

# 2010



INDIGO  
SHIRE  
COUNCIL

## INDIGO SHIRE HEATWAVE PLAN





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## What it is all about

In the past, people in Indigo Shire have dealt with prolonged periods of heat using a common sense approach. Our Council and other local organisations have used a variety of informal systems during summer to reduce the effects of heat especially on those at risk to heat illness. These have included ‘Sunsmart’ policies, the use of air-conditioners, flexible working hours and passing on temperature forecasts. As we face a future with an increased likelihood of hot weather, it is important that we develop and implement a municipal wide approach to dealing with heatwave events. Our plan will provide a framework of support to our local community and vulnerable population groups so we can be better equipped to handle more intense and frequent heatwaves.

The *Indigo Shire Heatwave Plan* will be used by Council and its partners in the planning-for and responding- to heatwave conditions. It has been developed using the general principles of emergency management as a guide to planning, preparation, response and recovery. The plan is underpinned by a long term approach by Indigo Council, in partnership with the North East Greenhouse Alliance and neighbouring shires, to reduce the scale of climate change and decrease its overall impact on the local environment.

The *Heatwave Plan* has been written to:

- Be consistent with departmental guidelines and other Council planning frameworks;
- Outline health, community and emergency service actions and response arrangements to heatwave alert;
- Identify vulnerable persons within the Indigo community;
- Propose a clear communication strategy to initiate alert, response and recovery phases of the plan;
- Describe key stakeholder roles and responsibilities; and
- Promote a community awareness and education component.





## Why we need a Heatwave Plan

Local councils in Victoria have been asked to prepare heatwave plans to support their local communities to adapt to heatwave conditions. By developing our own plan, we can use our understanding of local conditions and resources to better prepare for, respond to and recover from heatwave conditions.

High temperatures can seriously impact on the health of people in our shire especially the very young, the elderly, tourists and farmers. We need to be well prepared in advance to make sure our community has the necessary tools to cope in times of extreme heat.

By having a *Heatwave Plan*, we can:

- Ensure that health information and support is readily available to our community;
- Increase the capacity of our community to respond during heatwaves;
- Manage a heatwave emergency more effectively; and
- Develop long term changes in our behaviour to improve our health and wellbeing.

The aim of our *Heatwave Plan* is to:

- Support the Indigo community to prepare-for, respond-to and recover-from heatwave conditions.

We will achieve this by:

- Identifying vulnerable population groups in our community and the risks they face during heatwaves;
- Developing partnerships with local organisations to better coordinate a response to heatwaves;
- Outlining effective strategies and actions to implement in the event of a heatwave; and
- Building practices to evaluate the ongoing effectiveness of the plan.



## What our community looks like

### Our setting

The Shire of Indigo is located in the north east of Victoria and is named after the Indigo Valley and Indigo Creek. Our setting is bounded by the Murray River in the north/west, the city of Wodonga to the north, Towong Shire to the north and east, and Alpine Shire to the south. To the south and south/west are the rural city of Wangaratta and the Shire of Moira. Our position on the major national highway linking Sydney-Canberra and Melbourne provides ready and convenient access to our historic towns and rural areas. The shire encompasses a total land area of 2,044km<sup>2</sup>.



Figure 1: Location of Indigo Shire in Victoria

Our catchments include the Ovens and Kiewa rivers which contribute 38% of water to the Murray Darling Basin. We share borders with the Australian Alps and the fertile plains of the Murray River floodplain. Lake Hume and Lake Moodemere are our major water storages and provide significant landscape, recreation and tourism resources.

The shire is predominantly rural in nature with supporting services in small towns. The mix of historic towns, grape production, high altitude fruit growing and productive river flats has produced a diverse combination of land uses and attributes. Our economy relies on its rural and tourism base and its regional association with Albury-Wodonga and Wangaratta. Specifically, the economy is based on value-adding to local primary produce of the region, especially milk, cereals and grapes, and providing services to people, including tourism.

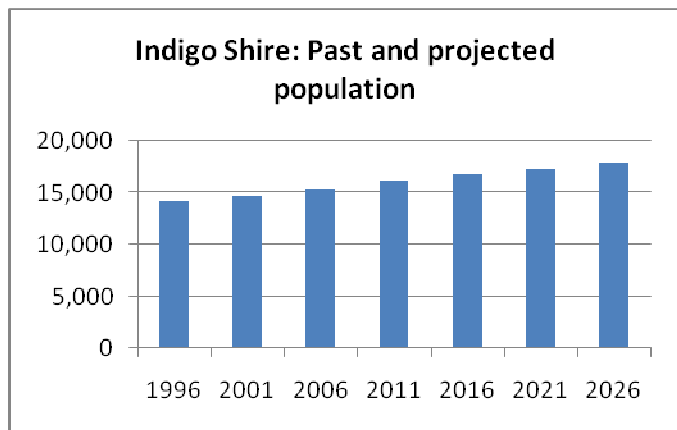


**Figure 2: Major towns in the Indigo Shire**

The municipality includes the localities of Allans Flat, Baarmutha, Back Creek, Barnawartha, Beechworth, Bells Flat, Brimin, Browns Plains, Bruarong, Carlyle, Charleroi, Chiltern, Chiltern Valley, Christmastown, Cornishtown, Dugays Bridge, Gooramadda, Great Northern, Gundowring, Huon, Hurdle Flat, Indigo, Indigo Upper, Indigo Valley, Kergunyah, Kiewa, Lilliput, Norong, Norong Central, Osbornes Flat, Prentice North, Red Bluff, Reids Creek, Rutherglen, Sandy Creek, Silver Creek, Stanley, Tangambalanga, Wahgunyah, Woolshed, Wooragee, and Yackandandah.

### Our population

According to Census information, the shire’s total population in 2006 was 15,367. We have experienced steady growth of around 1.3% pa since 1981. Department of Sustainability and Environment (DSE) population projections indicate that the shire’s total population will grow to 17,253 by 2021. Twelve to 20% of future regional population growth is expected to go into Indigo Shire towns, with the bulk of this absorbed by Chiltern and Barnawartha.



**Figure 3: Indigo Shire: Past and projected population**

Of our total resident population, over 50 per cent of our people choose to live in the major towns of Beechworth (3437 people), Yackandandah (1727 people), Rutherglen (2318 people) and Chiltern (1564 people). Over the last 15 years, Indigo has attracted a peri-urban population that commutes to Albury-Wodonga or Wangaratta. The scenic nature of the landscape and the proximity of historic towns like Beechworth and Yackandandah provide an attractive location for those seeking a rural getaway or "tree change". As a result, the shire now comprises a large proportion of young families.



## Our lifestyle

The natural environment has a significant influence on our lifestyle. The Indigo Shire offers a unique mix of attractive rural surroundings, welcoming villages, four distinct seasons and a thriving diverse economy. Over 15 per cent of our people are employed in the manufacturing industry followed by nearly 13 per cent in health care and social assistance and 11 per cent in agriculture and forestry. The Indigo Shire enjoys one of the lowest unemployment rates in rural Australia.

People living in the shire enjoy the growing nexus between local tourism, rural activities, culture and heritage. There are more than 1,500 heritage buildings within the shire and over 20 events that attract thousands of locals and visitors each year.





## How heatwaves affect the Indigo Shire

In the summer of 2009, the Indigo Shire, along with the rest of Victoria, experienced temperatures among the highest ever recorded. The Chief Health Officer estimated that 374 additional deaths occurred state-wide during this heatwave. Our shire experienced heat of unprecedented intensity and duration with maximum temperatures 12 to 15°C above normal for much of the area. The temperature was above 43°C for three consecutive days from 28 to 30 January reaching a peak of 45.1°C on 30 January 2009.

Research tells us that climate change is expected to increase the frequency and intensity of such heatwaves in our area. During the last decade, average temperatures in our region have been recorded as 0.5°C warmer than the 30 year (1961 to 1990) average. The future climate of our area is expected to be hotter and drier than it is today. By 2030, average annual temperatures will be around 0.9°C warmer and the number of hot days (days over 30°C) will continue to increase.

Statistics also show a decline in the region's rainfall over the past decade. Between 1998 and 2007, our average rainfall was 12% below the 1961 to 1990 average. There were recorded 18 fewer rainy days each year on average. It is predicted that the number of hot days will continue to increase and rainfall totals will continue to drop. As these predictions in relation to climate change are that extreme weather events are going to become more frequent and severe in the years to come, we have a duty to ensure that all residents and services of Indigo are well prepared to protect the most vulnerable members of our communities during such events.

Indigo Shire's diverse landscapes and climate make it vulnerable to drought, bushfire and heatwave conditions. High temperatures in the Indigo area typically correspond to low humidity values because the prevailing winds originate from the dry inland parts of the state. While more humid conditions can exist when the air temperature is closer to 30°C and can provide some degree of discomfort, such days are not generally associated with heatwave conditions. As a result, for Indigo the air temperature alone can provide a reasonable measure of heat stress.

Very hot days are usually associated with hazardous fire weather conditions in the region. The fire threat is increased when thunderstorms develop causing lightning that provides the ignition for storms. This is particularly the case when thunderstorms cause little or no rain, as is sometimes the case in our shire. Following the bushfires of February 2009, Indigo Shire Council received funding from a number of State Government agencies to rebuild those communities affected by the fires.

The *Indigo Heatwave Plan* is underpinned by a long term approach by Indigo Shire Council, in partnership with the North East Greenhouse Alliance, to reduce the scale of climate change and decrease its impact by adapting the built environment. The *Greenhouse Action Plan* was adopted by Council in 2009 and outlines Council's commitment to realising a 20% reduction target for greenhouse gas emissions on the 2005/2006 baseline data. Long term planning would seek Council to:

- Reduce emissions from its office and field operations;
- Reduce emissions associated with public assets and ensure infrastructure is adequate;
- Set an example within the community as a leader of sustainable practice; and
- Regulate land use and development to ensure the effects of climate change are considered in new developments.



## How heatwaves affect our health

As temperatures rise, so does the risk of contracting a heat related illness, a medical condition that results from the body's inability to cope with heat and cool itself. If left untreated, a heat illness can lead to serious complications, even death. In fact, heat kills more people than tornadoes, hurricanes, lightning and flash floods – combined.

Heat related illness can make people feel uncomfortable, not so much because they feel hot, but rather because they sense how difficult it has become to lose body heat at the rate necessary to keep their inner body temperature close to 37°C. The body responds to this stress progressively through three stages.

1. Heat cramps - muscular pains and spasms caused by heavy exertion. Although heat cramps are the least severe stage they are an early signal that the body is having trouble with the heat.
2. Heat exhaustion - typically occurs when people exercise heavily or work in a hot, humid place where body fluids are lost through heavy sweating. Blood flow to the skin increases, causing a decrease of flow to the vital organs. This results in mild shock with symptoms of cold, clammy and pale skin, together with fainting and vomiting. If not treated the victim may suffer heat stroke.
3. Heat stroke - is life threatening. The victim's temperature control system, which produces sweating to cool the body, stops working. The body temperature may exceed 40.6°C potentially causing brain damage and death if the body is not cooled quickly.

High temperatures can also be linked increased hospital admissions relating to heat stress, dehydration, or as a result of heat exacerbating existing conditions; increased rates of certain crimes particularly those related to aggressive behaviour such as homicide; increased number of work-related accidents and reduced work productivity; and decreased sport's performance.

To help prevent the onset of a heat related illnesses, people in the Indigo Shire are advised to:

- Carefully monitor the temperature and humidity outdoors, and plan activities and work hours accordingly by scheduling outdoor activities during cooler parts of the day;
- Stay in the shade or indoors in a cool location as much as possible;
- Drink plenty of water to replace fluids lost through sweating;
- Use a spray bottle to keep cool by misting;
- Wear lightweight loose-fitting and light-coloured clothing; and,
- Protect from the sun by wearing a hat and sunglasses, and using an umbrella.

General care for heat emergencies includes cooling the body, giving fluids and minimising shock.





## People most at-risk to heatwave conditions

Although anyone can suffer from the effects of prolonged periods of heat at any time, some people are at greater risk than others. Those most vulnerable include the elderly, infants and young children, people with a disability, people with a pre-existing medical condition and people who are socially and economically disadvantaged. Other groups at risk to heat include people who are overweight, people who overexert during work or exercise and people confined to bed and unable to care for themselves. While the *Indigo Shire Heatwave Plan* plans for a whole-of-community response, it particularly focuses on those aged above 65 years of age, children between 0 and 4 years of age, tourists and farmers.

### Our elderly

Elderly people in our community are more prone to heat stress for several reasons.

1. Elderly people do not adjust as well as young people to sudden changes in temperature.
2. They are more likely to have a chronic medical condition that upsets normal body responses to heat.
3. They are more likely to take prescription medicines that impair the body's ability to regulate its temperature or that inhibit perspiration.

Indigo's population, like most parts of Australia, is ageing. Between 1996 and 2006, the numbers of people aged 65-and-over increased by 329 that is from 13.2% of the population in 1996 to 14.3% in 2006. This ageing trend is projected to continue, but at a higher rate as the baby boomers enter old age. Between 2006 and 2026 Indigo's population aged 65-and-over is projected to increase from 2,198 to 4,839. By 2026, 27.1% of the population is projected to be 65-and-over. The number of people aged over 85 is projected to double from 2006 to 2026 in our shire.

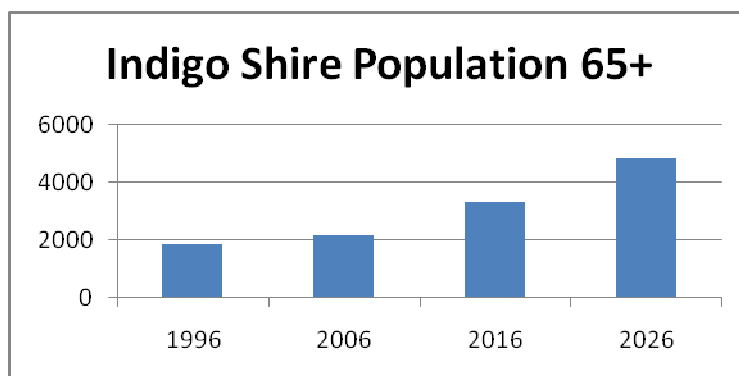


Figure 4: Indigo Shire: Past and projected population 65+

### Our young children

Young children are also sensitive to the effects of high temperatures because they produce more metabolic heat than adults and rely on others to regulate their environments and provide adequate liquids. Their core temperature can rise quickly causing dehydration. We need to watch our children carefully in times of prolonged heat as they can give in to heat illness in a very short period of time.

Although numbers are projected to fall in the next few years, we still have a significant share of families with young children in our shire. At present children aged 0 to 4 years comprise 5.6% of our



total population. They are catered for by six Maternal and Child Health centres located across the shire and have access to a range of children's services including child care centres, family day care, kindergartens, preschools and playgroups.

## Our tourists

In heat events, dehydration and heat stress can be a risk, particularly for non acclimatised people. North East Victoria attracts 1.3 million domestic overnight visitors per annum, many of them in the summer months. Whilst the Indigo Shire is recognised as a safe place to visit, as visitor numbers increase over summer, additional pressure can be placed on the capacity of health and safety services to meet the needs of visitors if they suffer from heat related illnesses. Simple messages need to be given to our tourists on very hot days such as:

- When it's hot, it's time to slow down and drink lots of water;
- Wear a broad-brimmed hat and cool loose clothes which "breathe";
- Use sun screen and carry copious supplies of water (drink around 500 ml before leaving your accommodation, then 200-300 ml every 15 minutes); and
- Reduce exercise in duration and intensity, or postpone to a more suitable, cooler time.

## Our farmers

Prolonged periods of hot weather can have far-reaching effects on our farmers. Because farmers generally work outdoors, they are at an increased risk of heat stress. Research tells us that during heatwave conditions there are higher numbers of work-related farm accidents and reduced work productivity, yet increased workloads and higher levels of stress for farming families. Deterioration of water supplies, along with drought and bushfire threat, can further add to difficult and expensive summers for our farmers.

Agriculture contributes \$125 million to the shire's economic base and employs around 650 persons. There are approximately 2,100 rural rated properties in the Indigo Shire. Some of these farming communities are situated in isolated geographic locations away from services and supports. Most, however, are less than 200 hectares in area and are small, hobby farms.

## Likely health impacts

By completing a heatwave survey (see Appendix 3), Indigo Shire key stakeholders have helped Council identify a number of local impacts occurring as a result of hot weather. It is important to understand these so that an accurate assessment can be made when it comes to dealing with heatwaves on a local level.

The potential impacts associated with heat are summarised in the Indigo Shire Heatwave Impact Matrix (see Figure 5). A risk rating has been given to each impact based upon Risk Assessment Rating Guide (see Appendix 2). The rating was determined after thought was given to the likelihood of the impact occurring, coupled with the severity of any consequences. A risk rating of low indicates that the issue could be managed through the usual processes. A risk rating of moderate indicates that the management of the issue may require further resources and attention. A risk rating of high suggests the issue is more serious with substantial impacts on individuals and/or organisations. Issues that receive a high risk rating require careful consideration in our heatwave action plan. The impact matrix reveals a number of issues with high risk ratings. These include risk of dehydration and heat



related illness for all vulnerable and stakeholder groups, concern for those living alone and/or disconnected from services and networks in the event of a heatwave, and increased workloads and stress levels for health service staff.

**Figure 5: Indigo Shire’s heatwave impact matrix**

Affected community	Heat related issue	Likely impact – Risk (R)	L’hood	Conseq	Rating
<b>Elderly</b>	Heat related illness - dehydration	Requires medical assistance Can become deadly if unattended	C	4	High
	Sleep disturbance	Fatigue Slowed reflexes and response Requires medical assistance	B	1	Low
	Discomfort in the home	Irritability	B	1	Low
	Change in temperament	Displays of anger and anti social behaviour; depression; anxiety	C	2	Low
	Loss of ability to ‘self care’	Requires medical assistance Exacerbation of existing conditions	C	3	Mod
	Stays inside and doesn’t connect with social activities, transport, community services	Social isolation Feelings of loneliness and despair Can’t shop or access services	B	2	Mod
	Taking medication that puts the elderly in danger of heat stroke	Requires medical assistance	C	3	Mod
	Lack of appetite	Can become malnourished	C	3	Mod
	Being alone	No one to check on health	C	4	High
	<b>Very young</b>	Heat related illness	Requires medical assistance Can become deadly if unattended	C	4
Fatigue		Irritability	B	1	Low
Small newborns being released from hospital to hot, poorly insulated houses		Heat stress for baby	B	4	Mod
Failure to attend immunisation clinics in heat		No vaccinations and protection from infectious diseases	C	2	Low
Modification of infant feedings		Breastfeeding mothers need to demand feed, drink plenty of water themselves; Bottle fed infants require more water	A	3	High
<b>Tourists</b>	Not acclimatised to local conditions	Heat related illness	C	3	Mod
	Over exercise in hot weather	Dehydration	C	3	Mod
<b>Farmers</b>	Lack of access to water for themselves and stock	Dehydration	C	2	Low
	Working outdoors in extreme heat	Heat related illness	C	3	Med
<b>Carers/ health workers</b>	Modification of programs	Kindergarten/preschool playtime earlier in day; MCH to commence earlier	A	2	Mod
	Unwillingness to complete duties in non-air conditioned places	Interruption to services	C	4	High
	Workplace stress	Fatigue, sick leave, under-staffed	C	3	Mod
	Driving in hot weather	Risk of heat related illness	C	2	Low
<b>Organisations</b>	Higher presentation to emergency departments in hospitals	Drain on services; insufficient staff	A	3	High
	Increase in workload (holidays)	Pressure on resources	A	3	High
	Poor workplace practice in hot conditions	Reduced productivity	C	3	Mod
<b>Other</b>	Water restrictions	Reluctance to use water to cool down	C	2	Low
	People disconnected from services or networks don’t hear warnings	Heat related illness; no one checks up on them	C	4	High



Community halls too hot to deliver programs and services	Groups are cancelled and people feel disconnected	C	2	Low
Critical infrastructure failure – power grid failure	Triggering of Emergency Management Plan	D	4	Mod

## Our partners

The *Heatwave Plan* sits alongside other Council plans and strategies. It has clear links with the *Indigo Shire Healthy Communities' Plan*, the *Emergency Management Plan* and *Council Plan*. It also falls under the state-wide heatwave plan which details the different areas of response and action across government and the health and community sectors.

Council is working alongside stakeholders from within the targeted sector groups in the Indigo community to act as key partners in the *Heatwave Plan*. We have partnered with government, private sector, service provider and community group organisations that represent especially our affected vulnerable communities of the very young, elderly, tourists and farmers. These partners include:

- Beechworth Health Service
- Indigo North Health Service
- Yackandandah Bush Nursing Hospital
- Gateway Community Health
- Indigo Health Consortium
- Sporting groups
- Local preschools & Childcare Centres
- Department of Health
- North East Greenhouse Alliance
- Emergency Services
- Educational institutions
- Beechworth Visitor Information Centre
- Chiltern Visitor Information Centre
- Yackandandah Visitor Information Centre
- Rutherglen Visitor Information Centre
- Upper Hume Primary Care Partnership
- Department of Human Services

Each of the key partners has an important role to play in the event of a declared heatwave. Their responsibilities are summarised in the action plan. Indigo Shire Council, as the lead agency, has consulted with stakeholders and identified three areas of priority considered by partners as crucial to the development of an effective heatwave plan. They include:

1. The formulation of localised plans and interventions based upon sound research and results of community consultation;
2. The targeting of vulnerable groups and the building of networks within the community; and
3. Health promotion and community education.





## What we are going to do

To be better prepared for heatwave conditions this summer, Indigo Shire Council is going to:

- Include heatwave preparation, response and recovery into existing municipal plans;
- Make use of existing community registers;
- Promote the use of cool areas in key locations around the shire;
- Use our community services and organisations to support vulnerable populations;
- Engage in a communication and media campaign using heatwave messages consistent with Department of Health materials; and
- Respond to state activated heat alert system in a planned and considered way.

## Our action plan

Our action plan is not just about responding to a pending heatwave; instead, it provides guidance all-year-round as we prepare our community in advance for very hot summers. Our actions then can be divided into three stages.

- Stage One: Pre summer preparation
- Stage Two: During summer prevention
- Stage Three: Heatwave response

Each stage is characterised by a set of key actions (see Figure 6).

**Figure 6: Summary of heatwave plan actions**

<p><b>Stage One</b></p> <p><b>Pre summer preparation April 1 to November 30</b></p>	<ul style="list-style-type: none"> <li>• Implement Heatwave Awareness Campaign (April to Nov)</li> <li>• Identify vulnerable groups and update community registers</li> <li>• Identify cool areas</li> <li>• Engage key stakeholders</li> </ul>
<p><b>Stage Two</b></p> <p><b>During summer prevention December 1 to March 31</b></p>	<ul style="list-style-type: none"> <li>• Implement Heatwave Awareness Campaign (Dec to March)</li> <li>• Advise key stakeholders of roles and responsibilities</li> <li>• Organise cool areas for possible use</li> <li>• Monitor Bureau Of Meteorology thresholds for Indigo Shire</li> </ul>
<p><b>Stage Three</b></p> <p><b>Heatwave response</b> <b>Trigger: DHS heat alert</b></p>	<ul style="list-style-type: none"> <li>• Alert key stakeholders to enact specific actions</li> <li>• Advertise cool areas</li> <li>• Inform Emergency Management Team</li> <li>• Monitor Bureau Of Meteorology reports</li> </ul>



## What we do in Stage 1

### Heatwave Awareness Campaign

Indigo Shire Council will use the same key health messages as recommended by the Department of Health to prepare the general public and vulnerable groups in the community for the upcoming summer. The campaign will involve simple, specific tips around how to prevent and identify the symptoms of heat-related illness and provide advice on the appropriate actions to take if a person exhibits signs of a heat-related illness.

As older people and young children have been identified as a vulnerable group during heatwaves, messages and resources will be used to particularly target people 65 years or older and their carers; and parents with young children. Indigo Shire Council will use the electronic templates made available from the department and will distribute them through community services and organisations. A range of materials such as posters, brochures, drink bottles and fridge magnets will be made available during this time. It will be a stand-alone campaign so that mixed messages are not relayed.

### Identify vulnerable groups and update community registers

Key stakeholders who interact directly with vulnerable clients will be encouraged during Stage 1 to maintain, as part of their individual care and response plan, a community register within their organisation or group. The registers will provide an opportunity to share public health information about heatwaves and heat-related illnesses to those who have enrolled voluntarily. In the event of a declared heatwave, this register would be used to phone high risk people, activate community phone trees and remind neighbours to check on each other everyday during a heatwave.

### Identify cool areas

During Stage 1, Council will seek out cool places across the shire where people can easily get to in the event of a heatwave. These areas could include swimming pools, air conditioned public spaces, school buildings, libraries, neighbourhood houses, community centres and shops. A shade audit will also be carried out.

### Engage key stakeholders

Successful implementation of our *Heatwave Plan* is dependent upon key stakeholders understanding their role in the event of a declared heatwave in the shire. Stakeholders will have different responsibilities according to the stage of the plan and context of the heatwave conditions. They will be reminded of these in Stage 1. Key stakeholders are encouraged to have their own heatwave plans where possible and appropriate.

## What key stakeholders can do in Stage 1

In Stage 1, key stakeholders will be advised by Council to consider:

- Revisiting their actions from the previous summer and evaluate their levels of effectiveness;
- Meeting with other stakeholders to revise and amend key heatwave messages and actions;
- Updating their community registers;
- Participating in Council's Heatwave Awareness Campaign;
- Educating any staff of key heatwave messages; and
- Auditing client homes (if appropriate).



## What we do in Stage 2

Stage 2 includes a range of actions to further build resilience amongst Indigo Shire residents during the summer months. It directly involves the actions of most key stakeholders. This stage is implemented between December 1 and March 31 each year.

### Implement the Heatwave Awareness Campaign

The campaign will provide key heat/health messages to the community during this time via media releases, website news, letter box drops and the *Indigo Informer* newsletter. These will include:

#### Cool your home down

- Keep windows that are exposed to the sun closed during the day, and opened at night when the temperature has cooled
- Turn off non essential lights and electrical equipment
- Move to the coolest room to sleep

#### Stay out of the heat

- Keep out of the sun during the hottest part of the day
- Avoid extreme physical exercise
- Wear light, loose fitting clothes
- Reschedule appointments to early morning

#### Keep yourself cool and hydrated

- Drink plenty of water; avoid caffeine/alcohol
- Take a cool shower
- Spray water over your skin or clothing
- Keep a damp cloth on the back of your neck

#### What you can do for others

- Phone or visit elderly or sick neighbours
- Be aware of phone numbers you can ring to get help
- Know where cool areas are in the shire

### Advise key stakeholders of roles and responsibilities

Council will contact key stakeholders to advise them on the implementation of Stage 2 of their plans. Sporting bodies and summer event organisers will also be informed of safe heat thresholds.

### Organise cool areas for possible use

During Stage 2, Council will ensure that designated cool areas within the shire are ready for use in the event of a heatwave. Shire public pools will be informed of Stage 3 actions. Air conditioning and water access will be checked at key cool locations.

### Monitor Bureau of Meteorology thresholds for Indigo Shire

Indigo Shire Council will check Bureau of Meteorology reports daily for weather updates.

## What key stakeholders can do in Stage 2

In Stage 2, key stakeholders will be advised by Council to consider:

- Participating in Council's Heatwave Awareness Campaign;
- Identifying cool areas;
- Keeping in regular contact with vulnerable clients;
- Modifying client programs;
- Providing staff with access to extra water and cool clothing; and
- Rescheduling staff work hours.

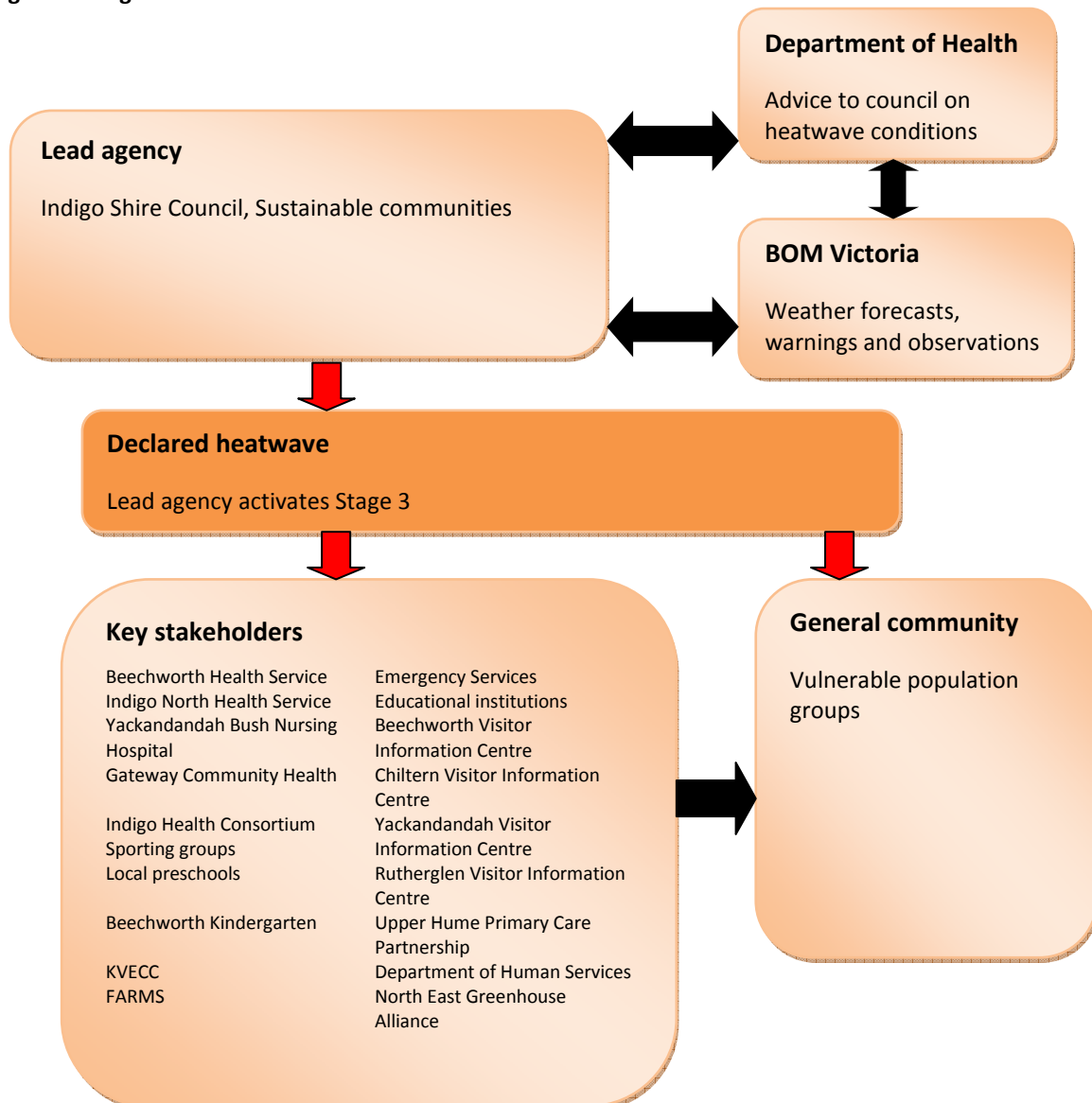


### What we do in Stage 3

Stage 3 is triggered when imminent heatwave temperatures are predicted by the Bureau of Meteorology (BOM) for the Indigo Shire. Council will know to move to this stage when it is notified by the Department of Health. Two staff members at Council, General Manager Sustainable Communities and Manager Community Planning, will receive an email alert on the day when forecasted temperatures first exceed threshold levels. It will then be up to Council to continue to monitor forecast temperatures in our area and notify the relevant stakeholders to activate Stage 3 of this *Heatwave Plan*.

Efficient implementation of Stage 3 is dependent upon the lead agency, Indigo Shire Council, informing all key stakeholders of their responsibilities to enact Stage 3 of the *Heatwave Plan* via email, fax or telephone. The communication plan below will be followed to ensure this process is carried out smoothly and effectively.

**Figure 7: Stage 3 Communication Plan**





During Stage 3, Indigo Shire Council's key responsibilities are to:

- Alert key stakeholders to enact their specific actions;
- Advertise cool areas and revisit pool opening and closure times;
- Monitor DHS, BOM reports daily;
- Alter staff scheduling (particularly outdoor workers);
- Cancel any Council outdoor events; and
- Inform Council's Emergency Management Team.

Aspects of the *Municipal Emergency Management Plan* would be activated by Indigo Shire Council only in response to declared emergencies resulting from heatwave conditions. In this case, the Municipal Emergency Management Plan would be activated.

### What key stakeholders can do in Stage 3

Prompt action by stakeholders during Stage 3 will ensure the impacts of heat on the elderly, very young, tourists and farmers are kept to a minimum. Key stakeholders will be advised by Council to consider:

- Enacting their phone trees;
- Prioritising tasks especially for those involving physical exertion;
- Assessing risk for clients and staff;
- Rescheduling staff work times and hours;
- Providing additional fluids and cool places to rest for clients and staff;
- Modifying client programs;
- Transporting clients in cooler parts of the day; and
- Altering children's outdoor activities and play times.

### How we evaluate the plan's effectiveness

To ensure Indigo's *Heatwave Plan* remains relevant and meets the changing needs of our community, Council will review it annually after each summer and use any amendments to inform an updated *Heatwave Plan* every four years. All relevant stakeholders will actively participate in the evaluation. The following questions will be addressed.

- Were the actions in Stage 3 appropriate and timely?
- What worked?
- What didn't work?
- Was information communicated effectively to stakeholders?
- Was information communicated effectively to the general community?
- What could we do differently next summer?



## Appendix 1: Key heatwave terms

**Climate:** Climate summarises the average, range and variability of weather elements (rain, wind, temperature, fog, thunder and sunshine) observed over many years at a location or across an area. It includes the future expectation of long term weather, in the order of weeks, months or years ahead.

**Climate change:** Climate change is the change in average weather over time and over a region. Climate change includes changes in temperature, wind patterns and precipitation.

**El Niño:** El Niño refers to the extensive warming of the central and eastern Pacific that leads to a major shift in weather patterns across the Pacific. In Australia (particularly eastern Australia), El Niño events are associated with an increased probability of drier conditions.

**Global warming:** Human activities have caused the warming of the global climate over the last 150 years, accompanied by retreating alpine glaciers, rising sea levels and shifting climate zones. Scientists believe that global warming will lead to changes in wind patterns, precipitation and frequency and type of severe weather events. This, in turn, could have significant environmental and economic consequences.

**Greenhouse effect:** The greenhouse effect is a natural warming process of the earth. Without greenhouse gases, the earth's average surface temperature would be about 35 ° Celsius cooler. Scientists are concerned that higher greenhouse gas concentrations, resulting from human activity, will lead to an "enhanced" greenhouse effect which may lead to global climate change.

**Heatwave:** A heatwave is a period of abnormally hot weather lasting several days.

**Morbidity:** Morbidity is an incidence of ill health. It is measured in various ways, often by the probability that a randomly selected individual in a population at some date and location would become seriously ill in some period of time.

**Mortality:** A fatal outcome.



## Appendix 2: Risk assessment rating guide

LIKELIHOOD DESCRIPTORS & RATINGS	
Likelihood	Risk Category
Almost Certain	A
Likely	B
Possible	C
Unlikely	D
Highly Unlikely	E

RISK RATING						
	Consequence					
	1	2	3	4	5	
Likelihood	A	M	M	H	H	E
	B	L	M	M	H	E
	C	L	L	M	H	H
	D	L	L	M	M	H
	E	L	L	L	M	H



## Consequence descriptors (Risks)

Consequence	Category	Social Profile	Community Connectedness	Health and Wellbeing	Environment
Catastrophic	5	*Widespread, irreversible impact on the city's population resulting in displacement of social groups and marked decrease in standard of living affecting occupation, education, income and/or family structure	*Significant barriers preventing access to, and participation in, physical, cultural and social environments by the city's population resulting in alienation and violation of civil liberties	*Widespread direct and/or indirect effects on the health and wellbeing of the general population *Significant, irreversible health and wellbeing impacts	*Complex and hazardous environmental impact on general population *Significant, irreversible damage to people's access to, and control over, their environment
Major	4	*Likely displacement of social group/s resulting in decreased standard of living	*Inequitable access to, and participation in, services and facilities for a large section of the community *Serious divisions within social groups requiring significant alternative service delivery arrangements	*General community concern about potential unequal health and wellbeing impacts *Serious disruption to a large section of the community	*Serious adverse environmental impact on general community
Moderate	3	*Likely adverse impact on more than one particular social group resulting in social/economic inequalities *Likely to be resolved	*Impeded access to, and participation in, services and facilities impacting on more than one social group for longer than one month *Increased social tension *Intervention required	*Potential for likely unequal health and wellbeing impacts on more than one particular social group *Considerable disruption to affected communities	*Likely adverse environmental impact on more than one particular social group
Minor	2	*Likely adverse social/economic impact on a particular social group *Likely to be resolved	*Temporary impeded access to, and participation in, some services and facilities for a particular social group *Minor social tension *Minor breakdown in social networks	*Potential for likely unequal health and wellbeing impacts on a particular social group *Minor disruption to affected community	*Likely adverse environmental impact on a particular social group
Negligible	1	*No adverse impact on people's way of life and standard of living	*No adverse impact on community cohesion and stability	*No adverse impact on people's health and wellbeing	*No environmental hazards or risks



## Appendix 3: Heatwave Survey

# Heatwave Survey

Indigo Shire Council is developing a Heatwave Plan to support the Indigo community to prepare-for, respond-to and recover-from heatwave conditions. By completing this survey, we will be able to gain a better understanding of community needs and health impacts so that effective responses to heatwaves can be developed.

### 1. Name of group/organisation

### 2. Contact details

### 3. Of your clients, who is most 'at risk' from prolonged periods of hot weather?

### 4. How does extreme hot weather impact this group?

### 5. In your experience, which of these impacts pose the highest level of risk to the health and wellbeing of this group?



**6. How are you informed of impending heatwave conditions?**

**7. How does your service deal with heatwave conditions so you and your clients are protected?**

**8. Has your organisation any systems in place to prepare for a heatwave?**

- Yes                       No

**If YES, please describe:-**

**9. Do you have a formal response strategy for a heatwave?**

- Yes                       No

**If YES, please describe:-**

**10. What could be done to further protect you and your clients in an episode of extreme hot weather?**

**11. Is there anything else you would like us to know about the effects of heatwaves on you or the users of your service?**