HEAT IMPACTS ARE INCREASING

Communities around Australia are increasingly exposed to more frequent and intense heat events under a changing climate. While temperatures in Greater Sydney are not as extreme as elsewhere in NSW, the sheer scale of population, assets and systems exposed creates significant risks.

In the event of an unprecedented heatwave, Sydney's response capacity could be overwhelmed due to systemic breakdowns of enabling infrastructure such as cooling, lighting, lifts, transport signalling, water supply, medical equipment, and telecommunications.

Beyond extreme events, the ongoing pressure of higher average temperatures and urban heat islands are creating chronic stressors for the city; exacerbating issues like cost-of-living and quality-of-life.

SYDNEY NEEDS A PLAN

Communities around Australia are increasingly exposed to more frequent and intense heat events under a changing climate. While temperatures in Greater Sydney are not as extreme as elsewhere in NSW, the sheer scale of population, assets and systems exposed creates significant risks.

WE ALL HAVE A ROLE TO PLAY

A heat resilient city requires an integrated, whole-of-community apparoach to prevention, preparedness, response and recovery (PPRR). This Plan seeks to build partnerships, shared responsibility, and an empowered community based on a holistic understanding of heat risk.

Woman using handheld fan with glass of water.

What do we mean by heat?

Bringing together the different ways in which heat is understood in Greater Sydney, this Plan understands heat hazard having three key components:

Climate: the baseline conditions in a particular location, and how these are changing over time. Taking into account climatic variations within its geographic area.

Urban heat: the way human activities and urban development – concrete, buildings and bitumen – can trap and re-radiate heat, making local conditions hotter. This driver is the key focus of urban planners and designers.

Heatwave and extreme heat: short term weather events that occur in a location at a particular point in time. Heatwaves cannot be prevented, but their severity can be mitigated, and we can respond with measures to improve the resilience of communities, assets and the environment.

While each of these drivers are interrelated, they require different treatment strategies and are owned by different sectors operating in our city.

Australian Government

NSW GOVERNMENT

The development of the Heat Smart City Plan was facilitated by WSROC and Resilient Sydney and funded through the Disaster Risk Reduction Fund. The Disaster Risk Reduction Fund (DRRF) is jointly funded by the Australian and New South Wales governments.

The Heat Smart City Plan was developed through engagement with the Greater Sydney Heat Taskforce, an Expert Reference Panel and other organisations and businesses across Greater Sydney.

The Taskforce includes the following organisations:

- Australian Department of Climate Change, Energy, the Environment and Water
- Australian Red Cross
- Blacktown City Council
- Business Western Sydney
- Committee for Sydney
- Endeavour Energy
- Energy and Utility Services Functional Area
- Green Building Council of Australia
- Liverpool City Council
- NSW Department of Climate Change, Energy, the Environment and Water
- NSW Department of Planning, Housing and Infrastructure
- NSW EPA
- NSW Health
- NSW Police (SEOCON)
- NSW Reconstruction Authority
- Property Council of Australia
- Resilient Sydney
- Sweltering Cities
- Swiss Re
- Sydney Water
- Transport for NSW
- Western Sydney Community Forum
- WSROC

Expert reference panel

- University of New South Wales, Dr. Patrick Harris
- University of New South Wales, Prof. Mat Santamouris
- University of Sydney, Prof. Ollie Jay
- University of Sydney, Prof. David Schlosberg
- Western Sydney University, Prof. Nicky Morrison
- Western Sydney University, Prof. Sebastian Pfautsch

Taskforce codesign group

(in addition to organisations listed under Taskforce Steering Committee and Taskforce Expert Reference Panel)

- Ausgrid
- Australian Institute of Landscape Architects
- Bradfield Development Authority
- Camden Council
- Campbelltown City Council
- City of Sydney
- COTA NSW
- Department of Communities and Justice
- Hawkesbury City Council
- Homes NSW
- NCOSS
- NEMA
- Nepean Blue Mountains Local Health District
- NSW Australian Medical Association
- NSW Treasury
- Penrith City Council
- Peppercorn Services
- Powerhouse Museum, Parramatta
- South Western Sydney Local Health District
- Sydney Local Health District
- Sydney Alliance
- Western Sydney Local Health District
- St John's Ambulance

If you are looking for more information about this project and to download the full Heat Smart City Plan, please contact WSROC.

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Greater Sydney Heat Smart City Plan

Summary Document 2025–2030

The Greater Sydney Heat Taskforce acknowledges Aboriginal and Torres Strait Islander peoples as the Traditional Custodians of the lands and waters of this place we now call Metropolitan Sydney. We pay our respect to Elders past and present of the Eora, Dharawal (Tharawal), Gundungurra, Dharug (Darug) and Guringai (Kuring-gai) peoples.

GREATER SYDNEY IS IMPACTED BY HEAT

Extreme heat is arguably one of the greatest threats to Sydney's health, liveability, and productivity in the immediate future and long term.

Historically, heat has killed more Australians than fire, flood and storms combined. Beyond mortality, heat has a range of complex and cascading impacts on city systems, including:

- **Infrastructure:** Reductions in energy transmission capacity, failures of signalling equipment.
- **Economy:** Lost productivity, business disruption (network connectivity, e-payment) and stock losses (agriculture, cold storage, transport, and logistics).
- **Community:** Increased energy and medical bills, lost work, social and mental health impacts, exacerbation of medical conditions.
- **Environment:** Tree canopy die-back, heat-related deaths of native fauna, as well as water and air quality impacts.

It is widely agreed that heat impacts are underestimated because they are not systemically recorded.

Heat Impacts:

Half of Sydney's urban **tree species** vulnerable to extreme heat

Mass deaths of flying foxes and birds at temperatures over **42°C**

Cost of living: energy use **triples** on days **35°C** and hotter

50% rise in **domestic violence** when temperatures rise from 20°C to 40°C

13% increase in mortality

$6.8 billion annual costs (health, productivity, energy) in Western Sydney **by 2070**

Unmeasured: Business disruption (network connectivity, e-payment, transport and logistics)

GREATER SYDNEY HEAT SMART CITY PLAN

This Plan has been developed under the Greater Sydney Heat Taskforce, a multi-sector collaboration of organisations across government, industry and the community sectors. The Heat Smart City Plan has been prepared through a collaborative codesign process involving over 13 workshops and 34 interviews and engagement with over 370 individuals from across health, planning and design, infrastructure, emergency management and community and corporate sectors.

The codesign process started by establishing an agreed shared vision and outcomes to strive for. This vision provided the framework for identifying recommendations for implementation.

The Plan outlines six key directions, nine focus areas and 40 recommendations (see next page). Each of the Plan's recommendations are at different levels of maturity. Some build on existing programs, while others are new proposals and collaborations that have emerged during the Taskforce process.

City Plan co-design workshop.

IMPLEMENTATION

The Heat Smart City Plan is set to be implemented 2025-2030. Taskforce partners will work together to develop a detailed Implementation Plan and evaluation program. Delivery of recommendations will be supported by regular internal and public feedback loops integrated in the Evaluation Plan.

Vision

To ensure people living in Greater Sydney can survive and thrive in a warmer climate and during extreme heat events.

PLAN OVERVIEW

This diagram shows an overview of the recommended actions for each of the key directions.
Detailed descriptions of the recommended actions are included in the Heat Smart City Plan, which can be downloaded from wsroc.com.au.

● Scoping ●● Committed – seeking funding ●●● Committed – delivery planning ●●●● Implementation

heatSMART decisions

Coordinated City
Enduring, collaborative approach improves heat risk decision making for Greater Sydney

1. Greater Sydney Heat Taskforce | ●●
Coordinate the establishment of a governance arrangement to guide delivery of the Heat Smart City Plan, as part of broader multi-hazard disaster adaptation planning.

2. Heat Resilient Community of Practice | ●●
Establish Community of Practice for professionals working on the issue of heat resilience, to support Heat Smart City Plan delivery.

3.Listen to Communities | ●●
Engage with community and reflect and report on community input in delivery of the Heat Smart City Plan.

Benchmarking Heat
Shared understanding and monitoring of heat and heat risk improves action

4. Heat Risk Assessment | ●●
Adopt agreed heat risk assessment frameworks, incorporating emerging heat risk assessment models that support place-based decision-making.

5. Triggers for Action | ●
Develop a set of heat impact thresholds and triggers relating to community health, business and service continuity, and infrastructure operations.

6. Measure Heat Impacts | ●
Develop and endorse agreed heat impact indicators to support consistent reporting, including:
- Economic impacts
- Productivity loss
- Health (e.g. heat related illnesses coming through emergency departments)
- Community wellbeing
- Environmental wellbeing
- Infrastructure resilience

heatSMART places for people

Heat Safe Homes and Buildings
New and existing homes, and buildings are heat responsive and can keep people safe from heat

7. Heat Safe Social Housing | ●●●●
Retrofit social housing properties to improve thermal performance and minimise heat stress.

8. Heat Safe Rentals | ●
Set and enforce thermal performance standards for residential rental accommodation, incl. retrofit incentives targeting areas of greatest risk.

9. Heat Safe Builds | ●
Inform thermal safety requirements within the National Construction Code to ensure new buildings protect occupants from extreme temperature.

10. Heat Smart Home Improvements | ●●
Deliver a community education campaign to improve household knowledge and confidence in making cool choices for their home and garden.

Heat Smart Planning
Integrated heat mitigation and adaptation is required in state and local planning controls

11. Cool Design Guidance | ●●●
Develop, publish and promote guidance and tools for government, industry and community to mitigate heat through planning and design.

12. Cool Suburbs Assessment | ●●
Deliver a rating and assessment tool to support industry and government deliver cool homes and suburbs in line with the latest science.

13. Cool Planning | ●
Review the NSW Planning System to identify where heat risk mitigation and adaptation measures need to be adopted into state and local planning controls and land-use overlays.

heatSMART economies

Heat Smart Marketplace
The private sector supports heat risk reduction, minimises the economic impacts of heat and seeks commercial opportunities in adaptation.

14. Intergenerational Report | ●
Publish impacts and economic costs of heatwaves in 2028 NSW Intergenerational Report (aggregate risk), and biennial departmental climate change impacts, risks and adaptation statements (enterprise risk disclosure) to inform the NSW budget and policy development.

15. Burning Money Brief | ●●●●
Build awareness among key public and private sector decision makers in NSW regarding the economic impacts of heat and priority recommendations for action.

16. Sovereign Heat Risk | ●
Engage with the Australian Government regarding recognition of heat as a peril through pre (Treasury) and post event (Disaster Management) channels.

17. Heat Smart Insurance | ●
Raise awareness of growing heat-driven risk exposure and application of appropriate insurance solutions to build social and economic resilience.

18. Heat Smart Innovations | ●
Identify, test and roll out new solutions to address heat risk with a focus on skills building, new technology, product development.

Heat Smart Work
Capacity built for effective heat risk planning by business and industry

19. Heat Safe Work Places | ●
Build capacity of organisations, business and industry stakeholders to plan, prepare for and respond to heat risks. Including integration of heat risk as part of BAU, business continuity, Duty of Care and WHS in all policies.

20. Heat Safety Workplace Pilot | ●●●
Develop a Heat Safety Strategy for academics, professional staff and students working on Western Sydney University campuses.

heatSMART infrastructure

Heat Smart Infrastructure
Interconnected, resilient infrastructure enables communities to survive and thrive

21. Climate Ready Infrastructure | ●●
Establish collaboration forums with the essential infrastructure sector to explore barriers and build opportunities for resilience across infrastructure streams.

22. Heat Smart Movement | ●
Investigate opportunities for climate resilient passenger networks including: cool transport stops, green active corridors, heat-resilient infrastructure, and heat safe operations.

23. Heat Smart Energy | ●
Build evidence and knowledge base to understand extreme heat impacts on energy network resilience, and the service needs of customers during heatwaves.

24. Emission Reductions and Energy Resilience Program | ●●●●
Invest in climate change mitigation and capacity building initiatives that support communities and business to reduce emissions and increase energy security.

25. Green-Blue Infrastructure Network | ●
Develop a coordinated approach to green and blue infrastructure delivery and maintenance, accompanied by tools and guidance to support best practice.

heatWAVE ready

Heatwave Ready City
Clear governance arrangements, funding and guidance supports effective heatwave management.

26. Heatwave in Disaster Adaptation Plan | ●●
Reflect Heat Smart City Plan actions in multi-hazard Disaster Adaptation Plans (DAPs) to drive government, business, household and service provider preparedness.

27. NSW Heatwave Subplan Review | ●●●●
Review the NSW Heatwave Subplan consulting widely and using the Heat Smart City Plan as a reference.

28. Emergency Plan Stress Test | ●
Conduct recurring local and city-wide multi-agency heatwave emergency scenario exercise to inform and improve arrangements.

29. Heatwave Response Protocols | ●
Develop and implement evidence-based protocols, templates and guidance to ensure best-practice heatwave emergency planning at all levels.

30. Cool Centres | ●
Initiate a partnership between state government, councils, community sector and industry that tests and evaluates examples of Cool Spaces for funding and standardisation.

31. National Disaster Funding | ●
Declare heatwave as an eligible disaster under the National Disaster Funding Arrangements.

Heatwave Ready Communities
Communities and organisations are empowered to take action to build community resilience, reduce risks and manage emergencies.

32. Beat the Heat | ●●●
Develop and circulate annually updated heat risk and safety communications resources and toolkits as part of ongoing awareness campaign.

33. Heat Smart Community Services | ●
Deliver training, tools and resources with community stakeholders, organisations and decision-makers to build their capacity to manage heat risk.

34. HeatWatch App | ●●
Personalised heat-health risk alert app with accompanying evidence-based cooling and hydration advice.

35. Heat Smart Healthcare | ●
Develop and deliver training tools and resources for caring professionals including medical, nursing and aged and disability care workers.

36. Social Cohesion Program | ●●
Measure, understand an d improve social cohesion of Greater Sydney communities (aligning to State Disaster Mitigation Plan).

37. Heatwave Safety Net | ●
Establish check-in program for priority at-risk individuals as part of heatwave management (e.g. Red Cross TeleCross REDi).

38. Heat Smart Learnings | ●●●●
Deliver an interdisciplinary learning program for young people to increase awareness and interest in the different aspects of heat resilience as they intersect across the curriculum.

heatSMART research

Researchers and practitioners work collaboratively to deliver heat resilient solutions.

39. Collaborative Research | ●●
Establish Sydney's first Heat Smart City Collaborative Research Program across Sydney's universities, utilities, industry, NGOs, NSW Government, and Greater Sydney local government.

40. Heat Smart Data Base | ●●
Establish a multi-indexed database of Sydney's dispersed collection of existing information that enables researchers, utilities, industry, government agencies and local government, NGOs to upload open access research, data and case studies to improve the capacity of the region to respond to heat risk.