

# TURN DOWN THE **HEAT** STRATEGY AND ACTION PLAN

2018



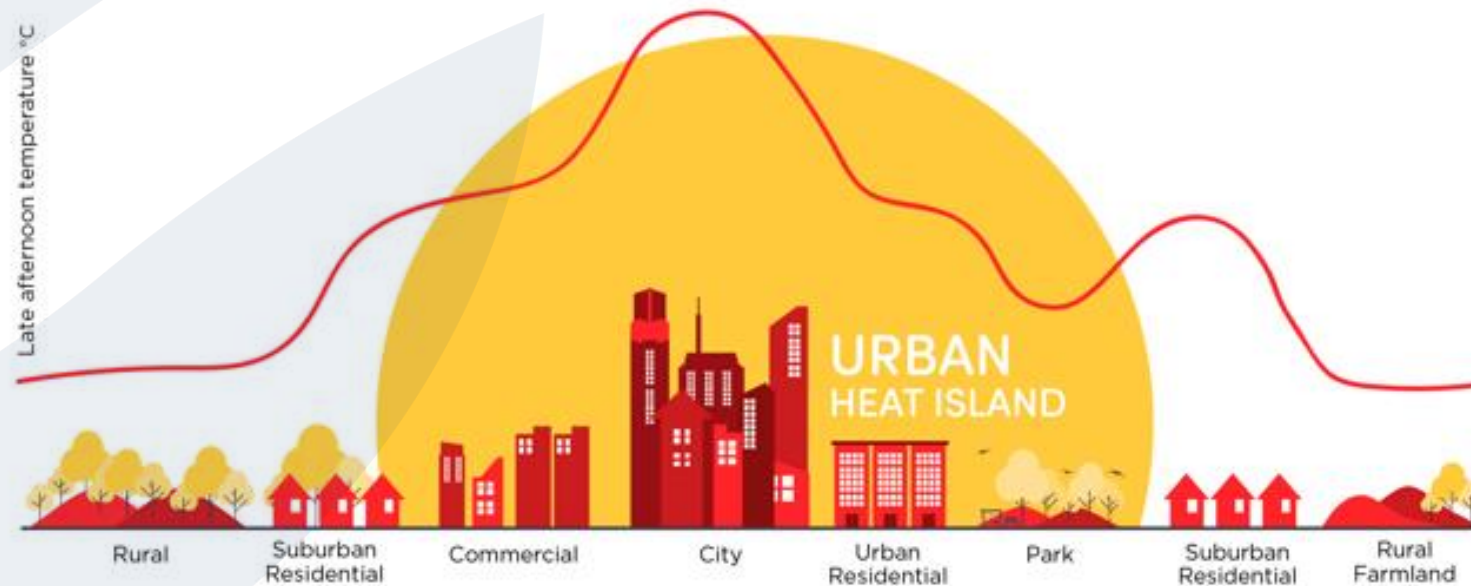
# The issue: Urban heat

**Sydney's top  
shock and biggest  
risk** Resilient  
Sydney Strategy  
2018

**Heatwaves and  
extreme heat are  
managed**  
Objective Greater  
Sydney Region Plan,  
2018

**An additional  
5–10 hot days by  
2030 expected for  
GWS**  
OEH, 2015

**Extreme heat is  
one of the top  
hazards for NSW**  
State Level  
Emergency Risk  
Assessment 2017





# The issue: Urban heat

Urban heat leads to **major health and liveability issues** for Western Sydney.

Is not a future problem. **It is happening now.**

There is a need to:

- Build better places
- Better prepare our communities

## PEOPLE

Heatwaves kill more Australians than any other natural disaster.<sup>1</sup>

13%

increase in mortality during heat wave<sup>2</sup>



## INFRASTRUCTURE

Of all extreme weather events, heatwaves place the greatest pressure on our city's assets.



**Unusable**

public spaces and other facilities become unusable

URBAN HEAT IMPACTS

\$6.9b

Australia's estimated annual lost productivity due to heat stress<sup>1</sup>



## ECONOMY

The economic burden of heatwaves is thought to be significant, however, the exact cost remains unknown and challenging to quantify.

100%

higher energy consumption for cooling in West vs East Sydney<sup>3</sup>

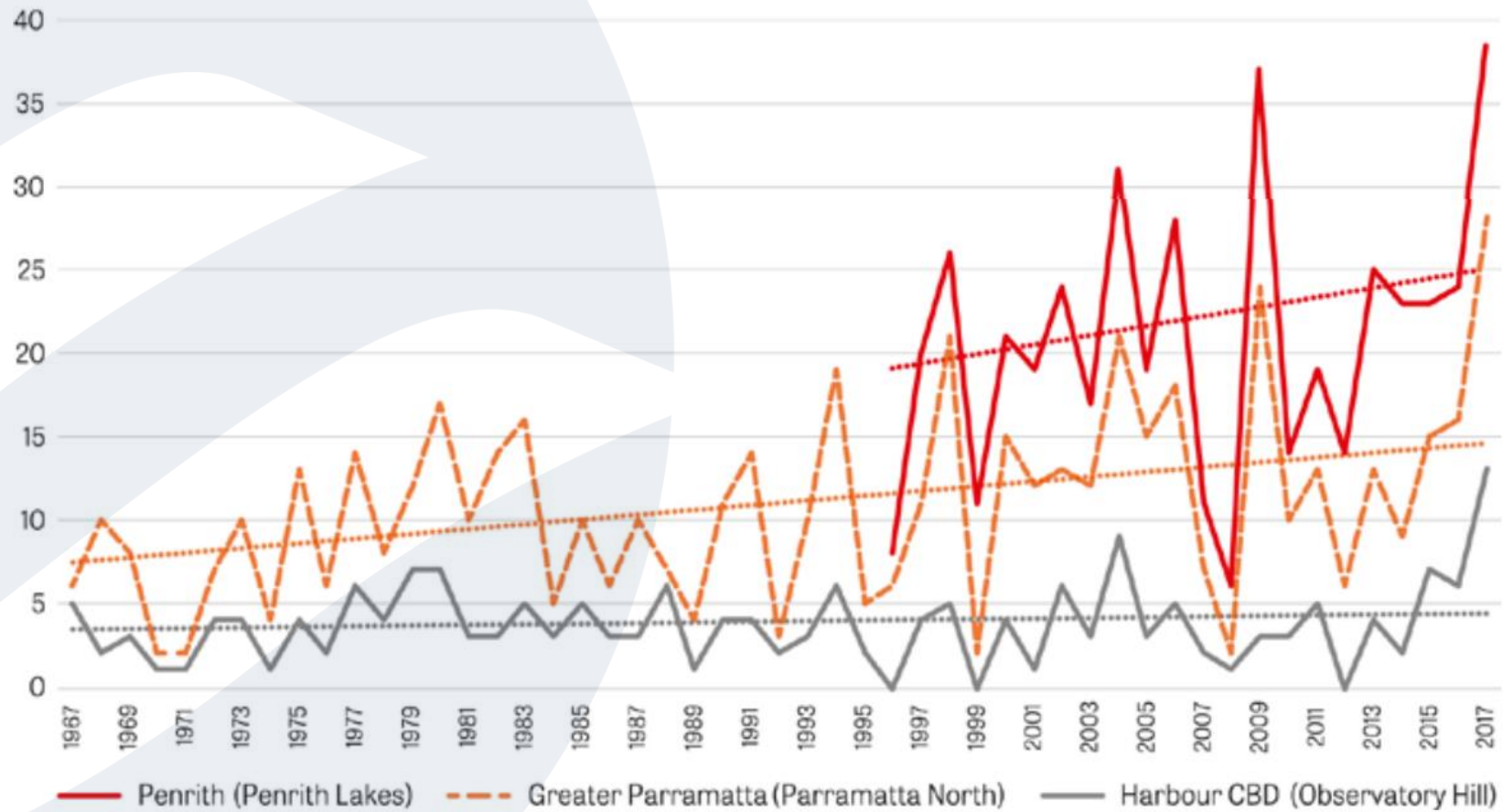


## ENVIRONMENT

Extreme heat causes a dramatic reduction in the amenity of an environment from the neighbourhood to the city level.



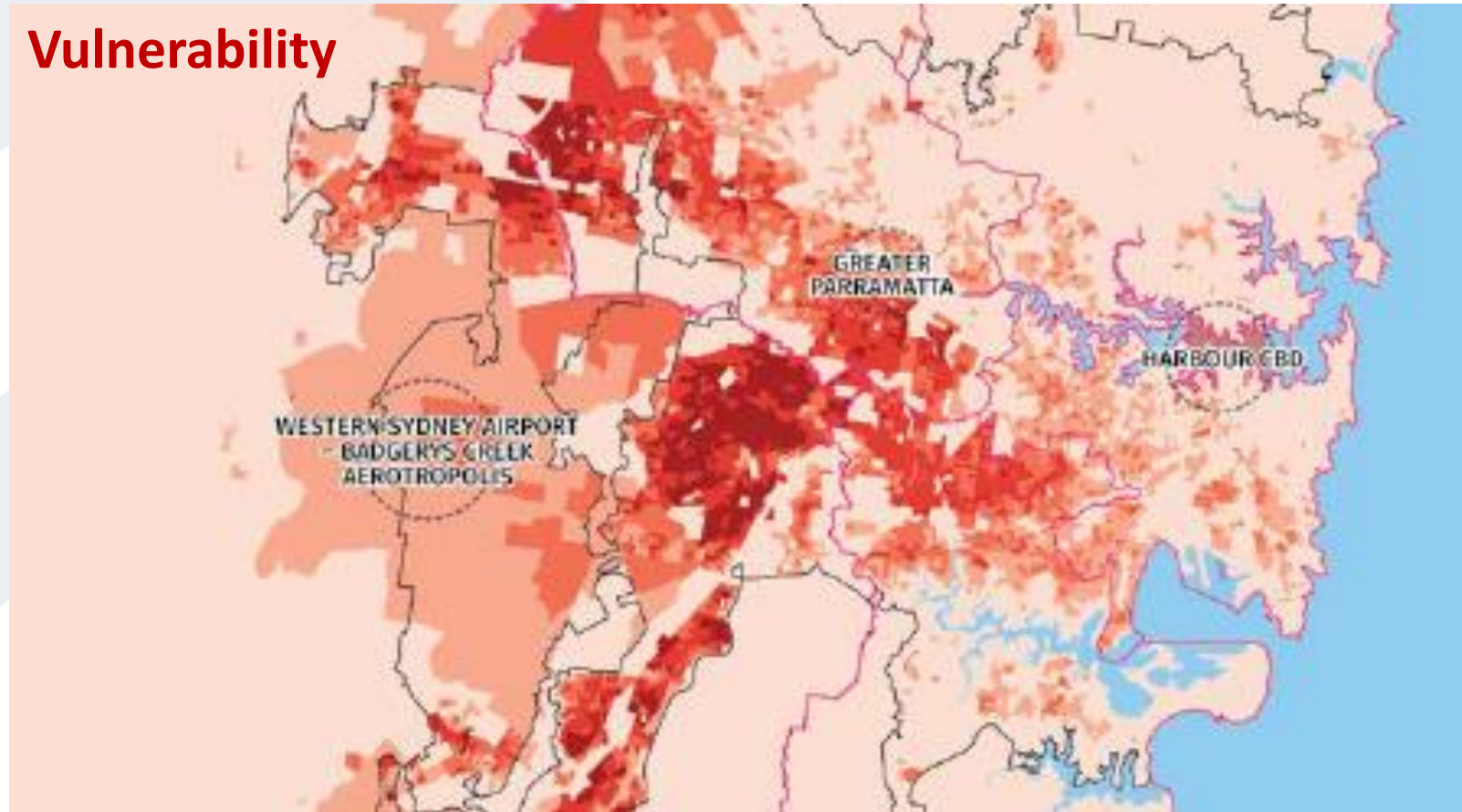
# The issue: Why Western Sydney?



Source: Greater Sydney Commission (2018) using data from the Bureau of Meteorology



# The issue: Why Western Sydney?



Source: Greater Sydney Commission, District Plans, 2018





# Australia's National Growth Areas



2010

A new greenfield development Blacktown LGA, Western Sydney.



2019

## **Challenge:**

Greenfield development drives the greatest increases in urban heat.

## **Opportunity:**

Growth areas are a clean slate for best-practice design of liveable, climate resilient communities.



# Australia's National Growth Areas

Our current approaches to heat tend to be focused on the **internal environment** and emergency response.

- BASIX
- Energy star ratings
- Air-conditioning – Cost/access leaves communities isolated and at-risk
- Heatwave response plans

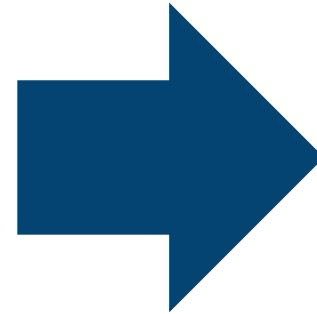
We need to also focus on our **external environments**.







# Collaboration towards solutions: Turn Down the Heat





# Strategy participants

## Steering Committee



## Stakeholders that have contributed (through interviews or workshop participation)



## Council Working Group



# Targets, strategic drivers and actions



## Ambitious provisional targets:

- **Increase multi-sectoral collaboration and investment** to deliver more projects to address the impacts of urban heat in Western Sydney by 2023.
- **Reduce ambient temperatures in Western Sydney by 1.5 degrees Celsius** through water, greening and cool materials strategies by 2023.
- **Zero net increase in economic impacts** of heatwaves by 2023.
- **Zero net increase in morbidity and mortality impacts** of heatwaves in Western Sydney by 2023.

## Strategic drivers:



Take action together



Design and plan to cool the built environment



Green our urban areas



Build a community that is healthy and prepared



Innovative and responsive infrastructure

**16 actions for implementation**

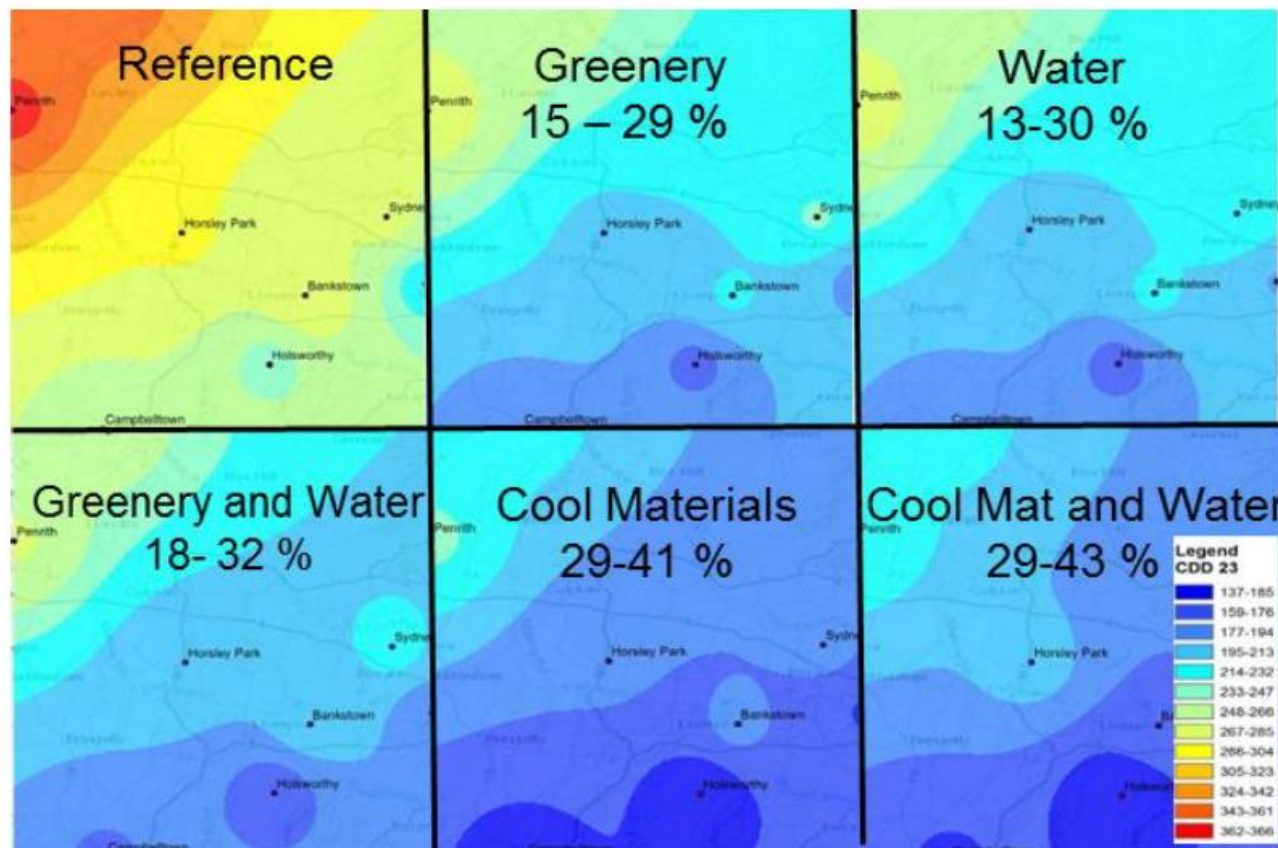


# Urban cooling strategies

## It's not just about trees !

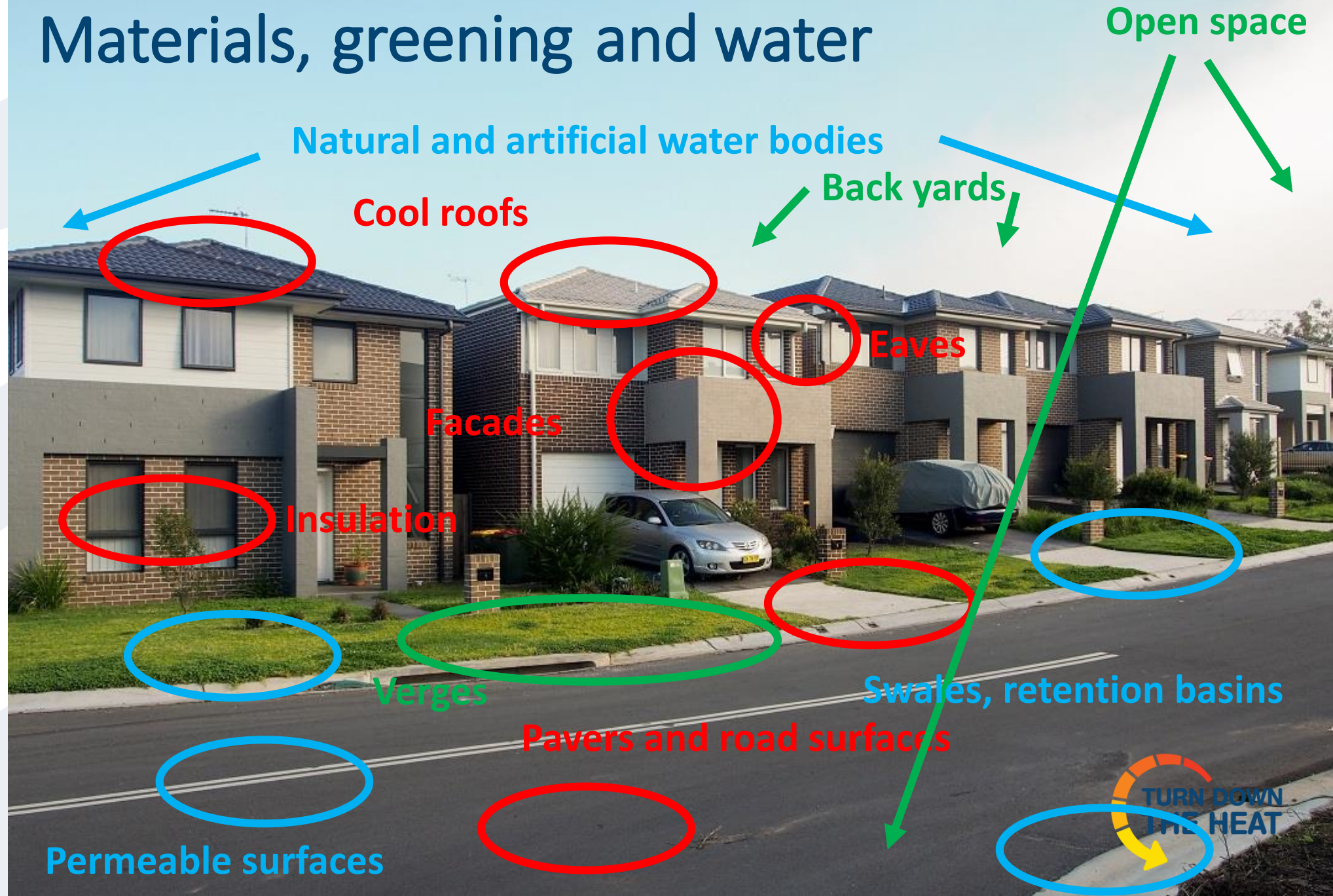
The most effective urban heat mitigation technologies use a combination of water-based technologies including fountains in conjunction with cool material technologies such as cool roofs and pavements.

UNSW, Cooling Western Sydney, 2017





# Materials, greening and water







# Connecting research with practitioners

**We must continue to build our understanding of impactful interventions and ensure information is accessible to key decision makers.**

Current examples:

- UNSW – Cool Suburbs mitigation tool
- UNSW – Citizen Science program
- WSU – Research repository
- WSU – Which plant where?
- WSU – Cumberland ambient air temperature project
- SU – cooling interventions for at-risk groups





# Community engagement



**It is critical that communities understand the health risks of extreme heat and can take action accordingly.**

Ensuring that people stay healthy and look out for others, but also equipping communities with the knowledge and resources to minimise their contribution to the problem.







# Health and emergency response



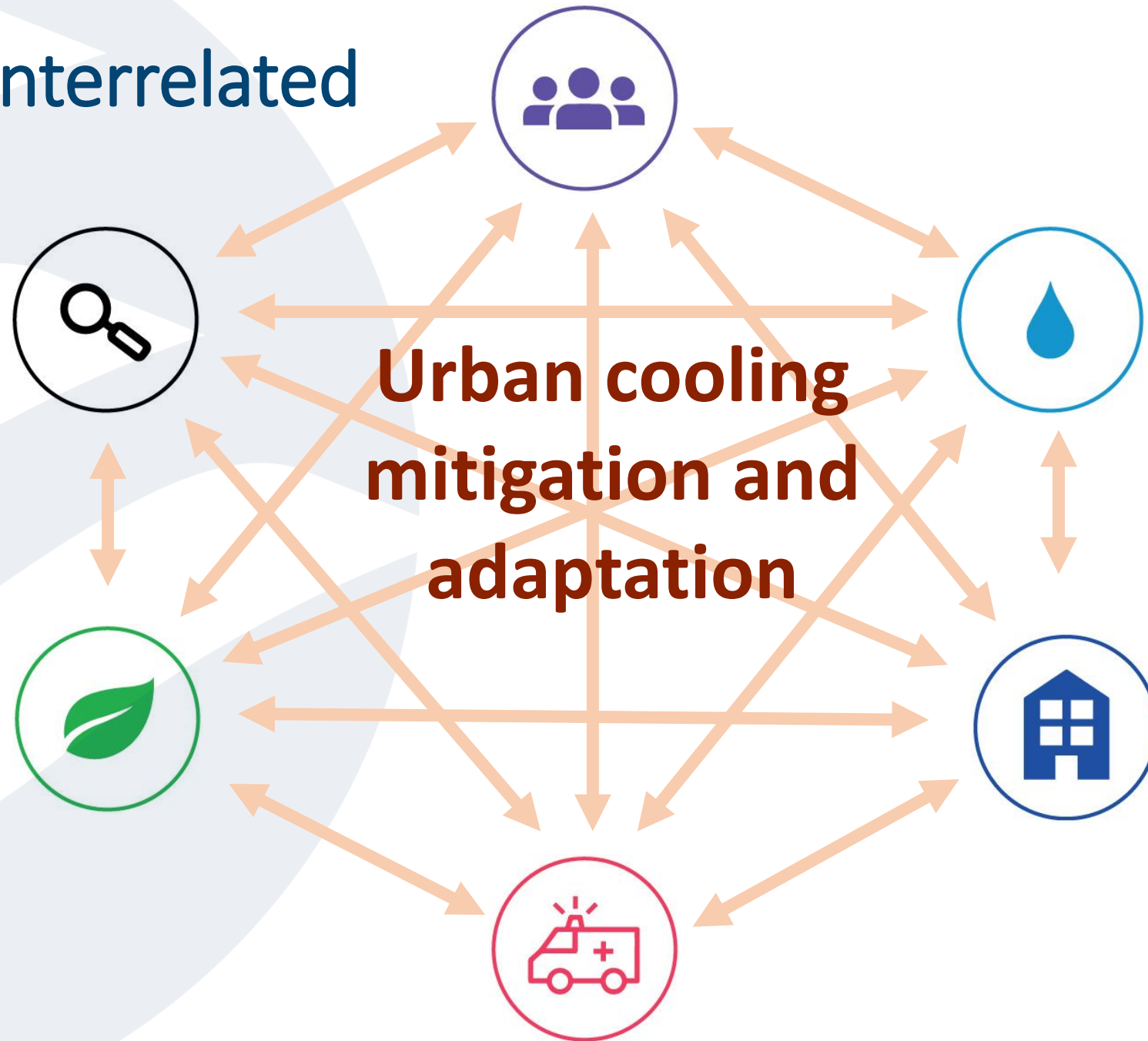
**While mitigation is crucial, we must also prepare for extreme heat events and heatwaves by ensuring we have appropriate emergency and health responses in place.**



Ensuring community members are also aware of how to respond to extreme heat events will require further engagement and education.



Actions are interrelated





# Putting Strategy into practice: Planning Review

## Development assessment pathways: Urban heat

Exempt Development	Complying Development	Local Development	State Significant Development
POTENTIAL FOR URBAN HEAT INFLUENCES			
SEPP Exempt and Complying Code to be amended to include requirements for UH	SEPP Exempt and Complying Code to be amended to include requirements for UH	Council to amend LEP and DCP to include UH requirements i.e. new subdivisions, developments etc.	Incorporation of UH into SEPP's and state and regional strategic policies. Council amends individual LEP, DCP, LSPS

**Urban heat needs to be prioritised as a first order consideration in development planning**

- Integrating urban heat objectives into local planning instruments
- Advocating for State Government to review planning instruments

# Putting Strategy into practice: Cool Suburbs

## Resilient Sydney flagship action

Develop a 'cool score' for new and existing suburbs (using latest in data sensing, materials science, built environment planning and performance monitoring).

Scoping of pilot project currently underway, implementation 2019- 2021.





## Putting Strategy into practice: Research consortium

# Western Sydney University is taking the lead to set up a research consortium:

A repository of research by different universities and working on better engagement between research institutions and practitioners.



## Turn Down the Heat

On Saturday 14 January 1939, the Sydney Sun reported that Blacktown hit nearly 48 degrees around one in the afternoon.

hottest day, our recent summers have broken just about  
 Sydney was sparsely populated. Hardly imaginable back  
 developments, the size of its cities, the sheer number of  
 bitumen linking them all together.

may have on the elderly, on the young, on our houses, no

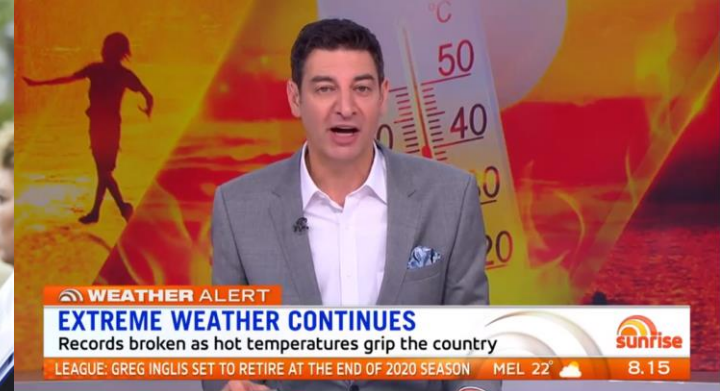
to adapt to the increased temperatures already in the Western Sydney University researchers and others investigate, rising heat in Western Sydney.

ure and Society, led by Dr Abby Mellick Lopes, provide eastern Sydney keep cool during the hottest parts of the air living environments, at home and out and about, hate changing world.





# Putting strategy into action: Advocacy



**WEATHER ALERT**  
**EXTREME WEATHER CONTINUES**  
Records broken as hot temperatures grip the country  
LEAGUE: GREG INGLIS SET TO RETIRE AT THE END OF 2020 SEASON MEL 22° 8.15

## 7 DAY FORECAST WESTERN SYDNEY

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
31°	33°	38°	36°	33°	41°

ONE DEAD, ONE CRITICAL AFTER AVALANCHE IN NEW MEXICO DAR 32° 8.17



**PARRAMATTA**  
**50C days 'the norm' by 2050 in western Sydney: New report tackles urban heat threat**

Matt Taylor, Parramatta Advertiser  
December 5, 2018 4:00am  
Subscriber only

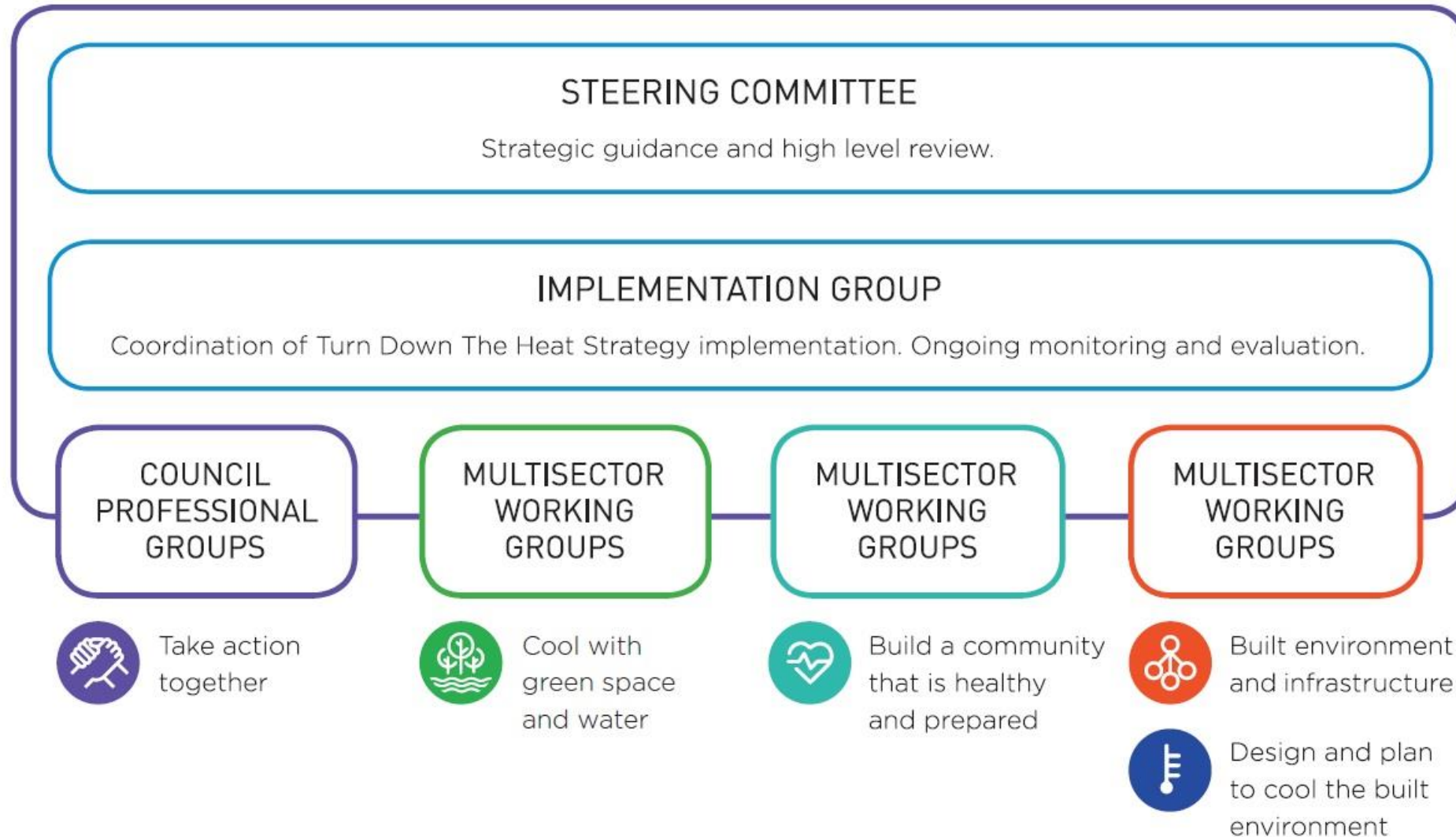


**SYDNEY**  
**BARRY CALVERT**  
President, Western Sydney Councils  
THOUSANDS MOURN DEATH OF MURDERED STUDENT IN MELBOURNE HOB 23° 8.19



# Governance structure

Implementing the Turn Down the Heat Strategy and Action Plan



# Thank you

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