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Australian Disaster
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Australian Government
National Emergency Management Agency

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Disaster Resilience 



Hot policy to cool hubs

Tackling Australia's silent killer in Greater Sydney

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CONFERENCE AND EXHIBITION

3 – 6 SEPTEMBER 2024

ICC Sydney



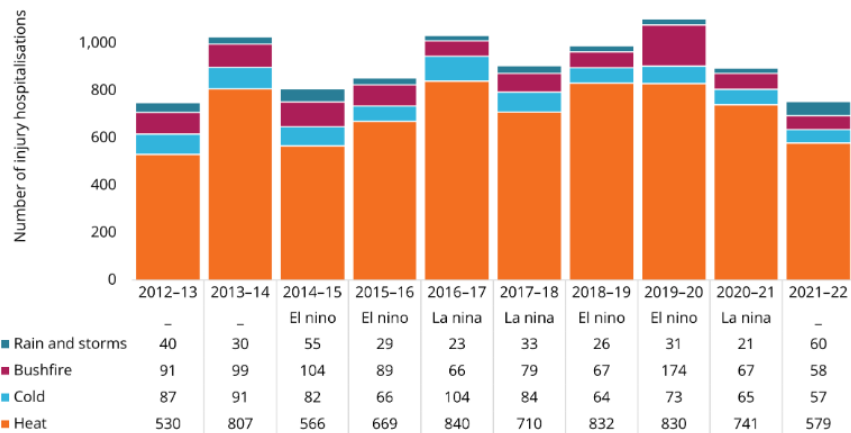
Greater Sydney Heat Taskforce

WSROC & Resilient Sydney - led project 2022 - 2024

The heat challenge

- Heat is a significant and growing issue globally and in NSW/Sydney.
- Multi-faceted issue with cumulative, cascading consequences: health, environment, economy.
- Heatwaves are responsible for more deaths than fire, floods and storms combined (Coates et al., 2014, 2022).
- In Australia, most weather-related injuries are due to heat (AIHW, 2023).
- Heatwaves lead to significant increase in mental health hospital admissions

Figure 1: Extreme weather-related injury hospitalisations, 2012-13 to 2021-22



Source: National Hospital Morbidity Database (NHMD)

Consequences of extreme heat in a highly urban area like Sydney can be catastrophic.

For example: What if parts of Sydney experience extended power outages on day four of an eight-day extreme heatwave?

What consequences will that have for:

- Health (mortality, morbidity, mental health)
- Infrastructure: traffic signals, trains, sewage, water, electronic payment, gas stations, aircon, solar panels, garage doors, etc.)
- Social (crime, violence)
- Economic (productivity, damages, health)

Are we adequately prepared to respond?

Major power outage hits the Balkan region as an early summer heatwave overloads system

Posted Sat 22 Jun 2024 at 3:44pm, updated Sat 22 Jun 2024 at 4:32pm



Death toll from global heat wave climbs as 1,000 die from extreme heat in Mecca

Alex Findijs
© 21 June 2024



Paramedics carry a muslim pilgrim for a medical check after he fell down due to a heat stroke at pillars, in Mina, near the holy city of Mecca, Saudi Arabia, Sunday, June 16, 2024 [AP Photo/Rafiq Meqbool]

Busiest transit hub in U.S. rocked by delays as infrastructure breakdowns hit during heat wave

Story by Deon J. Hampton and Daniel Arkin • 2d • 4 min read



Busiest transit hub in U.S. rocked by delays as infrastructure breakdowns hit during heat wave

'You feel death at your doorstep but have no choice': Extreme heat takes toll on outdoor workers

By Alicia Wallace, CNN
© 8 minute read - Published 6:00 AM EDT, Fri June 21, 2024

f x m e



A construction worker fixes a sidewalk during a heatwave in Boston in July 2022. Allison Dinner/Reuters

INDEPENDENT

Manchester airport power outage – what are your rights if you were disrupted?

Simon Calder

Mon 24 June 2024 at 10:03 pm AEST • 4-min read



Areas at Risk of Blackouts During the Summer

Certain parts of the US might face an energy crunch this summer. These are the regions in the US that have the highest chance of being affected by blackouts.



Governance: Comparing heat to other hazards

Despite known impacts, arrangements for heatwave are far less developed than for other hazards.

Hazard	Bushfires (RFS)	Flood (SES)	Heatwave (SEOCON)
Prevent	<ul style="list-style-type: none"> • Fire risk mapping • Hazard reduction burns • Evacuation routes • Planning rules (buffer zones) 	<ul style="list-style-type: none"> • Flood risk mapping • Flood levees/dams • Evacuation routes • Planning rules (1 in 100) 	<ul style="list-style-type: none"> • None • <i>Planning rules (first controls 2021, some councils only).</i>
Prepare	<ul style="list-style-type: none"> • Local emergency plans • Public awareness campaigns • Clean gutters, replenish water 	<ul style="list-style-type: none"> • Local emergency plans • Public awareness campaigns • Sandbagging, elevating valuables 	<ul style="list-style-type: none"> • None
Respond	<ul style="list-style-type: none"> • Public warnings • Door knocking • Evacuation centres • Back burning/fire fighting 	<ul style="list-style-type: none"> • Public warnings • Door knocking • Evacuation centres • Rescues 	<ul style="list-style-type: none"> • Public warnings (Health) • <i>Adhoc opening hours swimming pool/library.</i>
Recover	<ul style="list-style-type: none"> • Support programs • Infrastructure rebuilds 	<ul style="list-style-type: none"> • Support programs • Infrastructure rebuilds 	<ul style="list-style-type: none"> • None

Greater Sydney Heat Taskforce

A multi-agency taskforce to coordinate longer-term, systemic heat resilience for Greater Sydney

\$1.3m Disaster Risk Reduction Fund (Australian and NSW governments)

Multi-sector heat risk reduction program (PPRR spectrum)

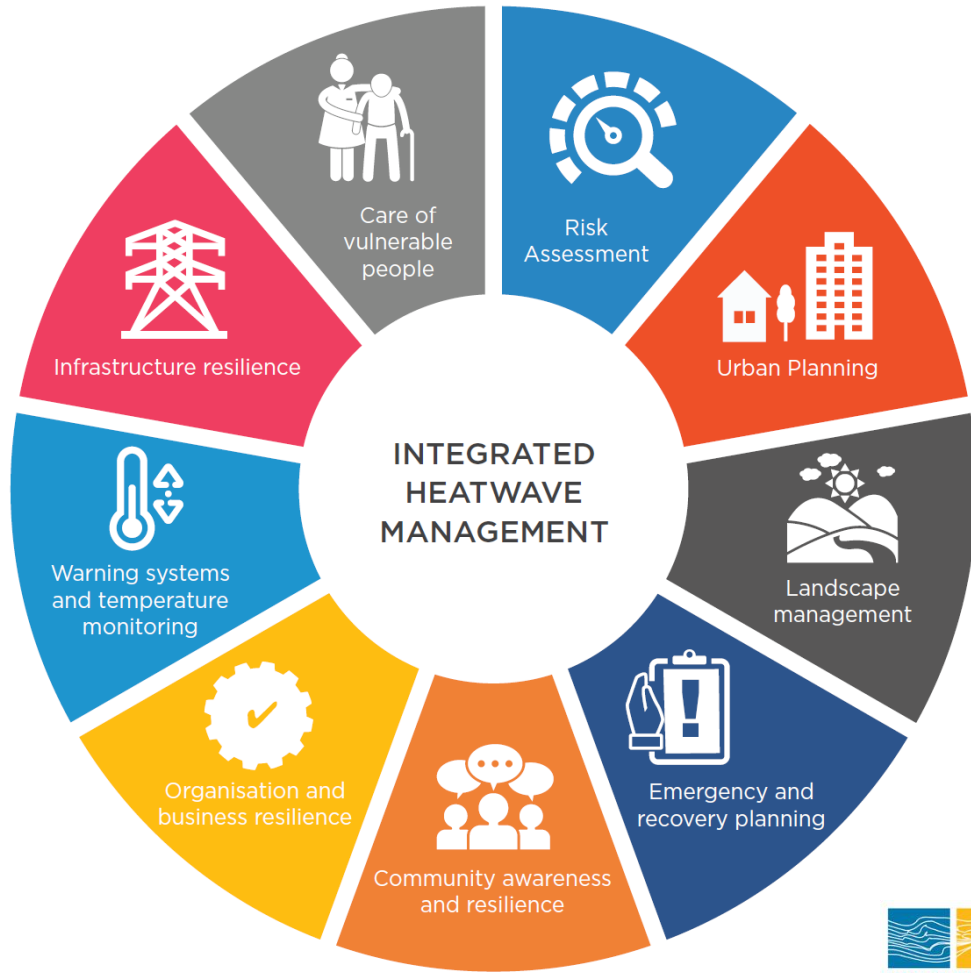
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|---|---|---|
| <ul style="list-style-type: none">• WSROC• Resilient Sydney• Blacktown City Council• Liverpool City Council• NSW Police (SEOCN)• NSW Department of Planning, Housing and Infrastructure• NSW Reconstruction Authority | <ul style="list-style-type: none">• NSW Health• NSW Dept of Climate Change, Energy, the Environment and Water• Transport for NSW• NSW EPA• Endeavour Energy• Sydney Water• Australian Dept of Climate Change, Energy, the Environment and Water | <ul style="list-style-type: none">• Swiss Re• Green Building Council of Australia• Business Western Sydney• Committee for Sydney• Property Council of Australia• Sweltering Cities• Western Sydney Community Forum• Australian Red Cross |
|---|---|---|

Facilitated by: WSROC & Resilient Sydney

Supported by: Working Groups, Expert Reference Panel, ongoing broad stakeholder engagements

Addressing the gap: Greater Sydney Heat Taskforce

A multi-agency taskforce to coordinate longer-term, systemic heat resilience for Greater Sydney



Greater Sydney Heat Taskforce initiatives

Greater Sydney Heat Taskforce

Establishing long-term governance for heat risk management across Greater Sydney

Heat Smart City Plan

*Five-year plan
for building heat
resilience in Greater
Sydney*

Cool Suburbs NSW

*Heat resilience rating
and assessment tool
for industry and
government*

Heat Risk Methodology

*Holistic place-based
methodology for
assessing community
heat risk*

Heatwave Management Guide

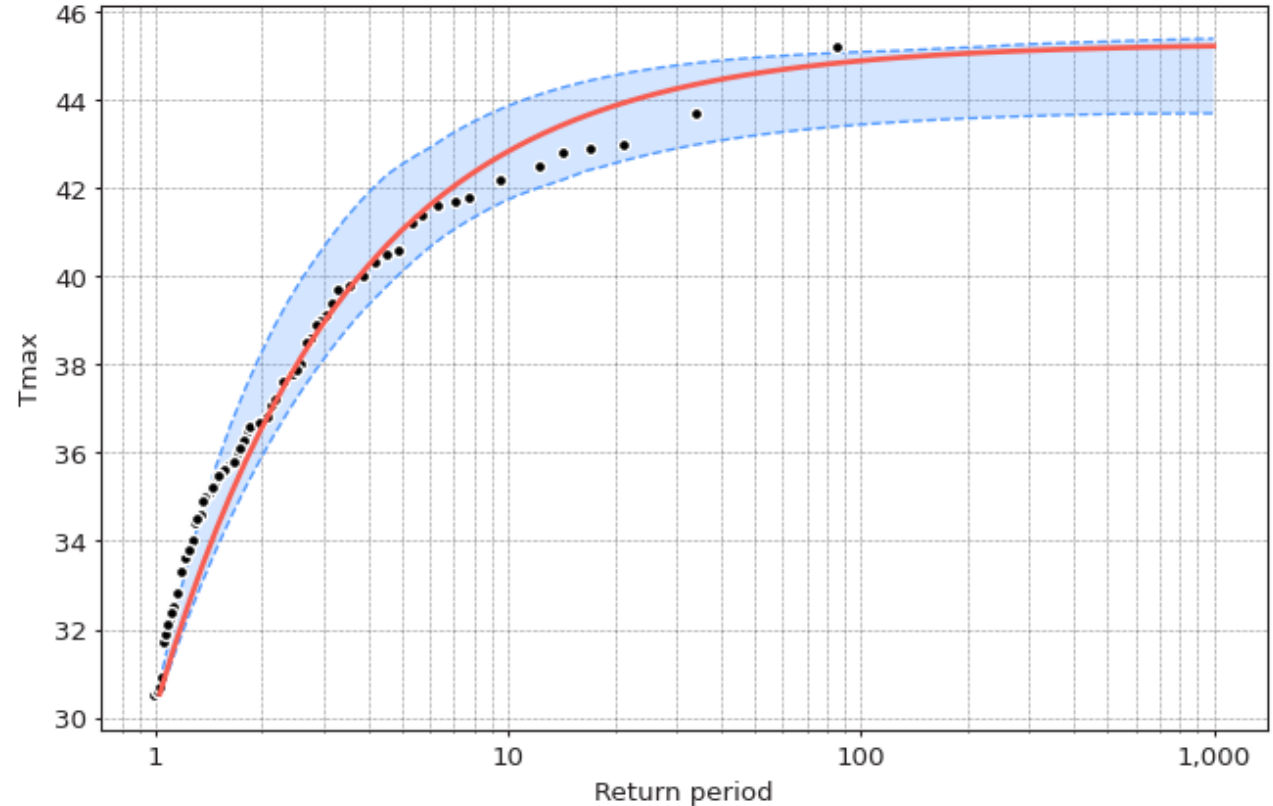
*Guidance for local
government to
improve heatwave
management*

Implementation: 2023-2024

A probabilistic approach to Heat Hazard (like floods)

Base hazard profile: Air Temperature

- **First in AUS (to be publicly available)**
- Provides **heatwave frequency** for various magnitude events (Tmax)
- Instrumental to:
 - **quantify heatwave impacts** (e.g. Annual Average Damage);
 - Inform **emergency planning**;
 - Inform **infrastructure/building design**
- **This phase:** 2 climate zones (Eastern and Western Sydney).
- **Next steps:** Option to expand to NSW.



Example modelled on air temperature, Sydney Airport (BoM)

Cool Suburbs NSW

- Free-to-use web-tool
- Provides evidence-based guidance for heat resilient urban development, available from the earliest stages of planning
- Provides a benchmark and rating against best practice criteria for different scale developments
- Co-designed with industry, government and expert science panel
- Currently in use:
 - Bradfield City masterplan
 - Greater Sydney council DCPs
 - GBCA Communities 2.0

<https://coolsuburbs.au/>



Heatwave Management Guide

Supporting councils to improve planning for a wide range of heatwave events

- Co-designed with local government – (30 Greater Sydney councils)
- Articulates current, emerging and possible roles of local government
- How heatwave plays out across different council departments
- How council roles intersect with existing governance structures (e.g. EM)
- How best to support communities



Figure 4: Main topics covered in the Heatwave Management Guide



Mobile Cooling Hub








Background

- Increase in extreme heat events
- Increase in primary homelessness (rough sleeping)
- 2022 research recommended further mitigation strategies to reduce rough sleeping hospitalisations during heat events
- Additional risks to heat stress/stroke if experiencing homelessness.

Open Access Case Report

Heat Illness Requiring Emergency Care for People Experiencing Homelessness: A Case Study Series

by  Timothy English ^{1,*} ,  Matthew Larkin ² ,  Alejandro Vasquez Hernandez ² ,
 Jennie Hutton ³ and  Jane Currie ⁴ 

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Development

Development Team

- Homeless and Heat Emergency Activation Team (HHEAT) established in late 2022
- Combination of homelessness/health operational teams and academic research teams.
- Co-designed – 5-6 members with lived experience.
- Monthly operational meetings



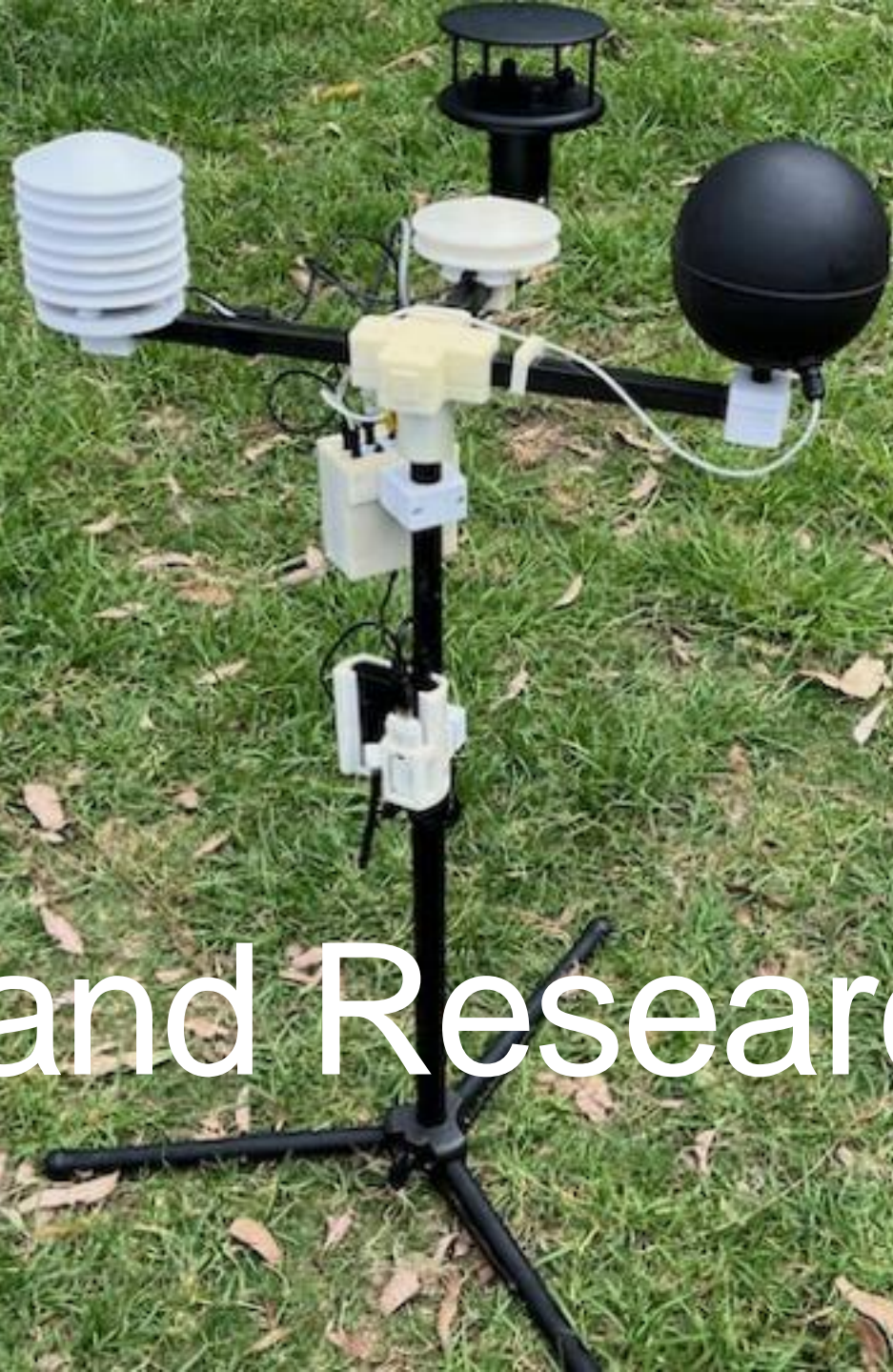


Purpose

Purpose

- Provide immediate heat relief for those experiencing homelessness or in vulnerable housing.
- Low cost, adaptable and scalable
- Health Led w/ NGO support
- Reduce hospitalisation and death for people sleeping rough





Design and Research

Design and Research

- Hubs designed by the Heat and Health Research Incubator team (HHRI)
- Heat Readings (EMU) and monitors
- Activation based off Heatwatch App
- Health, NGO and Local gov provides support
- Pre/Post and Longitudinal research





Launch

Phase One Launch

- Jan – March 2024
- Large and small scale set ups
- 50-60 attendance across the first two days
- 17 received health support from heat
- 11 participants to ongoing research





Response & Next Steps

Response & Next Steps

- Articles in multiple news outlets.
- NSW Minister Jackson and Parkes attendance and announcement in parliament
- Ongoing conversations with local, state and international agencies on possible replication.
- Off grid options and extended heatwaves
- Improve community comms





Phew – we need to cool off!

Thanks to all our project partners across Greater Sydney, and generous funders: NEMA, NSW Reconstruction Authority, Resilient Sydney, WSROC, City of Sydney, St Vincent Hospital Sydney and Sydney University.

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