TURN DOWN THE HEAT
STRATEGY AND ACTION PLAN
Summary 2018
ACKNOWLEDGEMENTS

WSROC 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, present and future of the Eora, Dharawal (Tharawal), Gundungurra, Dharug (Darug) and Guringai (Kuring-gai) peoples.

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With special thanks to the Turn Down the Heat program Steering Committee:

Western Sydney Local Health District
NSW Government Architects Office
Resilient Sydney
City of Parramatta Council
Western Sydney University
Greater Sydney Commission
NSW Office of Environment and Heritage

And the urban heat working group, consisting of professionals in the areas of planning, environment and sustainability from Blacktown, City of Canterbury Bankstown, Cumberland, Liverpool, City of Parramatta and Penrith City councils.

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Western Sydney is becoming hotter, and it is having significant impacts on our health, infrastructure, economy and the environment. This is largely due to what scientists call the urban heat island effect – the tendency of cities to be much warmer than their rural counterparts.

Urban surfaces such as roads and roofs absorb, hold, and re-radiate heat; raising the temperature in our urban areas. Human activities such as traffic, industry, and energy usage generate additional heat; adding to the effect.

Urban heat is already impacting the infrastructure and services that support our communities, and the people living and working within them. These impacts will demonstrably worsen if we don’t improve our response to the short and long-term challenges of urban heat.
Heatwaves kill more Australians than any other natural disaster.¹

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

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

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

¹ Nature climate change, 2015. ² Santamouris et al. Cooling Western Sydney, 2017
³ Natural hazards, Public health considerations. NSW Health, 2014
WHY THIS STRATEGY?

Responding to the challenge of urban heat spans the roles and responsibilities of many different organisations and public-sector agencies.

While the need to address urban heat is recognised by many, action remains fragmented often due to differences in administrative boundaries or misalignment of priorities. There is also a very real deficit of understanding the economic, environmental and social impacts of heat across Greater Sydney.

The Turn Down the Heat Strategy is designed to complement existing policies and strategies to create coordinated, local and practical and action to address urban heat in the short term.

Turn Down the Heat lays out a five-year framework to support a greener, cooler, more liveable and resilient future for Western Sydney.

**It seeks to:**

- Represent the interests of the residents of Western Sydney;
- Enhance existing efforts to address urban heat;
- Collaborate across the region to increase awareness; and
- Facilitate a broader and more coordinated response to the challenges of urban heat.

This could not have been achieved without the collaboration of a regional, cross-disciplinary group of stakeholders who are committed to facilitating a broader, more coordinated response to the challenges of urban heat.

The full Turn Down the Heat Strategy is available on the WSROC website. [wsroc.com.au](http://wsroc.com.au)

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Creating cool and walkable places
WHY WESTERN SYDNEY?

Urban heat impacts all cities, but Western Sydney is particularly susceptible due to the region’s existing climate, geographic position, large and growing residential population, rapid urban development and greater levels of social disadvantage.

During heatwave conditions, Western Sydney suffers three times more heat-related deaths than Sydney’s east. Western Sydney temperature records over the last 40 years show that Western Sydney has seen a rise in annual temperatures above and beyond those experienced in coastal parts of Sydney.

The impact of climate change combined with Western Sydney’s rapid development is expected to further increase average minimum and maximum temperatures, resulting in more hot days and fewer cold nights overall.

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

Number of days over 35° in Parramatta and Sydney CBD, from 1967 to 2015

10°C AVERAGE TEMPERATURE DIFFERENCE BETWEEN SYDNEY AND PENRITH ON AN EXTREME HEAT DAY
URBAN COOLING STRATEGIES

Listed below are key actions to address the issue of extreme heat. Not one of these interventions alone can solve the issue of heat, all are critical and interlinked. The effectiveness of any strategy will vary according to the location, urban context, geography and climatic zone.

Greening urban areas
Urban canopy cover and green spaces contribute to shade and evapotranspiration. Species selection, planting location and maintenance are critical to ensure optimum cooling benefits.

Cool materials
Building materials are major contributors to the urban heat island effect. They store heat and by doing so reduce indoor and outdoor thermal comfort. Choosing materials that prevent solar radiation (heat) from being absorbed can make a significant difference. Examples include light coloured roofs or pavers.

Designing with water
Water is one of the most effective ways to cool an urban environment. Designing with water can consist of a mix of natural water bodies, fountains, ponds, and technologies to integrate urban evaporative cooling systems.
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.

Preparing our city’s infrastructure to cope with extreme temperatures is critical for our economy and to ensure the community has access to cooling, water and transport when they need it most.

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.

We must continue to build our understanding of impactful interventions and ensure information is accessible to key decision makers.
What can we do?

180 stakeholders from 55 organisations assisted in the development of the following targets and actions, which were identified as the most critical in tackling urban heat across Western Sydney.

## Targets

The following provisional targets have been developed based on existing literature, policy and strategies in this area.

- Increase multi-sectoral collaboration and investment to deliver more projects to address the impacts of urban heat in Western Sydney by 2023.
- Reduce average peak ambient temperatures in Western Sydney by 1.5°C 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.

## Actions

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<th>Take action together</th>
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<td><strong>1. Develop a state of the issue study</strong></td>
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<td><strong>2. Establish an Urban Heat Research Consortium</strong></td>
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<td><strong>3. Monitoring and evaluation of proposed actions</strong></td>
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<th>Design and plan to cool the built environment</th>
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<td><strong>4. Land use and design controls that prioritise resilience</strong></td>
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<td><strong>5. Existing building retrofit programs</strong></td>
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<td><strong>6. Social housing retrofit program</strong></td>
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<td>Cool with green space and water</td>
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<tr>
<td>7. Adoption of Sydney’s Green Grid</td>
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<td>8. Urban forest strategy</td>
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<td>9. Recognition of blue and green infrastructure as critical urban infrastructure</td>
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<td>10. Green infrastructure planning</td>
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<td>Build a community that is healthy and prepared</td>
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<td>11. Preventative heat response framework</td>
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<td>12. Urban heat community engagement strategy</td>
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<td>13. Urban heat risk and impact research</td>
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<td>Innovative and responsive infrastructure</td>
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<td>14. Critical infrastructure provider forum on urban heat</td>
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<td>15. Climate adaptive transport infrastructure and services</td>
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<td>16. Development of innovative funding models for cooling</td>
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THE WAY FORWARD

Urban heat is a complex and far-reaching issue that will require a combination of immediate and longer-term, coordinated action and leadership to achieve the desired outcomes for Western Sydney and the broader city.

We need to:
- Develop new approaches to save lives and reduce the burden on our health system.
- Better manage the impacts of heat on the systems of our cities.
- Quantify the true costs of heat to our economy.
- Reduce the impact of heat on our environment and animals.

Implementing the Turn Down the Heat Strategy and Action Plan

STEERING COMMITTEE
Strategic guidance and high level review.

IMPLEMENTATION GROUP
Coordination of Turn Down The Heat Strategy implementation. Ongoing monitoring and evaluation.

COUNCIL PROFESSIONAL GROUPS
Take action together

MULTISECTOR WORKING GROUPS
Cool with green space and water

MULTISECTOR WORKING GROUPS
Build a community that is healthy and prepared

MULTISECTOR WORKING GROUPS
Built environment and infrastructure
Design and plan to cool the built environment
GET INVOLVED

Turn Down the Heat seeks to encourage and empower champions across a range of organisations. We welcome contributions from anyone seeking to build a greener, cooler, more liveable and resilient future for Western Sydney.

What you can do:

• Advocate for urban heat to be recognised as a priority issue for Western Sydney.

• Share successes and lessons learnt on addressing urban heat with others across Metropolitan Sydney.

• Join us by participating in our working groups to develop and implement the priority actions.
The Western Sydney Regional Organisation of Councils’ (WSROC) mission is to build collaboration between local governments across Greater Western Sydney, promoting Western Sydney, its people and places, through advocacy, business improvement, strategic leadership, research and partnerships. WSROC has facilitated the development of this strategy.

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