Halls Gap Extreme Heat Plan

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PREMINARY DRAFT ONLY

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Table of Contents

1 Introduction

1.1 Background

The frequency of extreme heat events in Australia is increasing. Excess deaths reported in Victoria as a result of an extreme heat event were 374 in 2009, and 167 in 2014[1]. Extreme heat can also adversely impact the supply of power, both directly, and through excessive power demand for air conditioning during an extreme heat event.

The Northern Grampians Shire Council (NGSC) *Heatwave Plan*[12] includes (among other things) support for community self-management of extreme heat events.

1.2 Purpose

This draft document is intended to provide a basis for the Halls Gap community to self-manage its response to extreme heat events, particularly those associated with prolonged power outages.

1.3 Scope

The *National Strategy for Disaster Resilience* requires all of society to take responsibility for preparing for disasters, including extreme heat events. This includes

1. residents and visitors taking responsibility for themselves and those in their care, and actively planning and preparing for extreme heat events, and
2. local government (including NGSC) and communities (including Halls Gap) planning and preparing for extreme heat events.

The risk mitigations in this document are limited to those which minimise risks to people, not risks to property/ infrastructure. The scope is extreme heat only, and ignores concurrent events (e.g. bushfires or storms) which will be handled by the relevant Incident Controller.

1.4 Audience

This preliminary document is intended for review by those organisations involved in heat health management in Halls Gap, and the community generally.

1.5 Caveats

This plan is preliminary only, and has not been implemented.

NGSC has declined to engage with the HGRG on extreme heat events until the *Municipal Extreme Heat Plan* has been completed.

This plan assumes that there are no other concurrent emergency events that will affect any extreme heat event e.g. bushfire, flood, landslide, etc.

1.6 Feedback

Any corrections, queries or suggestions to improve this plan should be referred to the Secretary of the Resilience Group via email:

secretary@resiliencegroup.org.au

[1] Health Victoria, *Research and reports - extreme heat and heatwaves*, https://www2.health.vic.gov.au/public-health/environmental-health/climate-weather-and-public-health/heatwaves-and-extreme-heat/heatwave-research

2 Context for Plan

2.1 Extreme heat versus Bushfires

To put extreme heat into context:

- The frequency of extreme heat events in Victoria (one every 2-5 years[2]) is already greater than the frequency of severe bushfires in the Grampians National Park (every 6 years on average).
- Extreme heat events have contributed to more deaths than any other natural disaster in Australia[3]. For example, the number of 'excess deaths' from the 2009 extreme heat event in Victoria was much greater than the number of deaths arising from the Black Saturday bushfires the following week.
- The financial loss of property and infrastructure from bushfire is often high, but is largely localised to the area of the fire, whereas the financial loss from extreme heat is far more widespread, and includes serious adverse impacts on[2]:
    - **Infrastructure and essential services**: The 2009 extreme heat event in southeast Australia caused financial losses estimated at $800 million due to power outages, disruptions to transport systems, etc.[4]
    - **Agriculture**: The 2009 extreme heat event, in conjunction with a shortage of irrigation water, caused significant heat-stress related crop losses in many vineyards[5] and similar adverse effects on other crops.
    - **Natural Ecosystems**: The 2009 extreme heat event caused the deaths of thousands of birds,[6] nearly 5,000 flying foxes in the Yarra Bend Park[7], and similar adverse effects on natural ecosystems.

Overall, the risks from extreme heat events are comparable to the risks from bushfires. They were both given a High risk rating in the *Halls Gap Threat and Risk Assessment*.

[2] The Climate Council (2014), *Heatwaves: Hotter, Longer, More Often*, https://www.climatecouncil.org.au/uploads/9901f6614a2cac7b2b888f55b4dff9cc.pdf

[3] Victorian Auditor-General (2014) *Heatwave Management: Reducing the Risk to Public Health*, October.

[4] Chhetri P, Hashemi A, Basic F, Manzoni A and Jayatilleke G (2012) *Bushfire, Heat Wave and Flooding Case Studies from Australia*. Report from the International Panel of the Weather project funded by the European Commission's 7th framework programme, March.

[5] Webb L, Whiting J, Watt A, Hill T, Wigg F, Dunn G, Needs S and Barlow E (2010) "Managing grapevines through severe heat: A survey of growers after the 2009 summer heatwave in south-eastern Australia", *Journal of Wine Research* 21:147-165.

[6] McKechnie A and Wolf B (2010) "Climate change increases the likelihood of catastrophic avian mortality events during extreme heat waves", *Biology Letters* 6:253-256.

[7] DSE (2009) *Yarra Bend Park Flying Fox Campsite: review of the scientific researc*h, https://www.wildlife.vic.gov.au/__data/assets/pdf_file/0030/27678/Flying_Fox_Scientific_Research.pdf

2.2 Residents Vulnerable to Extreme Heat

The groups who are susceptible to heat-related illness include[8,9]

- people with disabilities, who may not be able to access help quickly,
- people aged over 65 years who tend to be less aware and less adaptable to extreme heat, particularly those living alone without air-conditioning, and those who may not be able to access help quickly,
- babies and young children under five years old, who are sensitive to the effects of extreme heat and must rely on others to keep them cool and hydrated,
- people who have a medical condition such as heart disease, high blood pressure, diabetes, cancer, lung disease, kidney disease, etc.,
- people taking medications that may affect the way the body reacts to heat such as
    - allergy medicines (antihistamines),
    - some blood pressure and heart medicines (betablockers and vasoconstrictors),
    - seizure medicines (anticonvulsants),
    - thyroid medications (thyroxine), and
    - water pills (diuretics),
- people who have a mental illness, particularly those on medication (antidepressants or antipsychotics),
- people with problematic alcohol or other drug use such as amphetamines,
- people with an illness or infection that causes dehydration or fever, including COVID19,
- people with cognitive impairment who may not be able to identify or communicate their discomfort or need for water,
- people who have trouble moving around (such as those who are bed bound or in wheelchairs),
- people who are overweight or obese, or with very low cardiovascular fitness,
- pregnant women and breastfeeding mothers (breastfeeding is extremely dehydrating),
- people who work in hot environments or may be physically active outdoors (such as gardeners, labourers, traffic police, security guards),
- people with health conditions that impair sweating including people with skin disorders (including sunburn, prickly heat and extensive scarring from burns), congenital impairment of sweating, cystic fibrosis, quadriplegia and scleroderma,
- people who are unable to acclimatise, or are dehydrated,
- homeless people, who may not receive warning messages, may be unaware of cooling centres and may have limited access to other cooling measures (e.g. cool showers or baths),
- people of low socioeconomic status, who may also not have access to cooling measures, or may not be able to access information about extreme heat events and cooling centres,
- people who live alone or are socially isolated,

[8] Emergency Management Victoria (2017) *State Emergency Response Plan - Extreme Heat Sub-Plan,* Edition 2, p.32

[9] Singh, R., Arrighi, J., Jjemba, E., Strachan, K., Spires, M., Kadihasanoglu, A. (2019) *Heatwave Guide for Cities*. Red Cross Climate Centre.

- non-English speaking people who may not be able to understand heat event messaging or have reduced access to, or understanding of, health or support services,
- tourists, particularly those camping in tents or caravans, who may not know how to access local cooling centres or other resources, including local emergency management services, or may be from cooler climates and less adapted to the heat, and
- animals/pets, who are dependent on their owners for adequate protection from heat.

The number of people in most of these groups in Halls Gap at any one time is unknown. However,

- the 2021 census showed that out of a permanent population of 495 people there were
  - 116 people aged over 65,
  - 22 children aged less than 5 years old, and
  - there were 17 households out of 411 where a non-English language was spoken,
- there are 8,000-10,000 tourists present during peak holiday season[10] of which 17% (1,360 to 1,700 people) are aged over 65[11], and
- there were 3 people in Halls Gap who were listed in the NGSC *Vulnerable Persons Register* at the time of the 2014 Halls Gap bushfire evacuation.

In general, residents who are vulnerable to extreme heat are not registered with any local Halls Gap organisation. Vulnerable permanent residents would be registered by

- the NGSC, in its Vulnerable Persons Register, or
- Powercor, in its Life Support Customers Register (see later.)

Vulnerable tourists/visitors are not registered locally at all. As a consequence, there is little that the Halls Gap community can do to support specific tourists who are vulnerable to extreme heat. It can only rely on external agencies for this purpose, and provide public facilities like cooling spaces, which anyone can use.

While no Australian research has been identified on the percentage of people affected by extreme heat, US research suggests that almost 28% of the US population experienced heat-related symptoms during the summer of 2020[12]. On this basis, 2,240-2,800 tourists could be affected by extreme heat in Halls Gap. If 95% can self-manage the problem, then 112-140 people would need community support. (The actual numbers likely to require support is simply unknown.)

A cooling space capable of handling 112-140 people should be initially planned for, but if this proves inadequate, additional cooling spaces should be then developed.

2.3 Impact of Power Failures on Vulnerable Residents

For the groups who are susceptible to heat-related illness, a power outage during an extreme heat event may mean that[13]

- people are unable to use their fans, air conditioners or evaporative coolers,
- food may spoil,

[10] SGS Economics and Planning (2015) *Halls Gap Village Masterplan: Background Report*, North Grampians Shire, March

[11] Grampians Tourism Board (2018) *Grampians Tourism 2016-20 Strategic Plan*

[12] Wilhelmi O.V et al (2021) “Compounding hazards and intersecting vulnerabilities: experiences and responses to extreme heat during COVID-19”, *Environmental Research Letters*, Vol. 16

[13] NGSC (2014) *Heatwave Mitigation Plan*, March

- there may be reduced availability of cool drinks or ice,
- water pumps (including at the Halls Gap water treatment plant, and for fountains at the community swimming pool splash area) may not work,
- there may be no running water for drinking, people may be unable to shower or cool off in a bath or at the splash area, and toilets may not flush,
- power operated garage doors may not be able to be opened to enable the use of vehicles e.g. to travel to a designated local cooling space with backup power,
- radios, home computers and televisions may not work for updates on heat warnings,
- people who depend on television for company may feel increasingly isolated, and lighting may be an issue at night,
- medication may not be able to be kept cool, and
- phones and medical alert systems may not work.

Overall, power failures significantly exacerbate the adverse impact of extreme heat events. They also increase the level of heat-related deaths[14].

The *State Emergency Response Plan - Extreme Heat Sub-Plan*[8] states:

> "Electricity distributors maintain a register of the addresses of power dependent people (termed 'life support customers'), supplied to them from electricity retailers. Where an electricity [distributor] has more than 20,000 customers without power, they are required to inform DOH of the street address of these customers when it is expected that electricity supply will be disrupted for a period greater than 20 hours. Once DHHS has received this reporting, it will decide on the appropriate actions to be undertaken to ensure their wellbeing needs are being met."

These arrangements only apply to permanent residents i.e., will not apply to tourists/ visitors who reside in Halls Gap temporarily during holiday seasons.

For permanent residents, these arrangements need to be reviewed. In particular:

- What is the level of compliance of Halls Gap power retailers in supplying details of life support customers to Powercor?
- What is the level of compliance of Powercor in maintaining the register of life support customers in Halls Gap?
- What is the likely effectiveness of any DOH responses to extreme heat events in a remote regional town like Halls Gap?

2.4 Emergency Reporting and Control

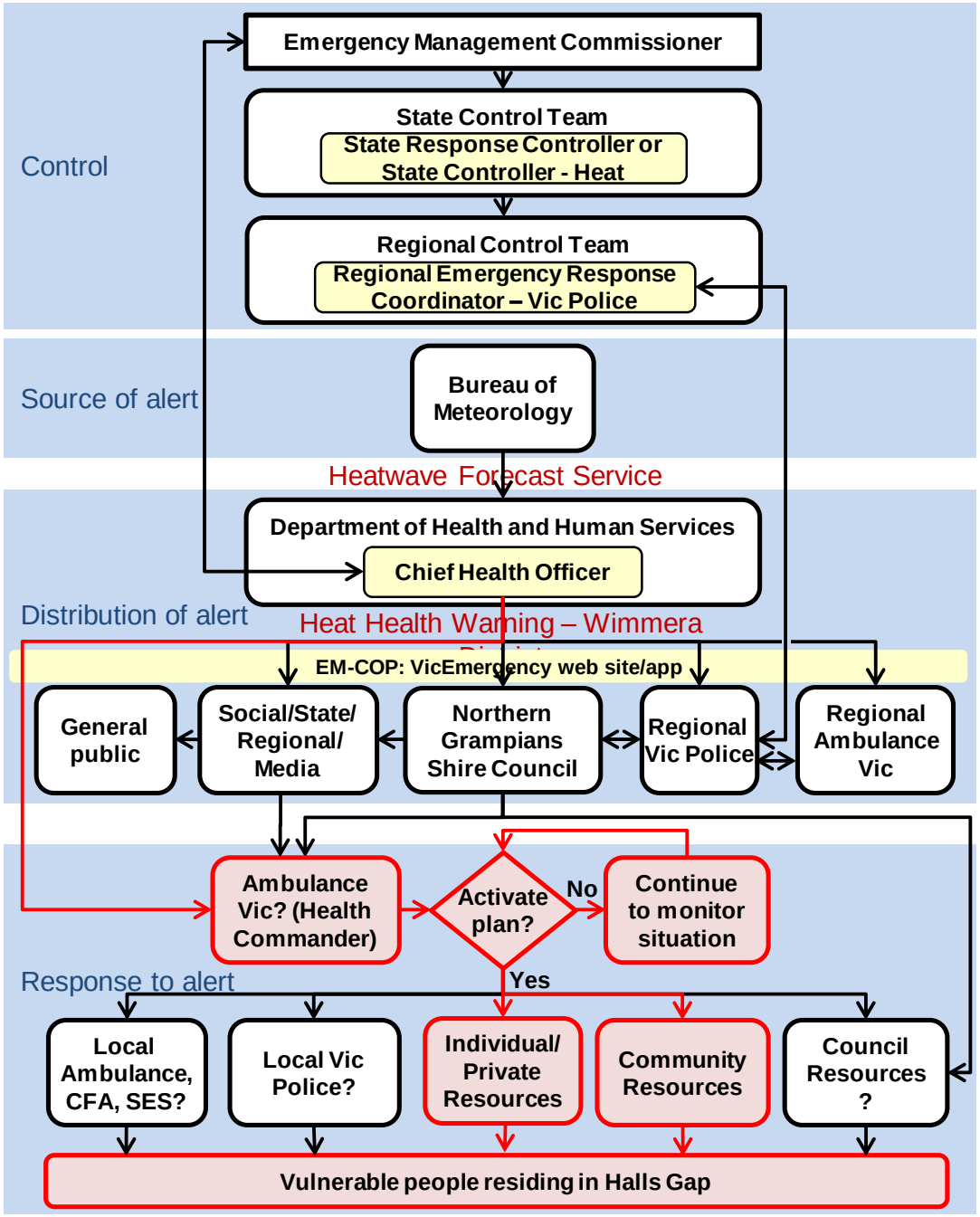
In 2014, the Victorian Auditor-General[3] concluded that

- governance for responses to extreme heat events was unclear, although Victoria Police was the identified control agency,
- no agency was making sure all support agencies had activated their extreme heat plans or that resources were being directed to where they were needed most, or to monitoring the effectiveness of those arrangements, and
- there was a real need for clear roles and responsibilities for extreme heat, sufficient strategic monitoring of extreme heat, and greater clarity around triggers for extreme heat plan activation, and sharing of extreme heat data across multiple systems.

After a review of multiple State and municipal documents, a possible extreme heat reporting and control structure is provided in Figure 1, although it is unlikely that the Control functions shown at the top of the structure will have any direct involvement in Halls Gap.

[14] Nairn, John, and Williams, Susan (2019) "Power outages during heatwaves: Predicting mortality burden in Australian cities"

Figure 1: Extreme heat Reporting and Control



The NGSC developed a *Heatwave Mitigation Plan* in 2014, and is currently in the process of developing a multi-agency *Extreme Heat Plan*. The details of this latter plan are as yet unknown, as it has not yet been published.

The 2014 *Heatwave Mitigation Plan* assumes that Victoria Police will partner with NGSC to provide important information on extreme heat events i.e., the primary role of NGSC is communication e.g. issuing messages to the community on self-management of heat health, through local media, the council web site, social media, and other communication channels.

In support of this, specific printed materials for Halls Gap will need to be developed, approved, translated and distributed for use in Visitor Centres and by accommodation providers, and an extended hours contact number (e.g. the Visitor Centre line) will need to be available e.g. so people can request transport to a cooling space when necessary.

Notices on community noticeboards, and articles in the *Fill the Gap* newsletter could alert parties to the availability of resources and contact numbers, and provide heat health advice.

One of the objectives of the NGSC *Heatwave Mitigation Plan* is to empower communities to self-manage extreme heat events and mitigate their effects i.e., the lowest part of Figure 1 is the most relevant to Halls Gap (particularly the red boxes.)

As part of this, there will be a need for an organisation to subscribe to the Heat Health Warning service, and take responsibility for the local community response to the warning. The Halls Gap Ambulance Vic unit would be an appropriate organisation.

There is also a need for this *Halls Gap Extreme Heat Plan* to guide responses to an warning. It needs to be discussed, amended where necessary, and agreed by all parties.

2.4.1 Heat Health Warnings

Heat health warnings are issued by the Chief Health Officer via email 3-4 days prior to any forecast of extreme heat conditions. The Bureau of Meteorology's 7-day forecast is used for the analysis. For the Wimmera district, which includes Halls Gap, an warning is issued when the average of the forecast maximum temperature and the forecast overnight temperature for any given day exceeds a threshold of 32^0C.

2.4.2 Heatwaves and Extreme Heat Events

A 'heat wave' is generally defined by the Bureau of Meteorology as three or more days of abnormal and uncomfortably hot weather.

In contrast, this plan uses the term 'extreme heat event' to include all events where vulnerable people are at risk from extreme heat, regardless of the number of days of extreme heat involved. The Victorian *Extreme Heat Subplan* states: "The effect of heat is cumulative on the community, infrastructure, and services. A single day of extreme temperature may have an impact and this impact increases with multiple days of similar temperatures. The effects of extreme heat can continue for some days after temperatures have dropped."[15]

2.4.3 Heat Illnesses

A list of heat-related illnesses, in increasing order of severity, is provided in Appendix A.

If a resident is already suffering from the worst case of a heat stroke, the appropriate action is to dial 000 i.e., any *Halls Gap Extreme Heat Plan* is already too late to address the problem. The objective of this plan is to provide information and cool/shaded facilities that mitigate the risk of heat strokes before they happen.

2.4.4 Individual/Private Resources

During an extreme heat event it is expected that most people in Halls Gap (permanent residents and tourists) will self-manage their own situation using their own resources, based on warnings and information provided by the media, NGSC, Victoria Police, accommodation providers, Visitor Centres and other information channels. This means that they should[16]

- keep themselves, and those they care for, adequately hydrated,
- never leave anyone or any pets in a vehicle,
- keep themselves, and those they care for, cool e.g. by
    - avoiding intense outdoor activity like hiking/walking or similar exercising, or renovating and gardening at home,
    - avoiding staying out of the sun during the hottest part of the day,
    - when outside, dressing lightly in light-coloured, loose-fitting clothing made from natural fibres like cotton and linen, and wearing a hat and sunscreen and carrying a bottle of water,

[15] EMV (2017) *State Emergency Response Plan Extreme Heat Sub-Plan*, Edition 2

[16] Better Health Channel (2021) *Surviving the heat*, https://www.betterhealth.vic.gov.au/heat

  - blocking out the sun during the day by closing curtains and blinds, but opening windows when there is a cool breeze,
  - spending as much time as possible in cool or air-conditioned rooms in their home or rented venue, or in their airconditioned caravans or motorhomes,
  - cooling off in their own swimming pool (if they or their accommodation provider has one), or keeping themselves cool by using fans with wet towels, putting their feet in cool water, or taking cool (not cold) showers or baths,
  - and similar self-managed actions,
- keep their pets and animals appropriately protected from the heat e.g. in a shaded place with plenty of fresh water.

For most people, none of the actions listed above should require community support or resources (other than the provision of heat health warnings and information and advice.)

However, some of the people who are susceptible to heat-related illness (see 2.2) may need support from community resources, particularly if there is a prolonged power failure. Available community resources are summarised below.

2.4.5 Community Resources

Community resources available in Halls Gap to provide cooling to heat-affected people are:

- An air-conditioned community building (see Local Cooling Space in 2.4.5.1 below.)
- The swimming pool.
- Shaded gardens and recreation reserves.

2.4.5.1 Local Cooling Space

The criteria used for identifying potential public cooling spaces are that they be:

- A large contiguous place which is centrally located and readily accessible.
- Not an accommodation provider (most will effectively be unavailable due to high occupancy during holiday periods.)
- Not associated with an emergency/essential service, which will need to continue operation without disruption (telecommunications, power/energy, food/grocery, government services, health services, transport, water, and banking/finance.)

Overall, the options are largely limited to the Primary School (assuming school is out, which would be the case for most of the hot season), the Centenary Hall, and the Pavilion at the Sports Oval.

An analysis of these options suggests that the Centenary Hall is the preferred option. It has a number of spaces that could be used for cooling:

- The main hall (205 m^2, 100 people.)
- The supper room (45 m^2, 22 people.)
- Other spaces e.g. the history room, Visitor Centre etc., some of which could be repurposed for cooling (possibly 100 m^2, 50 people.)

It has three roof-mounted air-conditioning units. The type (e.g. reverse cycle or evaporative) is unknown. There are three split systems along the north wall of the hall/history room. The cooling capacity of the six units, and whether all of them are operating, is unknown.

The hall does not have any backup power capability (e.g. batteries or diesel generator.)

2.4.5.2 Swimming Pool

The pool is 25m long and 11m wide, and has a depth of 1-1.8m. Assuming 2 m^2 per person, it has a maximum capacity of 137 people.

A toddler's pool and a splashpad area with various fountains can also be used for cooling.

Shade is provided around the pool via 140 m^2 of awnings beside the pool, allowing people to rotate from the shade to the pool and vice versa. Another 140 m^2 of shade is provided to the toddler's pool and the splashpad area.

Overall, the maximum capacity for the pool and shade areas is about 140 people, but a realistic pool capacity with less crowding is probably 100 people.

Venus Baths could potentially provide supplementary pool-based cooling, but having vulnerable people walk about 900m to the baths in extreme heat would not be desirable.

2.4.5.3 Shaded Gardens and Recreation Reserves

There are many community resources that can provide shade during an extreme heat event, including

- the Botanic Garden trees and picnic shelter,
- the recreation reserve trees and picnic shelters, and
- the trees along the banks of local creeks, or in the community garden, or other public spaces.

In general, none of these resources require community management during an extreme heat event. They are simply available for use by the people resident in Halls Gap at the time of the event and are not considered further in this plan.

2.4.5.4 Summary of Support Provided by Community Resources

Ignoring the shaded gardens and reserves, community resources can potentially provide for about 270 people. This is more than sufficient to accommodate all permanent residents, but it is not known whether it could cope with tourist demand as well.

There may be a need for controls on entry to the swimming pool (which has limited capacity.) Victoria Police may need to provide support to staff making entry decisions.

Extended hours operations at cooling centres and the pool may require staff rostering across at least two shifts. Manning of a local contact number e.g. for requests for transport assistance to get to a cooling centre will also be required.

2.4.6 Resources from Other Agencies

While the requirements are not as yet clear, and the resources on offer are not yet known, there may be resources from other agencies that may play a role in the Halls Gap response to an extreme heat event. The involvement of some of these parties needs to be discussed and agreed as part of the finalisation of this plan.

The other agencies include

- the NGSC, including any NGSC relief centres (probably in Stawell),
- the Budja Budja Medical Clinic,
- NURSE ON CALL (as the first point of call for heat health advice)
- Powercor (for its register of Life Support Customers in the event of a prolonged power outage), and DHHS (for support responses for Life Support Customers),
- the Halls Gap Fair Price Pharmacy,
- Grampians Health (Stawell hospital),
- Halls Gap Visitor Centres and accommodation providers (distribution of information),
- local Ambulance Victoria,
- local Victoria Police,
- TRILITY (in the event of a prolonged power outage affecting town water supplies), and
- the Halls Gap General Store (for the potential provision of bottled water if the town water supply fails.)

3 Outline of Halls Gap Extreme Heat Plan

3.1 Stages of the Plan

There are four stages to this plan:

- Stage 1 – Preparation
- Stage 2 – Warning/readiness
- Stage 3 – Response/action
- Stage 4 - Recovery

The initial setup step of Stage 1 should proceed immediately, as it is required to ensure that the infrastructure and processes are in place to deal with an extreme heat event.

When Stage 1 is complete, Stage 2 should commence whenever the Chief Health Officer issues a Heat Health Warning.

Stage 3 should commence once the *Halls Gap Extreme Heat Plan* is activated.

Stage 4 should be implemented once the extreme heat event is over and the likelihood of any immediate future heat events is low.

3.2 Stage 1: Preparation

As a preparation priority, this *Halls Gap Extreme Heat Plan* needs to be discussed and finalised. As part of this, the bullet points below (and others which arise) need to be allocated to specific parties for action, with appropriate timeframes/deadlines for completion.

3.2.1 Initial Setup

This plan assumes that the following actions are taken to better support the resilience of Halls Gap when faced with extreme heat in conjunction with a prolonged power failure:

- Seek support/approval from the manager/owner of the proposed cooling space.
- Perform an assessment of the air conditioning capacity required to maintain cool temperatures when the Centenary Hall is full of heat-effected people.
- Audit the type, cooling capacity, coverage (spaces cooled) and reliability of each air conditioning unit present in the Centenary Hall.
- If the capacity and coverage of the air conditioning available does not meet the criteria required to successfully support an effective cooling space, the air conditioning should be upgraded to meet the required capacity and coverage. Approval should be sought from the relevant manager/owner. Grants should be applied for to fund this work.
- Based on the power required to support the upgraded air conditioning and other relevant power loads, appropriately sized backup power generators should be provided to the Centenary Hall. Approval should be sought from the relevant manager/owner. Grants should be applied for to fund this infrastructure.
- The Halls Gap Resilience Group has been constituted as a sub-committee of the Community Association of Halls Gap Inc., so that the legal structure of the Group makes it eligible to apply for grants/ funding from NGSC or other parties in support of the air-conditioning upgrades and power backup facilities.
- Appropriate applications for grants/ funding from NGSC or other parties should be completed, and facilities installed if the grants are approved.
- Appropriate training should be provided to local community organisations in the operation and maintenance of backup power facilities, and upgraded air conditioning.
- The involvement of other agencies should be resolved (see 2.4.6) so that a firm strategy for dealing with extreme heat events can be developed and maintained.

- On-call volunteers should be recruited to prepare cooling spaces for heat-affected people when necessary, e.g. for clearing equipment from spaces, transporting heat-affected people to a cooling space when a lack of transport is an issue, etc.
- On-call health support staffing should be allocated to the local cooling space, and trained in heat related illnesses, and they should specify the requirements for hydrating drinks, ice, support supplies (e.g. towels, cold packs, electrolyte replacement pills) and equipment (e.g. basins, hoses, fans) needed to treat such illnesses (see Appendix A.)
- Printed heat health materials that are specific to Halls Gap should be developed, approved, and distributed to Visitors Centres, accommodation providers and other information outlets. This should include information on the availability of community facilities for dealing with extreme heat (cooling space, swimming pool, gardens etc,) and the roles of appropriate support agencies.
- Acquiring stocks of state government 'Survive the heat' materials.
- Visitor Centre staff should be trained in providing heat health materials, and recruited to staff the Visitor Centre contact number over extended hours during an extreme heat event e.g. to respond to requests for transport to a cooling centre.

3.2.2 Annual Preparation

The preparation required before the start of the hot season each year should include

- confirming that air-conditioning and backup power facilities in the cooling space have been maintained, tested, and are working effectively,
- reviewing/ updating the *Halls Gap Extreme Heat Plan* and other heat health materials,
- confirming that previously identified staffing/volunteers with heat health responsibilities are still available, including to staff the Visitor Centre contact number,
- distributing/restocking Halls Gap heat information and state government 'Survive the heat' materials at Visitor Centres, accommodation providers, and other information outlets, and
- sourcing and storing the specified hydrating drinks, ice, support supplies (e.g. towels, cold packs, electrolyte replacement pills) and equipment (e.g. basins, hoses, fans) required to support basic treatment of heat-related illnesses at the cooling centres.

3.3 Stage 2: Warning/Readiness

The Chief Health Officer will issue a heat health warning for the Wimmera District at least three days prior to the start of the estimated time period of extreme heat.

The NGSC will respond by communicating warning messages and heat health advice to the public via social media, regional media and the NGSC website.

NGSC should also advise healthcare providers and volunteer groups to contact/ visit identified vulnerable permanent residents in Halls Gap, warn them of the extreme heat outlook, and provide advice on self-managing their response, or obtaining help with their response to the extreme heat event. ??? Is this arrangement actually happening ???.

In response to the warning the following readiness actions should be taken within Halls Gap:

- The owner/manager of the cooling space should be alerted, and the Centenary Hall cooling space prepared for use (but not yet staffed) e.g. the Supper Room should be cleared, and supplies and equipment used for cooling/ treatment put in place in the hall.
- A local heat health warning should be issued to the Halls Gap community through the Emergency Alert system which sends voice messages to landlines and text messages to mobile phones within a geographic area. This warning should include information specific to Halls Gap. An example warning is provided in the Appendix B. ??? who will issue the warning ???
- Heat health staff/volunteers should be alerted of the likely need for their services over the designated time period of the extreme heat.

- The swimming pool manager should be asked to consider extended opening hours during the designated period of the extreme heat.
- Coordinators who may have activities planned during the designated extreme heat period should be alerted to the risks of extreme heat and advised of the possible need to reschedule (e.g. Sports and event coordinators, managers of community facilities involving vulnerable people like the Neighbourhood House, etc.)
- The status of the heat health warning should be monitored on an ongoing basis (via https://www.health.vic.gov.au/environmental-health/heat-health-alert-status) as weather forecasts and alerts can change over time.

3.4 Stage 3: Response/Action

If the warning is still in place the day before the start of the designated period, the *Halls Gap Extreme Heat Plan* should be formally activated. This includes:

- Activating the Centenary Hall early on the first day so that it remains cool throughout the designated period. Activating backup power generators when necessary.
- Staffing the extended hours contact line, and activating volunteers to transport heat-affected people to the cooling space when a lack of transport is an issue.
- Staffing Centenary Hall with heat health staff throughout the designated period to provide heat health advice and treatment, and staffing other cooling spaces as needed.
- Responding to people's needs by providing hydrating drinks, ice, information/ advisory materials, other support supplies (e.g. wet towels or cold packs) and equipment (e.g. fans, basins filled with water to put feet in, hoses and sprays to cool people down) to support basic treatment of heat-related illnesses at the cooling centre.
- Providing support to the swimming pool manager in limiting the number of people allowed in the pool. (Victoria Police may provide appropriate support.)
- Cooperating with any actions of other agencies responding to the extreme heat event, where necessary or appropriate (see 2.4.6.)

Beyond this, external service providers and agencies should make contact (via phone and/or visit) with the vulnerable members of the Halls Gap community, and provide support as required. ??? Will this actually happen? Which agencies will do it ???

3.5 Stage 4: Recovery

Once the extreme heat event is over and the likelihood for any immediate future heat events is low, the following recovery activities should be completed:

- Deactivate the *Halls Gap Extreme Heat Plan*.
- Have volunteers transport people back home where lack of transport is an issue.
- Return excess stocks of hydrating drinks, information materials, and other support supplies and equipment to the appropriate organisations or to storage.
- Re-establish the cooling space to the condition they were in prior to the warning and stand staff/ volunteers down.
- Advise sports and event coordinators, managers of community facilities, the manager of the swimming pool etc., that the extreme heat event is over.
- Address any failures of air-conditioning, backup power or other relevant infrastructure that occurred during the extreme heat period.
- Conduct a debrief session within seven days of the end of the extreme heat event, with all local stakeholders, to evaluate the preparation, response, activation and outcomes, and agree actions to improve the response, and update the plan and related materials.

Appendix A: Heat-Related Illnesses[17]

What to look for	What to do
Heat rash	
• Clusters of bumps that look like red pimples or small blisters, usually on the neck and upper chest • Most common in young children	• Move to a cooler place • Keep the affected area dry • Dusting powder may increase comfort • Avoid using ointments and creams
Dehydration Can lead to heat exhaustion without prompt treatment	
• Increased thirst • Dry mouth, lips and tongue • Dizzy, tired or irritable • Headaches • Bright or dark yellow urine • Less urine than usual	• Drink small amounts of water regularly • Move to a cooler place • Seek medical attention if symptoms are severe
Heat cramps Can be an early warning sign of heat exhaustion	
• Muscle pains and spasms, usually in the abdomen, arms or legs • Most common in people who sweat a lot during strenuous activity	• Stop all strenuous activity • Rest in a cool, shaded place • Increase fluid intake with water, low sugar sports drink or diluted fruit juice • After the cramps subside, wait a few hours before exercising strenuously • Seek medical attention if cramps continue for more than one hour
Heat exhaustion Can lead to heat stroke without prompt treatment	
• Heavy sweating • Heat cramps • Paleness • Weak or dizzy • Nausea or vomiting • Fast, weak pulse • Headache	• Rest in a cool, shaded place • Have a cool shower or bath, or apply cool, wet towels to the body • Loosen tight clothing • If fully alert, sip water or suck ice chips • Seek medical attention immediately if symptoms are severe, get worse or don't improve with treatment, or last longer than an hour
Heat stroke This is a medical emergency – call Triple Zero (000) immediately	
As per heat exhaustion, plus: • Worsening mental condition • Slurred speech, poor coordination • Seizures or losing consciousness	• Call Triple Zero (000) immediately – this is a life-threatening emergency • Follow directions of ambulance staff • Move to a cool, shaded place • Remove excess clothing • Immerse in water, spray with hose, or apply wet cloths and fan vigorously

[17] Queensland Health (2021) https://www.health.qld.gov.au/news-events/news/difference-between-heat-exhaustion-and-heatstroke-dehydration-heatwave

Appendix B: Example Heat Health Warning (English)

The Department of Health and Human Services has issued a heat health warning for <time period>.

Extreme heat can put your health and risk, so make sure you know how to keep yourself and others safe.

Many of us are vulnerable to the heat which can have adverse health impacts including heat stroke, heat exhaustion, dehydration, cramping or even death.

It is important that you are aware of your own health as the heat can make existing conditions worse, or bring on new health concerns. It is also important that you keep an eye on those around you to make sure we all stay safe.

If you need advice on heat health, call 1300 60 60 24 (NURSE ON CALL.)

How to stay cool

Plan ahead

Choose the coolest parts of the day to be outdoors. Store medicines at the recommended temperature. Check your air conditioner works and be prepared in case of a power failure.

Check on others

Extreme heat can affect anyone, but older people, young children and people with a medical condition are more vulnerable. Regularly check in on anyone who might be at risk.

Give pets plenty of water and shade

Keep cool

Avoid intense outdoor activity like hiking/walking or similar exercising, or renovating and gardening at home.

Stay out of the sun during the hottest part of the day.

When outside, dress lightly in light-coloured, loose-fitting clothing made from natural fibres like cotton and linen, wear a hat and sunscreen, and carry a bottle of water.

Block out the sun during the day by closing curtains and blinds, but open windows when there is a cool breeze.

Spend time out of the sun in cool or air-conditioned rooms in your home or rented accommodation, or in your caravan or motorhome. In the event of a power failure, consider whether you need to relocate to a community cooling space that has backup power. In the first instance, this should be the Centenary Hall. If you need help with transport to the cooling centre, call 1800 065 599.

If necessary, keep cool by using fans with wet towels, putting your feet in cool water, or taking cool (not cold) showers or baths. Cool off in your swimming pool, if you or you accommodation provider has one. If you don’t have access to a pool, consider cooling off in the community swimming pool if it is not already crowded. Utilise the shade provided when not actually in the water.

Drink more water

Always carry a water bottle and sip often. Alcohol, tea and coffee dehydrate you – water is always best.

Never leave anyone in a vehicle

Especially kids and pets. Even on a mild day, the temperature inside a parked car can be far hotter than it is outside.

Note: Warnings in other languages should also be made available in any printed materials.