole of organisation response to scale up available operational resources to manage increased ambulance 000 workload in the community and to provide for the welfare of staff and first responders.
Climate Change Adaptation Action Plans	Plans for seven systems across Victoria that are vulnerable to climate impacts or critical to building our state's climate resilience: built environment, education and training, health and human services, natural environment, primary production, transport, and the water cycle.

¹ At the time of writing, the SEMP Health Emergencies Sub-Plan had been approved but not yet published online.

Item	Description
	Together, these plans ensure an integrated response to climate change, including extreme heat.
Heat Health Guidelines for health and community services	Guidelines that outline how health and community services can plan, prepare, mitigate and respond to heat to reduce the health impacts of high temperatures.
Victorian Emergency Animal Welfare Plan	Details the responsibilities of animal owners and the coordinated activities of DELWP, DJPR and relevant non-government organisations to manage the impacts of emergencies on the health of wildlife, livestock, and companion animals.
Victorian Response Plan for Heat Stress in Flying-Foxes	Arrangements for preparing for and responding to the impacts of extreme heat emergencies on flying-foxes in Victoria

2 Victoria's Extreme Heat Threat

2.1 Extreme Heat events

For the purposes of this Sub-Plan, extreme heat events include low-intensity, severe and extreme heatwaves (three or more consecutive days of high temperatures) or one or two days of abnormal high temperatures which would impact the general population and include consequences for essential services, energy and water supply, health and wellbeing and the environment.

2.1.1 Excess Heat Factor (EHF)

Heatwaves are calculated by the Excess Heat Factor, using the forecast maximum and minimum temperatures over the next three days. This information is compared to actual temperatures over the previous 30 days, and the long-term climate record for what should be considered hot at the location at that time (Nairn and Fawcett 2013).

2.1.2 Heatwave level

Heatwaves can be classified by heatwave level: low-intensity heatwave, severe heatwave or extreme heatwave. These levels allow for a scalable response.

Table 2: Heatwave levels²

Level	Frequency ³	Messaging	Health Impact
Low-intensity heatwave	Most common EHF >0<1	Possible Heat health warning from Department of Health Monitor local conditions Prepare and respond according to heatwave plans	Most people can cope during these heatwaves.
Severe heatwave	Less frequent EHF ≥1<3	BOM Heatwave Warning issued Monitor local conditions Prepare and respond according to heatwave plans	Can impact those most at risk such as those over the age of 65 years, particularly those with medical conditions, and the very young.
Extreme heatwave	Rarest EHF ≥3	BOM Heatwave Warning issued Monitor local conditions Prepare and respond according to heatwave plans	Causing widespread health issues to all population cohorts. This can impact infrastructure such as power and transport.

2.2 The Impact of Extreme Heat

The Victorian Government has assessed heatwave to be a significant risk facing the State in the [Emergency Risks in Victoria report](#) (July 2020). Heatwaves result in more fatalities than any other natural disasters in Australia.

The impact of extreme heat events can be compounded with other environmental stresses such as prolonged periods of drought and amplified by climate change⁴. Climate change has already resulted in more extreme heat days and occurrences of heatwaves. Victoria's [Climate Science Report 2019](#) describes how our climate is changing and includes local-scale future climate projections for Victoria. These climate projections show that the number of extreme heat days and heatwaves will continue to increase in Victoria and this information should be used to inform how we plan for these events.

In January 2009, a heatwave in Victoria resulted in an estimated 374 deaths from episodes of extreme heat, compared with the average rate in the same week over the previous five years. Similarly, in a January 2014 heatwave, there were an estimated 167 deaths reported.

Although maximum temperatures for the January 2014 heatwave were slightly lower than those observed during previous heatwaves, the mean temperatures were higher, and the heat lasted for a longer period. Victoria experienced the hottest four-day period on record. Maximum temperatures were 12 degrees or more above average, with parts of Victoria reaching 45 degrees or more on three consecutive days.

According to the 2014 audit by the Victorian Auditor-General, *Heatwave management: Reducing the risks to public health*⁵, the collective efforts of the Department of Health's and other agencies' heatwave planning and implementation contributed to reducing the severity of the impact of the January 2014 heatwave.

² Bureau of Metrology, 'Understanding Heatwaves', <http://www.bom.gov.au/australia/heatwave/knowledge-centre/understanding.shtml>

³ Bureau of Metrology, 'Understanding Heatwaves', <http://www.bom.gov.au/australia/heatwave/knowledge-centre/understanding.shtml>

⁴ Bureau of Meteorology and CSIRO, 'State of the Climate 2020', p8, <http://www.bom.gov.au/state-of-the-climate/>

⁵ [Heatwave Management: Reducing the Risk to Public Health | Victorian Auditor-General's Office \(uatsite.com.au\)](#)

The 2019/20 Victorian Bushfires also witnessed periods of extreme heat, with sustained high temperatures across Victoria throughout December 2019 and January 2020. This included a Victorian December record being set on 20 December 2019, with an observed daytime maximum temperature of 47.9°C being recorded throughout parts of Victoria⁶. Severe fire weather conditions accompanied periods of extreme heat, particularly throughout parts of Eastern Victoria. The fires of 2019/20 also demonstrated how a warming climate can result in longer heatwaves, less rainfall and more days of extreme fire risk⁷.

2.2.1 Health and Wellbeing

Most Victorians are generally accustomed to living in hot weather and are known to be resilient in hot conditions. For this reason, some people may be complacent about heat and do not believe they are at risk of heat-related health impacts.

Health risks to Victorians are likely to continue to increase as climate change progresses, the population ages, and there are more people living with chronic conditions which increase their susceptibility to heat-related illnesses.

Extreme heat events can affect anybody, including the young and healthy; however, there are certain people that maybe more at risk than others - see **Appendix B**. Factors such as age, health, environment, social and economic circumstances, location, or occupation can make some people more likely to be affected by extreme heat.

Exposure to extreme heat can result in a range of mild to severe health impacts, including:

- heat cramps, heat exhaustion and heat stroke
- dehydration
- exacerbation of pre-existing medical conditions, including heart (cardiac) and kidney (renal) disease, asthma and other respiratory illnesses, neurological and mental health challenges.
- gastroenteritis where food is not properly stored at cold temperatures resulting in excessive growth of disease-causing bacteria.

The risk of drowning can also increase as people engage in water-based recreational activities.

There may also be occupational health and safety risks associated with higher temperatures. Those who require heavy personal protective equipment or who spend the majority of their work-day outside may need to take additional precautions to mitigate heat impacts.

Extreme heat rarely occurs in isolation. Likewise, the effects of extreme heat can continue for some days after temperatures have dropped.

Infrastructure failure or other natural emergencies can increase the demand for services and add complexity to a community's needs and response. Bushfires may reduce air quality and increase potential health impacts. Public transport disruptions will reduce the community's mobility and access to alternative air-conditioned venues. Pressure on the water management system can amplify health issues.

High temperatures can affect electricity supplies across the state and, in some instances, lead to widespread and prolonged power outages impacting many people's health and wellbeing. Power outages will affect people's ability to operate air-conditioners, access water, run critical medical equipment and maintain cool

⁶ Bureau of Metrology, 'Special Climate Statement 73, extreme heat and fire weather in December 2019 and January 2020', 17 March 2020

⁷ Duckett, S, Mackey, S, Stobart, A., 'The health effects of the 2019-20 bushfires: submission to the Senate Finance and Public Administration References Committee on lessons to be learned in relation to the Australian bushfire season 2019-20', The Grattan Institute, Submission 102, 2020

spaces for the community. Power dependency varies widely among people, and the consequence of being without power for extended periods will also vary.

Critical health infrastructure is reliant on air-conditioning systems, water supply, waste-water treatment and telecommunications, and therefore the ability to deliver health services is heavily dependent on a reliable power supply. Pharmacies, too, rely on power to store certain medications appropriately. The need for health infrastructure to deliver services on-site will continue, with demand potentially increasing, during extreme heat events.

2.2.2 Flora and fauna

Extreme heat events can have significant consequences for flora and fauna. Prolonged periods of heat can dry out vegetation and greatly increase the potential for major bushfires and die-offs of large numbers of wildlife. Similar to humans, companion animals, livestock, crops, agriculture, and wildlife can be affected by days of heightened temperatures and equally require increased access to shade and water.

The *Prevention of Cruelty to Animals Act 1986* describes that people 'in charge' of an animal have primary responsibility (duty of care) to ensure it is protected from unreasonable pain or suffering. Actions may need to be implemented to reduce the impact on animals, prior to, during and after an extreme heat event.

High temperatures, especially when combined with high humidity and low air movement, can exceed the ability of livestock to cope, resulting in a loss of appetite, productivity, reproductive vigour and sometimes death. Dairy cattle are particularly susceptible to heat stress. Smaller wildlife, such as flying foxes living in high density populations, are particularly impacted by this type of weather.

2.2.3 Critical Infrastructure

Extreme heat events and all levels of heatwaves can have a significant impact on critical infrastructure and reduce service delivery, for example, power outages, delays or cancellations of rail services or failures of traffic management systems. This can subsequently have a downstream impact on other services, increasing the demand for the use of taxis and rideshare services during periods where rail services are restricted. Public transport delays, cancellations and power disruptions may leave commuters stranded on hot platforms without access to cooling systems. Power outages can also impact access to vital cooling systems. Additionally, disruptions to telecommunications may also impact crucial messaging on extreme heat events by government departments and agencies.

All agencies with a role in protecting critical infrastructure are required to take action to prepare for and to protect these services during extreme heat and heatwaves at all levels.

Essential services and power disruptions

Infrastructure and essential services, especially power supply and transport, are susceptible to the impact of extreme heat and their failure can greatly compound the health impact of an extreme heat event.

Power failure can lead to the loss of air conditioning systems, water treatment and supply, waste-water treatment, telecommunications, transport control and traffic signal systems, and major transport hubs, leading to traffic congestion, subsequently exacerbating the impact of extreme heat events. Services, businesses, and industries with a dependency on power, transport and other critical infrastructure should ensure they prepare and regularly test and update their business continuity plans to reduce the disruption caused by outages.

Telecommunications systems such as phone networks and NBN are dependent on electricity and some elements may have limited performance of emergency power under extended power disruptions which can lead to limitations on people receiving warnings and advice on actions to take to keep them safe, accessing emergency services or other support networks.

Transport

As a result of extreme heat, transport outages may contribute to interruptions in the supply chain for industries and businesses, leading to a loss of business continuity and a major economic cost to the State. Delays or cancellation of transport services, and increased congestion at public transport hubs has consequent health and public order issues for passengers exposed to days of high temperatures. During worst case scenarios, transport infrastructure can be severely impacted with rail tracks buckling and asphalt roads melting. Due to limited protections to mitigate these extreme cases, the protection of people, the network and services is paramount.

Agriculture

Similarly, agriculture and primary producers can be impacted by extreme heat events through power disruptions, potentially resulting in a loss of crops, supply chains breaking down and significant economic implications.

3. Mitigation

3.1 Mitigation, the SEMP and extreme heat

There are a number of effective actions that can reduce the significant impact of extreme heat. Promoting these actions and supporting the health and wellbeing of Victorians is a responsibility shared by all Victorians, service providers, community organisations, local governments and state government departments. Throughout each year, agencies undertake pre-emptive community messaging to prepare the community for the effects of heat.

The SEMP outlines mitigation activities for heatwaves and the roles of the participating agencies in the SEMP's [Table 8: Mitigation activities and agencies for managing Victoria's significant emergency risks, by emergency](#).

3.2 Emergency information and warnings

3.2.1 Bureau of Meteorology Heatwave Warnings

BoM issues a public Heatwave Warning forecast when severe or extreme heatwaves are expected to affect at least ten per cent of a weather district. The warnings are published on the BOMs public channels, including its website and [BOM weather app](#).

3.2.2 VicEmergency

The [VicEmergency platform](#) will consume the BoM warning product as a four-day forecast, showing on the website and apps as a greyed area on the current Heat Health preparedness page and filters. Once the heatwave period is imminent – e.g., within 12 hours – an advice message will be issued to those areas likely to be impacted. If the heatwave escalates, the warning level may be escalated e.g., to Watch and Act. There is also opportunity to issue an Advice message for one off extreme heat events as advised by the Department of Health. VicEmergency warnings are aligned with the Australian Warning System.

3.2.3 Heat Health warning

The Department of Health has the capability to notify local governments, hospitals, and state-wide or major metropolitan health and community service providers of forecast high temperatures that are likely to impact on human health.

The Chief Health Officer may issue a heat health warning for forecast high temperatures of concern that do not meet the criteria for a BOM Heatwave Warning. This may include circumstances where:

- one or two days of high temperatures are expected to have significant population-level health effects
- severe or extreme heatwave affecting less than ten per cent of a weather district but affecting a large population centre or mass gathering.

More information about heat health warnings can be found at <https://www.health.vic.gov.au/environmental-health/extreme-heat-and-heatwaves>.

3.3 Urban planning and mitigating extreme heat

Urban planning, design and building standards are critical to mitigating the impact of extreme heat across the built environment. In urban environments, integrated water management, along with the placement and extent of the tree canopy (for shade), play a significant role in providing improved comfort during days of high temperatures and helping reducing the impact of the urban heat island effect.

Plan Melbourne identifies the importance of green infrastructure to create more liveable and climate-adapted communities. It sets out a long term program of infrastructure and planning system responses to support cooling and greening outcomes (Action 91 of the [2017-50 Implementation Plan](#). Note subject to update from 2023). To support strategic actions, DELWP Planning provide [interactive maps](#) of the Melbourne metropolitan area showing vegetation cover, urban heat and heat vulnerability index (based on 2014 and 2018 data). Planning provisions that require a percentage of canopy cover for development on residential, commercial or industrial land are being considered as part of the implementation of Plan Melbourne.

Precinct planning processes have a key role in supporting alignment of cross-agency infrastructure measures that support cooling and greening outcomes for new subdivisions. This includes collaboration between water authorities and planning authorities (including the Victorian Planning Authority - VPA) to incorporate use of recycled water and stormwater, where feasible, for irrigating sporting fields, trees, private open spaces such as private golf courses and public open spaces and parks to help reduce local temperatures and provide cooler areas for outdoor activities. The Central and Gippsland Region Sustainable Water Strategy sets out future opportunities ([Section 3.3](#)) to use recycled water for these purposes.

The VPA's *Precinct Structure Planning Guidelines: New Communities in Victoria* (October 2021) supports integrated water management measures and maximising canopy tree planting on public land in streets, local parks and public places to help improve resilience during extreme heat events with provision of shading and cooling. The target for potential canopy tree coverage for new precincts is a minimum of 30% (excluding areas dedicated to biodiversity or native vegetation conservation) within the public realm and open space.

In addition to promoting increased tree canopy, State planning policy supports use of shade structures, paving and surface materials that lower surface temperatures and reduce heat absorption. Building resilience to climate change is also a matter subject to active consideration by the Australian Building Codes Board. Changes planned to the National Construction Code (NCC) in 2023 will encourage the use of lighter coloured roof material in residential dwellings to further support minimising the contribution of residential dwellings to urban heat island effect. More broadly, NCC 2022 will see new residential class 1 and class 2 dwellings built to minimum of 7 star National Home Energy Rating Scheme from 1 October 2023. These changes will support higher performing buildings and improved occupant comfort during both extreme heat and cold temperatures, with and without the aid of active mechanical cooling or heating. Building resilience to climate change is a matter subject to active consideration by the Commonwealth, states and territories and Australian Building Codes Board and may result in further targeted changes to the NCC in 2025.

Local government provides a pivotal role in mitigating extreme heat through street tree planting, management of open space and design of public places. For example the City of Melbourne provides an

[interactive online map](#) to find free water fountains and shade under trees during hot days. In addition, the City of Port Phillip is considering measures to reduce heat exposure as part of its structure planning process for established areas such as [South Melbourne](#).

4. Planning

This section outlines how different departments and agencies undertake planning for heat emergencies.

4.1 Emergency Management Commissioner

The EMC is the control agency for heat (class 2 emergency) as outlined in [table 9](#) of the SEMP and coordinates the development of the SEMP Sub-Plan for Extreme Heat. The role and responsibilities of the EMC is further outlined in their [SEMP role statement](#).

4.2 Emergency Management Victoria

Emergency Management Victoria roles and responsibilities are outlined in its [SEMP role statement](#).

4.3 Department of Health

In its [planning and preparedness phase](#), the Department of Health (DH) works to minimise the consequences of extreme heat on individuals, communities, and the health system.

[Local heat health planning](#) is supported with resources developed by DH to assist organisations in developing and reviewing their heatwave plans which includes a *Heatwave plan review tool* (2012).

DH's heat health communications and engagement strategy aims to increase awareness of the risks of extreme heat and provide advice on how people can stay safe. It incorporates a broad range of tactics including government partnerships, stakeholder engagement and advocacy, proactive media, and social media. It includes emergency advertising geo-targeted to regions at risk when severe or extreme heatwaves are forecast.

DH also works in conjunction with Aboriginal Community Controlled Health Organisations (ACCHOs) to plan for extreme heat events. The role of DH and ACCHOs is further expanded upon in the response section of this Sub-Plan.

More broadly, in early 2022, the Department of Health and the Department of Families, Fairness and Housing published the Health and Human Services Climate Change Adaptation Action Plan 2022-2026. The plan includes 14 actions focussed on improving the climate resilience of the Victorian health and human services system. It includes a key focus on supporting adaptation to a range of climate-related hazards, including extreme heat.

4.4 Ambulance Victoria

Ambulance Victoria (AV) has an Extreme Heat Sub-Plan as part the Ambulance Victoria Emergency Response Plan (ERP) (Note: not this SEMP Sub-Plan). This agency-specific plan describes the planning, preparedness, and recovery activities of AV, and enacts a whole of organisation response to scale up available operational resources to manage increased ambulance 000 workload in the community and to provide for the welfare of staff and first responders.

4.5 Regional and Municipal Emergency Management Planning Committees

Regional and Municipal Emergency Management Planning Committees (REMPCs and MEMPCs) are responsible for multi-agency emergency planning in their respective planning emergency management regions or municipal districts.

If their relevant emergency risk assessments identifies heat as a key risk then the REMPC and/or MEMPC are encouraged to prepare an at-level extreme heat sub-plan to their Regional or Municipal Emergency Management Plan (REMP or MEMP), if additional details are required which are not contained within this Sub-Plan or the SEMP.

Any department, agency or municipal council may also maintain their own heat related operational plans as complimentary plans to the REMP or MEMP.

4.6 Water and Energy

DELWP oversees the sustainable management of Victoria's water resources. This includes groundwater, catchments and waterways, infrastructure, water saving and re-use projects, floodplain management, governance and water legislation – this is carried out in partnership with the Catchment Management Authorities and Water Corporations.

There are 18 publicly owned Water Corporations, Alpine Resorts Victoria, Parks Victoria and the Victorian Desalination Plant that all manage drinking water in Victoria. Both DELWP and the Water Corporations hold emergency planning meetings prior to extreme heat events to ensure all agencies have planned accordingly and are coordinated for expected events.

Extreme heat events can have a detrimental impact on the community and the supply and demand of energy in Victoria. DELWP has published the [SEMP Energy Sub-Plan](#) which outlines information about energy supply chains, infrastructure, risks and consequences of disruption, and the arrangements for mitigation of, response to and recovery from energy emergencies.

The electricity industry in Victoria is privately owned and operated. Responsibility for restoration of supply rests with the electricity distribution and transmission businesses that own and operate the network. Each electricity network business prepares and maintains its own emergency management plan.

The Australian Energy Market Operator (AEMO) oversees overall system security of the electricity transmission system and can act to protect and maintain system security. AEMO's electricity emergency management arrangements provide a framework for the coordination of electricity emergencies across the National Electricity Market (NEM). AEMO's national electricity emergency responsibilities are outlined in the Power System Emergency Management Plan (PSEMP).

4.7 Transport

The Department of Transport (DoT) has developed a [SEMP Public Transport Disruption Sub-Plan](#).

DoT oversees the emergency management plans of public transport operators and the arterial road network. DoT, CityLink, EastLink, Service Stream/PennLink, Metro Trains Melbourne (MTM), Yarra Trams, and V/Line all have emergency plans and protocols in place to deal with service disruption.

The Public Transport Coordination Group (PTCG) is a public transport sector specific emergency management team convened by DoT to coordinate across the sector in the event of a PT disruption, emergency or threat.

PTCG provides the operational framework, subject matter experts, and essential conduits to the partner organisations necessary for coordinating response and recovery plans for a major public transport disruption emergency or threat.

As the control agency for major public transport disruption emergencies, DoT chairs the PTCG and provides the liaison to the State and Regional EMTs as required.

DoT and each of the public transport operators have a summer preparedness plan that outlines activities and actions they will take in response to a range of hazards, including extreme heat events. This includes:

- DoT planning for various mitigation measures to minimise road damage or other asset impacts due to extreme heat
- V/Line planning for weather and other disruptions, with various mitigation measures including special procedures, conditions, and operating limits

For longer term planning, the [Transport Climate Change Adaptation Action Plan 2022-2026](#) aims to further strengthen transport assets, infrastructure and services to increase resilience to future climate change impacts including extreme heat.

DoT represents the transport portfolio in whole-of-government activities.

4.8 Education

The Department of Education and Training (DET) provides advice across the education sector – early childhood services, government and non-government schools, and higher education providers – to support providers to plan and manage risks in accordance with their emergency management plans.

4.9 Animal welfare and wildlife

The SEMP defines the roles DJPR and DELWP have in addressing animal welfare issues arising from declared emergencies within Victoria.

DELWP is the lead control agency for wildlife welfare arising from a declared emergency. Activities associated with responding to wildlife welfare issues arising from an extreme heat emergency are confined to dense single native species populations.

DJPR (Agriculture Victoria) is a lead support agency responsible for the health of livestock and companion animals.

As defined in the *Prevention of Cruelty to Animals Act 1986*, the person 'in charge' of an animal has primary responsibility (duty of care) to ensure it is protected from unreasonable pain or suffering, including extreme heat events. This includes companion animal owners, livestock owners, wildlife shelter operators and foster carers, zoos and animal businesses.

The [Victorian Emergency Animal Welfare Plan](#) is a guidance document that integrates existing, everyday legislative requirements for animal welfare with the state's formal emergency management arrangements, describing:

- the planning requirements for animal welfare support services
- government agencies and non-government organisations involved in emergency preparedness, response, relief and recovery
- the roles and responsibilities of agencies, organisations and owners and carers when planning for and providing emergency animal welfare support services.

Heat stress occurs in mammals when the body absorbs or produces more heat than it can dissipate resulting in a rise in core body temperature, which can lead to death. Flying-foxes are subject to heat-stress mortality when environmental temperatures exceed approximately 38°C on single or for multiple consecutive days.

DELWP has prepared the Victorian Response Plan for Heat Stress in Flying-Foxes with stakeholder consultation which formalises DELWP's accountability for flying-fox heat stress events by adopting Victorian emergency response arrangements and defining appropriate interventions that address heat related welfare issues. These arrangements are centred around weather forecasting, careful monitoring of flying-fox behaviour and on-ground preparation and intervention activities including cooling and veterinary care of impacted animals. For flying-foxes the *Victorian Response Plan for Heat Stress in Flying-foxes*

defines the extreme heat threshold as a forecast temperature in excess of 38°C and a Relative Humidity below 30 per cent on a single or consecutive days, unless otherwise defined within individual Camp Heat Stress Plans.

The Victorian Response Plan for Heat Stress in Flying-Foxes is to be published on the DELWP website prior to the 2022/23 summer season and details the role that land managers will play, supported by veterinarians and wildlife volunteers to support the implementation of the plan.

4.10 WorkSafe and Businesses

Employers and businesses/industries also have a responsibility to protect the health and safety of their workers as far as is reasonably practicable, and in accordance with the *Occupational Health and Safety Act 2004*.

During extreme heat events, outdoor workers are more susceptible to the consequences of heightened and severe temperatures, and action should be put in place to reduce the health impact on the workers, such as ceasing or rescheduling work until the temperature has reduced to a safe level.

5. Preparedness

Preparedness for all major emergencies, including extreme heat events, is outlined in the [SEMP](#) and is defined as the activities of the emergency management sector agencies to prepare for and reduce the effects of emergencies by having plans, capability and capacity for response and recovery.

5.1 Shared and individual responsibility for action

Shared responsibility is a key component of preparedness for all emergencies, including extreme heat events. The [SEMP](#) outlines how important shared responsibility is across all phases of emergency management, including communities and individuals, having a level of responsibility for preparing for emergencies.

Under the National Priority 4 – Governance, Ownership and responsibility of the [National Disaster Risk Reduction Framework \(2018\)](#) one of the key five year outcomes is for ‘all sectors and communities understand the extent to which they have responsibility to reduce disaster risk’.

In the context of preparedness for extreme heat events, shared responsibility can encompass:

- individuals actively planning and preparing heat management for themselves and persons in their care
- all sectors preparing to address the potential risk to operations, and plan for continued service provision including ensuring they have a heat policy in place for their employees, volunteers, customers and clients, including at-risk clients, and community members.
- non-government agencies preparing for increased service demand during heat events

Reducing the impact and consequences of extreme heat events depends upon individuals, communities, businesses, all levels of government and the not-for-profit sector all recognising the risk of heat, and taking the necessary action to protect themselves, their family, those most at risk (listed in **Appendix B**), neighbours, and the wider community, wherever possible.

5.2 Agency and sector roles in Preparedness

5.2.1 Health

Department of Health preparedness activities involve:

- sharing communications resources to help amplify heat health messaging with stakeholders
- providing *Survive the Heat* posters and brochures to the Victorian community, and organisations with direct care responsibilities including local governments and health services. These resources are translated into community languages.
- promoting seasonal preparedness to hospitals and other key stakeholders
- strengthening relationships with key stakeholders to remain informed of the risk of heat for the summer season
- ensuring systems are in place to identify heat risks as soon as practicable possible
- actively participating in regional and municipal emergency management planning through REMPC and MEMPCs respectively
- developing and updating published guidance that is evidence-based
- sustainable and climate resilient infrastructure program.

5.2.2 Public Housing

The Department of Families, Fairness and Housing has several programs aimed at preparing and reducing the impact of heat events on Victorians in public housing. These include:

- 'Keeping in Touch' - A program for public housing tenants aged 75 years and over. The program offers a weekly contact service for eligible tenants who opt into the program. As well as checking on their health and wellbeing, a weekly phone call from the Department to the tenants includes a notification of expected hot weather conditions and tips on keeping cool. If the tenant does not respond to the phone call, the department contacts next of kin, and if that is unsuccessful a welfare check is arranged through Victoria Police or by a local housing officer.
- Cooler places are air-conditioned community facilities within public housing that give renters relief from the hot weather on declared heatwave days.
- Electricity generators for high-rise public housing apartment buildings. Generators provide electricity to operate all facilities in the building.

5.2.3 Transport

In the preparation for extreme heat events, the Department of Transport and transport operators undertake the following measures

- Communicating advance warnings to regional and field DoT staff ahead of extreme heat days and activating contingency plans where possible
- DoT undertaking road maintenance inspections that are prone to surface changes in extreme heat on a regular basis during periods of hot weather to minimise heat damage.
- Bus operators undertake additional pre-summer maintenance to reduce risks of breakdown or air-conditioning failure.
- Metro Trains Melbourne undertaking routine inspections of train lines on a regular basis, with additional inspections during periods of hot and wet weather

Activities undertaken during the response phase of the extreme heat event or heatwave are detailed in section 6 of this Sub-Plan.

5.2.4 Education

In preparation for an extreme heat and/or heatwave, the Department of Education and Training (DET) provides advice across the education sector – early childhood services, government and non-government schools, and higher education providers – to support providers to plan and manage risks in accordance with their emergency management plans.

All education and training providers are encouraged maintain situational awareness using tools such as the 'VicEmergency' App.

DET also distributes communiques regarding associated issues, for example, the risks associated with leaving children in cars during hot weather.

Education providers are expected to act to minimise the impact of heat conditions, in line with their emergency management plans, relevant student health care plans and local conditions.

Government schools

DET has a Heat Health Policy that supports government schools to prepare for extreme heat events. Schools must:

- be able to recognise and treat heat related illness
- have early intervention, prevention and preparedness strategies in place to manage the risks associated with periods of extreme heat.

Early Childhood Services

Early childhood services are required to have policies and procedures that relate to the health and safety of young children in their care. This includes consideration of health and safety, sun protection and providing a child safe environment.

The Department of Education and Training distributes circulars to children's services and schools to advise of forecasted heat conditions. This information is also distributed to TAFE facilities, the Catholic Education Office, and Independent Schools Victoria.

Children's services and schools may choose to alter their timetables to minimise the impact of forecast heat conditions on children.

5.2.5 Tourism

International visitors are particularly susceptible to heat related safety risks because of a lack of knowledge about local conditions, potentially transitioning from colder climates to Victoria, along with language barriers potentially limiting an understanding of warnings.

The Department of Jobs, Precincts and Regions (DJPR) Tourism and Events Strategy and Reform group along with the Department of Health produced a summer safety video which includes information on heat health-related advice for visitors. This video is displayed at selectively accredited visitor information centres (VICs), alongside heat health communication materials for dissemination across the state's VIC network. DJPR also works with tourism operators regarding the risk of extreme heat events.

5.2.6 Energy and Water

Energy

Businesses may cancel non-essential electrical works or make alterations to facilitate completion of the works and restoration of electricity supply earlier in the day when there are forecast extreme heat conditions.

Water

Extreme heat events may cause a significant increase in the demand for water services, particularly drinking water. There may be concurrent risks, such as the potential loss of power supplies, which are required for water distribution and treatment.

Water corporations have a range of strategies in place to limit disruption of water supplies before, during and after extreme heat events, including:

- bringing forward or postponing scheduled work
- monitoring water system performance to manage any reduced pressure
- promptly repairing water main breaks to minimise outage times
- providing alternative power supplies at key water sites
- providing alternative water supplies, such as bottled water or temporary tanker water.

5.2.7 Wildlife

Heat stress occurs in mammals when the body absorbs or produces more heat than it can dissipate resulting in a rise in core body temperature, which can lead to death. Flying-foxes are subject to heat-stress mortality when environmental temperatures exceed approximately 38°C on single or for multiple consecutive days.

The *Victorian Response Plan for Heat Stress in Flying-Foxes* defines the preparedness activities that should occur prior to summer. This includes the preparation of individual Camp Heat Stress Plans for high-risk camps by the relevant land manager, supported by the Department of Environment, Land, Water and Planning (DELWP). These camp plans should ensure that geographically appropriate response triggers for camp surveillance are established, local response arrangements are specified, resources are identified, and contact information is up to date.

Unlike other wildlife emergencies, flying-fox heat stress events can often be predicted, and the scale of the event minimised by careful surveillance of flying-fox behaviours and early intervention. As a proactive approach, flying-fox camp surveillance and preparation activities, such as setting up triage facilities and closing public access, will be carried out under the umbrella of DELWP's emergency response arrangements. Any signs of heat stress may then be detected and responded to as quickly as possible.

5.2.8 Local Government and MEMPC Preparedness

Municipal councils and multi-agency MEMPCs both play a critical role in preparing their community for extreme heat events. Within any respective MEMP extreme heat-related sub-plans, there will likely be context-specific information for communities to utilise local services, such as community centres, libraries, shopping centres and areas with significant tree canopy ahead of extreme heat events.

Municipal councils may develop their own preparedness activities to ensure community members and in particular those most at risk during extreme heat events are protected.

6. Response

6.1 Heat emergency management and governance arrangements

The relevant governance arrangements for extreme heat events are detailed in the [SEMP](#) under class 2 emergencies.

Extreme heat events often occur alongside other major emergencies such as bushfires, storms, health emergencies, energy and water disruptions, along with wildlife and transport incidents. Associated agencies manage these events with whole-of-government supported coordination. These concurrent emergencies are managed as per the specific [SEMP sub-plan](#).

6.1.1 Managing concurrent events

During concurrent emergencies the State Controller – Heat (SC – Heat) will collaboratively work with other controllers, to ensure that extreme heat events are discussed in the context of other emergencies. It is essential that any developed strategies, actions, outcomes, and communications are consistent and formed from the combined view and impact of other emergencies.

Where a Regional Controller is appointed to manage Class 1 emergencies, their role is to integrate the extreme heat event considerations into the wider response activities of the region including situational awareness, key messaging, and consequence management.

6.1.2 Emergency Management Commissioner

The EMC is the control agency for [heat emergencies](#). The role of the EMC as the control agency for class 2 emergencies (including heat) is further outlined in the [SEMP](#).

Based on weather forecasts and consultation and recommendations from the State Coordination Team (SCoT), the EMC will:

- determine the need for a control function to be established, including the need to appoint a State Controller in line with the trigger considerations within the State Operational Arrangements – Extreme Heat⁸.
- determine the activation level of the SCC.
- determine if the Emergency Management Joint Public Information Committee (EMJPIC) to be convened to ensure a joined-up approach to community messaging
- request SCoT representatives with roles and responsibilities related to extreme heat plans ensure their organisations arrangements are appropriate and report back.

6.1.3 State Controller

The role of the State Controller is outlined in the [SEMP](#). The State Controller – Heat (SC-Heat) is appointed by the EMC when required.

6.1.4 Role of the State Coordination Team (SCoT)

The role of SCoT is outlined in the [SEMP](#).

The SCoT will convene as required. The SCoT monitors readiness planning by:

- reviewing the BoM's weather forecasts in conjunction with the BoM's Heatwave Service
- reviewing the BOM's heatwave warnings to determine the need to convene over the duration of forecasted heatwave days to monitor the potential or actual instances of heat impacts and consequences.

If Heat control is established:

⁸ This plan operationalises the Sub-Plan and is held separately on EM-COP.

- The Chief Health Officer can issue a heat health notice and will notify the EMC and other relevant agencies that a heat health notice is being issued. (More information on the issuing of heat health notices is in Section 3.2).
- The EMC (as the control agency) will determine the requirement for heat consequence messaging, facilitating this through EMJPIC

The SCoT will utilise existing coordination structures within energy, transport, health, education, and agriculture to manage and monitor the community connection, communications, and consequences. Government departments and other agencies bring information on impacts and consequences to the State Emergency Management Team (SEMT). SCoT will be notified of potential or actual extreme heat emergencies from the SEMT.

6.1.5 State Emergency Management Team (SEMT)

The role of the SEMT is outlined in the [SEMP](#).

6.1.6 Regional role and responsibilities

The SC-Heat will provide information of forecasted or actual impacts of extreme heat events to affected regions through Regional Controllers, Regional Emergency Response Coordinators (RERCs), and Regional Ambulance Commanders. Resulting actions to address these impacts are also to be communicated in the same manner.

Leadership at the regional level will be through the RERCs in conjunction with the Regional Emergency Management Team (REMT) and roles activated as per the SEMP Health Emergencies Sub-Plan.

The management of consequences from extreme heat events at the regional level are coordinated by agencies, which have specific responsibilities for heat related events.

Regional Controllers will be responsible for ensuring agencies within the Regional Emergency Management Team have activated their extreme heat plans.

Where action is required to manage a consequence that is not covered by an existing operational plan at a local or regional level, the Regional Controller will escalate this to the EMC, or the SC-Heat (where appointed).

6.2 Messaging and community information

6.2.1 Warning messages

The EMC as the control agency for heat may issue warnings through the State's warning platform ([VicEmergency](#)) about a forecasted and actual extreme heat events and/or heatwave. VicEmergency aligns with the Australian Warning System.

Warning messages and community information, needs to target those most at-risk in heat emergencies (see **Appendix B**).

6.2.2 Bureau of Meteorology forecasts

BoM operates the [Heatwave Service for Australia](#) from October to March, although the service can operate as needed to support early or late heat, before October or after March. The Heatwave Service depicts heatwaves through maps: the heatwave assessment of location specific low intensity heatwaves, severe intensity heatwaves, and extreme intensity heatwaves for the last two three-day period and heatwave forecast for the next five three-day period.

This service gives people advance notice of unusually hot conditions allowing government, emergency services, business, those who operate critical infrastructure, and communities time to adjust and to adopt measures to reduce the impact.

A Heatwave Decision Support Product (HDSP) is available to partner agencies. This product contains an overall summary of the Excess Heat Factor (EHF) for each weather district and a detailed EHF severity forecast for major towns for the coming seven days.

6.2.3 Community information

Collaboration between agencies is necessary to ensure the public receives consistent and complementary messaging. Communication may include channels such as media conferences, radio, advertisements, culturally appropriate messaging, and social media to target specific groups.

The following describes the roles and responsibilities for the distribution of community information.

- The role of the State Coordination Team (SCoT) and the role of the Emergency Management Joint Public Information Committee (EMJPIC) is outlined in the [SEMP](#).
- Upon activation of the SCC by the EMC, all community information functions (e.g. Warnings, Media, Social Media) will be led and coordinated from the Centre's Public Information Section.
- The EMC may engage further support from EMJPIC to ensure all state-level messaging are prioritised to reach the public. This may include specialist communications representatives attending the SCC as part of the State Communications Cell.

The Chair of EMJPIC will, as necessary, convene senior communications representatives from agencies responsible for extreme heat impacts and consequences. EMJPIC will coordinate across the senior communications representatives of:

- Department of Health which is responsible for coordinating with the Chief Health Officer to provide public health advice to the community and health sector
- Department of Environment, Land, Water and Planning in collaboration with AEMO, who are responsible for appointing a single industry spokesperson to speak on behalf of the Victorian Electricity Supply Industry when there are widespread and prolonged outages affecting the State
- Department of Transport is responsible for providing information about potential or confirmed impacts to transport infrastructure in line with the [SEMP Public Transport Disruption Sub-Plan](#), the road network and the maritime and freight sectors.
- Department of Jobs, Precincts and Regions is responsible for liaising with industry and producers during extreme heat events regarding production and livestock, and with other agencies and organisations regarding animal welfare. DJPR may convene the Victorian Emergency Animal Welfare Committee if required.

6.2.4 Role of State Controller-Heat (Messaging and Warnings)

The role of State Controller is outlined in the [SEMP](#).

The EMC, or the SC-Heat (when appointed) will decide if warnings need to be issued during an extreme heat event and determine if warnings are required to be issued during a heatwave in accordance with the National Heatwave Warning Framework.

State tier extreme heat spokesperson(s)

The EMC, the Chief Health Officer and/or the SC-H are the primary spokespersons to ensure a coordinated approach to state media and to the community regarding public safety and whole-of-government arrangements.

The EMC will determine if a secondary spokesperson is required. This is based on whether there are significant impacts and/or consequences (for example for the energy or transport sector).

Individual agencies may speak to the media regarding their own activities. However, this is to be notified and coordinated through EMJPIC via the State Communications Cell. The rostered SCC spokesperson may be utilised to communicate key messages.

Regional tier extreme heat spokesperson(s)

At the regional tier, the Regional Controllers will ensure that State Key Messages developed by EMJPIC are tailored to the regional setting.

The RERCs, the Regional Health Commander (Ambulance Victoria), DH Regional Health Coordinator and the Regional Controllers will ensure that heat specific communications at the regional level are included into any concurrent emergency messaging.

6.3 Agency roles and responsibilities

Those agencies with roles and responsibilities related to extreme heat events will:

- actively support and provide intelligence to the SC–H in managing the event to assist with mitigating event consequences
- implement agency plans, to undertake roles, responsibilities.
- collaboratively participate with other agencies in the response, relief and recovery from the emergency event.

6.3.1 Department of Health (DH)

The Department of Health will:

- Undertake a risk and consequence assessment of the potential impact on the Victorian community and health sector
- Respond as per the SEMP Health Emergencies Sub-Plan as required
- Actively monitor the health system and Ambulance Victoria performance
- Convene the State Health Emergency Management Team (SHEMT) to facilitate the coordinated response to the health and medical impacts as required.

Aboriginal Community-Controlled Health Organisations (ACCHOs)

In extreme heat, DH works with ACCHOs who are well positioned to:

- use existing relationships to provide culturally informed and safe health services
- distribute public health messaging to communities based on Aboriginal ways of knowing, being and doing
- develop culturally appropriate resources and strategies that reflects public health advice
- promote prevention measures that focus on the strengths of Aboriginal culture.

6.3.2 Pre-Hospital Coordination

The State Health Commander (Ambulance Victoria) is responsible for directing the pre-hospital response to an emergency at the State level. They participate as a member of the SHEMT and liaise directly with the State Health Coordinator (DH). The State Health Commander is part of the State Control Team (SCT), SEMT and SCoT.

The State Health Commander operates out of the Ambulance Emergency Operations Centre, to oversee an integrated pre-hospital response by Ambulance Victoria and other agencies who provide pre-hospital medical support.

6.3.3 Transport

The Department of Transport (DoT) and transport operators undertake activities relating to their own infrastructure. Rail operators roster extra maintenance staff during extreme heat events as required. DoT, CityLink, EastLink, Service Stream/PennLink, Major Road Projects Victoria, Metro Trains Melbourne, Yarra Trams, and V/Line all have emergency plans and protocols in place to respond to service disruption, which can be quickly put into place should disruptions occur. These include:

- implement actions to reduce health impacts on people at points of congestion e.g. bus terminals replacing trains etc
- using weather warnings as a trigger to roster additional drivers, maintenance, and customer service staff
- community information via social media and input to the Emergency Management Joint Public Information Committee (EMJPIC)
- replacing affected passenger rail services with buses and coaches
- using trucks to transport rail freight where rail lines are unavailable and providing identified road freight routes to minimise subsequent damage to local roads where possible
- activating protocols with DET for the management of school bus services
- communicating advance warnings to regional and field DoT staff ahead of extreme heat days and activating contingency plans where possible
- Yarra Trams undertaking rotation of rolling stock on extreme heat days and additional inspections and maintenance of infrastructure and rolling stock before and after extreme heat events
- Rail service providers may apply speed restrictions due to the increased internal rail stresses imposed by the higher temperatures on the network tracks
- DoT activates reviews of road contractor worksite operations to consider potential impacts with extreme heat.

6.3.4 Energy and Water coordination

Energy

Where extreme heat events have energy implications, a State Controller-Energy may be appointed based on the triggers as defined in the [SEMP Energy Sub-Plan](#).

AEMO also maintains a number of policies that contribute to the coordination of the energy sector, these include the Victorian Energy Emergency Communications Protocol (VEECP), the Single Industry Spokesperson Protocol, and the Guidelines on Planned Network Outages for Days of Extreme Heat.

The VEECP is enacted by the AEMO in collaboration with DELWP. Within this protocol, AEMO, energy industry, DELWP, Energy Safe Victoria, DH, and emergency response agencies communicate and share information during a significant energy related event⁹.

⁹ DFFH has approached AEMO to list DFFH in the VEECP protocol for communications

DELWP uses this information to brief the SCoT and SEMT, as well as to ensure the extreme heat response is integrated with the response of other functional sectors in a whole-of-government approach. DELWP also uses the information to inform and advise the Minister for Energy on the event, and any additional action that should be undertaken.

During an extreme heat event, it is possible for the demand for electricity to exceed available supply. If this were to occur, when there is sufficient time, the electricity industry may load shed in accordance with established protocols. However, unplanned power outages may also occur as part of network safety measures, through asset failures or to rectify localised safety issues, giving the industry limited opportunity to prioritise affected customers.

Distribution businesses maintain a register of the addresses of customers who are dependent on electricity for medical reasons (termed 'life support customers'). Section 21.1 in the Electricity Distribution Code (the Code) defines the term 'life support customer', also referred to as 'power dependent customer' in the SEMP Energy Sub-Plan. These customers are registered as dependent on electricity for medical reasons. Consistent with the Code, distributors are responsible for providing all customers with an emergency contact number and regular updates on the status of an outage on their website.

The inter-departmental emergency management arrangements Power Outage Notification Protocol provide timely and effective support for registered Life Support Customers (LSCs) during activation of the SEMP Energy Sub-plan. DH will prioritise the identification of ventilator dependent customers and ensure welfare checks are undertaken for these people. DFFH will coordinate welfare checks for the remaining LSCs and will triage and respond to relief needs that are identified

Many people are dependent on powered cooling, including air conditioning, to survive extreme heat events. Power shedding will have short- and long-term health consequences as outlined in 2.2 and **Appendix B**. Removing power from areas, particularly urban heat islands, such as the areas of Greater Melbourne, need to consider the direct health and wellbeing impacts.

Water

Extreme heat events result in increased demand on water services and the reduced capacity to operate pumps and other infrastructure. This can lead to lower water pressures, as well as risks to critical infrastructure. Additionally, there are concurrent risks such as the potential loss of power supplies, which can impact water distribution and treatment.

DELWP works closely with Water Corporations and Catchment Management Authorities in the lead up to extreme heat events. Preparedness actions focus on the primacy of life and maintaining continuity of water and wastewater services. DELWP works with Water Corporations to facilitate the activation of their preparedness measures and links the sector into incident control structures at the state, regional and local levels. Water corporations will activate their preparedness and response arrangements as necessary.

DELWP is the relief coordinating agency for the provision of emergency relief drinking water to households on non-reticulated systems.

6.3.5 Education Coordination

DET's Security and Emergency Management Division coordinates the departments emergency response and recovery efforts for early childhood services, government, and non-government schools. DET works closely with relevant stakeholders, including the early childhood sector, Catholic Education Commission Victoria, and Independent Schools Victoria.

Government schools

During periods of extreme heat, schools adjust their timetables and planned activities in line with local conditions. It is common for midday recess to be reduced to thirty minutes and dismissal times adjusted. If the school needs to send students home (potentially due to loss of essential services), this will only occur

where there is appropriate supervision and teachers will remain on duty until the standard finish time to supervise students who are unable to return home.

6.3.6 Animal Welfare Coordination

The [Victorian Emergency Animal Welfare Plan](#) details the responsibilities of animal owners and the coordinated activities of DELWP, DJPR and relevant non-government organisations to manage the impacts of emergencies on the health of wildlife, livestock, and companion animals.

In responding to flying-fox heat stress events, DELWP will initiate a response guided by the *Victorian Response Plan for Heat Stress in Flying Foxes* - and the relevant camp heat stress plans. This will define the coordination between DELWP, other agencies, the land manager, traditional owners, veterinarians and wildlife carers in preparing for and undertaking response activities.

6.3.7 Regional Emergency Response Coordination - Victoria Police

The role of Regional Emergency Response Coordinators (RERCs) is detailed in the [SEMP](#).

6.3.8 Other support agencies for response

[Table 10: support agencies for response](#) in the SEMP outlines the services, personnel or the materials support agencies provide or assist the control agency during an emergency, including the EMC as the control agency for heat.

6.4 Relief Coordination

The relief coordination arrangements for an extreme heat event are as per [Table 11: 'Specified relief activities and relief coordinating agency'](#) and [table 12: 'Relief coordination'](#) in the SEMP. It details the range and types of assistance, and the providers of each, to support community relief during and immediately after emergencies.

6.5 Transition to recovery

The arrangements for the transition to recovery are detailed in the [SEMP](#).

7. Recovery

7.1. Recovery responsibilities

Under the EM Act 2013, the EMC is responsible for consequence management and coordinating recovery for major emergencies (including extreme heat) and can delegate this responsibility to relevant agencies. As per the SEMP, Emergency Recovery Victoria (ERV) is responsible for state and regional recovery coordination, partnering with all levels of government, businesses and not for profit organisations to enable locally driven and locally delivered recovery.

Local government is responsible for municipal recovery coordination, including coordination of local recovery activities and post emergency needs assessment to determine long-term recovery needs.

7.1.1. Agency roles across the recovery domains

Specific roles and responsibilities for delivery of recovery coordination and recovery activities are set out in the SEMP Role and Responsibilities, in the Recovery section.

Where an emergency has had a broader impact across the Social, Economic, Built and Natural environments, recovery activities will be led by the relevant Recovery Lead Agency with support from Recovery Support Agencies.

Social recovery

Extreme heat events often occur at the same time as other emergencies, most likely before or at the same time as severe storm or bushfire conditions and may have adverse health impacts on individuals and communities. The Department of Families, Fairness and Housing is the recovery coordinating agency for social recovery, including coordinating the provision of psychosocial support, whereas health and medical assistance is coordinated by the Department of Health.

Economic recovery

Businesses and local economies can suffer a range of setbacks after extreme heat events, including loss of business and livelihoods and impacts to supply chains and demand. Business owners may incur multiple hardships, and this is important to consider as part of the recovery effort.

Activities in this line of recovery focus on how businesses and local economies can survive in the short-term and thrive in the long-term. Building on existing economic strengths and opportunities with a focus on tourism, primary producers, small businesses, medium and large business, industry and sectors is critical. This line of recovery also captures opportunities for strategic investment in regional infrastructure to boost economic recovery and future development.

Built recovery

Residential, commercial and agricultural buildings are often damaged or destroyed in emergencies. Similarly, essential utilities and infrastructure that communities access on a daily basis – running water, electricity, roads, and community facilities – can all be impacted by extreme heat events, and concurrent emergencies that often accompany days of heightened temperatures. There are also significant state-owned assets, such as schools, health facilities and emergency management facilities that can require repair and restoration following extreme heat events. The Victorian Health Building Authority (VHBA) and the Victorian Schools Building Authority (VSBA) play crucial roles in bringing health facilities and schools back online.

Environmental recovery

Emergencies and extreme heat events can cause destruction to the environment and plants and animals through loss of life and habitat. Emergencies also compromise Victoria's natural assets and resources, as well as public use of parks and forests enjoyed by Victorians and visitors alike.

In the days following an extreme heat event, DELWP and relevant land managers will monitor affected flying-fox camps for ongoing impacts including addressing any ongoing heat stress related health issues within the population. The day following an extreme heat event is especially important, as some animals may have deteriorated overnight. Long-term care (greater than 2-3 days) of impacted flying-foxes must be undertaken by licensed wildlife carers in accordance with guidelines for wildlife rehabilitation set out by DELWP.

All rehabilitated flying-foxes must be released in accordance with the *Wildlife Shelter and Foster Carers Authorisation Guide*. If their home camp location no longer provides sufficient food, water or shelter for the animal, the animal can be released at a nearby location within its home range.

Aboriginal culture and healing

For Aboriginal peoples, relationships to country, culture and community are not only interconnected, but intrinsically linked and enmeshed with one's identity. This means that when one of these foundations is impacted by an emergency, Aboriginal peoples experience unique pain and loss. It is critical to recognise that this harm is compounded by – and cannot be detached from – trauma incurred due to longstanding social dislocation and upheaval as a direct result of past policies of governments at all levels.

Activities in this line of recovery support the celebration of culture and knowledge, health, mental health and wellbeing, engagement with education, respect for land practices, connection to land, water and wildlife, and strengthened representation in workforce. Recovery activities to meet these commitments span across all lines of recovery but are unified through this line of recovery and its outcomes.

ERV's dedicated Aboriginal Culture and Healing Branch coordinate this work, leveraging existing Victorian Government services across departments and seeking guidance through Aboriginal Victoria, which is part of Department of Premier and Cabinet (DPC).

7.2. Monitoring and evaluations to support recovery

As part of its coordination function, ERV monitors and evaluates the progress and success of recovery activity according to the long-term outcomes for each of the five lines of recovery.

ERV and Victorian Government departments and agencies use an outcomes-based approach to monitoring and evaluation to determine the impact of recovery programs. This is aligned to the expectation in the *Assurance Framework for Emergency Management* that all sector organisations have a role in assurance, and the use of outcome measurement.

Three key elements underpin this approach:

- **Long term recovery outcomes**: clear, unambiguous statements about what long-term recovery looks like for each recovery line with criteria for assessing the success of recovery programs against these outcomes.
- **Evaluation**: collating data collected through ongoing monitoring processes, gathering additional data and information to draw insights and conclusions about the impact of the recovery programs.
- **Monitoring**: the regular and ongoing assessment of efforts, for example execution of key activities within time and budget, and delivery of key outputs.

Appendix A: Acronyms

Acronym	Full Term
AEMO	Australian Energy Market Operator
AUSVETPLAN	Australian Veterinary Emergency Plan
AV	Ambulance Victoria
BoM	Bureau of Meteorology
CA	Control agency
CALD	Culturally and linguistically diverse
CHO	Chief Health Officer
DELWP	Department of Environment, Land, Water and Planning
DET	Department of Education and Training
DFFH	Department of Families, Fairness and Housing
DJCS	Department of Justice and Community Safety
DJPR	Department of Jobs, Precincts and Regions
DH	Department of Health
DoT	Department of Transport
DPC	Department of Premier and Cabinet
DTF	Department of Treasury and Finance
EHF	Extreme heat factor
EM	Emergency Management
EMC	Emergency Management Commissioner
EM-COP	Emergency Management Common Operating Picture
EMJPIC	Emergency Management Joint Public Information Committee
EMV	Emergency Management Victoria
EPA	Environment Protection Authority
ERV	Emergency Recovery Victoria
ICC	Incident Control Centre
JSOPs	Joint Standard Operating Procedures
MEMP	Municipal Emergency Management Plan
MEMPC	Municipal Emergency Management Planning Committee
PV	Parks Victoria
REMP	Regional Emergency Management Plan

Acronym	Full Term
REMPC	Regional Emergency Management Planning Committee
REMT	Regional Emergency Management Team
RERCs	Regional Emergency Response Coordinators
RRCs	Regional Recovery Coordinators
RSPCA	Royal Society for the Prevention of Cruelty to Animals
SCC	State Control Centre
SC-Heat	State Controller - Heat
SCoT	State Coordination Team
SCRC	State Crisis and Resilience Council
SEMP	State Emergency Management Plan
SEMT	State Emergency Management Team
SERC	State Emergency Relief Coordinator
SHEMT	State Health Emergency Management Team
SPLO	Senior Police Liaison Officer
SRC	State Response Controller
VicPol	Victoria Police

Appendix B: People most at risks to the effects of heat

Extreme heat events and heatwaves can affect anyone. Some people are more vulnerable to its effects due to factors such as their age, health, environment, social and economic circumstances, location or occupation.

The following population groups are likely to be most affected. While these population groups are not in any specific order, belonging to more than one at-risk group may further increase susceptibility to extreme heat events. This Sub-Plan also recognises that Victoria's First People's could be significantly impacted by extreme heat events, and the need for the Victorian Government and agencies to work with and support Aboriginal community activities throughout all phases of emergency management.

Actions outlined in this plan and the operational plans of agencies will reduce the impact of extreme heat events for:

First nations people

- First nations people

People of a certain age or life stage

- Over 65 years old, especially those living alone
- Pregnant women and breastfeeding mothers

- Babies and young children

People with particular health conditions

- Heart and lung disease, high blood pressure, diabetes, cancer or kidney disease
- Certain neurological illnesses (e.g. Parkinson's Disease, Multiple Sclerosis)
- Mental illness
- Illness or infection that causes dehydration or fever
- Conditions that impair sweating including dehydration, skin disorders (including sunburn, prickly heat and extensive scarring from burns), congenital impairment of sweating, cystic fibrosis, quadriplegia and scleroderma
- Problematic alcohol or other drug use such as amphetamines
- Cognitive impairments that may limit the ability to identify or communicate their discomfort or need for water
- Limited mobility (such as those who are bed-bound or in a wheelchair)
- Overweight or obesity
- Low cardiovascular fitness

People taking medications that may affect the way the body reacts to heat

- Allergy medicines (antihistamines)
- Some blood pressure and heart medicines (beta-blockers and vasoconstrictors)
- Seizure medicines (anticonvulsants)
- Thyroid medications (thyroxine)
- Water pills (diuretics)
- Antidepressants
- Antipsychotics

People taking medications requiring storage at a certain temperature

- Medicines might be ineffective if not stored at the correct temperature
- Lack of storage in pharmacies
- Electricity is essential to the pharmacy maintaining manufacturers' storage conditions of medicines, especially fridge items.

People with particular social and economic circumstances

- Sleeping rough
- Low socioeconomic status who may restrict use of, or have limited access to, air-conditioning
- Living alone or who are socially isolated
- Non-English-speaking people who may not be able to understand extreme heat alerts and warnings or have reduced access to appropriate health or support services
- people visiting from other countries, especially from cold climates

People outdoors during extreme heat

- Working or being physically active outdoors (such as gardeners, athletes and labourers).