



# HEATWAVE PROJECT

## *Stage one report*

**The City of Greater Bendigo will work with communities to lessen the impacts of extreme hot weather**

**January 2009**

Prepared by the City of Greater Bendigo  
For Council consultants and suppliers  
For Community and Cultural Development  
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# EXECUTIVE SUMMARY

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Extreme weather events, in particular heat and heatwaves, are a fact of life in Australia including the central region of Victoria where the City of Greater Bendigo is located.

Conservative climate change projections indicate increases in Bendigo temperatures of 1.4°C to 2.8°C by 2070. The average number of days of 35°C (Celsius) or above are projected to increase by between seven and 17 days per year (ranging up to a possible 39 days per year) and days above 40°C are expected to increase by between one and four days on average per year.

The effects of these changes are expected to have a significant impact on extreme weather events such as heatwaves resulting in increased hospital admissions and mortality rates (particularly in vulnerable groups).

Data from the last five years shows that Bendigo has an average of 2-3 periods each summer where the five-day average of maximum temperature exceeds 35°C. The five day average reached or exceeded 37.5°C twice in the 2007/08 summer. Despite being no defined local thresholds for heatwaves in the Bendigo region it is evident that heat events do occur and research indicates that the length of these heat events has increased by between 1.5 and 2.0 days over the past 50 years.

At the beginning of 2008 a successful expression of interest was made to the Department of Human Services to participate in the Victorian Climate Change Adaptation Program, Heatwave Pilot Program. The broad goal of the Bendigo Heatwave Project has been to develop local and statewide recommendations for developing awareness, adaptation capacity and preparedness for vulnerable groups living within the City of Greater Bendigo and to develop a greater understanding of the social impacts of climate change.

A Heatwave Response Officer, Robert Kretschmer, was engaged by the City of Greater Bendigo to undertake the Heatwave Pilot Project.

The project is being undertaken in three stages:

- Stage one – Understanding and Raising Awareness of Heatwaves.  
This stage focused on increasing local understanding of the social impacts and implications of increasing frequency and severity of heatwaves in the City of Greater Bendigo. City of Greater Bendigo facilitated a collaborative approach to understanding heatwaves and included a range of local agencies that have specialist knowledge about climate change, climate adaptation, large scale community education campaigns and assistance initiatives. The report on Stage one identifies the risks, probable impacts, priorities for action, community engagement and education strategies.
- Stage two – Developing an Integrated Heatwave Response.  
The second stage will be managed by the Environmental Health unit and will focus on incorporating the recommendations from Stage One into the municipal Emergency Management Plan. This stage will address preparedness, awareness, mitigation, response and recovery.
- Stage three – Implementing community awareness and education recommendations  
This stage of the project will focus on implementing the recommendations developed in this report surrounding community awareness, health, partnership development and adaptation support programs.

The Bendigo Heatwave steering group was established to oversee Stage one of the project with representation from:

- City of Greater Bendigo
- Bendigo Welfare Agencies Network
- Bendigo Neighbourhood House Network
- Primary Care Partnership
- Rural Ambulance Service
- Bendigo Health
- Bendigo Community Health
- McIvor Health Service
- Department of Human Services

The primary challenge for developing a local heatwave response is that there is no agreed definition of what a heatwave is or the threshold triggers. With no locally specific heatwave definition it is difficult to ascertain the number of heatwave events that have occurred in Bendigo in recent years or to predict the frequency of heatwaves into the future.

The general perception that extreme heat events are passive and have little impact on communities (when compared to other natural disasters) means that data such as hospital admissions where heat is the cause or a contributor can not easily be collected. It also means that little research has been undertaken into the community impacts of Heatwaves either in Australia or worldwide. As heatwaves are predominantly local or regional based events with impacts and contributing factors varying significantly from place to place work that has been done is not directly transferable.

This report outlines the processes, research, community engagement activities undertaken, including a set of recommendations in the areas of impact mitigation planning, advocacy for statewide awareness and adaptation campaigns, increasing access support, professional development and strategic planning responses.

The second and third stages of the project will be to undertake the development of a heat mitigation plan and implement identified community awareness and support programs and health planning strategies.

The Bendigo Heatwave report recommends as a key priority that definitions and trigger points are identified at a State level with input from agencies such as the Department of Human Services and the Bureau of Meteorology. The report identifies a number of urban and rural communities within the City of Greater Bendigo that are at high risk during heatwaves because they have a higher than average concentration of aged residents who, because of their socio economic disadvantage, may be particularly vulnerable to extreme climatic conditions. These communities include Long Gully, North Bendigo, Ironbark, Eaglehawk, White Hills, California Gully, West Bendigo, Raywood, Neilborough, Axedale, Heathcote and Redesdale.

Examination of demographic data and consultation with community service agencies identified the following groups that were most vulnerable during heatwaves, people who are:

- older
- have a disability or pre-existing medical condition
- experiencing social or geographical isolation
- experiencing low socioeconomic circumstances
- infants (and consequently their parents or guardians)

A survey of organisations that work with these vulnerable groups identified that very few agencies have any kind of formal heat response plan although a number employ common sense measures such as rescheduling of appointments in hot weather, adjusting carer and event schedules such as modifying catering arrangements.

An analysis of effective responses to Heatwaves was undertaken at a stakeholder forum called the “Heatwave Hotpot” in July 2008. Four key areas were identified as needing an increased focus:

- Education and awareness for vulnerable groups
- Engaging and supporting rural and isolated groups
- Alternative ways for vulnerable people to cool down
- Improving housing for vulnerable groups

Analysis of the data, information from stakeholders and discussion amongst all the agencies involved has identified some priorities for action

### ***Information***

There is a need for consistent, accessible and available awareness information. There is a wide variety of resources regarding personal care during summer and heat events that needs to be consistently promoted and made available, particularly to the identified vulnerable groups. Additionally the need for a single, local and comprehensive information resource regarding accessibility, amenities, transport, health facilities, other important infrastructure and places of respite for heatwave situations has been identified.

### ***Heatwave Trigger***

A consistent statewide system of forecasting and triggering heatwaves is essential, as is a clear warning or alert system for health service providers and the general public. An accompanying communication plan and media strategies including appropriate awareness, instruction or directive information should also be coordinated.

### ***Education for Service Providers***

There is a need to build the capacity of carers, service providers (eg. public transport operators) and health services to be able to identify and support vulnerable people during heatwaves, including providing them with appropriate information and linking them with agencies who can assist them.

### ***Engaging Isolated Residents***

Social and geographic isolation have a significant impact on vulnerability. There is a need to be able to identify, reach and communicate with people who are isolated and may require assistance during heatwaves.

### ***Improving thermo regulation of housing***

There is a need to assist and support people in low income areas (see demographics) to improve house thermo-regulation to reduce inside temperatures during heatwaves.

### ***Heatwave consideration in strategy development***

While the City of Greater Bendigo has many high-quality strategies relating to amenity, accessibility, health and wellbeing and open space there is a need for the inclusion of greater detail in policies relating to the provision of accessible shade and shelter and accessible drinking water.

The Heatwave Pilot project has been a cross City of Greater Bendigo initiative with participation by various business units including Community and Cultural Development, Environmental Policy, Environmental Health, Aged and Disability, Risk Management, and Family and Children’s Services.

The Bendigo Heatwave Project report marks the completion of the first stage of the Bendigo Heatwave Project. The City of Greater Bendigo has played a key role in coordinating community engagement activities and bringing together agencies that have not previously collaborated on heatwave related planning. This role should continue into the future as City of Greater Bendigo is ideally placed to coordinate local Heatwave responses and encourage collaboration between community service and health organisations to build community resilience and capacity to adapt to the expected increasing frequency, intensity and length of Heatwaves in the future.

The report has identified the Bendigo already has some useful strategies in place to help residents cope with heatwaves but that there is significant potential to build on existing knowledge and partnerships to develop an effective and collaborative local strategy on heatwave response.

While the City of Greater Bendigo and local agencies have demonstrated their willingness and capacity to work together on heatwave response, there is a need for other levels of government to work together to develop threshold triggers and alert systems together with a state-wide communication campaign to support local efforts. The second and third stages of the project, to begin in early 2009, will be to implement the identified recommendations and undertake the development of a heat mitigation plan



# OBJECTIVES

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The aims of the pilot project are:

- To develop an understanding of the social impacts of climate change in the Bendigo region.
- Understand the predicted changes to the Bendigo climate as a result of climate change.
- Identify gaps in community awareness.
- Develop Bendigo Heatwave strategy recommendations relating to awareness, adaptation and preparation.
- To identify the relevant stakeholders to a municipal heatwave strategy.
- Develop recommended content for the development of a municipal emergency management heatwave sub-plan.

# BACKGROUND

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Heatwaves are typically considered to be a passive threat or natural disaster, particularly when compared to the more evident destruction of floods, cyclones, fire and earthquakes. Heatwaves are the largest cause of mortality as a result of a natural hazard in Australia. A heatwave in Sydney (Australia) has been associated with 15 excess deaths per 100,000 population (M Loughnan, 2008). Despite this, the effects of heatwaves in Australia are not properly understood.

The scientific evidence for climate change is compelling (IPCC). The intensity and frequency of heatwaves and heat events are set to increase over the coming decades and century. Bendigo will be particularly vulnerable to this and therefore essential that Bendigo consider the needs of its most vulnerable community members and groups and work in collaboration with a range of service providers and agencies across our community to improve awareness, preparedness, resilience and adaptation capacity within these groups.

## Demographics

The demographic scope of the project is the City of Greater Bendigo local government area in central Victoria. The City of Greater Bendigo is a major regional centre with a population of approximately 100,000 people. The urban area of Bendigo is surrounded by a number of small towns and rural areas. Nearly 20% of the Greater Bendigo population is over the age of 60 years and the number of people of retirement age or over increased by 14% between 2001 and 2006. However the largest increases in population are in the 50–59 year age bracket which points to an increasingly number of vulnerable aged residents over the next few decades. Particular areas within the City of Greater Bendigo that are at high risk during heatwaves due to a higher than average concentration of aged residents, who may be more likely to be experience socio economic disadvantage and be particularly vulnerable to extreme climatic conditions. These communities include Long Gully, North Bendigo, Ironbark, Eaglehawk, White Hills, California Gully, West Bendigo, Raywood, Neilborough, Axedale, Heathcote and Redesdale.

## Victorian climate change adaptation program (VCCAP)

It is the Victorian Government's aim to help Victoria maximise the benefits and minimise the costs of climate change by adapting. This will require action from many areas of government. The Victorian Climate Change Adaptation Program (VCCAP) has been initiated to coordinate the adaptation work of different Government departments.

Funding is allocated to initiatives including:

- Helping Victorian communities adapt to climate change by increasing our scientific knowledge and technical expertise
- Making buildings, infrastructure and homes more adaptable to climate change.
- Understanding what climate change will mean for individual communities.
- The Government will work with local government, regional groups and other stakeholders to build local understanding of the impacts of climate change. It will keep communities informed with the most up-to-date, regionally specific information available that will help them develop local solutions.
- Assessing the potential public health impacts on Victorians arising from climate change.

VCCAP is run jointly by five departments:

- Department of Sustainability and Environment
- Department of Primary Industries
- Department of Human Services
- Department of Premier and Cabinet
- Department of Innovation, Industry and Regional Development

Heatwave pilot projects are being managed by the Department of Human Services.

## Climate change

Bendigo is located approximately 160 kilometres north of Melbourne (Victoria, Australia). Bendigo experiences warm to hot summer seasons and mild, cool winters. The Bureau of Meteorology and Victorian Department of Sustainability and Environment delivered a report into the effects of climate change and the north central region of Victoria. The report summarises predictions and climate trends for the region surrounding Bendigo.

Over the previous decade (1998–2007) the average temperatures in the region have increased by 0.3°C above the 30 year average (1961–1990). Summer and spring daily average maximum temperatures have increased by 0.7°C and days over 35°C and 40°C have increased by four and three days per year respectively on average. At the same time rainfall has decreased by 15% and Bendigo is experiencing an ongoing drought, the impacts of which are only exacerbated by increased temperatures and climate change.

Projections for mid-range carbon dioxide emissions scenarios indicate further increases in temperature in the region of 0.9°C by 2030. Projections for 2070 range from 1.4°C to 2.8°C, dependent on emissions scenarios. The average number of days of 35°C or above are projected to increase by between seven and 17 days per year (ranging up to a possible 39 days per year) by 2070. Days above 40°C are expected to increase by between one and four days on average per year.

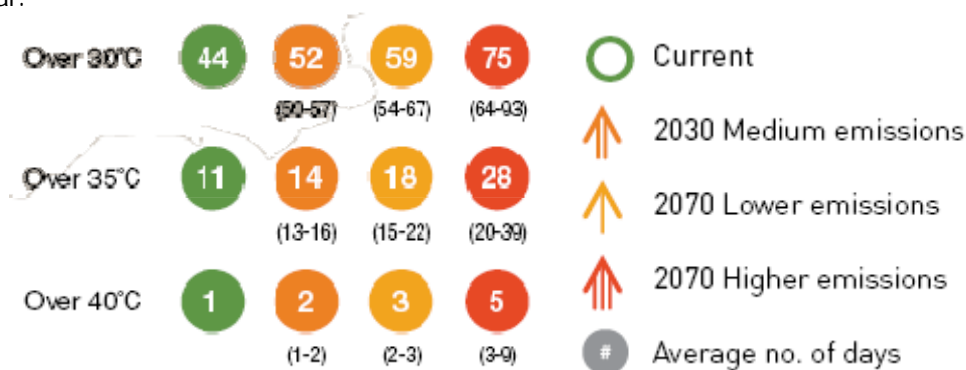


Fig 1. Projected average number of hot days for Bendigo (CSIRO and Bureau of Meteorology)

The effects of these changes are expected to have the greatest impact through extreme events such as heatwaves and heat events. Housing thermo-performance, hospital admissions and mortality during heat events (particularly in vulnerable groups) will all be affected.

The urban heat island effect is not expected to be a major factor when compared to larger cities. A very small proportion (less than 0.01%) of residents of the City of Greater Bendigo live in high density residential buildings or amongst the higher building density of the central business district. Only seven high density residences were recorded in the 2006 Census (ABS 2008).

With no locally specific definition of a heatwave for the Bendigo region it is difficult to ascertain the number of heat events that have occurred in recent years. An overview of the past five summers in Bendigo (November to March, 2003/04 to 2007/08, chart 1 below) indicates an average of 2.2 periods (0–3 per year) each summer where the five-day average of maximum temperature exceeded 35°C. The five day average reached or exceeded 37.5°C twice in the 2007/08 summer. Despite being no defined local thresholds for heatwaves in the Bendigo region it is evident that heat events do occur.

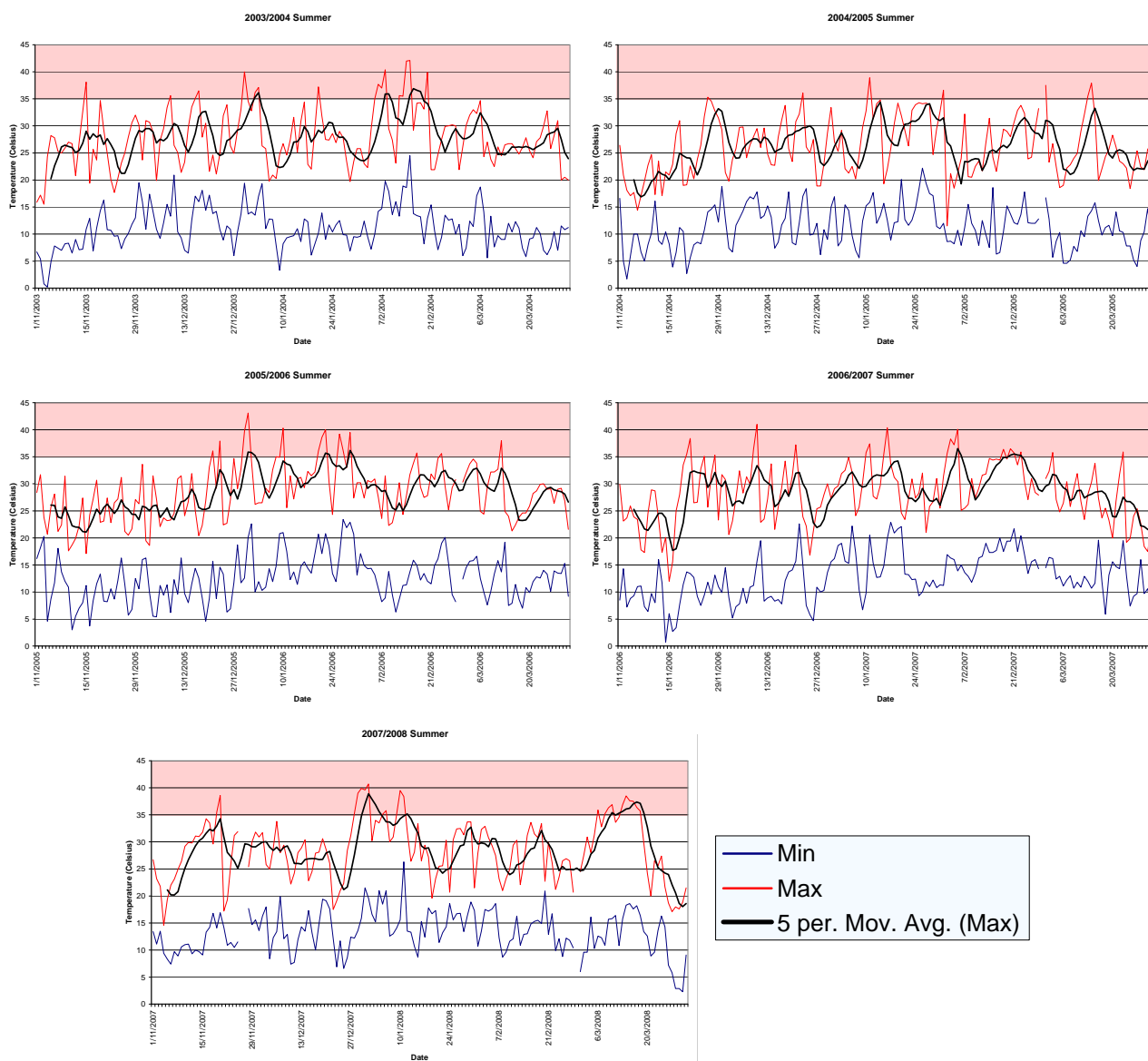


Chart 2. Summer temperature maximums 2003/04 to 2007/08 (Bureau of Meteorology)

Research indicates that heatwave run length in the Bendigo region has increased by between 1.5 and 2.0 days over the past 50 years (M. Loughnan, 2008, Tryhorn and Risbey, 2006). No hospital admissions data has been collated for the purpose of this project however research external to Bendigo demonstrates that heatwave events can be associated with increased admissions and mortality (M. Loughnan, 2008).

# WORK BREAKDOWN STRUCTURE

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The Bendigo Heatwave project was broken into three distinct stages.

- Stage one focuses on planning, research, community engagement and reporting.
- Stage two focuses on embedding identified recommendations developed during stage one into the emergency management sub-plan and awareness and adaptation strategies.
- Stage three will involve the implementation of recommendations for community awareness, education and support programs as identified in stage one.

## **Stage one – Understanding and raising awareness of Heatwaves.**

This stage focused on increasing local understanding of the social impacts and implications of increasing frequency and severity of heatwaves in the City of Greater Bendigo. City of Greater Bendigo facilitated a collaborative approach to understanding heatwaves and included a range of local agencies that have specialist knowledge about climate change, climate adaptation, large scale community education campaigns and assistance initiatives. The report on Stage one identifies the risks, probable impacts, priorities for action, community engagement and education strategies.

### **Research – Climate change**

This objective involves developing a practical understanding of climate change and the potential for increased heatwave intensity and frequency and the associated social and environmental impacts for the Bendigo area. The Bureau of Meteorology will develop threshold triggers that will inform the development of an alert system.

### **Research – Best practice**

Research will be undertaken to determine what best practice models already exist in Australia and internationally with regard to heatwave response education and emergency management planning.

### **Identify stakeholders**

The City of Greater Bendigo and the Heatwave Advisory Group worked together to identify key stakeholders and to prioritise the scope of the engagement plan and to identify sectors of the community most vulnerable to the impacts of Heatwave.

### **Service mapping and gap identification**

Structured interviews were held with a selection of stakeholders identified in 4.1.c. This process was used to explore and map services and information currently provided, perceived issues, potential networks which could be used for information distribution, what is missing and what can be done.

Community engagement activities included workshops, structured interviews and surveys and to identify areas where services are missing or ineffective, assess information provision and identify what the community needs in response to heatwaves.

The content of the structured interviews was developed by the Heatwave Coordinator in collaboration with representatives from the Heatwave Advisory Group which also included a review of existing council strategies.

### **Heat mitigation planning**

Service mapping and stakeholder analysis activities will inform the development of priorities for inclusion in a heat mitigation plan for development and implementation in stage two of the project. Implementation of stage two of the

project is to be undertaken by the City of Greater Bendigo Environmental Health and Local Laws unit in collaboration with the Municipal Emergency Management Committee.

### **Community education, awareness and community support strategy**

Results from 4.1.e will inform the development of a community information, education and community support strategy. The strategy will be developed for implementation in stage two of the project. Strategies will be developed to work with individuals, community groups and communities.

### **Stage two – Developing an integrated heatwave response.**

The second stage will be managed by the Environmental Health unit and will focus on incorporating the recommendations from Stage One into the municipal Emergency Management Plan. This stage will address preparedness, awareness, mitigation, response and recovery.

### **Stage three – Implementing community awareness, education and support programs**

This stage of the project will focus on implementing the recommendations developed in this report surrounding community awareness, health, partnership development and adaptation support programs.

# RESEARCH

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## Best practice review

A review of heatwave plans from Australia and internationally has been undertaken to inform the development of this report and the Bendigo Heatwave Plan. Plans and reports reviewed were taken from the New South Wales Central Coast, Queensland and the United Kingdom. A review of relevant City of Greater Bendigo strategy, policy and plans has also been undertaken to identify potential areas for further review and improvement.

### Heatwave plan for England (updated 2008)

This plan sets broad strategy directions for the entirety of England, United Kingdom. Considerable background information is provided and analysed. The plan defines responsibilities at national and local levels in the areas of:

- Forecasting
- Alert
- Awareness and;
- Response.

An alert system has been developed and linked into processes for direct advice to the public by working with the media and guiding local and individual planning for heatwave situations. Adaptation and mitigation planning are also covered by this document. The alert system is comprised of four tiers of alert level (green, amber, red and red emergency). The alert system includes base levels (green) of planning, awareness, and a period of summer preparedness as well as elevated levels for responding to the prediction and eventuality of heatwaves occurring. Processes for media engagement, reach out, encouragement of community connectedness, assessment of event safety and actions for care organisations. The model is consistent, clear and easy to understand.

The health benefits of and need for long term-planning is emphasised with shade, greening the built environment and responding to climate change all identified as significantly contributing to minimising the impact of heat events. The plan provides processes for identification of those at risk, defining local thresholds and regular monitoring of the implementation of the plan.

The Croydon Primary Care Trust Heatwave plan has been developed to assist with the local implementation of actions defined by the Heatwave plan for England. The document has more of a technical focus and defines local specific actions to be performed based on alert triggers set out by the national plan. Local background is limited and the processes for action appear to be overly complicated. Although this plan sits at a similar level to a Bendigo Heatwave Plan, greater local detail and communications processes would be useful.

### Queensland (Australia) Heatwave Response Plan (2004)

This document has been developed as a statewide plan for Queensland. The report clearly defines the scope, context, roles of responsibility and emergency management hierarchy. A system for defining threshold triggers is set out and feeds into the four tier alert system (white, yellow, red, green). The alert system is more complex than the English model. The system is linked in with local heatwave planning mechanisms and hospital specific heatwave responses.

A clear communication plan is incorporated into the document with draft media releases, instructions for the public and directions to school principals.

### Central Coast Heatwave Pilot Project (New South Wales, Australia)

The content of this report is similar to what might be included in the Bendigo Heatwave Plan. The report provides information regarding local background, communications strategies, monitoring and review and public education and

awareness strategies. Emphasis is placed on consistency of warning systems, public awareness, communication, response, planning, monitoring and evaluation. Draft media releases for weather advice are included as well as suitable awareness materials.

## **Review of existing council policy context**

The City of Greater Bendigo currently has a number of related roles, projects and strategies either currently operating, under development or review relating to climate change, vulnerable communities, health and community development.

A network group within the City of Greater Bendigo has recently been formed to ensure consistency in programs, strategies and funding applications related to climate change. The focus of these projects range from mitigation, off-setting and avoidance of emissions, impact reduction and adaptation.

### ***Related projects and strategies***

While there are direct references actions relating to climate change in City of Greater Bendigo strategies there is the potential for inclusion of focused heat related actions and climate change adaptation responses. Existing strategies and plans that are related to the Heatwave project are listed below.

- Open spaces strategy 2005
- Health and wellbeing strategy 2008
- Bendigo +25 community plan
  - Welcoming place action group
  - Healthy living action group
  - Transport action group
- Natural environment strategy
- Council directions
- Pandemic strategy
- Drought response strategy
- B-Line – Getting around Bendigo and Loddon (Transport Connections)
- Play space strategy
- Central Business District Plan 2005
- Greater Bendigo Planning Scheme

### **Health and Wellbeing Plan (incorporating Municipal Early Years Plan)**

The 2008 Health and Wellbeing Strategy fulfills the role of the Municipal Health Plan and incorporates the Municipal Early Years Plan. The strategy is built around principles of livability, social justice, health and amenity and the role of the City of Greater Bendigo. A number of identified challenges are of particular relevance to the Heatwave project including social gradient, social support, social exclusion and health status. Actions that aim to address these challenges are included in the document including the implementation of the heatwave strategy to build community capacity for adapting to climate change.

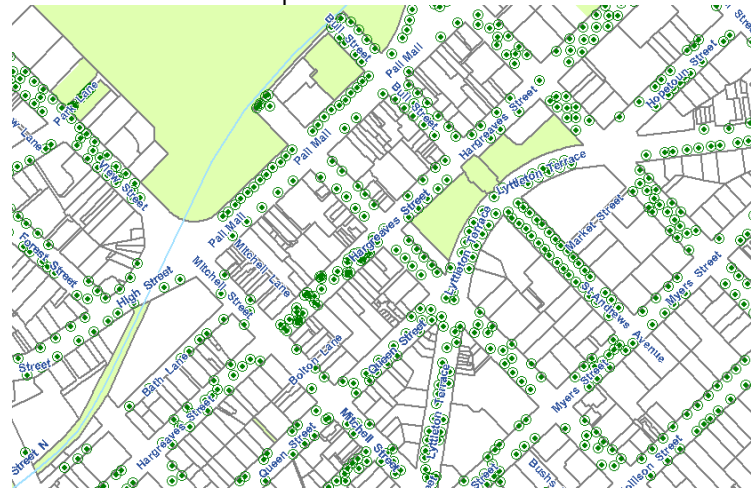
### **Open space and Natural Environment Strategies**

The main focus of the Open Spaces and Natural Environment strategies are consistency in environmental programs and responding to climate change. Programs for environmental responsibility, promoting more active lifestyle and a

hierarchy for parks and programs for revegetation has been developed. Whilst amenities and accessibility for parks and other public open spaces are discussed there is a need for more detail in this area, particularly with reference to the provision of shade.

## Urban planning

The City of Greater Bendigo is considered a leader amongst Australian cities, particularly with regard to urban planning. The Central Business District Plan 2005 (CBD Plan) has been received a number of national awards for amenity and innovation in the CBD. This has included significant capital works in creating more accessible footpaths and placing 12km of above ground power lines underground. The underground power lines when combined with a deciduous tree planting program (started in the early 1990s) and the design and development overlay (DD05 in the Greater Bendigo Planning Scheme has contributed to a significant heat respite benefit through the creation of considerable areas of natural shade and weather protection.



Map 3. Street trees, Bendigo central business district



Images 4. Street trees, View Street before and after capital works and tree plantings 1992 (left) and 2008 (right)

An upcoming review of the Greater Bendigo Planning Scheme Municipal Strategic Statement provides an opportunity to embed principles of shade provision and heat respite into the Greater Bendigo Planning Scheme.

## Play space strategy

The play space strategy is in draft form at the time of completion of this report. The strategy includes a review of play spaces in the City of Greater Bendigo including a review of spatial distribution of play spaces and catalogues the provision of shade and amenities in 115 play areas in Greater Bendigo and provides recommendations for maintenance, improvement and rationalisation of play spaces. The appendices of the strategy include a series of design guidelines including recommendations for provision of shade, shelter, drinking water and amenities.

## Identification of vulnerable groups

Having undertaken a demographic review (see 2 demographics) and by working with the Heatwave Advisory Group the following groups were identified as the focus for community engagement. These groups have been selected for reasons of vulnerability, ability and access to resources for preparation adaptation to climate change and heatwaves. The selected vulnerable groups for the focus of this project are people who are:

- older
- have a disability or pre-existing medical condition
- experiencing social or geographical isolation
- experiencing low socioeconomic circumstances
- infants (and consequently their parents or guardians)

# COMMUNITY ENGAGEMENT

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Community engagement processes were developed based on the Effective Community Engagement model developed by the Department for Sustainability and Environment. This process involved the establishment of a Heatwave Advisory Group, stakeholder identification and analysis processes. A community engagement plan was developed with specific strategies and tools targeted to each stakeholder group. Information gained from engagement processes were then used to identify gaps and opportunities to recommend responses.

The objective of the engagement process was to perform a gap analysis and to identify opportunities for resources, emergency management, services and communication. A process was developed to facilitate the gap analysis by identifying and assessing the “four p’s” – Positives (what works well), Problems (what doesn’t work so well), Priorities (what is most important) and Possibilities (what can be done). The information collated during community engagement processes were then used to develop responses and recommendations.

## Heatwave advisory group

The Bendigo Heatwave group was assembled as a body to advise on the development and implementation of the Bendigo Heatwave Project. Membership on the group was based on interactions with health service, community service and welfare organisations during the expression of interest process of establishing the project. Organisations identified as having an interest or key role in the development of the project were approached by the City of Greater Bendigo and invited to participate as a member of the advisory group.

Once the project was established these organisations were invited to participate as a member of the Heatwave Advisory Group. Agencies invited to participate included

- City of Greater Bendigo
- Bendigo Welfare Agencies Network
- Bendigo Neighbourhood House Network
- Primary Care Partnership
- Victoria Police
- Rural Ambulance Service
- Bendigo Health
- Bendigo Community Health
- McIvor Health Service
- Department of Human Services

The function of the group was advisory with a number of members participating in community engagement processes or contributing to the development of community engagement plans and developing recommendations. The group met three times throughout the project. Some of the agencies invited to participate were unable to attend all or some of the meetings due to resourcing and other priorities. It is recommended that future projects clearly define the role of the group during the early stages of the project and develop support structures within the group.

The make up of the group may have benefited from more direct community representation from the disability, aged, cultural and linguistically diverse and social and geographical isolation communities.

## Stakeholder Analysis

Stakeholders were identified in collaboration with members of the Heatwave Advisory group and interactions with member networks. Each identified stakeholder or group was categorised based on their level of stake, resources and influence in the project and the implementation of objectives.

High stake, high resources/influence	High stake, low resources/influence	Low stake, high resources/influence	Low stake, low resources/influence
<b>Health, disability, aged</b>			
<ul style="list-style-type: none"> <li>– Loddon Mallee Primary Care Partnership</li> <li>– City of Greater Bendigo Aged and Disability Services</li> <li>– Bendigo Community Health Service</li> </ul>	<ul style="list-style-type: none"> <li>– Returned Services League</li> <li>– Peter Harcourt Services (disability)</li> <li>– Scope disability services</li> <li>– Arts for Health project</li> <li>– Red Cross</li> </ul>		
<b>Government and other</b>			
<ul style="list-style-type: none"> <li>– City of Greater Bendigo, Risk Management Unit</li> <li>– Municipal Emergency Management Planning Committee</li> </ul>	<ul style="list-style-type: none"> <li>– Heatwave advisory group</li> <li>– General Community</li> </ul>	<ul style="list-style-type: none"> <li>– Department for Human Services</li> <li>– City of Greater Bendigo Asset, Planning and Design</li> <li>– Bendigo Sustainability Group</li> <li>– City of Greater Bendigo Strategy Unit</li> <li>– Department for Planning and Community Development</li> <li>– City of Greater Bendigo Councilors</li> </ul>	<ul style="list-style-type: none"> <li>– Drought network</li> <li>– TravelSmart</li> <li>– Summer in the Parks</li> <li>– Safe Cities Forum</li> <li>– Goldfields Library</li> <li>– Rural Ambulance Service</li> <li>– Thermo-regulation auditors</li> </ul>

High stake, high resources/influence	High stake, low resources/influence	Low stake, high resources/influence	Low stake, low resources/influence
<b>Socially and geographically isolated</b>			
	<ul style="list-style-type: none"> <li>– Rural Access Program</li> <li>– St Lukes</li> <li>– City of Greater Bendigo Transport Connections project</li> <li>– Access employment</li> <li>– Neighbourhood renewal project</li> <li>– Neighbourhood houses</li> <li>– Loddon Mallee Housing Service</li> <li>– Bendigo Welfare Agencies Network</li> <li>– Cultural and Linguistically Diverse community (CALD)</li> <li>– Charitable organisations</li> <li>– Small township residents</li> </ul>		–
<b>Infants, parents and youth</b>			
–	– City of Greater Bendigo Children & Family Services		City of Greater Bendigo Youth Services

Table 5. Stakeholder analysis

## Community engagement response

The analysis of stakeholders as summarised above was used to determine the form and participation of stakeholders in community engagement activities to be undertaken. Stakeholders categorised as high stake, high resources were identified as requiring a high level community engagement participation focus. High stake, low resources groups were identified as being groups that are often marginalised and requiring focused efforts for engagement. These groups were selected for consultation and involvement in developing solutions. Low stake groups were identified as not being immediately involved but requiring information as the project developed. Having identified the level of engagement and participation for each stakeholder group, appropriate engagement tools were identified, selected and applied in the gap analysis processes to follow. The community engagement tools applied include structured interviews, a survey, meetings, a community forum and focus groups. Within these tools a number of additional engagement tools were used.

Stakeholder	Level of engagement/participation	Tool/method
High stake, high resources	Inform, consult and participate	Meetings, interview, forum, survey
High stake, low resources	Consult and involve	Interviews, focus groups, hotpot invitation, survey
Low stake, high resources	Inform and consult	forum invitation, survey
Low stake, low resources	Consult	Survey, forum invitation

Table 6. Stakeholder participation levels and community engagement tools

## Community engagement tools

### Survey

A survey was undertaken (see attachment) amongst organisations who work with groups identified as vulnerable to heatwaves to identify potential areas for investigation and guide community engagement processes. The survey was responded to by 23 groups of which only two indicated having some kind of formalised plan responding to heatwaves.

The survey was released twice, the first a longer, more detailed version, the second a shorter follow up aimed at achieving a higher return rate. The structure and the content of the surveys was consistent and as such the collation of responses could be combined.

There was a consistent proportion of responses from all of the identified vulnerable groups apart from the culturally and linguistically diverse community (CALD). The other groups including disability, aged, social and geographical isolation and low income were all represented by greater than 25% of the responses. The low response rate from the CALD community may possibly identify a gap in the networks attached to the Heatwave Advisory group or simply reflect the smaller proportion of CALD groups in Bendigo.

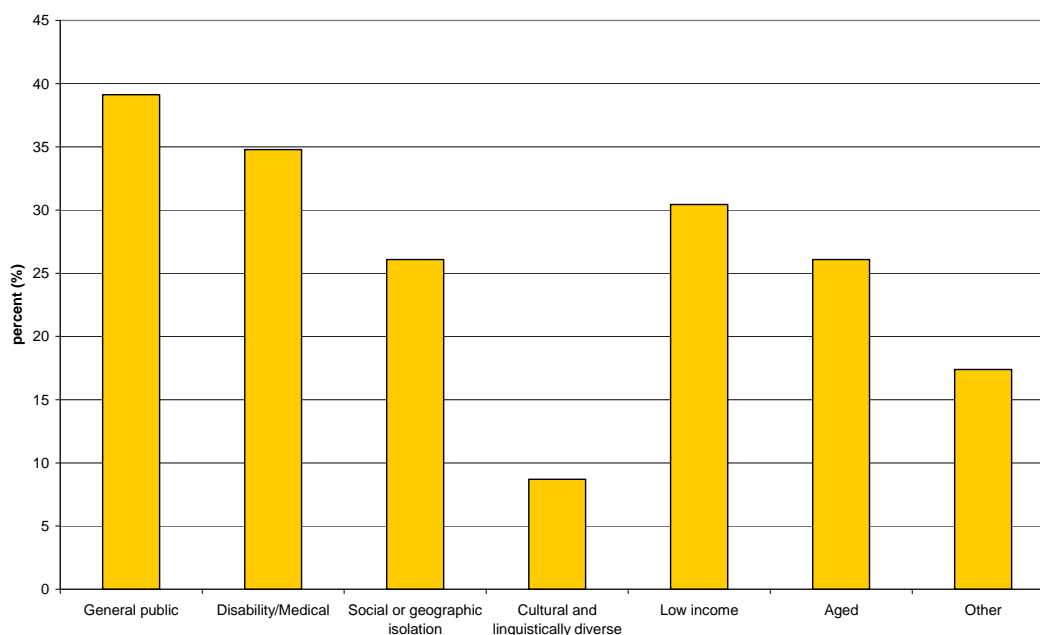


Chart 7. Survey: Client groups

The remainder of the survey questions were aimed to identify existing and missing programs, services and information resources as part of a gap and needs analysis. Respondents were asked to identify whether their organisation had a specific heat plan and whether the organisation undertook any community awareness or education programs with regards to summer heat or related areas. A relatively small proportion of organisations had some kind of heat response plan or strategy. In most of these cases this constituted informal strategies or strategies that existed as part of a larger response or general client care processes that occur on an ongoing basis such as rescheduling of appointments in hot weather, adjusting carer and event schedules such as modifying catering. A greater proportion of respondents, 26%, indicated that their organisation does perform some kind of additional role in

heat awareness such as informal discussion groups with parents of young children at play groups, hospital response plans, and work environment occupational health and safety responses.

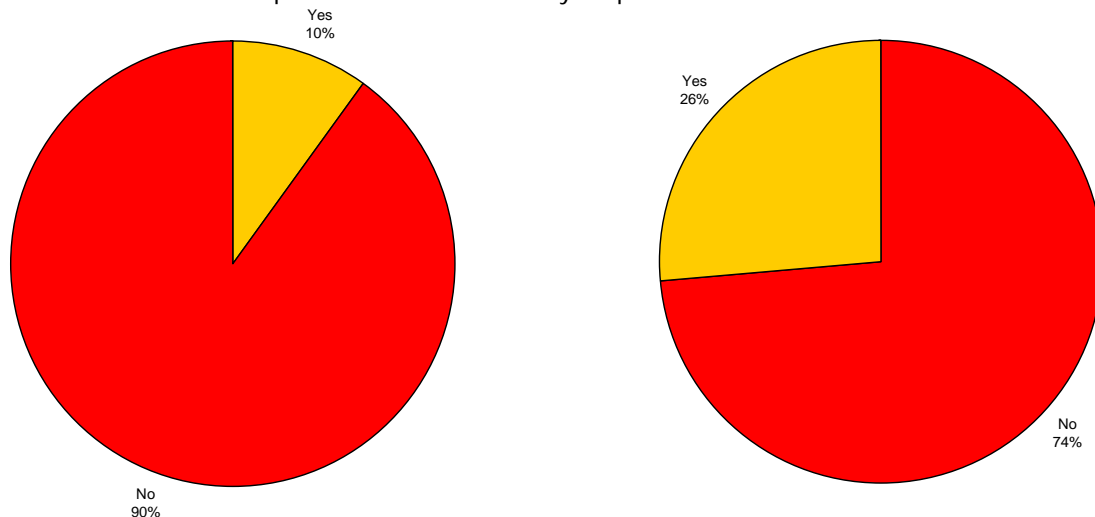


Chart 8. Survey: Organisations with a heat strategy and (second chart) heat related awareness activities Respondents were asked to identify what sort of education or awareness campaigns are needed for vulnerable groups and how they should be targeted to such groups. Possibilities suggested included informal information sessions, SunSmart style policies and procedures, resources for volunteers, identifying vulnerability, cool places, ultraviolet training, community connectedness, information for personal planning, care for animals and coping techniques.

## Structured interviews

Structured interviews were undertaken with representatives from a selection of organisations whose clients fall under the groups identified as having a high stake in the project and its outcomes as determined in the stakeholder analysis process. Interviewees were provided with an overview of the project. Discussion (see attachment for sample questions) focused on the treatment of heatwaves in the organisation, identifying existing responses, gaps, and networks for communications.

None of the interviewed organisations had a formal heatwave strategy in place or were developing such a strategy. Little or no measuring was occurring into the impact of heat waves or heat events except in health services where heat was generally not recorded as a primary factor in admissions. Interviews opened new avenues for investigation including shade quality in parks, accessibility information and accessible presentation of information as well as the need for training for customer service and transport operators working with people with disabilities. Opportunities for improved awareness information and access included short, on-site information sessions

A number of already existing positives were identified including a collaborative project between neighbourhood houses aimed at developing capacity in the community to prepare and adapt for climate change. A number of existing heatwave relevant awareness campaigns were identified. The effectiveness of campaigns like SunSmart, useful networks for distribution of awareness materials with common priorities identified included awareness, prevention, behaviour change and accessibility were also identified. Possibilities discussed for responding to the increased likelihood and intensity of heatwaves include:

- The development of a Health, Wellbeing and Access map for the City of Greater Bendigo similar to the recently released TravelSmart Map
- Auditing shade and shelter quality in Bendigo parks and open spaces and at bus stops
- Training for direct care and customer service staff in identifying heat related risk and working with people with a communication disability
- Investigating the development of a system for assisted adaptation through home thermo-regulation audits and supported implementation of remedies

- Trialing personal heatwave planning processes in direct care areas
- Short information sessions at the start of summer providing basic self-care and cooling techniques
- Making use of existing communication networks

Organisation/ Interviewee	Stakeholder group	Heat Strategy?	Positives	Problems	Possibilities	Awareness
Scope	Disability	No	Lake Weeroona SunSmart	Accessible toilet facilities Shaded areas in CBD Shade at bus stops View St shelter and access to water Park shade and shelter, not enough room for wheelchair Crusoe reservoir Park 7 Crook Street Kennington reservoir	Amenities/respite room Personal planning Organisation/building response plan Accessible drinking water in shops Awareness programs/information at Library	Always travel with drinking water Combining with SunSmart Health and Wellbeing Map
Access Employment (Eco-living centre)	Low income	No			Environment festival in March	March festival stall Point of access for materials
RSL Bendigo	Aged Disability Medical Low income	No	60 Volunteers Weekly day club Men's shed' for all members Newsletter, distribution 3,500 Monthly membership meetings	1000 members, 700-800 between 75-85 years old Mobility restriction Stress on volunteers Conditioning/tradition and change Partner carer couples	Investigating bus purchase	Health and Wellbeing Map Short (15 min) information sessions at start of summer
Peter Harcourt Services	Disability	No	Shutdown thresholds Some programs in place	Water availability in work places Information accessibility Paving, footpath amenities Opening a new site Transport	Personal planning/checklist	Training for customer service/public transport operators Health and Wellbeing Map Easy to understand information
Loddon Mallee Housing Service	Aged Disability Medical	No		Caravan parks Event management Access to water		Easy ways to cool down Personal planning with out-reach
COGB Child services	Low income General community Other, parents	No	Information booklet Existing awareness material		Pool availability and affordability Clarifying messages	Pre-prepared campaign materials with direct care staff Health and Wellbeing Map Identifying cool spots

Organisation/ Interviewee	Stakeholder group	Heat Strategy?	Positives	Problems	Possibilities	Awareness
St Lukes NILS	of young children					
Bendigo Health	Medical	No	Code brown response exists for disaster Community preparedness systems work well Hospital attempting to minimise need to admit, treatment at home	Staff ratios  Community support system  Identifying vulnerable groups Physically active people No campaigns Pre-existing conditions	Checking on vulnerable  Warning systems	Quicker cooling mechanisms  Community cooling
COGB Disability and Aged Services	Aged  Disability		Out-reach services Assessment processes		Home auditing  Carer/food delivery home checklist Home Out-reach in hot weather	Health and wellbeing map
Energy auditors	General Community	-			Thermo-regulation audits adapted from full audit Support neighbourhood house program	

Table 9. Summary of interview responses

## Forum – Heatwave Hotpot Forum

Stakeholder analysis processes identified the need for a broad engagement process for stakeholders with a high stake in the project and its outcomes. Low stake groups were also invited to attend. A community forum was arranged in order to reach the broad cross section of groups identified within this category. The objective of the forum was to educate stakeholders about the social impacts of heatwaves and climate change and to identify existing measures, gaps, priorities and to begin developing responses. The forum was held in July, one of the colder months of the year for central Victoria, and was to cover a wide range of topics. As such, the concept of the 'Heatwave hotpot' was developed to present the forum in a manner that would be engaging to the target groups. An engaging and dynamic graphic design style was created to develop a brand for the forum and the project. A partnership was developed with the Wodonga Heatwave Project to deliver a 'Heatwave Hotpot' forum in each of the cities.

In order to meet the objectives of the forum a consistent diversity of community representation was required. Target stakeholder groups were identified such as disability support organisations, small township planning associations, health services and family services and invited directly to attend the forum. This was supported by electronic mail outs to the broader networks of the Heatwave Advisory Group and City of Greater Bendigo staff, themed advertisements placed in the Bendigo Advertiser newspaper in the lead up to the forum, media releases and media interaction through local radio and newspaper reporting. The forum was an

all day event with a catered, hot soup lunch provided for participants to link in with the hotpot theme. A number of tools were developed to achieve the community engagement outcomes identified above including presentations, individual and group brainstorming, prioritisation, risk assessment and a world café process.



### Attendance and stakeholder representation

The promotion and direct invitation of stakeholders was particularly successful. The project targeted and attendance of 50 participants on the day, this was more than achieved. An assessment of the distribution of attendees across the categories of vulnerability was undertaken in the form of an arrival 'who are we' exercise where attendees were asked to register and identify the target group they were representing on a chart. The diversity of representation was very good. All vulnerable groups identified were sufficiently represented on each table group at the forum providing the greatest opportunity for balanced discussion. This ensured exposure to a range of experience and perspectives across the forum.

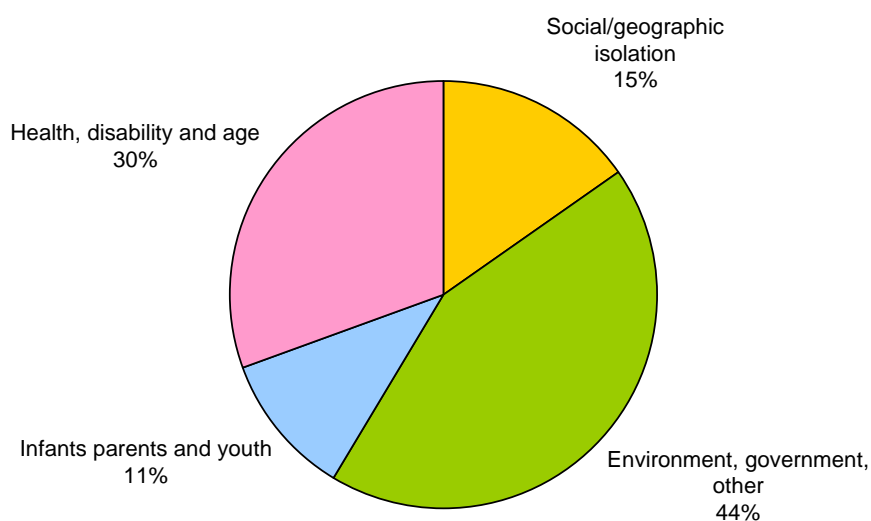


Chart 10. Heatwave Hotpot forum – attendance by community sector

## **Presentations**

Presentations were made by Dr Margaret Loughnan from the School of Geography and Environmental Science Monash University presented research findings regarding meteorological trends, impact on human health, learnings from previous heat events around the world and developing an adaptation baseline. Judy McInnes of the School of Public Health and Preventive Medicine Monash University presented research findings regarding the awareness of health professionals and carers of the health risks to the elderly from extreme hot weather. Julie Hoy, Manager Community Health Risk, Department of Human Services presented information regarding the health impacts of climate change with particulars on Bureau of Meteorology and CSIRO modeling of climate change affects on the Bendigo region.

## **Community engagement activity: Positives/what have we got?**

A process of individual brainstorming and expanding this to tables working as a group was undertaken to identify existing actions, programs, campaigns and services that related to heat events in the Bendigo area. The content gathered in this process was then collated as part of the gap analysis process in combination with the following exercises. Groups worked well to produce a diverse range of existing activities and resources. There was a particular focus on related awareness and education campaigns, existing networks, community experience and connectedness, similar public education campaigns such as SunSmart and fire awareness and common sense responses in general.

The list generated by tables provides an overview of existing resources, campaigns, experience and programs. Many of the items general community connection and interaction and indicate that there are already well functioning community networks and awareness campaigns that can be built upon. There is a significant emphasis on education indicating that although heatwaves are impossible to counter that being informed and part of a connected community is essential to maintaining wellbeing for vulnerable groups in our community. This demonstrates that there are already significant related resources and activities that are occurring that may be connected into.



<b>Table 1</b>	<b>Table 2</b>
<ul style="list-style-type: none"> <li>– Being part of group support networks (community awareness of individuals) <ul style="list-style-type: none"> <li>○ CALD</li> <li>○ Elderly</li> </ul> </li> <li>– Common sense/awareness</li> <li>– Government recognizing need for education</li> <li>– Use of media to advise general community eg. Bushfire season</li> <li>– Other risk management <ul style="list-style-type: none"> <li>○ Schools</li> <li>○ Events</li> <li>○ Community gatherings</li> </ul> </li> <li>– Heatwave officer position</li> </ul>	<ul style="list-style-type: none"> <li>– Education/advice <ul style="list-style-type: none"> <li>○ Carers</li> <li>○ Mothers</li> <li>○ Fathers</li> </ul> </li> <li>– Monitoring of families/vulnerable children</li> <li>– Links and contact vulnerable groups <ul style="list-style-type: none"> <li>○ Formal</li> <li>○ Informal</li> </ul> </li> <li>– Do work (cooking, cleaning) before hot, out of heat</li> <li>– Eat less, drink more, no meat (food that heats you up)</li> <li>– Public space design <ul style="list-style-type: none"> <li>○ Shade</li> <li>○ Shelter</li> <li>○ Greenery</li> </ul> </li> <li>– Media/public announcements <ul style="list-style-type: none"> <li>○ Ambulance</li> <li>○ ABC</li> </ul> </li> <li>– Drought experience</li> </ul>
<i>Emphasis: Awareness, community networks and risk management</i>	<i>Emphasis: Outreach, awareness and communication</i>

<p><b>Table 3</b></p>	<p><b>Table 6</b></p>
<ul style="list-style-type: none"> <li>- Enviro designed buildings and landscape</li> <li>- Water re-use <ul style="list-style-type: none"> <li>o Feature</li> <li>o Fountains</li> <li>o Biodegradable products</li> </ul> </li> <li>- Communal awareness and alertness – “know your neighbours”</li> <li>- Build and fund support networks</li> <li>- Educate and inform <ul style="list-style-type: none"> <li>o Baptist care</li> <li>o Young mothers</li> <li>o Primary schools</li> <li>o Maintenance</li> <li>o Efficient operation</li> </ul> </li> <li>- Calendar checklist – air con</li> <li>- Radio press alerts</li> <li>- CFA Workshops</li> </ul>	<ul style="list-style-type: none"> <li>- SunSmart policy <ul style="list-style-type: none"> <li>o Hats</li> <li>o Alter timetabling</li> <li>o Water</li> <li>o Shade structures (playgrounds)</li> </ul> </li> <li>- Clothing policy</li> <li>- Access to free water in summer events</li> <li>- Shuttle buses to pools</li> <li>- Professional education – Council staff</li> <li>- Street tree policy</li> <li>- Public education campaigns eg. Pets, children in vehicles</li> <li>- Installation of solar powered air conditioners</li> <li>- Energy audits, low income housing</li> </ul>
<p><i>Emphasis: Awareness and policy</i></p>	<p><i>Emphasis: Awareness, accessible cooling and planning</i></p>
<p><b>Table 4</b></p>	
<ul style="list-style-type: none"> <li>- Slip slop slap style campaign</li> <li>- Promoting behaviour change eg. Minimise artificial heating, cooling, blinds, wear clothes</li> <li>- Provision and use of community facilities eg. Swimming pools, green spaces and parks</li> <li>- Childrens and HACC service networks (provision of advice and services)</li> <li>- Solar energy rebates</li> <li>- Strong community networks</li> <li>- Keeping communication messages in simple, clear and concise language (plain language)</li> </ul>	
<p><i>Emphasis: Awareness and community networks</i></p>	

Table 11. Bendigo Heatwave Hotpot Forum: What have we got? Exercise results

<b>Information, awareness and experience</b>	<b>Programs and funding</b>	<b>Partnerships and networks</b>
<ul style="list-style-type: none"> <li>– Slip slop slap style campaign</li> <li>– Promoting behaviour change eg. Minimise artificial heating, cooling, blinds, wear clothes</li> <li>– Keeping communication messages in simple, clear and concise language (plain language)</li> <li>– Communal awareness and alertness – “know your neighbours”</li> <li>– Educate and inform <ul style="list-style-type: none"> <li>o Baptist care</li> <li>o Young mothers</li> <li>o Primary schools</li> <li>o Maintenance</li> <li>o Efficient operation</li> </ul> </li> <li>– Education/advice <ul style="list-style-type: none"> <li>o Carers</li> <li>o Mothers</li> <li>o Fathers</li> </ul> </li> <li>– Calendar checklist – air con</li> <li>– Drought experience</li> <li>– Common sense/awareness</li> <li>– SunSmart policy <ul style="list-style-type: none"> <li>o Hats</li> <li>o Alter timetabling</li> <li>o Water</li> <li>o Shade structures (playgrounds)</li> </ul> </li> <li>– Professional education – Council staff</li> <li>– Public education campaigns eg. Pets, children in vehicles</li> </ul>	<ul style="list-style-type: none"> <li>– Creative health promotion</li> <li>– Community awareness programs/COGB policy</li> <li>– Capacity building</li> <li>– Revegetation programs</li> <li>– TravelSmart</li> <li>– Heatwave relief funds</li> <li>– Government commitment</li> <li>– Training</li> <li>– Children’s and HACC service networks (provision of advice and services)</li> <li>– Water re-use <ul style="list-style-type: none"> <li>o Feature</li> <li>o Fountains</li> <li>o Biodegradable products</li> </ul> </li> <li>– Other risk management <ul style="list-style-type: none"> <li>o Schools</li> <li>o Events</li> <li>o Community gatherings</li> </ul> </li> <li>– Shuttle buses to pools</li> <li>– Energy audits, low income housing</li> <li>– Solar energy rebates</li> <li>– Heatwave officer position</li> <li>– Installation of solar powered air conditioners</li> </ul>	<ul style="list-style-type: none"> <li>– Partnership approach with range of sectors</li> <li>– COGB Aged and Disability services well organised, well resourced?</li> <li>– General community networks</li> <li>– Neighborhood houses</li> <li>– Strong community networks</li> <li>– Build and fund support networks</li> <li>– Radio press alerts</li> <li>– CFA Workshops</li> <li>– Monitoring of families/vulnerable children</li> <li>– Links and contact vulnerable groups <ul style="list-style-type: none"> <li>o Formal</li> <li>o Informal</li> </ul> </li> <li>– Media/public announcements <ul style="list-style-type: none"> <li>o Ambulance</li> <li>o ABC</li> </ul> </li> <li>– Being part of group support networks (community awareness of individuals) <ul style="list-style-type: none"> <li>o CALD</li> <li>o Elderly</li> </ul> </li> <li>– Government recognizing need for education</li> <li>– Use of media to advise general community eg. Bushfire season</li> </ul>

<b><i>Policy</i></b>	<b><i>Public space</i></b>	<b><i>Other</i></b>
<ul style="list-style-type: none"> <li>- Enviro designed buildings and landscape</li> <li>- Water re-use</li> <li>- Public space design <ul style="list-style-type: none"> <li>o Shade</li> <li>o Shelter</li> <li>o Greenery</li> </ul> </li> <li>- Clothing policy</li> <li>- Access to free water in summer events</li> <li>- Street tree policy</li> </ul>	<ul style="list-style-type: none"> <li>- Open space</li> <li>- Walk Bendigo</li> <li>- Public swimming pools</li> <li>- Provision and use of community facilities eg. Swimming pools, green spaces and parks</li> </ul>	<ul style="list-style-type: none"> <li>- Do work (cooking, cleaning) before hot, out of heat</li> <li>- Eat less, drink more, no meat (food that heats you up)</li> </ul>

Table 12. Bendigo Heatwave Hotpot Forum: What have we got? Exercise results, categorised

### Community engagement activity: Identifying gaps, prioritising and assessing risk

Having worked to identify activities and resources that already exist relating to heatwaves tables this was followed up with a table brainstorming process to identify gaps or areas for improvement or development of a response. Additionally tables were asked to prioritise the produced list and perform a risk assessment on the items identified as highest priority.

Prioritisation by the tables allowed for the selection of issues for solutions development. A risk assessment process performed by the groups provided further detail regarding the importance of each area of issue. Combining the risk assessment issues by category and placing them on the risk assessment matrix creates a clear and concise picture of priorities as determined by the participants.

Issues regarding health and isolation were deemed to have a high likelihood and high impact. Other areas of interest that will be pursued by the project include housing quality, coordination and knowledge and awareness. Whilst housing is beyond the resources of the project there are aspects of awareness and capacity building that may be able to improve the thermo-resilience of vulnerable housing. Further work and focused interactions with stakeholders have identified awareness and information to be a high priority also.

The determination of risk is an important factor in the selection of key areas of focus for the development of a Heat Mitigation Plan.

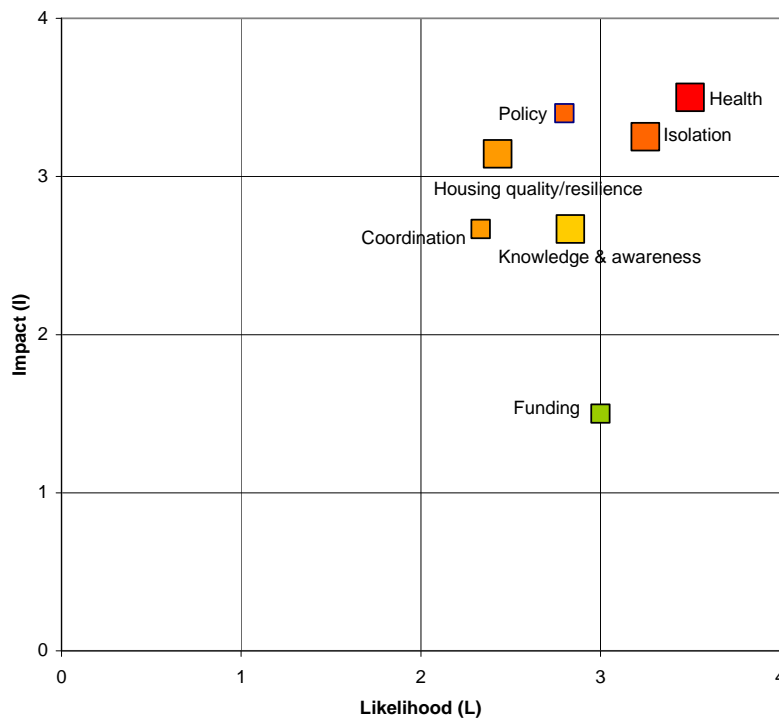


Chart 13. Risk assessment process, prioritisation

Based on the gaps identified on the day, the following four categories were identified as being of significant priority and suitable for further investigation by attendees in groups.

Education and awareness for vulnerable groups

Reaching and supporting rural and isolated groups

Alternative ways for vulnerable people to cool down

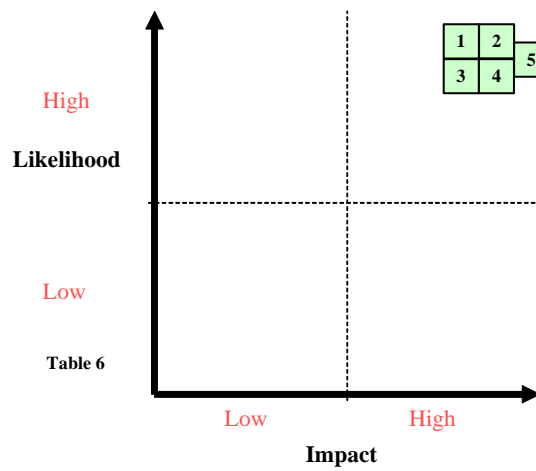
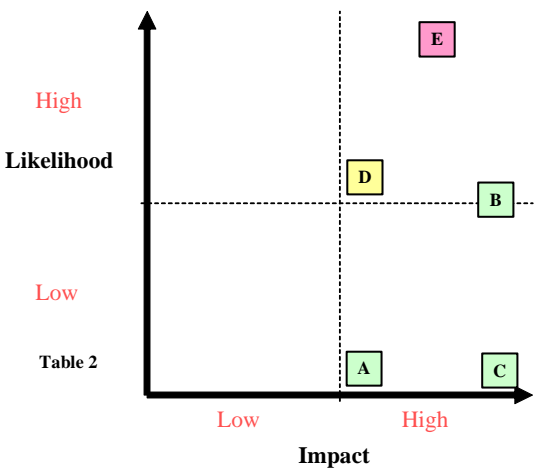
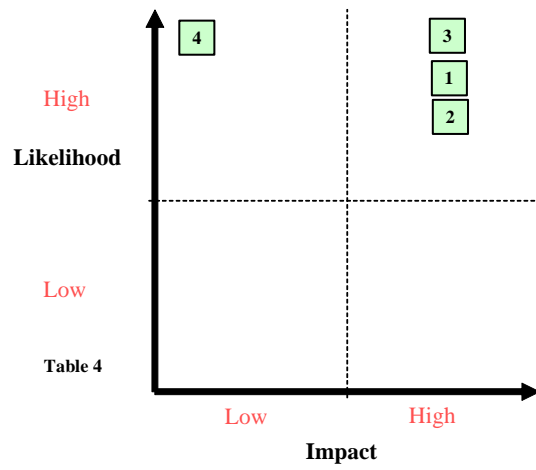
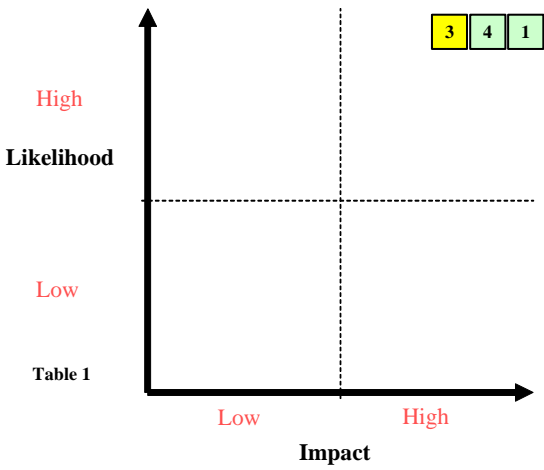
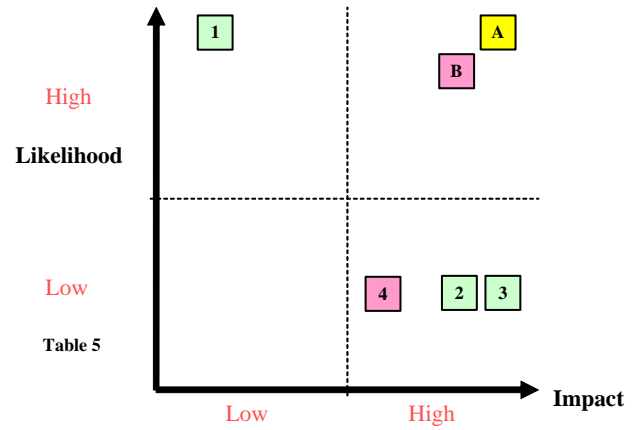
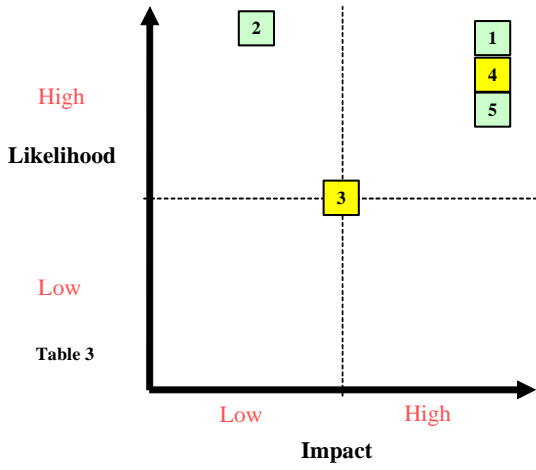
Improving housing for vulnerable groups

The areas for investigation above were adjusted to ensure the focus was on addressing issues for vulnerable groups. The results were used to further inform the interview process and guide decision making in the identification of priorities and recommendations for awareness and the Bendigo Heatwave Plan.

<b>What is missing? – Table 3</b>	<b>What is missing? – Table 5</b>
<ul style="list-style-type: none"> <li>– <b>1 (Addressing) Energy over use</b> <ul style="list-style-type: none"> <li>○ Aircon dependence</li> <li>○ Time management of appliances = solution</li> <li>○ Get back to basics</li> </ul> </li> <li>– Shade provided by vegetation</li> <li>– <b>3 (Addressing) Isolation due to lower availability of public transport, especially in rural areas</b></li> <li>– Accessible access to reasonable essential services</li> <li>– Costs of water and power</li> <li>– <b>4 Practical support to rural communities</b> <ul style="list-style-type: none"> <li>○ Stock/domestic</li> <li>○ Irrigation</li> </ul> </li> <li>– <b>2 Ongoing structured funding to sustain programs and keep momentum</b></li> <li>– Low cost swimming pools</li> <li>– Ability to psychologically “feel good” <ul style="list-style-type: none"> <li>○ Supported with design</li> <li>○ Mini green</li> <li>○ Mini water/wet</li> <li>○ Mini social spaces</li> <li>○ For where we live now</li> <li>○ Personal choice to feel better</li> </ul> </li> <li>– 5 Enforced design codes public and private</li> </ul>	<ul style="list-style-type: none"> <li>– <b>4 Behaviour change</b> <ul style="list-style-type: none"> <li>○ Health benefits</li> </ul> </li> <li>– <b>3 Building design and planning</b></li> <li>– Drinking fountains</li> <li>– <b>5 Better cooling systems (too cold in many buildings)</b> <ul style="list-style-type: none"> <li>○ Temperature guidelines</li> <li>○ Energy efficiency</li> </ul> </li> <li>– <b>2 Better shade – public, homes</b> <ul style="list-style-type: none"> <li>○ Shelter sheds</li> <li>○ Trees</li> <li>○ Bus shelters</li> </ul> </li> <li>– Information – what, who <ul style="list-style-type: none"> <li>○ Young people, alcohol</li> <li>○ Impact heat</li> <li>○ Personal actions</li> </ul> </li> <li>– <b>1 How information, knowledge is transferred</b></li> <li>– What behaviour <ul style="list-style-type: none"> <li>○ Older people → young</li> <li>○ Adopting ‘public’ trees</li> </ul> </li> <li>– Neighborhood support</li> <li>– Information sources <ul style="list-style-type: none"> <li>○ Who</li> <li>○ What</li> <li>○ When power goes off</li> </ul> </li> <li>– <b>A Geographical Isolation</b></li> <li>– B Health impacts</li> </ul>
<b>What is missing? – Table 1</b>	<b>What is missing? – Table 6</b>
<ul style="list-style-type: none"> <li>– <b>4 Education/denial of (green, pink, yellow, blue)</b> <ul style="list-style-type: none"> <li>○ Heatwave issues</li> <li>○ Climate change</li> <li>○ Fear of future</li> </ul> </li> <li>– <b>2 Community connectedness</b> <ul style="list-style-type: none"> <li>○ (Tribal awareness) Breakdown of informal networks (Yellow, blue, pink)</li> </ul> </li> <li>– <b>5 Planning/design – council not allowed to introduce restrictions on new buildings (green, pink)</b></li> <li>– <b>6 Lack of coordination. Successful campaigns (eg. SunSmart) but not linked → heatwave (green, pink)</b></li> <li>– <b>3 Lack of access to transport (blue, green, yellow, pink)</b></li> <li>– <b>1 Current solutions</b> <ul style="list-style-type: none"> <li>○ Micro-climate</li> <li>○ Cooler spots</li> <li>○ Lack of information on alternative ways to cool down.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>– Lack of public awareness</li> <li>– Mixed messages</li> <li>– <b>2 Lack of policy</b></li> <li>– <b>3 Dissemination of information</b> <ul style="list-style-type: none"> <li>○ Emergency toolkit (water supply, food)</li> </ul> </li> <li>– Emergency responses</li> <li>– <b>4 Education regarding keeping cool</b> <ul style="list-style-type: none"> <li>○ Mail</li> </ul> </li> <li>– <b>5 Security &amp; energy audits</b></li> <li>– Register for vulnerable groups in community</li> <li>– Trigger system</li> <li>– <b>1 Identification of main stakeholders</b></li> </ul>

<b>What is missing? – Table 4</b>	<b>What is missing? – Table 2</b>
<ul style="list-style-type: none"> <li>– <b>4 Building/housing design</b> <ul style="list-style-type: none"> <li>○ Limitations of 5 Star system – energy rating</li> <li>○ Resistance from architects, designers and builders due to fashion, trends and cost</li> </ul> </li> <li>– <b>2 Water availability</b></li> <li>– <b>3 Lack of useful community information through community media – ABC</b></li> <li>– <b>1 Lack of understanding of social impact to the community as a result of a heatwave</b></li> </ul>	<ul style="list-style-type: none"> <li>– <b>A Centralised organisation/planned approach</b></li> <li>– Clarity of messages – currently a bit scatty</li> <li>– New/emerging problem = no historical data to review</li> <li>– Inconsistent messages eg. Reduce power consumption vs keep cool</li> <li>– <b>B Planning/building regulations don't promote low energy/passive temperature design</b></li> <li>– <b>C Sustainability an optional extra</b></li> <li>– <b>D Inadequate financial support mechanisms for at risk sectors of the community</b></li> <li>– <b>E Capacity of hospitals to cope with demand</b></li> </ul>

Table of results 14. Bendigo Heatwave Hotpot Forum: What is missing? Exercise results by table



Risk assessment charts 15. Bendigo Heatwave Hotpot Forum: What is missing? Exercise results by table, prioritised

## Service mapping and gap analysis

The primary function of community engagement exercises for the project have been to develop an understanding of what formal response and awareness activities regarding heatwaves are currently in place and identify possible areas for improvement or new initiative development. Community engagement activities for the project focused on the identified target vulnerable groups for the project (see Identification of Vulnerable Groups). Activities undertaken included a survey of service providers, a community 'Heatwave Hotpot' forum attended by more than 50 community members and representatives of community organisations, workshops and structured interviews.

### Gap analysis and prioritisation

Community engagement processes have identified a number of areas where gaps in awareness, communication and support activities exist within the City of Greater Bendigo. There is a need for consistent, accessible and available awareness information. There is a wide variety of resources regarding personal care during summer and heat events, this needs to be consistently promoted and made available, particularly to the identified vulnerable groups. A consistent statewide system of forecasting and triggering heatwaves is desirable. Additionally the need for a single, local and comprehensive information resource regarding accessibility, amenities, transport, health facilities, other important infrastructure and places of respite for heatwave situations has been identified.

A need for a clear warning or alert system for health service providers and the general public has been identified. Such a system must be integrated with clear definitions for the public regarding what constitutes a heatwave or heat event in the context of the Bendigo region. An accompanying communication plan and media strategies including appropriate awareness, instruction or directive information should be coordinated. The system must be accessible and easy to understand.

The community engagement process has identified a need for building the capacity of carers, the customer service field (eg. public transport operators) and health services to be able to identify vulnerability, housing (where relevant) and provide assistance.

Social and geographic isolation have a significant impact on vulnerability. There is a need to be able to identify, reach and communicate with people who experience isolation. Community connectedness, personal planning and preparation assistance are essential to this.

The main contributor and promoter for the improvement of housing standards and resiliency of existing housing stock is that of improving energy efficiency and reducing energy costs. The current focus regarding climate change is on mitigation and when compared to adaptation. There is a need to assist and support people in low income areas (see demographics) to improve house thermo-regulation resilience and develop adaptation capacity. A further understanding of the local impacts of climate change and the need to adapt to unavoidable climate change is required.

While the City of Greater Bendigo has many high-quality strategies relating to amenity, accessibility, health and wellbeing and open space there is a need for the inclusion of greater detail in policies relating to the provision of accessible shade and shelter and accessible drinking water is necessary.

# RECOMMENDATIONS

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Recommendations in this report are targeted primarily around mitigation planning, education and awareness, capacity building and collaboration with external organisations. Resourcing for implementing the actions associated with recommendations is intended to be achievable where possible within existing council resources. Where outcomes are not possible within council resources or are identified as being outside of the core business of the City of Greater Bendigo advocacy to the Victorian Government and Department of Human Services and collaboration with external agencies such as the Primary Care Partnership are recommended.

## Heat mitigation planning

It is recommended that the City of Greater Bendigo include a Heat mitigation plan to sit alongside the Municipal Emergency Management Plan. The role of the plan should be coordination, communication of a local alert system whilst providing links and guidance to awareness and adaptation programs.

### City of Greater Bendigo Heat mitigation plan

The Emergency Management heat mitigation plan will be developed by the City of Greater Bendigo Environmental Health Unit as Stage two of the Bendigo Heatwave Project. To avoid duplication the plan will be similar to the City of Greater Bendigo Pandemic Public Health Plan. The plan will include definitions of heat events based on information provided by the Department for Human Services and the Bureau of Meteorology. The plan will identify hazards effects, response and recovery arrangements for heat events and will include a communication strategy identifying stages of communication and information to be distributed based on existing Municipal Emergency Management Plan arrangements. It is recommended that key information resources are developed at the state level to ensure consistency and avoid duplication across municipal areas. This information should also include preventative information to avoid heat related illness/death. Bureau of Meteorology/DHS definitions and alert levels of impending and actual heat events will be incorporated into the plan (these trigger points are yet to be finalised but are anticipated to be determined for local areas and applied consistently across the state). Responsible Emergency Management officers will be identified for receiving notifications regarding heatwaves from the Bureau of meteorology and will incorporate the implementation of a community awareness/preparedness/alert system. Response and recovery arrangements within the plan will refer to existing Emergency Management arrangements.

### **Recommendations**

- Municipal Emergency Management Planning Committee to implement Stage two of the Bendigo Heatwave Project by completing and implementing a heat mitigation plan including a communication plan.
- Nominate responsible officers for receiving heat threshold communications

### Local heat definitions

#### **Recommendations**

- Advocate for DHS and the BOM to complete research and develop clearly defined heat event thresholds for the Bendigo region and implement threshold trigger communication system.

### Alert system

The review of international and Australian best practice undertaken in section 5.1.b of this report suggests that any heatwave alert system functions most appropriately when implemented broadly, consistently and with clearly defined roles. It is recommended that a consistent, statewide alert system is developed and implemented. In the interim a local alert system is suggested for investigation by the Bendigo Municipal Emergency Management Planning Committee. The suggested model is one based on the English model, a three tier alert system. A green, neutral state, including a summer preparedness period, would be the natural state for the system. Meteorological

assessments and predictions undertaken by the Bureau of Meteorology will allow a nominated responsible officer or automated system at state level to trigger state changes in the system. System state changes should be accompanied by media, communications and preparation activities. The accessibility, availability, consistency and community understanding of such a system and the dissemination of information is essential to its effectiveness. In the event that a heatwave or heat event occurs and deaths or severe impact to health infrastructure and services occur the Municipal Emergency Management Plan will be activated.

The development and implementation of a new heat alert system will require communication and awareness promotion to the community. It is recommended that information regarding the operation and interpretation of the system be made available via communication networks, community groups and organisations, health services, the City of Greater Bendigo website, media release and by means of a hardcopy flyer. An appropriate source of funding will need to be identified for the development of the material, printing and distribution. Responsibility for content and coordination of production should be with the City of Greater Bendigo Municipal Emergency Management Planning Committee. Website information should include current, up-to-date heat alert status information, all content should include relevant emergency contacts and how to access personal care and planning resources such as the Better health channel.

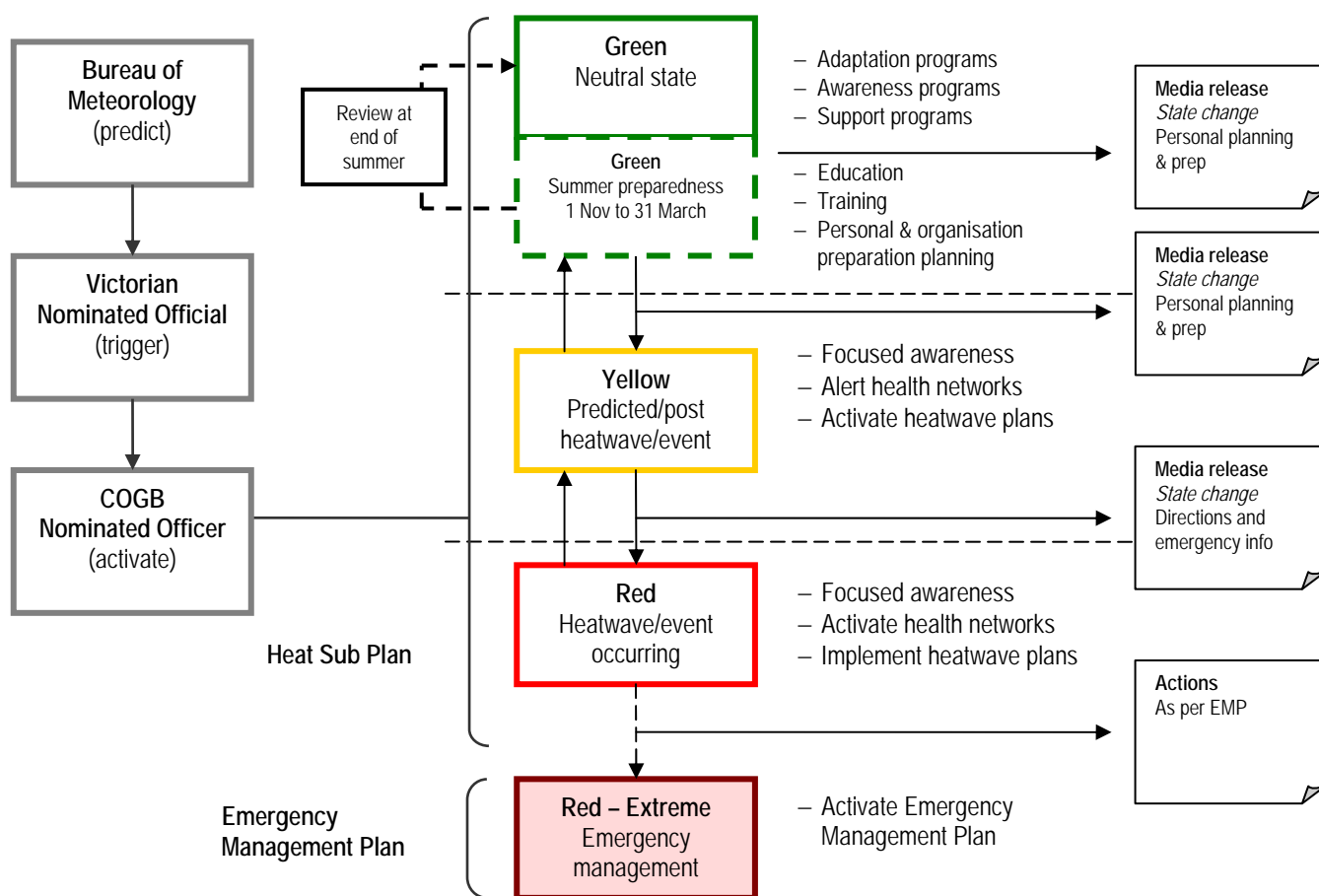


Figure 16. Proposed heat alert system

### Recommendations

- Municipal Emergency Management Planning committee to Investigate the implementation of an interim alert system and associated awareness materials
- Develop & implement awareness program for heat alert system

### City of Greater Bendigo resourcing – council officer

There is the potential to incorporate heat related community awareness, connectedness and prevention education programs into existing role(s) within the City of Greater Bendigo Risk Management Unit. This may require the review and modification of officer position descriptions by the Manager of the Risk Management Unit in collaboration with the officers and the Human Resources Unit.

## **Statewide awareness campaigns**

There is an identified need for a broad, statewide awareness campaign focused on climate change adaptation and personal protection and prevention strategies for dealing with heat events. It is recommended that the City of Greater Bendigo advocate for DHS to develop such a campaign.

It is recommended that an information resource be developed that focuses on low cost home cooling remedies for vulnerable groups in our community. Many programs exist regarding energy efficiency, the focus of this kind of information resource should be on adaptation and resiliency in response to climate change and may include information regarding cost-effective ways to cool a home, self-care and planning information (based on information such as the better health channel), water-wise vegetation for shade and reducing heat load in and around homes and providing shade.

### ***Recommendations***

- To advocate for state government to implement a statewide heat awareness and climate change adaptation campaign with a focus on home adaptation in response to climate change.
- Statewide campaign to focus on personal preparedness, adaptation, community connectedness and home resilience in response to climate change.
- Educate and create awareness of the impacts of heat events and the importance of preparedness, self-care, pet care and community connectedness.

## **Collaboration with external organisations**

### **Awareness sessions**

Consultation with community organisations such as the Bendigo RSL have indicated the potential for short (15 minute) information sessions or workshops prior to the start of summer with client groups such as people who are older or people with a disability. These sessions would provide the opportunity to introduce an alert system, personal planning, an opportunity to emphasise key self-care messages and to provide further information by way of additional resources. The role may be undertaken as a function of Aged and Disability Services within the City of Greater Bendigo or through an external community organisation or health service.

### ***Recommendations***

- Department of Human Services and City of Greater Bendigo Aged and Disability Services and Health services to identify and secure resources to enable health agencies to develop and run pre-summer heat awareness sessions for the community.
- The program should be implemented for the 2009/10 summer period.

### **Personal heat planning for vulnerable individuals**

Discussion with disability care and support organisations and accommodation services has identified the need for processes relating not only to heatwave planning at an organisational level but for individual clients. A number of organisations have expressed an interest in trialing the development of personal processes that would be undertaken with vulnerable clients. The planning process is to be undertaken at the start of summer with carers or support staff working with individuals to identify the needs of the client in heat events and if possible identify some personal strategies for staying cool, this might involve identifying the coolest location within the home, preparing cooling or heat minimising strategies or identifying broader actions/opportunities to mitigate the impacts of heat events on the individual. It is recommended that the trial is initiated by the Heatwave response officer during remaining project period.

## **Recommendations**

- Aged and Disability Services to liaise with external agencies by sharing information regarding personal heat planning for individuals and encourage the development of best practice planning and response models in those agencies.
- The trial should be implemented for the 2009/10 summer period.

## **Supporting community based adaptation capacity building activities**

The City of Greater Bendigo will have an increasingly important role supporting, developing and partnering community based adaptation programs.

The City of Greater Bendigo is currently providing support to Neighbourhood Houses and the Bendigo Sustainability Group who have received a grant to implement the 'Our Carbon Footprint' project. This project is aimed at creating awareness and household behaviour change regarding energy efficiency and climate change. The project will involve home energy efficiency audits, community education and 'do it yourself' workshops. The City of Greater Bendigo is also working with the Bendigo Sustainability Group on developing a sustainable living guide for Bendigo. The guide will take the form of a calendar with each month focusing on a particular sustainability theme. The project is fully funded by Council with Action Groups from Bendigo Sustainability Group developing content.

Although the focus of these projects is primarily on energy efficiency and sustainability there are synergies with heatwave strategies for improving resilience and developing adaptation capacity in the community.

### **Recommendation**

- To encourage new community based climate change adaptation partnerships (to better support vulnerable residents to adapt to heatwaves) between community groups, government agencies and community support organisations where opportunities present.

## **Primary Care Partnership organisation heat response planning**

It is recommended that the City of Greater Bendigo work with the primary care partnership to identify resourcing to develop a process assisting PCP organisations to develop and implement organisation heat plans.

### **Recommendation**

- City of Greater Bendigo to work with the PCP to identify resources where appropriate to assist PCP organisations to develop their own specific heat plans.

## **Increasing access support for people with a disability**

Participation and community connectedness are essential to breaking down barriers of social isolation in heatwave conditions. Discussion with disability service providers and support agencies has identified the need for training for people in customer service roles in assisting people with a vocalisation disability. It is recommended that a program be developed and implemented by the Transport Connections program in collaboration with Peter Harcourt Services.

### **Recommendation**

- Work with the PCP network and disability support agencies to develop and implement a training program for people in primary care, service delivery, customer service and community support roles in assisting people with a vocalisation disability during heat events.

# Community awareness and connectedness

## Health and wellbeing map

The community engagement processes undertaken have identified the need to update access maps in central Bendigo and small townships within the Municipality. In addition to general accessibility information need has been identified for such a map to include information regarding the location of naturally and artificially cool(ed) places, quality of shade, shelter and amenities in open spaces including access to drinking water, location of health services and accessible public transport. It is recommended that a working group including representatives from related projects within council (e.g. Transport Connections, Rural Access, Aged and Disability Services, Children and Family Services etc) in consultation with community groups, health services and other relevant organisations is formed to guide the development and content for such a map. Information gathered by a park shade, shelter and amenities audit as a part of the Play space strategy would contribute significantly to the content for such a map. The development process and format of the map can be based on the recently developed TravelSmart map which has a focus on behaviour change and commuter travel in central Bendigo. It is recommended that this action is coordinated by the Transport Connections project. Funding for such a resource may be covered by remaining Bendigo Heatwave project stage 1 (production of awareness materials) funds in combination with potential access to Transport Connections brokerage funding and other health related funding.

Areas of information identified as relevant to a Health and Wellbeing map may include:

- Public transport, accessible taxi and bus stop information
- Accessibility information
- Seats, shade and shelter quality
- Kerbs and footpath quality
- Park facilities
- Accessible toilets and other amenities
- Public phone and TTY access
- Self-care information
- Home resilience information
- Cool places e.g. shops cinemas, library, gallery
- Health facilities and services
- Community organisations/services/facilities eg. centrelink, charity and support organisations, neighbourhood houses
- Play spaces, shade and shelter
- Disability parking
- Concessions information

## Recommendations

- City of Greater Bendigo to facilitate the development of a Health and Wellbeing/access information map. In addition to general information the map should include heat awareness information as well as information useful to vulnerable groups in heat events such as naturally and artificially cool(ed) places and facilities, quality of shade, shelter and amenities in open spaces and parks including access to drinking water, location of health services and accessible public transport
- Map to be distributed to vulnerable groups as identified in Emergency Heat mitigation plan communication plan and additional vulnerable networks identified by the working group.

## Community capacity building – small townships

People experiencing social and geographic isolation have been identified by the project as being vulnerable to extreme heat events. Rural isolation in Bendigo is a significant barrier to participation and access to information. Small townships in the City of Greater Bendigo have undergone a significant process of re-establishing community planning organisations and developing community plans as part of the Bendigo +25 community planning initiative. Seven of the eleven identified small townships in the municipality have completed a local plan based on community surveys, visioning workshops and targeted focus groups. These plans do not tend to address the potential impacts and need to develop resilience and adaptation capacity in their communities. It is recommended that the City of Greater Bendigo advocate for such planning in future plans and to promote the development of heat plans within small townships. A township within the City of Greater Bendigo has expressed an interest in developing and implementing a community engagement process for the development of a local heatwave plan. The purpose of such a plan would be to identify vulnerable groups within the local community and work to develop community capacity, resilience, assistance, adaptation and connectedness. A township heat mitigation plan would create significant awareness links in rural areas to a central alert system and other awareness programs.



Figure 17. Small township heat plan development process, see appendix *small townships process* for greater detail

### Recommendations

- Trial community capacity building processes to assist the development of community based heat plans for small townships.
- City of Greater Bendigo to work with small townships to include local heat mitigation planning responses in future small township plans.
- To facilitate the development of a partnership between a community or health organisation to trial collaboration with a small township on the development of a community heat plan. Community education and professional development

### HACC vulnerability assessment training

Additionally it is recommended that a training program for direct care workers in the identification of risk factors and vulnerability of clients and direct care workers be developed, this may include a simple checklist for assessing a home during care visits. It is recommended that a trial training program be developed and implemented as part of the City of Greater Bendigo Home and Community Care (HACC) training program.

### Recommendation

- City of Greater Bendigo Aged and Disability Services to develop a carer training program for identifying and vulnerability risk factors effecting clients and direct care staff.

## Planning and strategic responses

The City of Greater Bendigo is a leader in planning and provision of facilities and public spaces. The opportunity exists to continue this leadership by ensuring that future strategies and the planning scheme incorporate principles of heat impact minimisation, climate adaptation and resilience. Consideration should be undertaken for addressing heat and shade in future revisions of existing strategies such as the Health and Wellbeing, Play space and open space strategies. The provision of clean, accessible drinking water in public space and amenity related policies could also be considered. A significant number of City of Greater Bendigo staff work outside during extreme heat conditions. The City of Greater Bendigo has a duty of care to take all reasonable measures to protect staff from heat discomfort

or illness. Whilst a policy statement exists, this should be expanded to provide a greater detail on content areas such as measures, controls procedures to minimise risk to staff working in extreme weather conditions.

The opportunity also exists to include heat and summer exertion awareness information in TravelSmart, summer in the parks and other summer event and activity publications.

Suggested policy/strategy/municipal strategic statement content:

- The City of Greater Bendigo recognises the impacts of heat and ultra violet radiation on health for vulnerable groups including children, people who are older, socially or geographically isolated or have a pre-existing medical condition.
- The City of Greater Bendigo acknowledges the role of local government in providing access to facilities of high quality amenity including the provision of heat respite and shade in the development of public and open spaces and improving this in existing public and open spaces.
- Council aims to provide safe and attractive open spaces and facilities for the community. This includes the provision of sustainable, quality shade and areas for heat respite. Council recognises that there are opportunities to improve the provision of shade and heat respite across existing and newly developed council facilities.
- Community members within the municipality are also to be encouraged to practice personal prevention and protection measures as recommended by SunSmart and health authorities.
- Safety should also be a major consideration in the provision of either natural or built shade. The provision of shade should not create safety hazards.

### ***Recommendations***

- Consider heatwaves in the implementation of existing City of Greater Bendigo strategies
- Where opportunities exist, consider amendments to urban strategies, municipal strategic statement within the Greater Bendigo Planning Scheme and policies to ensure that considerations of heatwaves and shade are incorporated in planning and decision making.
- Include the consideration of heatwaves and shade in the development of future Health and Wellbeing plans and other related council strategies.
- Analyse play space strategy park audit data and identify opportunities to increase shade and amenities that provide heat respite
- Expand City of Greater Bendigo Occupational Health and Safety hot weather policy to provide greater detail on controls, procedures and impact minimisation strategies for staff exposed to heatwave conditions.

# BUDGET SUMMARY

	Overall	Budgeted Stage 1	Actual Stage 1	Heat planning Stage 2	Implementation Stage 3
<b>Staff/consultation</b>					
Labour	\$ 26 000.00	\$ 19 934.29	\$ 18 422.72	-	-
Consultant/ presenters/ workshops	\$ 7 000.00	\$ 4 500.00	\$ 3 853.67	-	\$ 2 500.00
<b>Materials</b>					
Fact sheets/workshops etc.	\$ 6 000.00	-	-	-	\$ 6 000.00
<b>Administrative</b>					
Consultation venue hire etc.	\$ 6 000.00	-	-	\$ 5 000.00	\$ 6 000.00
<b>Total</b>	<b>\$ 45 000.00</b>	<b>\$ 27 434.29</b>	<b>\$ 22 276.39</b>	<b>\$ 5 000.00</b>	<b>\$ 14 500.00</b>

Table 18. Expenditure summary

The project has been funded by a \$45 000 grant from the Department of Human Services, this includes funding for labour, materials and the development of an information resource. Of this funding \$23 000 has been spent implementing stage one of the project with the remainder allocated for stage 2 of the project, the development of a heat mitigation plan (\$5000), and stage 3 of the project, implementing education, awareness and support recommendations (\$14 500).

Community engagement activities have been the primary source of expenditure. The Heatwave hotpot forum as the major community engagement activity accounts for a significant proportion of the consultation expenditure. Internal vehicle expenditure is not been available at this time for the purpose of this report.

Funds budgeted for materials have not been spent as an overall understanding of the need for such materials has only been completed in this report. It is envisaged that the remaining funding should be allocated to the implementation of the recommendations listed in this report.

# IMPLEMENTATION PLAN

Recommendation/Actions	Responsible manager	Partners	Resources	Timeline	Ref
<b>1. That the City of Greater Bendigo develop a heat mitigation plan</b>					
<ul style="list-style-type: none"> <li>– Municipal Emergency Management Planning Committee to implement Stage two of the Bendigo Heatwave Project by completing and implementing a heat mitigation plan including a communication plan.</li> <li>– Nominate responsible officers for receiving heat threshold communications.</li> <li>– City of Greater Bendigo to advocate to Department of Human Services and the Bureau of Meteorology to develop clearly defined heat event thresholds for the Bendigo region and implement threshold trigger communication system.</li> <li>– Municipal Emergency Management Planning committee to Investigate the implementation of an interim alert system and associated awareness materials</li> <li>– Develop and implement an awareness program for the heat alert system</li> </ul>	Environmental Health, Risk Management	Municipal Emergency Management Planning Committee, Media, Bureau of Meteorology, Department for Human Services, Public Health	Within existing Environmental Health resourcing	Draft heat mitigation completed March 2009. Alert system, November 2009	7.1.a-c

Recommendation/Actions	Responsible manager	Partners	Resources	Timeline	Ref
<b>2. Advocate to state government for the development and implementation of a statewide heat awareness and climate change adaptation campaign</b>					
<ul style="list-style-type: none"> <li>– Statewide Campaign to focus on personal preparedness, adaptation, community connectedness and home resilience in response to climate change.</li> <li>– Educate and create awareness of the impacts of heat events and the importance of preparedness, self-care, pet care and community connectedness.</li> </ul>	Environmental Health	DHS Department for Sustainability and Environment	Nil	November 2009	7.1.d
<b>3. City of Greater Bendigo to work with partner organisations to develop and implement awareness and education programs</b>					
<ul style="list-style-type: none"> <li>– Department of Human Services and City of Greater Bendigo Aged and Disability Services and Health services to identify and secure resources to enable health agencies to develop and run pre-summer heat awareness sessions for the community.</li> </ul>	Aged and Disability Services	Primary Care Partnership	Home and Community Care Regional Training Coordinator Total cost \$8000, City of Greater Bendigo contribution \$4000 (50%) from heatwave implementation funds.	Program developed for implementation during the 2009/10 summer period.	7.2.a
<ul style="list-style-type: none"> <li>– City of Greater Bendigo to work with the PCP to identify resources where appropriate to assist PCP organisations to develop their own heat plans.</li> </ul>	Environmental Health	Primary Care Partnership		November 2009	7.2.d
<ul style="list-style-type: none"> <li>– Aged and Disability Services to liaise with external agencies by sharing information regarding personal heat planning for individuals and encourage the development of best practice planning and response models in those agencies.</li> </ul>	Aged and Disability Services	Primary Care Partnership, Peter Harcourt Services	Staff time, Home and Community Care Regional Training Coordinator	The trial should be implemented for the 2009/10 summer period.	7.2.b

Recommendation/Actions	Responsible manager	Partners	Resources	Timeline	Ref
<b>4. To encourage and support new community based partnerships and networks where opportunities exist</b>					
<ul style="list-style-type: none"> <li>- To encourage new community based climate change adaptation partnerships (to better support vulnerable residents to adapt to heatwaves) between community groups, government agencies and community support organisations where opportunities present.</li> </ul>	Community and Cultural Development	Bendigo Sustainability Group	Team Leader Environmental Projects	November 2009	7.2.c
<b>5. To increase access for disadvantaged groups within our community</b>					
<ul style="list-style-type: none"> <li>- Work with the PCP network and disability support agencies to develop and implement a training program for people in primary care, service delivery, customer service and community support roles in assisting people with a vocalisation disability during heat events.</li> </ul>	Aged and Disability Services	Community and Cultural Development, Risk Management, Peter Harcourt Services, Primary Care Partnership, Rural Access	Funded by heatwave project implementation funds with possible Transport Connections brokerage to contribute portion, Total cost \$1-2000	November 2009	7.2.d
<ul style="list-style-type: none"> <li>- City of Greater Bendigo to facilitate the development of a Health and Wellbeing/access information map. In addition to general information the map should include heat awareness information as well as information useful to vulnerable groups in heat events such as naturally and artificially cool(ed) places and facilities, quality of shade, shelter and amenities in open spaces and parks including access to drinking water, location of health services and accessible public transport</li> <li>- Map to be distributed to vulnerable groups as identified in Emergency Heat mitigation plan communication plan and additional vulnerable networks identified by the working group.</li> </ul>	Community and Cultural Development	Transport Connections, Rural Access, Aged and Disability Services, Children and Family Services, Parks and Natural Environment, Strategy Unit, Community and Cultural diversity, PCP, Peter Harcourt Services, and Scope.	\$3000-\$6000, funded in Heatwave project budget. Possible Transport Connections brokerage funding for portion	Map completed and made available through prior to the 2009/10 summer period.	7.3.b

Recommendation/Actions	Responsible manager	Partners	Resources	Timeline	Ref
<ul style="list-style-type: none"> <li>– Trial the development of community based heat plans for small townships in partnership with local communities.</li> </ul>	Community and Cultural Development or Strategy Unit	Neilborough small township	\$2-5000, Funded as part of heatwave pilot project funding arrangement with DHS	November 2009	7.3.c
<b>6. Community education and professional development</b>					
<ul style="list-style-type: none"> <li>– City of Greater Bendigo Aged and Disability Services to develop a carer training program for identifying and vulnerability risk factors effecting clients and direct care staff.</li> </ul>	Aged and Disability Services	Risk Management	Staff time, Home and Community Care Regional Training Coordinator	November 2009	7.3.d
<b>7. City of Greater Bendigo to consider heat in strategic planning</b>					
<ul style="list-style-type: none"> <li>– Include the consideration of heatwaves and shade in the development of future Health and Wellbeing plans and other related council strategies.</li> <li>– Consider heatwaves in the implementation of existing City of Greater Bendigo strategies</li> <li>– Where opportunities exist, consider amendments to urban strategies, municipal strategic statement within the Greater Bendigo Planning Scheme and policies to ensure that considerations of heatwaves and shade are incorporated in planning and decision making.</li> <li>– Analyse play space strategy park audit data and identify opportunities to increase shade and amenities that provide heat respite</li> </ul>	Strategy Unit			November 2010	7.4

Recommendation/Actions	Responsible manager	Partners	Resources	Timeline	Ref
<ul style="list-style-type: none"> <li>Expand City of Greater Bendigo Occupational Health and Safety hot weather policy to provide greater detail on controls, procedures and impact minimisation strategies for staff exposed to heatwave conditions.</li> </ul>	Human resources	Risk management	Staff time	November 2009	7.4

# CLOSURE ACTIVITIES

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Stage one closure activities include the following:

- Hand over of Emergency Management recommended content to City of Greater Bendigo Municipal Emergency Management Planning Committee Unit for refinement and implementation.
- Heatwave response officer and members of Heatwave Advisory Group to participate in Department of Human Services Heatwave pilot projects review.

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