



Government of Western Australia
State Emergency Management Committee

STATE HAZARD PLAN

Heatwave

Note: This document contains information relating to the arrangements for managing emergencies resulting from the hazard of heatwave. It must be read in conjunction with the State Emergency Management Plan, which contains the generic emergency management arrangements.

Responsible Agency: Department of Health (Disaster Preparedness and Management Unit)

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Legislation

Policy

PLAN

Procedure

Guidelines

Glossary

CONTACT OFFICER

To provide comment on this plan, contact:

Assistant Director
Office of the Chief Health Officer
Public and Aboriginal Health Division.
Department of Health, Western Australia.
dpmu@health.wa.gov.au

AMENDMENT TABLE

Amendment		Details	Amended by:
#	Date		
1	Oct 2012	Initial issue	
2	May 2016	Statement of fact amendments	SEMC Secretariat
3	May 2018	New State Hazard Plan format, Statement of fact changes, removal of duplication, inclusion of assurance activities, Machinery of Government changes and substitute of calculation acronym Excessive Heat Factor (EHF) with Three Day Average Temperature (3DAT).	Department of Health
4	December 2018	Version 01.01 – Statement of fact amendments. Refer also to the generic amendments to the suite of State EM documents as per amendments table v02.00 approved by SEMC (Resolution Number 90/2018).	SEMC Business Unit
5	August 2019	Version 01.02 – Inclusion of Energy Policy WA's role and responsibilities under this plan.	Department of Health

Amendment		Details	Amended by:
#	Date		
6	October 2019	Version 01.03 – Minor amendments approved by SEMC (Resolution Number 91/2019) as per amendments table v02.02 .	SEMC Business Unit
7	June 2020	Version 01.04 – Amendments to reflect amendments to the <i>Emergency Management Act 2005</i> and <i>Emergency Management Regulations 2006</i> and statement of fact amendments approved by SEMC (Resolution Number 39/2020) as per State EM documents amendments table v2.03 .	SEMC Business Unit
8	December 2020	Version 01.05 – Amendments approved by SEMC (Resolution Number 84/2020) as per State EM documents amendments table v02.06 .	SEMC Business Unit

This State Hazard Plan is available on the State of Emergency Management internet site www.semc.wa.gov.au.

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1 INTRODUCTION

The State Hazard Plan for Heatwave (the Plan) provides an overview of arrangements for the management of heatwave in Western Australia and contains information on heatwave prevention, preparedness, response and initial recovery.

The Plan refers to a range of existing plans and documents relating to heatwave but does not duplicate the information contained in these, instead providing directions to websites or other sources where further information can be obtained if required.

1.1 SCOPE

This Plan covers emergency management arrangements within the geographic boundaries of WA, for the hazard of heatwave. It describes risk reduction strategies, preparedness for, response to and initiation of recovery arrangements following the impact of a heatwave.

1.1.1 Out of Scope

Incidents that may occur as a result of, or in conjunction with, a heatwave (e.g. bushfires, storms and power interruptions), are out of the scope of this Plan and are managed as separate incidents. Please refer to the relevant State Hazard Plan(s) or individual agency business continuity plans.

1.2 HAZARD DEFINITION

The event of heatwave is prescribed as a hazard under r. 15(m) of the *Emergency Management Regulations 2006* (EM Regulations).

A heatwave is a period of abnormally and uncomfortably hot weather, that is unusual for the location and which could impact on human health, infrastructure and services.

Contributing factors on the impact of heatwave include:

- maximum daily temperature and the minimum night time temperature;
- duration of the high temperatures;
- humidity and air quality;
- urban and rural design; and
- local acclimatisation.

1.3 ORGANISATIONAL ROLES AND RESPONSIBILITIES

The Chief Executive Officer, Department of Health, is the Hazard Management Agency (HMA) for heatwave (EM Regulations r. 22(b)).

It is recommended that each agency with a role or responsibility under this Plan has appropriate operational procedures detailing their response arrangements in accordance with this Plan. These arrangements should be complementary to the agency's operational procedures detailing their roles and responsibilities under the [State EM Plan](#).

Information regarding the response roles and responsibilities of relevant agencies under this Plan are detailed in Appendix C.

1.4 RELATED DOCUMENTS AND LEGISLATION

Legislation and codes relevant to this plan include but are not limited to:

- *Emergency Management Act 2005*
- *Emergency Management Regulations 2006*
- *Local Government Act 1995*;
- *Meteorology Act 1955*;
- National Construction Code (current);
- *Occupational Safety and Health Act 1984*; and
- *Public Health Act 2016*.

1.5 ACTIVITIES INFORMING THE ASSURANCE PROCESS

The WA health system engages with intrastate agency stakeholders and national stakeholders to ensure a consistent approach to heatwave.

Specialist business units within the WA health system provide response planning and capability. Emergency and incident response support capability is legislated in the *Public Health Act 2016*. Health has internal standard operating procedures to manage the response to heatwave. The State Emergency Management Committee (SEMC) oversees compliance of plans with the State emergency management arrangements (e.g. State Hazard Plan reviews and exercises).

A heatwave event has the potential for increased fatalities that often do not present until weeks and months after the event. The WA health system assesses patient activity and trends as part of its general business activities. During a response phase,

the WA health system undertakes increased levels of syndromic surveillance of public hospital emergency activity.

Information systems data is coded in accordance with International Classification of Disease, 10 revision (ICD-10 standards). Health service providers (i.e. Hospitals) are accredited under the [National Safety and Quality Health Service Standards](#).

Following activation of the response section of this Plan, the Department of Health (WA Health) undertakes a post activation report of the event to ensure quality improvement process is maintained.



2 PREVENTION AND MITIGATION

2.1 RESPONSIBILITY FOR PREVENTION AND/OR MITIGATION

As a naturally occurring event, a heatwave cannot be prevented. However, the adverse effects on communities can be mitigated through the implementation of community resilience and education strategies, such as;

- promotion and participation in community education campaigns in partnership with local government including at risk populations (Appendix E);
- participation in the research and development of Commonwealth mitigation programs;
- improved community warnings and information dissemination;
- establishment of liaison networks with industry groups to promote mitigation strategies; and
- promoting a clear understanding regarding the effect of heatwave exposure and the implementation of appropriate risk mitigation strategies (e.g. rescheduling events).

3 PREPAREDNESS

3.1 RESPONSIBILITY FOR PREPAREDNESS

Organisations, both government and private, should have strategies and operational plans in place to prepare for a heatwave event in line with this Plan.

Preparedness activities include:

- developing plans and procedures;
- designing organisational structures;
- providing ongoing training;
- developing resource management systems; and
- community education.

Organisations should ensure preparedness activities are undertaken within their organisation. The WA health system can provide support and guidance to Local Government and other agencies in the development of any local plans for the management of a heatwave event, including identification of resources that may be required.

3.2 CAPABILITY BASELINE

Heatwave events in the metropolitan area do not occur on a frequent basis (when considering the trigger thresholds – see Appendix F).

Agencies should structure their response based on a protracted heatwave event lasting more than six days. Planning should consider significant workforce non-attendance due to staff fatigue (heat effects) and absenteeism (e.g. resulting from potential school closures). Public infrastructure and public

utilities could also be affected by the same heat event, which may compound the ability of agencies to respond.

3.3 PLANNING AND ARRANGEMENTS

The planning and preparedness information below is intended to provide general advice to assist organisations to ensure they are prepared for a heatwave event.

Communication strategies, internally and for the public, must be developed and tested by organisations to ensure efficient, effective and appropriate distribution of relevant information. The activation of the [State Support Plan](#) - Emergency Public Information may be considered as required.


Internal emergency management plans are to be developed and based on:

- best practice principles;
- technical and scientific knowledge;
- historical data and information; and
- local knowledge and experience.

3.3.1 At Risk Groups

Identification of at risk populations (as detailed in Appendix E), along with methods to access these populations in a timely fashion, to provide advice and support, are a critical part of the preparedness process.

Agencies caring for at risk populations (e.g. aged care facilities) need to ensure they have rigorous redundancy plans (e.g. power, water and evacuation) and business continuity plans to ensure resilience.



The cultural diversity within WA must also be considered so that heatwave information is tailored to effectively communicate across the state, reaching all Culturally and Linguistically Diverse (CaLD) communities.

3.3.2 Resources

Workforce

- Each organisation is responsible for their workforce.
- Management of the workforce is critical. Strategies need to be established to mitigate staff fatigue (heat effects), absenteeism (e.g. resulting from potential school closures) and, where relevant, loss of volunteer support (e.g. state emergency services personnel, lifeguards, ambulance officers and firefighters).

Redundancy

- Electricity, gas, liquid fuels, water, roads and other modes of transportation are critical in enabling our emergency services to continue to function.
- Essential Service Network Operators (e.g. Western Power, Horizon Power, Main Roads, Water Corporation), Energy Policy WA and the Public Transport Authority have overall responsibility to maintain their business continuity during Heatwave events.

3.4 COMMUNITY INFORMATION AND EDUCATION

The WA health system, in collaboration with key stakeholders, will develop communication strategies to educate and advise the public on heatwave forecasting and personal health management, prior to and during a heatwave event.

Identified organisations (see Appendix D) will assist in the distribution of educational material and will work with the communities they service, especially at risk populations / individuals, to help them develop resilience in advance of a heatwave event.

3.5 ASSISTANCE ARRANGEMENTS WITH OTHER JURISDICTIONS

The arrangements for Interstate, including Commonwealth and Defence Force assistance, is available for a heatwave event as detailed in the [State EM Plan](#) section 5.6.

4 RESPONSE

4.1 RESPONSIBILITY FOR RESPONSE

As the HMA, Chief Executive Officer, Department of Health, is responsible for the prevention, preparedness, response and recovery elements of heatwave. The HMA will appoint an Incident Controller (IC) to manage the response to a heatwave emergency.

4.2 RESPONSE ARRANGEMENTS

A coordinated response to a heatwave event will require agencies to undertake a variety of agreed roles and responsibilities. These roles and responsibilities are detailed in Appendix C.

4.3 TRIGGERS

4.3.1 Perth Metropolitan Area

For the Perth metropolitan area, the heatwave trigger is defined as a three day average temperature (3DAT) calculation of 32 degrees Celsius or above. This 3DAT calculation is based on both daily maximum and minimum temperatures over a forward looking three-day prediction (see Appendix F for calculation method).

4.3.2 Regional WA

Given the geographical diversity of WA, regionalised heatwave trigger definitions have not been predetermined. The agencies detailed in Appendix C in this Plan will be activated for regions outside the Perth Metropolitan area by the WA health system in collaboration with advice from the Bureau of Meteorology

(BoM) and other affected stakeholders. Factors to be considered will include:

- humidity;
- evidence of increased morbidity and mortality related to the heat;
- effects on infrastructure and business; and
- population acclimatisation (based on climatic norms) and ability to compensate.

Agreed regionalised trigger definitions may be incorporated into this Plan once a National Heatwave Warning System is completed, endorsed and implemented.

4.4 NOTIFICATIONS

The BoM will notify the WA health system via their Emergency Services Briefing product, as soon as possible following the prediction of a heatwave event. The information provided will include:

- geographic area likely to be affected;
- estimated duration and corresponding temperature predictions; and
- associated weather conditions that may pose an additional hazard (e.g. storms, fire danger ratings, UV index).

4.5 ALERT

A forecast maximum temperature of 40 degrees Celsius or above, on three or more consecutive days, for the Perth metropolitan area will trigger an alert for a potential heatwave event.

The WA health system will disseminate information to agencies detailed in Appendix D indicating that the Alert criteria has been met and there is potential to escalate to Standby.

4.6 STANDBY

Following notification of a predicted heatwave (i.e. an anticipated 3DAT of 32 degrees Celsius or above), the response arrangements of this Plan will be placed on standby.

The HMA will:

- liaise with emergency management support agencies and other relevant stakeholders to communicate awareness of the predicted heatwave;
- through the State Health Incident Coordination Centre (SHICC), inform the relevant health sites of the expected event;
- through the avenues of support organisations, and the WA Health Communications Directorate, promulgate public messages on coping with a heatwave from a health and community perspective;
- in conjunction with the support and combat agencies, establish contact with at risk groups for whom they have responsibilities; and
- Identify an appropriate IC.

4.7 RESPONSE

On commencement of the predicted heatwave (as determined by the triggers outlined in 4.3), the response arrangements of this Plan will be activated.

The IC will:

- activate the SHICC to coordinate the response to the heatwave;
- direct emergency management agencies as required and advise other relevant stakeholders that this Plan's response arrangements have been activated, including the level of response (see section 4.10);
- liaise with the WA Health Communications Directorate to ensure re-enforcement and promulgation of health messages via the media to the community; and
- through multiagency liaison, disseminate information, monitor heatwave impacts and resolve outstanding issues.

The principal response strategies include:

- building on community resilience / preparedness and promoting 'Protect-in-Place', as first line response for communities;
- identifying, supporting and providing advice to at risk populations;
- emergency management and supporting agencies meeting their agreed roles and responsibilities as detailed in this Plan (see Appendix C);
- identifying liaison officers (within predetermined organisations, see Appendix C); and
- depending on the level of the incident, establishing an Incident Support Group (ISG) and / or Operational Area Support Group (OASG) as required.

4.8 STAND DOWN AND DEBRIEFS

The IC will determine when stand-down will occur. A stand-down advice may not automatically be called when the 3DAT falls below the trigger thresholds. The IC will consider advice from the BoM for the upcoming forecast period along with syndromic surveillance information associated to the heatwave event.

Agencies involved in the response to a heatwave event conduct debriefs with their staff as required and appropriate.

Operational debriefing will be conducted for all WA health system staff, interagency partners and other personnel involved in the response to a heatwave event.

4.9 PUBLIC WARNINGS/INFORMATION

The WA health system will undertake the following media strategies and internal and external communication activities to inform the community of expected heatwave events and to promote resilience in advance of the occurrence:

- develop an information package containing fact sheets and a heatwave guide for distribution to the community;
- prepare communication material and identify key health messages;
- consider paid advertising;
- introduce information early, especially to at risk groups, to strengthen community resilience prior to a heatwave event;
- release media statements (WA Health to designate a spokesperson for press releases);
- utilise social media;

- provide information on intranet and internet websites;
- publish articles in the local and regional newspapers / newsletters;
- share information with existing networks and stakeholders; and
- WA Health Communications Directorate to work in collaboration with local, State and non-government organisations to coordinate the media response and release of advice to the public.


The IC is responsible for the provision of public information during a heatwave emergency. Preparation of WA Health media statements and coordination of media inquiries during an emergency event lies with the Manager Communications Directorate, WA Health. The IC may request support from the State Emergency Public Information Coordinator, as required, as detailed in the [State Support Plan](#) - Emergency Public Information.

4.10 HEATWAVE LEVELS

The IC will determine the level of response to a heatwave event based on geographical location, population and duration. The IC is responsible for making and communicating a declaration in accordance with [State EM Response Procedures](#) – Incident Level Declaration.

The below information is provided as a guide to declaration levels for heatwave.

INCIDENT LEVEL 1 The thresholds for a heatwave are activated with the 3DAT of 32 degrees or greater. There are minimal impacts on the community with no residual effects to



other agencies. Hospitals observe negligible increase in activity.

INCIDENT LEVEL 2 Weather conditions leading into the heatwave are sub optimal. The 3DAT of 32 degrees or above continues for approximately six days. The weather event is resulting in some power outages. Hospital activity increases with low number of fatalities.

INCIDENT LEVEL 3 The 3DAT period is protracted, exceeding seven days. Maximum temperatures exceed 45 degrees on multiple days with significantly increased night time temperatures. Public infrastructure is affected, especially power supply, compounding the heatwave and resulting in the public unable to seek respite from the heat. Schools are closing and other businesses close to protect the welfare of their workers. Tourism is greatly affected with events that were scheduled to be held outside being cancelled. Multiple fatalities are observed particularly for at risk populations.

4.11 FINANCIAL ARRANGEMENTS

Financial arrangements are in accordance with [State EM Plan](#) section 5.12 and [State EM Policy](#) section 5.4.

Note: There is no specific funding available for the hazard of heatwave –Disaster Recovery Funding Arrangements – Western Australia (DRFAWA) do not apply to heatwave emergency events. Agencies are advised to track their individual costs incurred during the response phase of a heatwave event, as other unspecified funding may become available depending on the circumstances.

5 RECOVERY

The HMA or Controlling Agency managing the response must initiate recovery activities as part of their response activities ([State EM Policy](#) section 6.2.2).

The impacted local government is responsible for managing the community recovery process.

It is the responsibility of the Controlling Agency to gain an understanding of known or emerging impacts during the response to an emergency incident and coordinate the completion of an Impact Statement prior to the transfer of recovery to the local government. The Impact Statement must be developed in consultation with the ISG, all affected local governments and the State Recovery Coordinator.

Recovery plans should address issues such as re-establishment of normal health services, school and work attendance that may have been interrupted during the event, and the psychosocial wellbeing of those who have been affected by the impact of a heatwave event.

The transition from response to recovery will be at the discretion of the HMA, in consultation with the impacted local governments, once the following conditions have been met:

- the BoM forecasts suggest that heatwave conditions have passed; and
- essential public services (e.g. power, transport and water), have been restored to adequate levels.

APPENDIX A: DISTRIBUTION LIST

This State Hazard Plan for heatwave is available on the SEMC website (www.semc.wa.gov.au). The agencies below will be notified by the HMA (unless otherwise specified) when an updated version is published on this website.

- Bureau of Meteorology
- Department of Communities
- Department of Fire and Emergency Services
- Energy Policy WA
- Emergency Management Australia (SEMC Business Unit to notify)
- HealthDirect
- Local Government
- Main Roads Western Australia
- Minister for Emergency Services (SEMC Business Unit to notify)
- Public Transport Authority
- Royal Flying Doctors Service
- State Emergency Management Committee (SEMC), SEMC subcommittee and SEMC reference group members (SEMC Business Unit to notify)
- State Library of Western Australia (SEMC Business Unit to notify)
- St John Ambulance Australia (WA) Inc
- WA Council of Social Service
- Water Corporation
- Western Australia Police Force.

APPENDIX B: GLOSSARY OF TERMS / ACRONYMS

Terminology used throughout this document has the meaning prescribed in section 3 of the *Emergency Management Act 2005* or as defined in the [State Emergency Management Glossary](#). In addition, the following hazard-specific definitions apply.

B1 GLOSSARY OF TERMS

**3 DAY
AVERAGE
TEMPERATURE
(3DAT)**

A forward looking average temperate of forecast temperatures for the next three days.

**CHIEF
EXECUTIVE
OFFICE,
DEPARTMENT
OF HEALTH**

The Chief Executive Officer, Department of Health is the Hazard Management Agency for the emergency of heatwave and is a representative of the Department of Health. The Chief Executive Officer has the authority to command the coordinated use of all health resources within WA for response and recovery activities arising from the impacts and effects of a major heatwave emergency or disaster situation.

**HEATWAVE
ALERT**

A forecast maximum temperature of 40 degrees Celsius or above on three or more consecutive days for the Perth metropolitan area.

**HEATWAVE
TRIGGER**

A 3DAT of 32 degrees Celsius or above.

**STATE HEALTH
INCIDENT
COORDINATION
CENTRE
(SHICC)**

The SHICC is a designated WA health system facility under the control of the SHC, which provides strategic coordination of the state health response following a major incident including operational control of health resources as required, as per the State EM Glossary definition of an incident control centre (ICC).

**WA HEALTH
SYSTEM**

A combination of public and private providers that provide health services to the public. This includes public and community health service providers along with hospitals both public and private.



B2 ACRONYMS

3DAT	3 Day Average Temperature
BoM	Bureau of Meteorology
CaLD	Culturally and Linguistically Diverse
DRFAWA	Disaster Recovery Funding Arrangements – Western Australia
HMA	Hazard Management Agency
IC	Incident Controller
ISG	Incident Support Group
OASG	Operational Area Support Group
SECG	State Emergency Coordination Group
SEMC	State Emergency Management Committee
SHICC	State Health Incident Coordination Centre

APPENDIX C: RESPONSE ROLES AND RESPONSIBILITIES

The Department of Health has the primary role of coordinating the response to a heatwave emergency. The assistance and cooperation of other agencies and organisations operating within their functional areas are necessary for an effective and timely response.

The following are the response roles and responsibilities of agencies under this Plan. Brief all-hazards information is also provided for agencies who may have a role under this Plan – full details of these roles and responsibilities can be found in the [State Emergency Management Plan](#), Appendix E.

All agencies should maintain appropriate internal plans and procedures in relation to their specific responsibilities.

Organisation	Responsibilities (see State EM Plan Appendix E for full all-hazards roles and responsibilities)
Bureau of Meteorology	<ul style="list-style-type: none"> a. Alert the WA health system to predicted heatwaves, through their Emergency Services Briefings. b. Assist in communication of WA health system’s messages to the community. c. Research and develop a National Heatwave Policy. d. Participate in ISG, OASG and SECG meetings as requested. e. Provide a liaison officer to the SHICC if required.
Department of Communities	<ul style="list-style-type: none"> a. Coordinate welfare services for those impacted by the incident including operating welfare centres and providing crisis support services (emergency accommodation, emergency clothing and personal requisites, personal services, financial assistance, emergency catering), as required. b. Coordinate and facilitate registration and reunification, including arranging for Register.Find.Reunite. to be activated via the Australian Red Cross, as required. c. Identify and provide advice and support to the existing Department of Communities at risk population client base. d. Participate in ISG, OASG and SECG meetings as requested. e. Provide a liaison officer to the SHICC if required.

Organisation	Responsibilities (see State EM Plan Appendix E for full all-hazards roles and responsibilities)
Department of Fire and Emergency Services	<ul style="list-style-type: none"> a. Undertake operations to control subsequent hazards and coordinate the activation of relevant State Hazard Plans and support plans if required. This considers the likelihood that a heatwave event has resulted in DFES responding to incidents within statutory responsibilities. b. Assist in communicating messages to the public: <ul style="list-style-type: none"> i. before a heatwave, to assist the development of community resilience; and ii. during a heatwave emergency to protect the community. c. Participate in ISG, OASG and SECG meetings as requested. d. Provide a liaison officer to the SHICC if required.
Department of Health	<ul style="list-style-type: none"> a. Discharge the duties of HMA for heatwave emergencies, on behalf of the Chief Executive Officer, Department of Health, in accordance with the <i>Emergency Management Act 2005</i>, State EM Policy section 5, State EM Plan section 5 and this Plan. b. Coordinate the activation of the State Health Emergency Response Plan and other support plans, as required. c. Convene an ISG and/or OASG, as required. d. Request the State Emergency Coordinator to establish an SECG, if required. e. Promulgate public messaging around heatwave and promote personal safety community advice during a heatwave. f. Provide advice to support agencies to assist with supporting at risk communities (Appendix D)
Energy Policy WA	<ul style="list-style-type: none"> a. Provide advice to the WA health system regarding potential disruptions or known pending disruptions to state energy supplies. b. Participate in ISG, OASG and SECG meetings as requested.
HealthDirect	<ul style="list-style-type: none"> a. Provide support to the WA health system, including additional telephony, as required. b. Provide extreme heat health advice to the public.

Organisation	Responsibilities (see State EM Plan Appendix E for full all-hazards roles and responsibilities)
Local Government	<ul style="list-style-type: none"> a. Assist in communicating messages to the public: <ul style="list-style-type: none"> i. before a heatwave, to assist the development of community resilience; and ii. during a heatwave emergency to protect the community. b. In consultation with Department of Communities, identify venues that can be utilised as welfare facilities for at risk populations in the community (e.g. local libraries, community recreation facilities, respite areas). c. Provide resources to assist the WA health system when requested. d. Undertake community recovery activities, as required. e. Participate in ISG, OASG and SECG meetings as requested. f. Provide a liaison officer to the SHICC if required.
Main Roads Western Australia	<ul style="list-style-type: none"> a. Provide details on road conditions to the WA health system for assets on the Main Roads Network. b. Participate in ISG, OASG and SECG meetings as requested. c. Provide a liaison officer to the SHICC if required.
Public Transport Authority	<ul style="list-style-type: none"> a. Provide frequent updates on affected public transport to relevant agencies (SJA, DFES, WAPolice Force) and the public. b. Participate in ISG, OASG and SECG meetings as requested.
Royal Flying Doctors Service	<ul style="list-style-type: none"> a. Participate in ISG, OASG and SECG meetings as requested. b. Provide a liaison officer to the SHICC if required.
St John Ambulance Australia (WA) Inc	<ul style="list-style-type: none"> a. Participate in ISG, OASG and SECG meetings as requested. b. Provide a liaison officer to the SHICC if required.

Organisation	Responsibilities (see State EM Plan Appendix E for full all-hazards roles and responsibilities)
Water Corporation	<ul style="list-style-type: none"> a. Provide advice to the WA health system in respect to water and wastewater services to Water Corporation customers: <ul style="list-style-type: none"> i. ensure continuity of safe drinking water supply. ii. maintain power interruption contingency plans for pump stations, treatment facilities and other critical infrastructure required to provide water and wastewater services. b. Participate in ISG, OASG and SECG meetings as requested.
Western Australia Police Force	<ul style="list-style-type: none"> a. Provide assistance to the WA health system as requested and mutually agreeable. b. Provide a liaison officer to the SHICC if required. c. Participate in ISG, OASG and SECG meetings as requested.
Western Power	<ul style="list-style-type: none"> a. Respond to potential electrical hazards and maintain the integrity of the power system. b. Liaise with WA Health around the sensitive customer priorities during a heatwave when power is affected. c. Consult WA Health Media in relation to media statements pertaining to demand management communications during a heatwave. d. Participate in ISG, OASG and SECG meetings as requested.

APPENDIX D: AGENCIES AND ORGANISATIONS SUPPORTING AT RISK POPULATIONS

The following listed agencies and organisations have responsibilities to advise and / or provide support to at risk populations by way of communicating messages to the public before a heatwave; assisting in the development of community resilience, and during a heatwave emergency; to protect the community:

- aged care facilities – Department of Health (Commonwealth);
- Aboriginal Health Council of Western Australia;
- all health care providers (e.g. hospitals, general practices, mental health services);
- child care centres;
- Culturally and Linguistically Diverse Groups;
- Department of Communities;
- Department of Education;
- Department of Local Government, Sport and Cultural Industries;
- HealthDirect;
- Silver Chain;
- Tourism Western Australia; and
- WA Council of Social Service.

APPENDIX E: AT RISK POPULATION LIST

Health At Risk Populations

- Those over 65 years old, especially:
 - In care homes
 - Living alone or are socially isolated.
- Those taking multiple medications, particularly:
 - Anticholinergics
 - Vasoconstrictors
 - Antihistamines
 - Diuretics
 - Psychoactive drugs
 - Antihypertensive.
- The chronically unwell, including those with:
 - Heart conditions
 - Diabetes
 - Respiratory disease
 - Renal insufficiency
 - Parkinson's disease
 - Severe mental illness
 - Impaired sweating, due to burns, skin or genetic disorders
 - Conditions requiring community / ambulatory care (e.g. Hospital In The Home, home Continuous Positive Airways Pressure, dialysis).
- Those unable to adapt their behaviour to keep cool, due to:
 - Dementia
 - Disability
- Being bedridden
- Being babies and the very young
- Substance abuse
- Being very overweight or obese
- Being a pregnant or breastfeeding mother.
- Additional populations who may be vulnerable to the effects of a heatwave including:
 - Aboriginal people,
 - Cultural and linguistically diverse people, who may have limited understanding of the impacts
 - Other acutely unwell patients living in urban heat islands, such as the Perth Central Business District, where the temperature gradient across urban areas may be higher by several degrees celsius due to reduction in green space, high building density and the nature of street surface coating material
 - Homeless
 - Suboptimal housing conditions
 - Workers in hot workplaces, such as kilns in a brickwork factory
 - Outdoor workers
 - Sportsmen / women and children's athletic groups.

APPENDIX F: THREE DAY AVERAGE TEMPERATURE (3DAT) CALCULATION

To calculate the **3DAT** the Average Daily Temperature (ADT) needs to be determined.

AVERAGE DAILY TEMPERATURE (ADT)

The ADT is calculated from the forecast daily maximum (in this case, Wednesday) and the forecast daily minimum, which is the overnight temperature leading into the following day (in this case, Thursday).

For example:

Perth Wednesday

Min: 20° C

Max: 40° C

Mean Calculation for Wednesday:

$$ADT = (40 + 26) / 2 = 33° C$$

3 DAY AVERAGE TEMPERATURE CALCULATION

To calculate the **three Day Average Temperature** a forward looking 3 day average is used.

$$3DAT = (ADT_1 + ADT_2 + ADT_3) / 3$$

The trigger for Perth is a 3DAT of 32°C; the example below demonstrates that this trigger will only be breached on days four and five.

Day	Min (°C)	Max (°C)	ADT (°C)	3DAT (°C)
1	15	35	26	28.2
2	17	38	29.0	30.2
3	20	39	29.5	31.3
4	20	40	32	32.3
5	24	41	32.5	32.2
6	24	42	33.5	29.8
7	25	38	30.5	27.2
8	23	30	25.5	
9	21	30	25.5	
10	21	35		

Day 4 3DAT calculation:

$$(ADT_4 + ADT_5 + ADT_6) / 3 = (32 + 32.5 + 33.5) / 3 = 32.3$$

Day 5 3DAT calculation:

$$(ADT_5 + ADT_6 + ADT_7) / 3 = (32.5 + 33.5 + 30.5) / 3 = 32.2$$

In the above example State Hazard Plan – Heatwave would be on **alert the first day** there was a **forecast of 3 or more consecutive days above 40 degrees**, moving to **activated on days four and five**.