

**Ambulance**  
Victoria



# Ambulance Victoria

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Climate Adaptation Action Plan

2021 - 2025



# Contents

Foreword .....	3
Executive Summary.....	4
Introduction.....	5
Purpose.....	5
Objectives .....	5
Scope .....	5
Climate adaptation .....	5
Background .....	6
Climate context.....	6
Climate and Health .....	6
Sustainable Development Goals.....	7
Climate projections, scenarios and futures .....	7
Climate risk and consequence .....	8
Health system and Ambulance Victoria impacts.....	8
Alignment with Emergency Management & Emergency Response Plan .....	9
Alignment with Business Resilience .....	9
Alignment with Asset Management Plans.....	9
Timing .....	10
COVID-19 and Climate Change .....	10
Climate Governance: Roles and Responsibilities.....	10
Case Studies: AV Climate Impacts .....	11
Part 1 AV Climate Adaptation Themes .....	12
AV Climate Adaptation Themes.....	13
Our climate vision.....	13
Approach & principles .....	13
Climate adaptation themes .....	13
Part 2 Climate Adaptation Action .....	15
Part 2 Response Actions .....	15
Climate adaptation action .....	16
Measures of Success.....	22
Part 3 Supporting Information .....	23
Supporting Legislation, Plans & Resources.....	24
Definitions.....	27

# Foreword

Working on the frontline of emergency response has a way of helping you focus on the things that really matter in life. The fact that I keep coming back to with every catastrophic weather or health event: climate change is not only an environmental and economic issue – climate change is a health issue that amplifies risk.

We're committed to delivering best care to the communities we serve, and it's important to focus on what best care actually means. To me, it means giving our best not only to the community but to the issues that impact them, including climate change.

There's no question that climate change-induced extreme weather events are becoming more frequent and more intense. The science has forecast this for three decades. Climate futures and scenarios tell us that Victoria and its regions will be impacted.

Extreme heat, prolonged drought, fires, floods – extreme weather events are coming down the road to challenge and change us at Ambulance Victoria. Emergency services learned a lot from the Black Saturday fires in 2009 when 173 people perished. Because of the lessons we have learned from these tragic events, last summer we were able to save many lives due to collective understanding of how to respond to the threat level.

We need to be ahead of potential threats. To future-proof our service, we need to think smarter, not bigger. We need to do things in a more efficient and innovative way. Technology enables us to re-imagine and transform our service and we're proactively partnering with communities to build their capacity to respond to health emergencies. Getting ahead of potential threats mean we can be in a position to manage extreme weather events on top of already significant demands relating to mental health as well as an ageing population, which are the daily reality in a modern ambulance service.”

As part of our work, we support the Victorian Government's target of net zero greenhouse gas emissions by 2045. As part of global community action on climate change, we will continue to reduce our environmental footprint and are proud to be one of the first health services to have an Adaptation Action Plan aimed at increasing our climate resilience.

**Associate Professor Tony Walker, ASM**

Chief Executive Officer

Ambulance Victoria



# Executive Summary

The Ambulance Victoria (AV) Climate Adaptation Action Plan provides a framework to guide Ambulance Victoria's response to the impacts of climate change expected in future, describing the high-level actions and approach that Ambulance Victoria will take to support it becoming a more climate resilient ambulance health service over time.

The plan provides a range of actions for AV to take on climate change and is aligned with the Health and Human Services Pilot Adaptation Action Plan (and pending Health and Human Services Adaptation Action Plan in 2022) for climate response. It also supports further integrating climate change readiness into AV's emergency management and business resilience plans.

It has been developed with AV internal subject matter experts and external climate change stakeholders, and references our local climate planning context, as well as drawing on international ambulance service learnings on climate change to date.

Our vision is to be a sustainable health service resilient to climate change achieving Best Care.

The plan is made of three key parts.

- **Part 1:** Outlines Ambulance Victoria's climate adaptation themes
- **Part 2:** Provides details of Ambulance Victoria's actions
- **Part 3:** Contains additional detail to support ongoing climate planning and decision making.

Our actions for climate adaptation focus on five key themes:

1. Governance and policy
2. Resilience planning and process
3. Asset readiness and monitoring
4. People engagement and knowledge build; and
5. Community and partner engagement

Our climate planning to date has identified some key activity to increase our climate resilience, and we will continue with our focus on understanding and addressing the impact of climate change to our service.

We will continue to build our understanding of the impacts of climate change on our service and as solutions also evolve, and will further develop and refine our adaptation response over time, assessing our levels of climate resilience and embeddedness, and other specific steps to building resilience of AV.

# Introduction

## Purpose

The purpose of our Climate Change Adaptation Action Plan ('the plan') is to outline our response and actions in order to manage climate change risk, whilst simultaneously ensuring high quality pre-hospital care and medical transport are available for people in life-threatening, time-critical emergencies.

It will support us to consider future risks that climate change may pose towards our operational activity and is a baseline document that will be periodically updated as more is learnt about how climate change will impact Victoria, its key risks and the activities required to support the Victorian community ongoing.

## Objectives

The core objectives of the plan are to:

- Drive our preparedness to reduce the impact of climate change on AV and the broader Victorian community;
- Enhance our emergency preparedness response to climate change related events to support the working of the Emergency Response Plan (ERP) and Business Resilience plans and processes;
- Embedding climate resilience into our infrastructure and assets; and
- Uplift our climate capabilities while preparing for the impact of climate change.

## Scope

The plan specifically applies to climate change and considers the potential impact that climate change may have on AV. It seeks to reduce the impact of the climate change on the delivery of ambulance services in Victoria and supports the ongoing health, safety and wellbeing of frontline operational staff, patients and the wider community.

The plan describes actions available to AV to minimise the impacts of climate change into the future.

## Climate adaptation

Adaptation means changing practices to reduce our vulnerability to climate change. There are a number of ways in which an ambulance service can adapt to climate change. This includes both operational changes and changes to our wider ways of working.

*"climate change adaptation will ensure that our health and human services continue to provide a high standard of service to Victorians and preserve the community's health, wellbeing and safety. Our health is closely linked to the environment we live in. By working together, we can better address the complex challenges that climate change presents, safeguard our prosperity, and ensure Victoria continues to be one of the most sustainable and liveable places in the world"*

*Brett Sutton, Victorian Chief Health Officer, Department of Health and Human Services, 2019<sup>1</sup>*

The aim of increasing our resilience at AV is to help identify opportunities for us to adjust to climate change, as well as to better cope with the consequences. Every dollar spent on adaptation now can avoid future costs of up to six times as much<sup>2</sup>.

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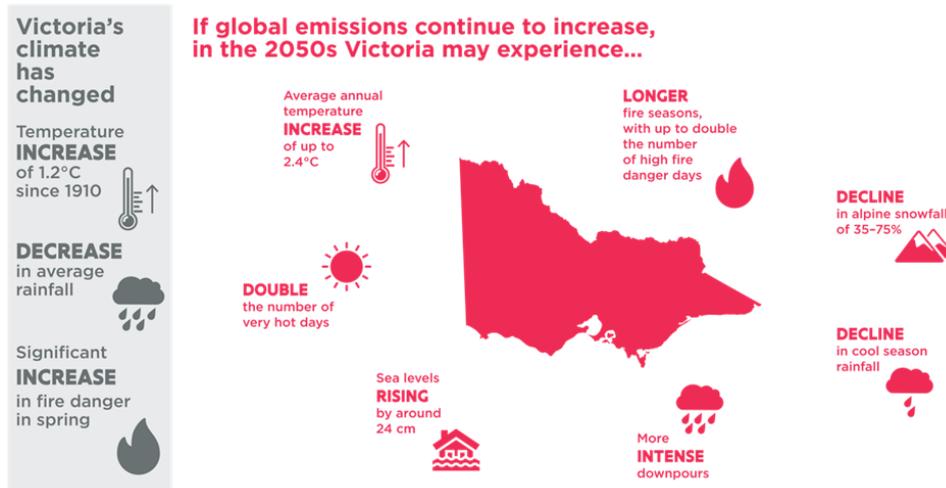
<sup>1</sup> Health and human services climate change adaptation action plan [2019-21 Adaptation Plan](#) (pilot), viewed 02 March 2021

<sup>2</sup> [Victorian Climate Change Strategy 2021](#), Victorian State Government, viewed 07 June 2021

# Background

## Climate context

The Lancet Commission on Health and Climate Change and the World Health Organisation recognises that “climate change is the biggest global health threat of the 21<sup>st</sup> century.”<sup>3</sup> Victoria’s temperature has already increased 1.2°C since 1910, and if global emissions continue to increase, by 2050 Victoria is expected to experience 24cm of sea level rise and twice the number of very hot and high fire danger days. The Victorian Climate Change Act (2017) establishes a legislative framework for our action on climate change.

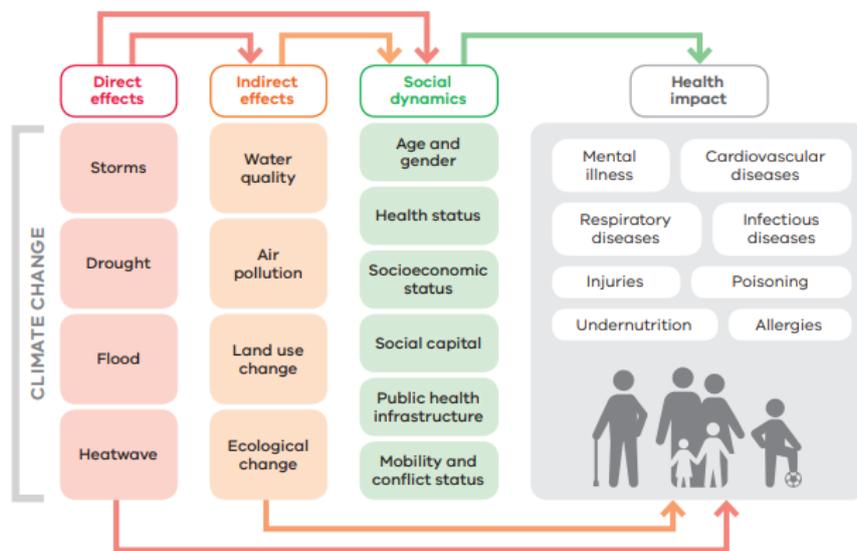


Under high emissions, compared to 1986-2005. Updated from Victoria's Climate Science Report 2019

Victorian Climate Change Strategy, 2021 (page 9)

## Climate and Health

Climate change affects health in many ways: directly by the increased intensity and frequency of extreme weather events such as prolonged heatwaves, floods and bushfires; and indirectly through worsening air quality, changes in the spread of infectious diseases, risks to food safety and drinking water quality, and effects on mental health<sup>4</sup>.



Direct and indirect effects of climate change on health and wellbeing, Watts et al. 2015

<sup>3</sup> [Climate change and health](#), World Health Organisation, 2015, viewed 02 March 2021

<sup>4</sup> [Tackling climate change and its impact on health](#), viewed 02 March 2021

## Sustainable Development Goals

AV's Social and Environmental Responsibility Framework was developed in line with a number of the United Nation's Sustainable Development Goals (SDGs). For climate change, the specific goal for Climate Action (Goal #13) focuses on taking urgent action to combat climate change and its impacts<sup>5</sup>.

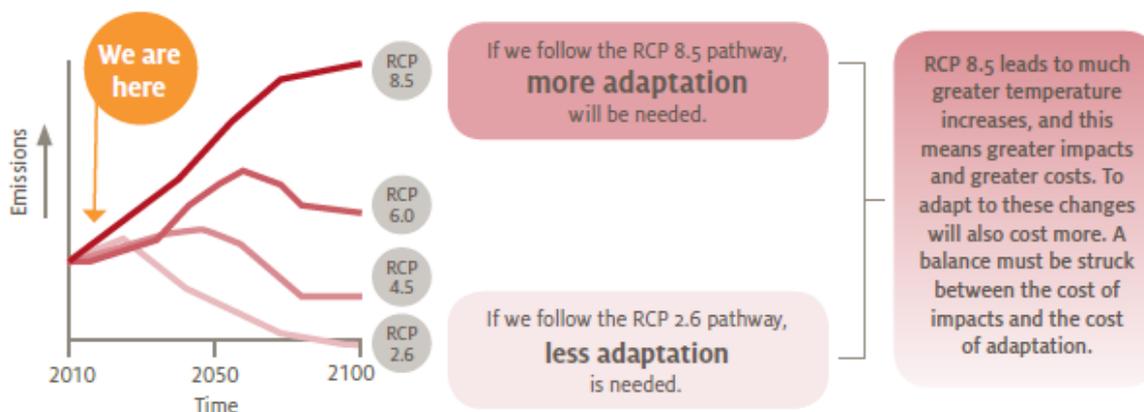
Another goal that remains a primary focus for AV is the Good Health and Wellbeing goal (Goal #3).



## Climate projections, scenarios and futures

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. Victoria's climate projections use the Representative Concentration Pathways (RCPs) as emissions scenarios for the future<sup>6</sup>. 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 2 degrees Celsius. To help achieve this goal, Victoria along with many governments is committed to net-zero emissions by 2050. However, even with ambitious global emissions reductions, there are likely to be unavoidable impacts we need to prepare for<sup>7</sup>.

Planning for multiple possible futures strengthens organisational adaptive capacity and aligns with best-practice climate adaptation planning. AV has initially assessed using two pathways: RCP 4.5 is a middle ground for emissions; and RCP 8.5 is a worst-case scenario of ongoing high emissions (current emissions are tracking in line with this). This approach helps AV to consider relevant impacts to integrate climate considerations into strategic planning and risk management processes.



Representative Concentration Pathways and climate change adaptation<sup>8</sup>

<sup>5</sup> Climate Action Goal 13: <https://sdgs.un.org/goals/goal13>, viewed 02 March 2021

<sup>6</sup> [Emissions Scenarios information sheet](#), DELWP, and [VCP 2019](#) data, DELWP, viewed 02 March 2021

<sup>7</sup> [Victorian Climate Change Strategy 2021](#), Victorian State Government, p.5, viewed 07 June 2021

<sup>8</sup> [What are the RCPs?](#) Department of the Environment & Energy, viewed 02 March 2021

## Climate risk and consequence

Climate change is a significant public health risk because of its potential to affect large numbers of people over a sustained period of time across wide geographical areas. It has the potential to overwhelm ambulance services, emergency departments, primary care resources and other health systems and services.

### Health system and Ambulance Victoria impacts

Potential health consequences across the community as a result of climate change include ill people and fatalities, restricted availability and accessibility of health care services, and unsustainable demand on the health system.

The Victorian health system may experience more frequent surges in client demand, disruption of health workforce attendance at their workplace, psychosocial impacts on staff, damage to built assets from events such as floods, storms, and bushfires, disruption or failure of service infrastructure such as telecommunications, transport, electricity, and water supplies, as well as disruption of supply chains.<sup>9</sup>

Further health system impacts emerging from recent place-based work in the development of regional adaptation strategies to date include:

- Frequency and severity of extreme weather events impact on health infrastructure and services (which are already limited and hard to access in some regions)
- Frequency and severity of bushfires impact on community and health infrastructure; and
- Availability and accessibility of safe community refuges for escaping heat stress and emergencies – particularly for vulnerable people in remote rural communities.
- Increasing evidence of impact of climate change (current and projected) on the mental health of communities, both in areas that are highly exposed to climate change where livelihoods are impacted (e.g. farming communities; tourism sector) and more generally (concern about the future).
- Access and mobility – many rural and regional communities have poor quality or poor access to health infrastructure and services outside main rural cities. Limited access to public transport options further builds on this vulnerability. Also contributes to a sense of isolation – vulnerable individuals can be cut off from support services as a result of extreme events.
- Pre-existing vulnerabilities – most regions have many pre-existing vulnerabilities that will be exacerbated by climate change impacts including mental health issues, cardiovascular disease, undernutrition, ageing populations, particularly in small rural towns.

Climate change is a risk amplifier for AV and is expected to exacerbate the impacts from different climate related hazard events such as heatwave and bushfire. It is likely to bring an increased frequency and duration of crisis events especially from natural disasters that AV encounters. Recurrent disasters can impact on AV's ability and capacity to recover before the next event occurs.

Climate change is expected to increase AV's vulnerability to impacts such as:

- Significant and urgent surge in demand and calls for ambulance attendance
- Significant increase in resource utilisation
- Increased staff absences resulting from frontline operational staff
- Requirement for urgent and prolonged recall of our staff
- Requirement for organisation wide escalation; and
- Extended state of "surge" demand over time.

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<sup>9</sup> Health and human services climate change adaptation action plan [2019-21 Adaptation Plan](#) (pilot), viewed 02 March 2021  
Climate Adaptation Action Plan 2021- 2025 v1.0 AUGUST 2021

## Alignment with Emergency Management & Emergency Response Plan

The AV Emergency Management Framework and Emergency Response Plan (ERP) provides an organisation-wide guideline for the management of major incidents. It is anticipated that climate change related events may trigger a sustained escalation of response level (Orange / Red) and the activation of related subplans and response activities<sup>10</sup>.

Climate change action relates to Emergency Management with climate thinking being embedded into the Framework and supporting processes and plans. The plan focuses predominately on the '*Preparedness Phase*' via action around forward climate planning and monitoring the emergence of climate related events. This will support AV being forward looking in its risk approach to possible climate futures in building our overall climate resilience.

Climate adaptation in emergency management aims to promote supplementary actions in planning for and understanding how to reduce the likelihood of an escalation between response levels and/or reducing the risks associated with a prolonged state of escalation over time due to climate change. Ongoing alignment will also occur with Emergency Management Victoria's climate approaches.

## Alignment with Business Resilience

AV is committed to being a resilient organisation, able to maintain continuity of its critical services in the face of disruptive incidents. AV's Business Resilience program will minimise the impact of disruptions by anticipating, preparing for, being able to respond to and recover from disruptive incidents when they occur. Disruptive incidents may be caused by major or extreme failures / unavailability of the people, processes, assets or resources on which AV depends for the delivery of critical services or business processes.

AV's climate action related to Business Resilience planning and processes is to ensure climate thinking is embedded into its Policy, Framework, processes and plans. This will ensure that it is forward looking in its risk approach to possible climate futures and ensure AV's climate resilience and adaptability.

Business resilience scenarios planned include the loss of access to a building or facility, loss of information technology, loss of staff and loss of critical third parties. Future testing of business resilience scenarios will incorporate a climate change lens in planning and stress testing. Business resilience is proactive and planning for new and emerging loss scenarios is also considered.

## Alignment with Asset Management Plans

In the context of asset management, sustainability is about meeting the needs of the future by balancing social, economic, cultural and environmental needs and/or outcomes when making decisions. AV's Asset Management Plans set out AV's approach to the effective management of the assets in specific asset portfolios. Each major asset category plan includes an Improvement Plan with actions to improve the quality of the plans and our management of the assets that will build over time to include climate adaptation focused items.

Climate change is a key sustainability priority to integrate and include climate in improvements in asset management over time. Ongoing annual Asset Management Plan updates will further incorporate climate change adaptation as a planning focus, and be captured into the relevant asset improvement initiatives.

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<sup>10</sup> Response activated under ERP subplans focuses on immediately increasing the availability of the workforce by extending the duration of shifts, recalling staff and increasing the number of staff on roster.



## Timing

The focus of this plan is on the short to medium term defined here as 2021-2025, but factors in longer-term considerations informed by climate projections out to 2070.

Timeframe	Milestone
<b>Short – medium term: 2021-25</b> (this plan)	Integration of climate change adaptation into relevant areas of governance, policy, planning and processes is in progress. Adaptation responses are being prioritised, designed, and planned.  Implementation of priority adaptation programs is underway.
<b>Longer term: 2026 – 2030</b>	Continued implementation of priority adaptation programs. Consideration of climate change adaptation is part of business-as-usual approach to decision making.  AV continues to provide a high standard of service to Victorians, with an increased resilience to climate change, and is operating as a more sustainable health service overall.

For AV, 2030 and 2070 are two key time horizons under consideration for climate change risk. Understanding the risks and adaptation needs for 2030 relates to more agile operational components, while a 2070 time horizon enables planning for adaptation needs for physical assets such as buildings, fleet vehicles and supporting infrastructure into the longer-term.

## COVID-19 and Climate Change

COVID-19 is having a profound impact on the world, and every health sector. A recent report from the UK's National Health Service found that there "is an interrelationship between the pandemic and the environment, which reinforces the need to minimise our impact on the environment and be prepared for climate change. A host of infectious diseases, ranging from dengue fever to swine flu, are in part affected by changes in land use as a result of environmental degradation. Key changes from the response, such as the roll out of digitalised care, will be evaluated and may deliver long-term future carbon reduction benefits. Conversely, some elements of the response have the potential to increase our impact on the environment such as increased use of single use personal protective equipment (PPE)<sup>11</sup>"

## Climate Governance: Roles and Responsibilities

The roles and responsibilities of key AV stakeholders in the management of climate change align to the overall governance structure for Social and Environmental Responsibility Framework, and the CEO as the Accountable Officer under the Standing Directions 2018 under the Financial Management Act (FMA).

The ownership of AV's risk portfolio is allocated across the Executive Committee with the Executive Director Operational Strategy and Integration the Risk Owner for the risk associated with environmental sustainability risk including climate change in AV's Enterprise Risk Register. The management of climate risk includes reporting on and coordinating action on climate change to the AV Executive and Board and is focused on being embedded in AV's risk framework across our risks. The Social and Environmental Responsibility Framework is part of the risk treatment plan, and the monitoring and reporting of risk treatment plans are undertaken in accordance with the AV Enterprise Risk Management Framework as approved by the Board.

<sup>11</sup> Green NHS, United Kingdom: <https://www.england.nhs.uk/greennhs/a-net-zero-nhs/> viewed 02 March 2021, p.8  
Climate Adaptation Action Plan 2021- 2025 v1.0 AUGUST 2021

## Case Studies: AV Climate Impacts

### Bushfire and air quality, 2019/2020

During the 2019/2020 summer, air quality from bushfires impacted our services. As smoke from the fires blanketed Melbourne and regional cities and air quality plummeted to hazardous levels, we saw a 51 percent spike in calls for help for breathing problems in one night.



#### 2019-2020 Bushfire Season

Unprecedented event

Ambulance Victoria: Calls to 000 increase for breathing difficulties



### Heatwave, 2009

More extreme and longer heat wave events are predicted to occur in future. Heat causes major impacts on people's health, and we are focused on planning for different climate futures to support our ability to continue to provide service to community in the face of rising temperatures.

During the heatwave that preceded the Black Saturday bushfires, between 26 January and 1 February 2009, maximum temperatures were 12–15°C above normal for most of Victoria, while Melbourne endured three consecutive days of temperatures above 43°C. AV was called to nearly three times as many heart-attack patients, locums had twice as many calls to attend a deceased person, and the number of patients dead upon arrival at emergency departments rose three-fold over normal expectations.

### Flood, 2010

Flood events impact our own infrastructure and assets. In 2010, severe floods caused inundation and significant damages at two ambulance branches in regional Victoria, resulting in one branch needing to be rebuilt. AV was involved in flood response activities across the Loddon Mallee, Grampians and Barwon South West regions for several days in the acute phase, and in the weeks while the record flood levels receded.

### Dual crisis planning, 2020

In late 2020, our Emergency Management Unit worked with regional teams to ensure we could respond to concurrent events. It is possible that we will continue to need to deal with floods, extreme storm events or bushfires while still managing the pandemic. One of the major considerations was managing evacuation and relief centres and relocating residents while practising social distancing.

### Severe Weather and Potential flooding, 2020

The Ambulance Emergency Operations Centre escalated monitoring due to a severe weather warning with potential for damaging winds and heavy rainfall leading to flash flooding in north east Victoria.

### Thunderstorm asthma, 2016

In 2016 we experienced the world's largest and most catastrophic epidemic of thunderstorm asthma. Over a period of 30 hours, there was a 672% increase in respiratory-related emergencies, and ten people died. While links between climate change and thunderstorm asthma risk are still being further understood, factors at play include increased pollen production and more severe storms in future.

Part 1  
AV Climate Adaptation  
Themes



# AV Climate Adaptation Themes

## Our climate vision

AV's climate responsibility is to manage climate risks to its people, patients, services and assets.

Our vision for climate change is to be a **sustainable health service resilient to climate change achieving Best Care.**

The overall outcome sought is that climate planning and action supports us becoming the adapted and climate resilience health service set out in our vision.

## Approach & principles

We planned for different Victorian climate futures, using climate risk assessment methods aligned with international climate practices and prevalent methodologies to climate risk, as well as informed by Department of Health (DH) and other Victorian government climate plans and resources.

The following guiding principles were applied in developing the plan:

- Evidence based: Climate science and evidence-based for two key timeframes: 2030 and 2070, and two key emissions futures scenarios “medium” and “high” (RCP 4.5 and 8.50 respectively)
- Care: Our people, patients and community focus – prioritising the health, safety and wellbeing of our people and continuing to provide Best Care in a changing climate future
- All of AV approach: Applies wide climate filter with an all of AV and all hazards approach
- Risk and prioritisation based: Prioritisation of the key actions and immediate priorities
- Collaborate for change: Engagement and behaviour focused; operating in partnership with the broader health system and other agencies
- Flexible / adaptative: Acknowledges need for future work to plan and adapt over time (not static plan), and responsive to ongoing changing needs

The plan was developed via a series of engagements on climate risk and action planning on how to adapt to different climate futures as an emergency health service. This occurred across both internal stakeholders including Emergency Management, Business Resilience, asset management, logistics, procurement and external stakeholders including agencies such as Department of Health (DH), Department of Environment, Land, Water & Planning (DELWP), and other ambulance services.

## Climate adaptation themes

AV recognises that it is important to have a response that contributes to reducing the impact of the climate change to ensure the ongoing delivery of ambulance services in Victoria and supports the ongoing safety and wellbeing of AV staff and patients. While we respond to present conditions we must also anticipate future vulnerabilities, and understand they will intensify, requiring changes in emergency management and disaster response. We must be capable of managing, no matter what climatic conditions emerge.

The climate plan sets out five key themes identifying required areas of adaptation response. These themes are intertwined and inform each other to support a comprehensive adaptation response.

The longer-term outcomes for each theme also describe the changes sought by AV in implementation of our climate action:

	<p><b>GOVERNANCE &amp; POLICY</b></p> <p>Establishing climate governance structures in AV systems. Establish processes that embed climate awareness and planning into policy and strategy.</p> <p><u>Outcome:</u> Climate change embedded into policy and authorising environment</p>
	<p><b>RESILIENCE PLANNING &amp; PROCESS</b></p> <p>Embedding climate thinking into AV systems and processes to ensure that it is considered within business-as-usual planning for our core services and support mechanisms.</p> <p><u>Outcome:</u> Climate as a filter for all horizon planning. Climate integrated plans and systems. Increased climate resilience of AV service delivery.</p>
	<p><b>ASSET READINESS &amp; MONITORING</b></p> <p>Asset readiness, monitoring and reporting of key indicators to establish trends and predictions for future climate impacts on our infrastructure.</p> <p><u>Outcome:</u> Increasingly resilient assets that consider climate future scenarios.</p>
	<p><b>PEOPLE ENGAGEMENT &amp; KNOWLEDGE BUILD</b></p> <p>Communicating and upskilling our people in climate change and what it means to AV.</p> <p><u>Outcome:</u> Increased climate knowledge and skills of our people, and awareness of climate change issues.</p>
	<p><b>COMMUNITY &amp; PARTNER ENGAGEMENT</b></p> <p>Communicating and engaging on climate change as we work with the community and partners to understand and act together in preparation for Victoria’s climate future and its impact on the health system.</p> <p><u>Outcome:</u> AV supports increasing the climate health resilience of Victorian community, and our shared role is understood for response to the impacts of climate change.</p>



Part 2  
Climate Adaptation  
Action



## Climate adaptation action



A number of key high level actions across each of the themes are set to be achieved in the period to 2025. These actions represent the first steps for AV towards climate change adaptation over the longer term.

#	Our Climate Adaptation Action
1	<p><b>GOVERNANCE &amp; POLICY</b></p> <p><u>ACTION</u>: Embed climate change into AV policy and governance processes.</p>
2	<p><b>RESILIENCE PLANNING &amp; PROCESS</b></p> <p><u>ACTION</u>: Incorporate climate change into planning and systems to support consideration of climate futures and risk management.</p>
3	<p><b>ASSET READINESS &amp; MONITORING</b></p> <p><u>ACTION</u>: Review and plan climate resilience improvements to AV's key assets and infrastructure.</p>
4	<p><b>PEOPLE ENGAGEMENT &amp; KNOWLEDGE BUILD</b></p> <p><u>ACTION</u>: Develop and deliver engagement to support building our people's awareness and understanding of climate change.</p>
5	<p><b>COMMUNITY &amp; PARTNER ENGAGEMENT</b></p> <p><u>ACTION</u>: Develop and deliver community engagement focused on preventive health climate risks, and partner engagement on shared climate risks.</p>

The table below provides detailed actions for each climate adaptation theme:

#	Climate Adaptation Action	Owner
	<p> <b>1. GOVERNANCE &amp; POLICY</b></p> <p>Embed climate change into AV policy and governance processes.</p>	
1.1	Communicate high level adaptation plan themes & actions.	Sustainability
1.2	Establish governance of Climate Adaptation to AV Executive and Board.	Sustainability
1.3	Embed climate change into AV Frameworks and policy	Sustainability
1.4	Strengthen climate change considerations in strategic planning processes	Transformation & Strategy
1.5	Embed annual climate adaptation materiality review and update to AV Executive	Sustainability

#	Climate Adaptation Action	Owner
1.6	Ongoing management and assessment of climate risk and supporting risk treatments.	Sustainability / Corporate Services (Enterprise Risk Management)
1.7	Review financial assessment and reporting of AV's financial climate disclosures (ongoing).	Corporate Services (Finance)
1.8	Review climate change's likely impact on AV's insurance	Corporate Services (Enterprise Risk Management)
1.9	Develop climate change metrics and indicators.	Sustainability
1.10	Create next AV Climate Adaptation Plan (2026 – 2030) including materiality review	Sustainability
 <b>2. RESILIENCE PLANNING &amp; PROCESS</b> Incorporate climate change into planning and systems to support consideration of climate futures and risk management.		
2.1	Establish AV – DELWP – CSIRO agency data system linkages for climate futures data sets	Sustainability
2.2	Model and integrate climate data into AV core planning processes.	Transformation & Strategy
2.3	Extend AV's demand and forecast timelines to assist in longer term climate planning.	Transformation & Strategy
2.4	Consider overall impacts of climate change to regions (population movement, business impacts, mental health, etc).	Transformation & Strategy
2.5	Identify AV locations that are vulnerable to key climate hazards and establish an AV climate map supported by region specific climate data, and develop risk treatment plans for high and critical risk sites as required.	Sustainability, Corporate Services (Enterprise Risk Management)
2.6	Develop further climate scenarios for AV specific planning and data research projects (e.g. backcasting & event / hazard likelihood analysis)	Sustainability
2.7	Develop and test “compound” or dual crisis climate events to stress test AV's emergency management and business resilience plans.	Emergency Management (incl. Business Resilience), Corporate Services (Enterprise Risk Management)
2.8	Integrate updated climate projections data into AV systems and planning (VCP 2019 updated data set).	Sustainability
2.9	Identify climate change risks within health supply chains together with examination of industry emission profiles.	Sustainability

#	Climate Adaptation Action	Owner
2.10	Update resource model and operational planning assumptions to include climate change data considerations and workload forecasts.	Operational Logistics / Emergency Management / Operational Capability
2.11	Review and update workforce planning assumptions to include climate change considerations.	People & Culture
2.12	Review capacity and capability of First and Co-Responders in light of climate change impacts (skills / capability / specialist areas aligned to locality need) e.g. contingency for absence in areas at risk of inundation.	Operations Capability
2.13	Validate and identify disruption risks related to climate change	Business Resilience
2.14	Identify risks of and review AV's communications scenarios for business continuity against key climate hazards.	Operational Communications / Emergency Management (Business Resilience)
2.15	Review baseline researched predictions on the changing nature of Victorian diseases in response to climate change to inform gap analysis of AV clinical skills.	Research & Evaluation
2.16	Supply chain resilience: Validate climate risk, frailties and critical third parties to influence change beyond existing identified risk threshold.	Operational Logistics / Emergency Management (Business Resilience)
2.17	Assess and update Business Continuity plans with climate change considerations.	Emergency Management (Business Resilience)
2.18	Assess and test business resilience climate gaps, including creation of new Business Continuity Plans as required.	Emergency Management (Business Resilience)
2.19	Insert business continuity requirements into major contracts as a key clause.	Corporate Services (Procurement & Commercial)
2.20	Build climate and environment objectives into AV procurement process and standards.	Corporate Services (Procurement & Commercial)
 <b>3. ASSET READINESS &amp; MONITORING</b> Review and plan climate resilience improvements to AV's key assets and infrastructure.		
3.1	Complete a fabric and condition audit for AV asset baseline condition.	Corporate Services (Property Services)
3.2	Establish / integrate capital & works program in response to identified key climate risks	Corporate Services (Property Services)
3.3	Embed sustainable design principles into the AV Branch Design Guidelines and Standard Ambulance Design (VHBA)	Corporate Services (Property Services)

#	Climate Adaptation Action	Owner
3.4	Create Sustainability addendum for Branch Design Guidelines including key business resilience considerations.	Corporate Services (Property Services) / Sustainability
3.5	Review specialist assets / resources to accommodate off grid to work in extreme weather conditions. e.g. pods / vehicles	Emergency Management (Business Resilience) / Operations Logistics
3.6	Energy resilience: Undertake project to increase branch power back up for outages (UPS – uninterrupted power supply)	Corporate Services (Property Services)
3.7	Asset Management Plans / Improvement Plans include environmental and climate considerations and actions to support increased resilience of key assets.	Corporate Services (Asset Management, Property Services, ICT, Operational Fleet & Equipment)
3.8	Establish budget for preventative “climate” maintenance of assets	Corporate Services (Property Services)
3.9	Retrofit existing AV property with climate resilient improvements	Corporate Services (Property Services)
3.10	Implement smart asset management systems to enable enhanced reporting including real time monitoring.	Corporate Services / Operational Logistics (Property Services, Operational Fleet & Equipment, Asset Management,)
3.11	Review refresh of the Infrastructure Risk Assessment and Adaptation of branches and helipad (Department of Health)	Sustainability
3.12	Develop a digital platform for property services asset master data as part of enterprise asset data management approach.	Corporate Services (Property Services, Asset Management)
 <b>4. PEOPLE ENGAGEMENT &amp; KNOWLEDGE BUILD</b> Develop and deliver engagement to support building our people’s awareness and understanding of climate change.		
4.1	Develop AV climate overviews to support climate change awareness and understanding.	Sustainability
4.2	Distribute climate summaries of Victorian regional climate futures.	Sustainability
4.3	Consult and engage broadly through AV on climate change and climate risk	Sustainability / Corporate Services (Enterprise Risk Management)
4.4	Implement health and wellbeing climate prevention strategies (e.g. heat, hydration, exposure).	Clinical Operations / Operational



#	Climate Adaptation Action	Owner
		Communications / Emergency Management
4.5	Implement advanced paramedic practice programs / pilots with focus on community medicine and climate resilience.	Clinical Operations
4.6	Establish continuing education modules that target climate change such as climate futures and health, telehealth / innovation, etc.	Operations Capability
4.7	Upskill targeted operational roles to meet climate related challenges (changing nature of disease) and impacts (more intense; more often) e.g. telehealth, regional medicine, specialist skillsets.	Operational Communications / Clinical Operations
4.8	Develop emergency management / strategic command training in consideration of managing changing incident types.	Emergency Management
4.9	Investigate and create support materials for psychological safety and climate wellbeing e.g. eco-anxiety.	People & Culture
 <b>5. COMMUNITY &amp; PARTNER ENGAGEMENT</b> Develop and deliver community engagement focused on preventive health climate risks, and partner engagement on shared climate risks.		
5.1	Contribute to and participate in development and implementation of the six community-led Regional Adaptation Strategies (2021-2025) which are supporting by DELWP.	Sustainability, Clinical Operations, (Emergency Management, Operational Communications)
5.2	Establish pilot community engagement programs that support individuals and communities to proactively reduce their climate-related health risk.	Clinical Operations, Strategic Communications & Engagement
5.3	Continue to increase engagement with local government and regional management using regional support role structures (such as municipal and regional resources), in addition to increase active engagement with health services.	Clinical Operations, Operational Communications, Emergency Management
5.4	Contribute to climate thought leadership and public health services discourse and debate.	Sustainability
5.5	Leverage climate change and health education into university programs	Operational Capability / Sustainability
5.6	Establish relationships and ongoing engagement with key climate change agencies and departments, other ambulance and health services and community organisations on climate change.	Sustainability / Operations
5.7	Become a member of and participate in state, regional and local Climate Adaptation plan networks, plans and engagement	Sustainability / Operations



#	Climate Adaptation Action	Owner
5.8	Build knowledge and commence engagement with other agencies on shared climate risks and mutual impacts to staff wellbeing and community management.	Sustainability / Emergency Management
5.9	Investigate opportunities for partnerships and innovation in climate adaptation and health (e.g. climate pilots / or studies)	Sustainability
5.10	Work with peak ambulance body (CAA) to establish ambulance environmental performance benchmark and measure over time.	Sustainability



## Measures of Success

This plan's aim is that integration of climate change adaptation into relevant areas of governance, policy, planning and processes is in progress. Adaptation responses are being prioritised, designed, and planned, with implementation of priority adaptation programs underway.

We will evaluate and report on the Climate Adaptation Action Plan at the end of the plan's timeframe as summarised below. This will help feed into the following plan, and it is intended that the measures will evolve over time as does our adaptation maturity.

Climate Adaptation Indicator	Target
<b>GOVERNANCE &amp; POLICY</b>	
Improved positive climate change risk culture (Incorporation of climate change in AV policy and governance)	Climate change established in AV policy via roles and responsibility, and in critical policy areas. Environmental risk incorporated in organisational risk, with risk treatment plans in place and active
<b>RESILIENCE PLANNING &amp; PROCESS</b>	
Incorporation of climate change into AV planning	External climate data embedded into AV systems and planning processes
	## scenario / stress tests & climate hazard case studies completed
Improved climate change consideration in procurement and contract management	Major contracts include environmental / climate change specifications and criteria
<b>ASSET READINESS &amp; MONITORING</b>	
Improved climate resilience of AV infrastructure & assets	Asset improvement plans include climate adaptation actions & ## resilience actions delivered
	## vulnerable energy locations back up energy installations
<b>PEOPLE ENGAGEMENT &amp; KNOWLEDGE BUILD</b>	
Improved workforce awareness and understanding of climate change and its impacts	Increased staff awareness of sustainability and climate change
	## sustainability representatives participating in climate engagement & upskill
<b>COMMUNITY &amp; PARTNER ENGAGEMENT</b>	
Improved partnerships on climate change with community groups and government agencies.	## established climate memberships / partnerships



# Part 3

## Supporting Information



## Supporting Legislation, Plans & Resources

Resource	Source	Comment
<b>International</b>		
Paris Agreement (2015)	<a href="#">International Treaty: Paris Agreement</a>	International treaty on climate change, with goal to limit global warming to below 2, preferably to 1.5 degrees Celsius.
United Nations Sustainable Development Goals (SDGs) 2015	<a href="https://sdgs.un.org/goals">https://sdgs.un.org/goals</a>	17 global goals for sustainable development to 2030. Includes a key action on climate change (Goal #13)
Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD, 2016)	<a href="#">TCFD Report</a>	Framework for disclosure of climate financial risk. Focused on stress testing and scenario planning on a forward basis.
<b>National</b>		
National Climate Resilience and Adaptation Strategy (2015)	<a href="https://www.environment.gov.au/climate-change/adaptation/publications/national-climate-resilience-and-adaptation-strategy">https://www.environment.gov.au/climate-change/adaptation/publications/national-climate-resilience-and-adaptation-strategy</a>	How Australia is managing climate risks for the benefit of the community, economy and environment. Identifies a set of principles to guide effective adaptation practice and resilience building. (due for update in 2021)
Australian Institute for Disaster Resilience	<a href="#">Strategic Disaster Risk Assessment Guidance (aidr.org.au)</a>	Guidance for Strategic Decisions on Climate and Disaster Risk
Climate disclosures AASB/ AuASB guidance (2018, updated 2019)	<a href="#">Climate related and other emerging risk disclosures</a>	Consideration on balance sheet items
<b>Victorian Government</b>		
Victoria Climate Change Strategy (2021 – 2025)	<a href="#">Victoria's Climate Change Strategy</a>	Released May 2021. One of 2030 objectives is “Emergency management and disaster preparedness”
Victoria's climate change adaptation plan 2017–2020	<a href="#">Vic Adaptation Plan</a>	<a href="#">Monitoring &amp; evaluation framework</a>
Health and Human Services pilot Climate Adaptation Action Plan (2019-2021)	<a href="#">Pilot plan</a>	First legislated HHS AAP due October 2021.
6 Regional Adaptation Strategies	(pending)	Available from July/August 2021
Victoria's Climate Science Report 2019	<a href="#">Victoria's changing climate (climatechange.vic.gov.au)</a>	A summary of the latest climate change science knowledge for Victoria.
DH Environmental Sustainability Strategy (2019 – 2023)	<a href="#">Sustainability strategy</a>	To improve the environmental sustainability of the health system and to adapt the health system so it is resilient in the face of climate change

Resource	Source	Comment
State Emergency Response Plan (SERP)	<a href="#">SERP</a>	Arrangements for coordinated response to emergencies by all agencies with a role in emergency response.
Emergency Management Act 2013	<a href="https://www.emv.vic.gov.au/about-us/what-we-do/our-legislation">https://www.emv.vic.gov.au/about-us/what-we-do/our-legislation</a>	The 2013 Act operates concurrently with the <i>Emergency Management Act 1986</i> with the intention that the 1986 Act will ultimately be repealed.
EMV: Regional Emergency Management Plans	<a href="#">REMPs</a>	
EMV: Emergency Risks in Victoria 2020	<a href="#">Report</a>	
Climate Change Assessment (2018)	<a href="#">Climate Change Assessment for Emergency Management Organisations</a>	Discussion paper on climate change and the emergency management sector
EMV: Victoria's Critical Infrastructure Resilience 2020	<a href="#">Victoria's Critical Infrastructure All Sectors Resilience Report</a>	
IGEM: Assurance in Emergency Management	<a href="https://www.igem.vic.gov.au/assurance/climate-change">https://www.igem.vic.gov.au/assurance/climate-change</a>	Assurance activities mapped against risks which are relevant to Victoria (including climate change)
Climate Change: Regional Adaptation Climate Resources	<a href="https://www.climatechange.vic.gov.au/information-and-resources/climate-change-adaptation-resources">https://www.climatechange.vic.gov.au/information-and-resources/climate-change-adaptation-resources</a>	Region by region factsheets around climate impact and adaptation.
Victorian Climate Projections (VCP - 2019)	<a href="#">VCP 2019</a>	Victorian Government modelling of climate futures based off CSIRO climate science data.
DEWLP: Climate Change Futures Toolkit	<i>Via DELWP Climate Risk team</i>	
Victoria 30 Year Infrastructure Strategy (draft, 2021)	<a href="https://www.infrastructurevictoria.com.au/project/30-year-strategy/">https://www.infrastructurevictoria.com.au/project/30-year-strategy/</a>	Infrastructure destroyed by emergencies is built to a more resilient standard or in less vulnerable locations.
Victorian Health and Wellbeing Plan (2019-2023)	<a href="https://www2.health.vic.gov.au/about/health-strategies/public-health-wellbeing-plan">https://www2.health.vic.gov.au/about/health-strategies/public-health-wellbeing-plan</a>	Tackling climate change and its impact on health (one of four key priorities)
Sustainability Victoria: Health and climate	<a href="#">Health and climate change research</a>	
Resources for Local Government	<a href="#">Local Government Roles and Responsibilities for Adaptation under Victorian Legislation: Guidance Brief (PDF, 1.3 MB)</a>  <a href="#">Climate Change Data and Information for Local Government Factsheet (PDF, 801.4 KB)</a>  <a href="#">Climate Change Data and Information for Local Government Factsheet: accessible (DOCX, 4.8 MB)</a>	Local governments play a critical role helping their communities to reduce emissions and adapt to climate change. Local governments are often the first to respond to localised climate change impacts and their strong connections to the community and local knowledge mean they are often best placed to recognise the need for adaptation at a local scale.



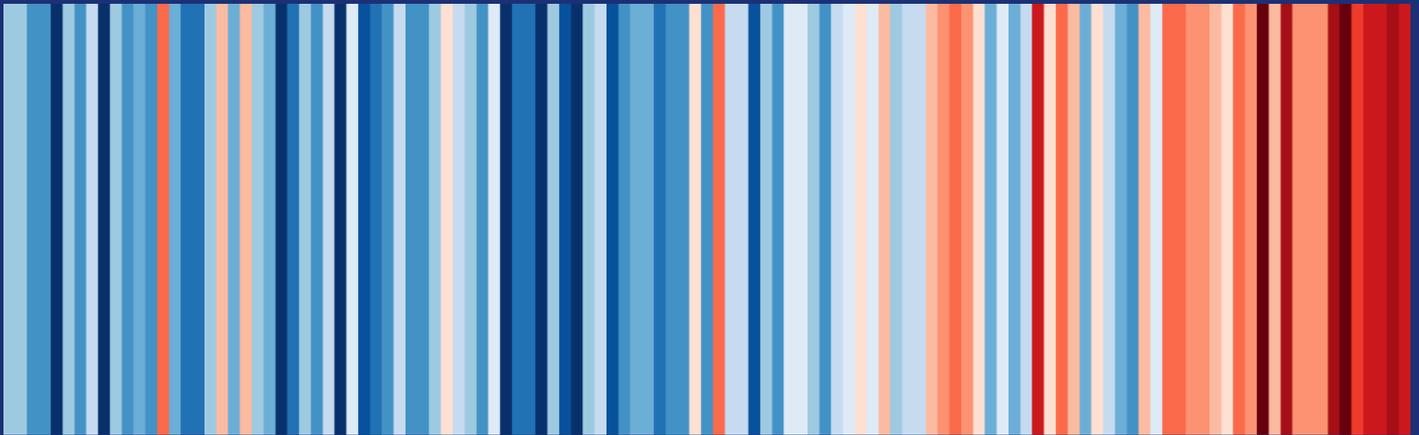
Resource	Source	Comment
	<a href="#">Climate Change Risks to Local Government (PDF, 450.3 KB)</a> <a href="#">State-Local Government Climate Change Projects 2010-2020</a>	
<b>Ambulance Victoria</b>		
Social & Environmental Responsibility	<a href="#">Social &amp; Environmental Responsibility Framework</a>	
Emergency Management Framework & Emergency Response Plan (ERP)	<a href="https://intranet.ambulance.vic.gov.au/sites/Teams/em/Pages/Emergency-Response-Plan.aspx">https://intranet.ambulance.vic.gov.au/sites/Teams/em/Pages/Emergency-Response-Plan.aspx</a>	Describes AV's triggers for escalation, key roles and responsibilities and considerations during a major incident.
Business Resilience Framework	<a href="https://intranet.ambulance.vic.gov.au/sites/Teams/ERM/BR/Pages/default.aspx">https://intranet.ambulance.vic.gov.au/sites/Teams/ERM/BR/Pages/default.aspx</a>	Supported by AV's Business Continuity Plans (BCPs)
Asset Management Plans	<a href="#">PLN/FCS/000 – Asset Management Plan – Summary</a>	Includes 4 supporting asset management plans for Equipment, Fleet, ICT & Intangibles, and Property.
<b>Health and Climate: Thought Leadership</b>		
Climate and Health Alliance (CAHA): Australia in 2030	<a href="#">Australia in 2030: Possible alternative futures report</a>	Narrative scenarios for five possible alternative futures for Australia.
Grattan Institute: Climate and Health report (2020)	<a href="#">Climate Change and Health: Preparing for the Next Disaster report</a>	How climate change is harming Australian's health, improving health sector resilience and building a carbon neutral healthcare system.
Lancet countdown (2020)	<a href="#">The Lancet Countdown on health and climate change</a>	Annual report tracks the relationship between climate and health globally.
World Health Organisation	<a href="#">Guidance for climate resilient and sustainable health care facilities</a>	
McKinsey: Health futures	<a href="#">Prioritizing health: A prescription for prosperity</a>	



## Definitions

Acronym / Term	Description
Adaptation	Changes in natural or human systems to prepare for actual or expected changes in the climate in order to minimise harm, act on opportunities or cope with the consequences.
Adaptive Capacity	Capability of a system or group to adjust to climate change, to minimise harm, to act on opportunities, or to cope with the consequences.
AV	Ambulance Victoria
BCP	Business Continuity Plan
BR	Business Resilience
CE	Continuing Education (ex CPD - Continuing Professional Development)
Climate Change	Change in conditions with a longer-term shift in climate patterns
DELWP	Department of Environment, Land, Water & Planning
DH	Department of Health
EMV	Emergency Management Victoria
ERP	Emergency Response Plan
Hazard (Climate Hazard)	Climate related physical event or hazard such as Air Temperature, Heatwaves, Drought, Bushfire, Precipitation, Flooding, Extreme Storms, Sea Level Rise, Coastal Inundation, Wind, Solar Radiation and Humidity.
The plan	Ambulance Victoria Climate Adaptation Action Plan
RCPs	<a href="#">Emissions scenarios</a> or Representative Concentration Pathways (RCPs) try to capture future climate emissions trends.
TCFD	Task Force on Climate-related Financial Disclosures
VCPs	<a href="#">Victorian Climate Projections</a> based on CSIRO climate science data, updated on semi-regular basis.
VHBA	Victorian Health and Building Authority





### **Victorian Warming Stripe**

The 'warming stripe' shows the change in average temperature from 1901 to 2018 in Victoria, where each stripe represents one year. It shows a clear warming trend over the course of more than a century.

Hawkins E 2019, [Show your stripes](#)



# DOCUMENT CONTROL

<b>Document name</b>	<b>AV CLIMATE CHANGE ADAPTATION ACTION PLAN</b>	
<b>Document no.</b>	MAN/XXX/XXX	<b>Stored:</b> QPE to complete
<b>Version:</b>	DRAFT (Exec 14/07/2021)	<b>Review:</b> <input type="checkbox"/> Annual <input checked="" type="checkbox"/> 3-Yearly
<b>Division</b>	Sustainability	
<b>Responsible Executive</b>	Chief Operating Officer, Operations	
<b>Responsible Manager</b>	Director Sustainability, Sustainability, 03 9840 3358	
<b>Key stakeholders: (including external)</b>	<b>Consulted:</b> <ul style="list-style-type: none"><li>• AV Executive</li><li>• Operations Executive</li><li>• Social &amp; Environmental Responsibility Working Group (includes functions for Property Services, Procurement &amp; Commercial, Asset Management, Fleet &amp; Equipment, People &amp; Culture)</li><li>• Emergency Management Unit (including Business Resilience Specialist)</li><li>• Manager Enterprise Risk</li><li>• Clinical Operations: Regional Directors, Regional Support Managers, Regional Emergency Management Planning Coordinators (REMPCs), Regional Community Engagement Coordinators (OCELC)</li><li>• Manager, Environmental Sustainability (DH) / Senior Project Manager, Environment, Infrastructure Policy (DH)</li><li>• Manager, Climate Science, Climate Change Division. Manager Climate Change Policy (Adaptation) &amp; Senior Policy Officers, Climate Change Division (DELWP)</li></ul>	<b>To be informed:</b> <ul style="list-style-type: none"><li>• AV Board</li><li>• AV Executive</li><li>• Operations Executive</li><li>• Social &amp; Environmental Responsibility Working Group</li><li>• Corporate Services (Property Services, Asset Management, &amp; Procurement and Commercial)</li><li>• Operational Logistics (Fleet &amp; Equipment)</li><li>• Operations: Emergency Management Unit (including Business Resilience), Clinical Operations (regional representatives), Operational Communications representatives</li><li>• DH, Sustainability &amp; Climate teams</li><li>• DELWP, Climate team</li></ul>
<b>Review date</b>	By <b>Month 202x</b> or in accordance with applicable legislative or regulatory changes.	