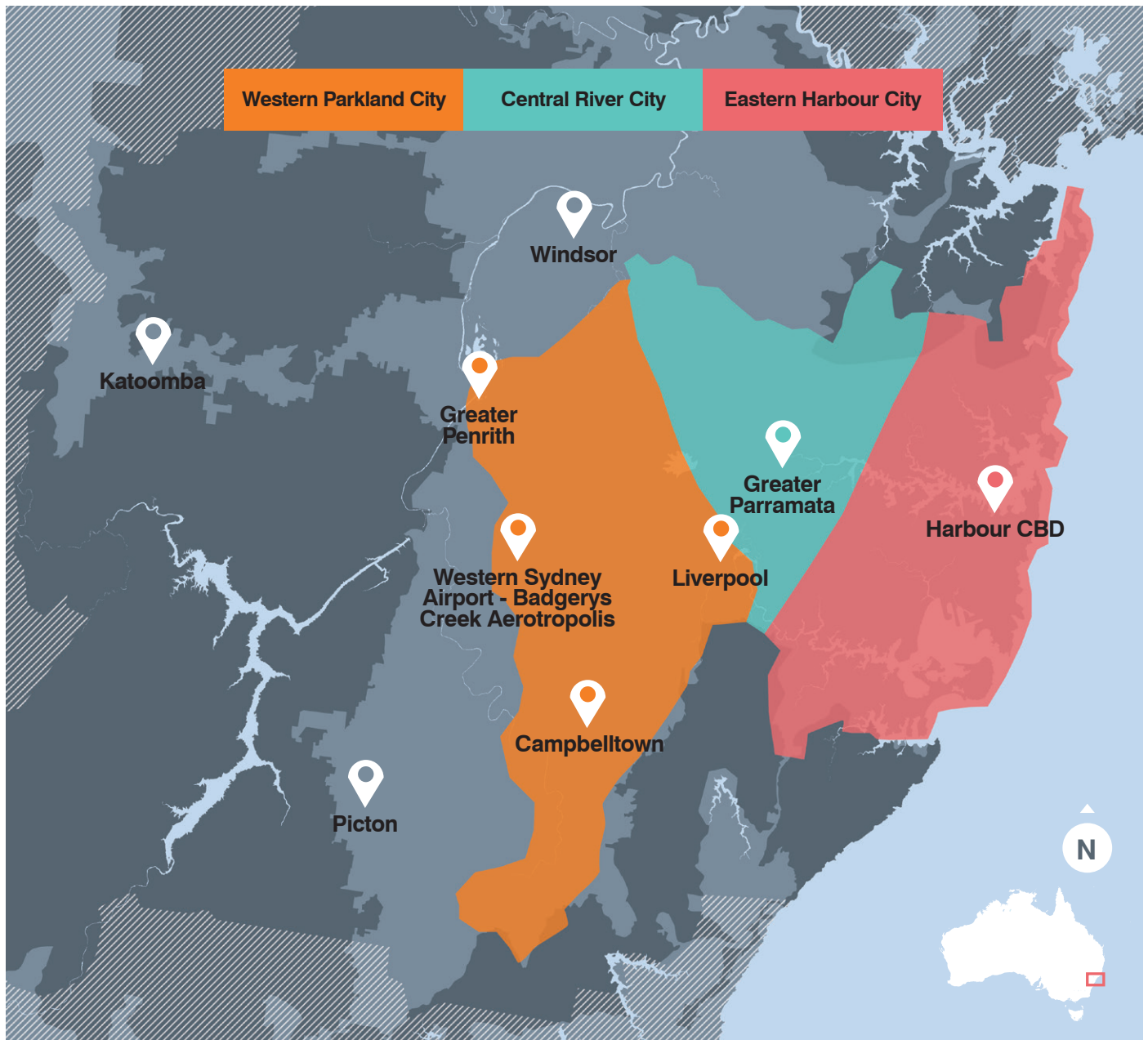


## Map of Sydney



Greater Sydney as a metropolis of three cities, as described in the Greater Sydney Region Plan (2018), Greater Sydney Commission.

Protected Natural Area

Metropolitan Rural Area

Non-Greater Sydney Area

## Governance and global commitments

### Local governance and policy context

Global issues need global solutions and integration. 100 Resilient Cities is part of a worldwide trend in programs that engage decision makers who represent big populations in nations and in cities. Through the United Nations (UN), the Australian Government has made commitments to global initiatives for collaborative action.

Cities are at the forefront of global collaboration for global issues and making use of global networks such as 100 Resilient Cities to learn from each other and make change. Cities are adopting or aligning to the UN Sustainable Development Goals and managing disaster risk reduction through local emergency and disaster preparedness. Coalitions such as the C40 alliance and Carbon Neutral Cities Alliance are sharing best practice and experience on climate change and adaptation.

In New South Wales and Sydney, the links between the global, national, and local or city-scale approaches usually take place through state government policies, budgets and investments and local government strategies and plans.

### Government in Sydney

There are three layers of government in Sydney: the Australian Commonwealth Government, New South Wales State Government, and many local governments. This multi layered and complex governance system requires collaboration for effective strategic planning and implementation at metropolitan scale.

Within these layers the Australian Commonwealth Government is responsible for: defence and foreign affairs; trade, commerce and currency; immigration; postal services; telecommunications and broadcasting; air travel and most social services and pensions. The Australian Commonwealth Government also provides funding to the NSW State Government for health, welfare, education, and infrastructure.

From a resilience policy position the Australian Commonwealth Government has developed a National Strategy for Disaster Resilience (2011) which sets seven priority areas to build disaster resilience communities and a Critical Infrastructure Resilience Strategy (2015) which aims to ensure the continued operation of infrastructure in the face of all hazards.



**Above** Sydney: President of 100 Resilient Cities, Michael Berkowitz. Photo: Katherine Griffiths

**Right** Parramatta River: ferry cat.





## Policy in Sydney

At a NSW State Government level, major responsibilities include: schools and hospitals; conservation and environment; roads, railways and public transport; public works; agriculture and fishing; industrial relations; community services; sport and recreation; consumer affairs and police, prisons and emergency services. Fire and Rescue NSW, NSW Rural Fire Service, and NSW State Emergency Service are funded through the Australian Commonwealth Government Emergency Services Levy on household insurance policies (73.7%), Local Government (11.7%), with the NSW Government contributing (14.6%).

NSW has a framework of plans, guidelines and committees for emergency Planning, Preparation, Response, and Recovery (PPRR) activities at state, district, and local levels. They prescribe the role, responsibilities and arrangements for each agency involved in emergency management. Metropolitan Sydney is divided into three Emergency Management Regions, designated as Sydney Metro, North West Metro, and Southwest Metro. Across these three regions there are a number of emergency management sub plans which support the NSW State Emergency Management Plan (2012). Support for community resilience post-disaster includes the NSW Department of Emergency Community Resilience Innovation Plan (2016).

The NSW State Government defines the jurisdictions and geographical boundaries of each local government area. Key responsibilities assigned to the 33 local government areas across metropolitan Sydney include: building development and regulations; public health; local roads and footpaths; public recreation facilities such as aquatic centres, playgrounds and youth centres, libraries, parks and playing fields; local environmental issues, waste disposal, childcare facilities and many other community services.

In managing these services, Community Strategic Plans are developed which represent the highest level of strategic planning undertaken by each local council. It is in these Community Strategic Plans that local councils across metropolitan Sydney including the City of Sydney, Parramatta, Penrith and Campbelltown are starting to adopt a resilience approach for their communities. The Greater Sydney Commission, the agency responsible for planning for Greater Sydney, identified resilience as a key direction in the Greater Sydney Region Plan (2018). The 2018 NSW State infrastructure Strategy includes six recommendations regarding resilience. This will assist with putting into operation resilience within land use planning and operational programs across local government.

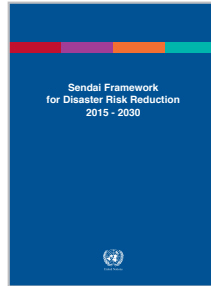
Future monitoring and evaluation of resilience in Sydney will report on how community, government, academia and businesses are building their capacity for resilience.

## Resilience at every level

### Frameworks and policies that support city resilience are being developed at every level of governance applicable to Sydney.

A selection of relevant documents are shown. Resilience planning is already emerging in these conventions, strategies, policies and now into local community plans. As more organisations understand their role in community resilience, plans and policies will mature to reflect new knowledge.

#### Global



UN Sendai Framework for Disaster Risk Reduction (2015)



UN Sustainable Development Goals (SDGs)



World Economic Forum: Global Risks Report (2018)

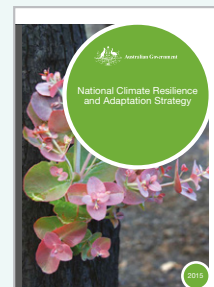


UN Framework Convention on Climate Change: Paris (2015)

#### National



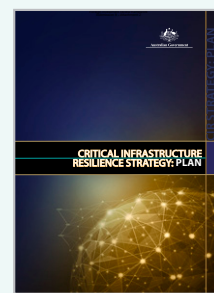
National Strategy for Disaster Resilience (COAG, 2011)



National Climate Resilience & Adaptation Strategy (2015)



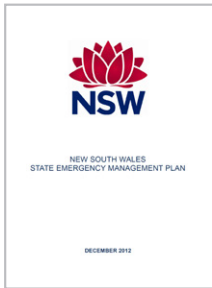
Australian Infrastructure Plan (IA, 2016)



Critical Infrastructure Resilience Strategy (2015)



## NSW State



NSW State  
Emergency  
Management Plan  
“EMPLAN” (2012)



NSW Climate  
Change Policy  
Framework (2016)

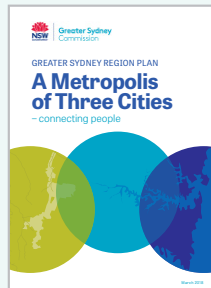


NSW State  
Infrastructure  
Strategy (2018)



COMPACT  
Program  
Multicultural NSW

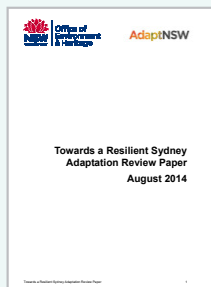
## Metropolitan



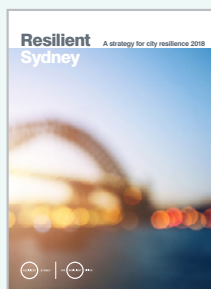
Greater Sydney  
Region Plan  
(2018)



Future Transport  
Strategy 2056  
(2018)

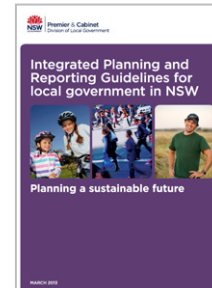


Towards a  
Resilient Sydney,  
Adapt NSW  
(2014)



Resilient Sydney  
Strategy (2018)

## Local



IP&R document  
for Councils

**All local councils involved in Sydney are looking to incorporate resilience in their local Community Strategic Plans and Operational Plans. A number have already done so.**

## Learning from Elders: resilience and resistance





“Aboriginal people have always lived in Sydney. After the arrival of the First Fleet in 1788, the British encountered Aboriginal people around the coves and bays of Port Jackson. The Aboriginal communities here showed enormous resilience and generosity towards the British who took their land.”

---

**Barani Barrabagu<sup>1</sup>**

Australia's First Nations Peoples are the world's oldest continuous living culture and the traditional custodians of Sydney.

Aboriginal and Torres Strait Islander community Elders and leaders shared their knowledge on the qualities that enabled their communities to thrive for tens of thousands of years.

**Elders identified the following qualities as critical for resilience:**

**Connection** A sense of belonging and connection to family, community and culture, with Elders as givers and receivers of culture, respect and care

**Sharing** A willingness to help anyone who needs it, even if you don't have much yourself

**Participating** A strong work ethic – just getting on with it

**Identity** Visibility of culture and support for young people – from the Indigenous and wider community.

---

The Elders identified a single key shock, the European colonisation of the Sydney Basin, as the single most impactful event on their ancestors, their lives and the region. They agreed that physical and cultural survival in the face of colonisation is a binding theme for First Nations individuals and groups in Sydney.

The skills, characteristics and behaviours that enabled First Nations People to survive this event continue to be employed by Sydney's First Nation Peoples to cope with ongoing stresses.

**Left** Bangara Dance Company. Photo: Katherine Griffiths



## Learning from Elders: resilience and resistance

### An impactful shock

The impacts of European colonisation of the Sydney Basin including:

- dispossession from people, country, families, culture, kinship systems
- massacres and conflict, resistance.

### Ongoing stresses

Daily, ongoing stresses described by participants include

- racism
- child removal
- access to traditional lands
- educational issues
- over-representation in the legal system
- over policing
- access to resources
- inadequate and unaffordable housing.

Aboriginal and Torres Strait Islander people are proud of the gains made by themselves, their families and communities in managing their response to this shock and these stresses. They identified resilience as a direct result of the fight to survive.

**“Resilience comes from our identity, a sense of belonging and community.”**

### Sydney’s First Nations language groups

Bediagal, Bidjigal, Birrabirragal, Bool-bain-ora, Boorooberongal, Borogegal, Burramattagal, Cabrogal, Cadigal, Cannalgal, Cannemegal, Cammeraigal, Carigal, Cattai, Gomerrigal, Gorualgal, Gweagal, Kameygal, Kayimai, Kurrajong, Mulgoa, Muringong, Muru-ora-dial, Norongerragal, Terramerragal, Tagary, Toogagal, Wallumattagal and Wangal.

**Right** Smoking ceremony. Photo: Katherine Griffiths





“I’d say  
Aboriginal  
people are  
the most  
resilient in  
the world.”  
– Elder





## Our people

**As one of the most diverse cities in the world on the basis of place of birth, Sydney is home to vibrant and thriving communities.**

Aboriginal and Torres Strait Islander peoples and people from over 200 different cultures from around the world now call Sydney home. Collaboration within and between these communities, governments and businesses will influence the future of our city, and our resilience.



**“We pull together in Campbelltown. But the area is growing so fast I think some of the infrastructure is not keeping up.”**

Robyn and Dennis Wardrope,  
residents of Campbelltown

**“Resilience is the habit of collaboration.”**

Greg Dyer, previous General Manager, Parramatta City Council

**Above** Redfern: Christmas party. Photo: Katherine Griffiths

**Above right** Claymore. Photo: Sarah Rhodes

**Right** Robert Tickner (OAM), Bryna Lipper (100RC, Senior Vice President City and Practice Management), Lord Mayor of the City of Sydney, Clover Moore, Beck Dawson (Chief Resilience Officer), Greg Dyer (previous General Manager, City of Parramatta Council). Photo: Katherine Griffiths





## Voices of Sydney

**“By working with all tiers of government and business, we look forward to creating a stronger, safer, more connected Sydney for everyone.”**

---

Lord Mayor of Sydney, Clover Moore



**“We have a lovely beach, fantastic pool. We have enough shops to get necessities for the week. Everything is in walking distance. But there is not enough public transport with people working in the city and the roads are always congested.”**

---

Sylvana Chandler, resident of Dee Why

**“This process has been an education in the need for openly sharing our challenges.”**

---

Alan Stoneham, General Manager,  
Penrith City Council

Above left Photo: Sarah Rhodes

Above right Dee Why Beach. Photo: Sarah Rhodes

## A multicultural city

Sydney's communities today are home to people from across the world. Sara Mansour shares how multiculturalism in her community in Punchbowl shaped her experience and feeling of home in Sydney.

“Home means a lot of things to different people but is ultimately underpinned by the notion of being in a place that is familiar and safe.”

---

**Sara Mansour, Bankstown Poetry Slam**



**Above** Parramatta. Photo: Sarah Rhodes  
**Left** Parramatta River. Photo: Sarah Rhodes  
**Right** Bankstown: Sara Mansour, Poetry Slam. Photo: Katherine Griffiths





## Poem of Resilience

by Sara Mansour, Bankstown Poetry Slam

So when people ask me where I'm from  
I tell em Punchbowl  
More often than not, they smile, and reply  
"No, where are you FROM?"  
I sigh, roll my eyes and in an explanatory  
tone respond  
"PUNCHBOWL".  
You know.. It's near Bankstown  
The city where mouths do not ebb the flow of  
"Welcome" in over 60 different tongues  
Where over 100 nationalities are housed under  
one postcode  
This is my ode to the only place I know  
Where one is told to go back  
Because everyone understands  
This is my ode to home  
  
My Australia is  
Walking in the streets of Punchbowl  
With the smell of freshly roasted Lebanese coffee  
kissing the Asian bakeries good morning  
The eucalyptus towers overhead and the  
frangipanis scent my breath  
As we sing the unofficial national anthem  
"I come from a land down unda..."  
Living from beat to beat  
Bumping down the streets  
With Tupac on our tongues and  
We're headed for the beach  
Water so unapologetically salty to the eyes  
But we take it in our stride  
Remembering all the lessons at Greenacre pools  
and at school  
When Cronulla hit high tide

My Australia is barbeques, or as my dad still  
says BURBEQUE  
As the meat sizzles on the fire, tabouli and tomato  
sauce and homemade pavlova cake served alongside  
some knafeh  
The perfect cultural dichotomy  
And its not hard to see no matter our creed we always  
rep our team  
Hashtag Wanderers FC  
This country will never be tainted by café sieges, we  
will always ride together from the mountains where the  
bushfires rage, we stand together down to the shore  
where the lifesavers age  
Under that great southern sun  
My Australia is one  
Where women wear their saris and their colourful hijabs  
proudly  
Men don sweat stained blue collars like war badges  
You can get the best pho in Sydney  
12 dollar woodfired pizzas, the realest Lebanese  
and Chinese  
And you feel at ease because no one judges your  
garlic breath or the  
tabouli stuck in your teeth  
It is finding the most authentic spices  
In shops where signs in foreign languages sit like  
jewelled crowns atop their doors  
It is neighbours passing barbequed meat over the fence  
And always saying hello  
It is all the stoic traditions  
It is stoic- a community that has been hardened by  
media headlines  
It is targeted  
It is judged  
It is 3am sirens and perceived thugs  
  
But it is also where the calls to prayer  
Gently interludes with the ringing of church bells  
It is co-existence  
And artistic resistance  
Like the 4elements youth hiphop festival  
And the largest poetry slam in the country  
  
It is my Dad's voice 25 years on  
Accent thick with resilience  
Warm like an Autumn breeze  
Smelling of petrol and truck smoke and all the forgotten  
things  
All the zaatar and the tahini and the crushed petals that  
were once dreams  
Saying  
We are lucky  
It's not perfect.  
But it's home.  
It will never be perfect, but it will always be home  
My Australia is home. When the rest of the world  
says no.







# Our strategy

## In this section

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SYDNEY

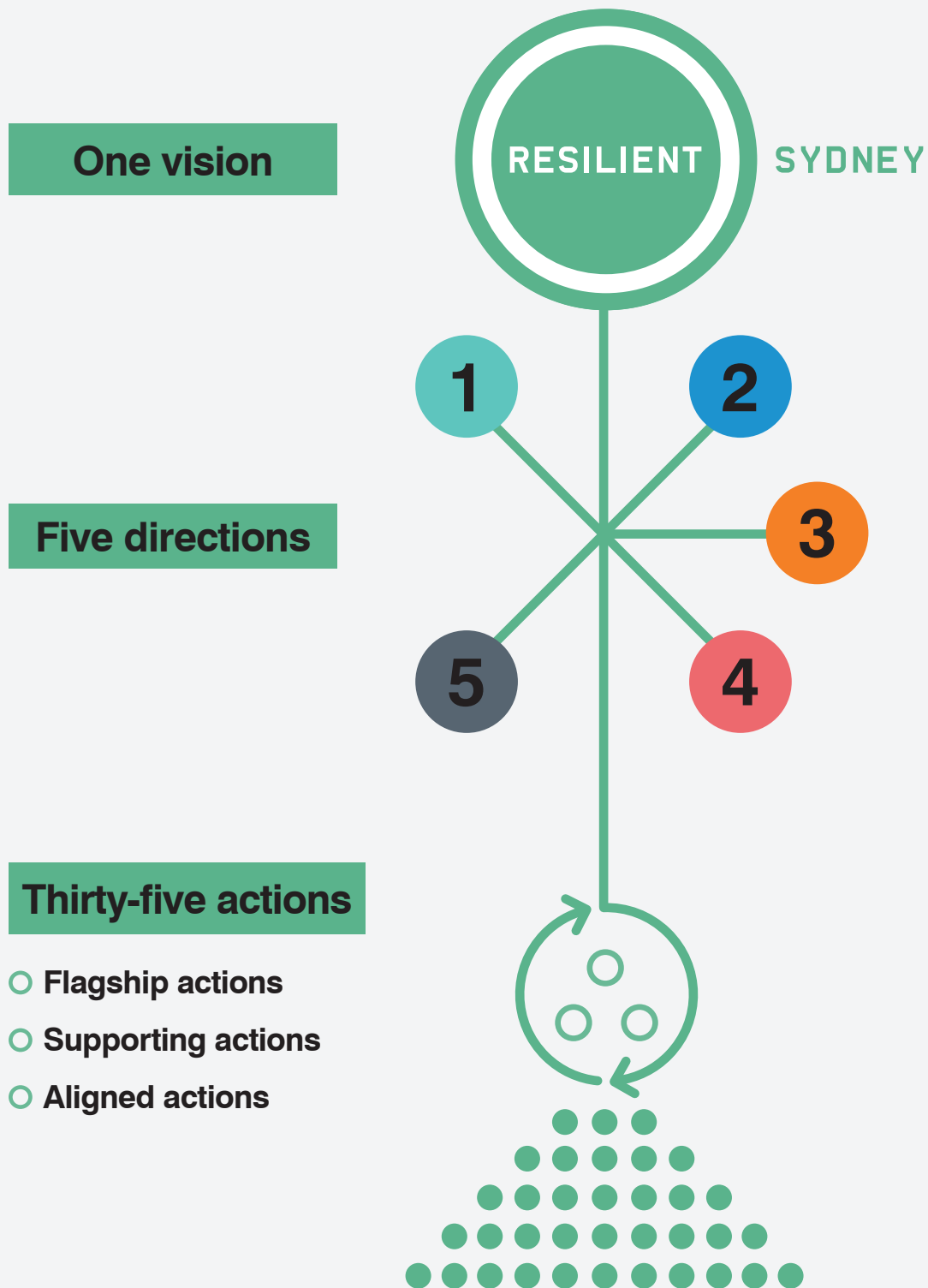
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CITIES



## Strategy structure





## Our resilience challenges and opportunities are described as five directions for resilience in Sydney.

### DIRECTION 1

#### People centred city

We include communities in decision making for growth and equity, so people connected to where they live and able to access transport, affordable housing and education and employment opportunities.

### DIRECTION 2

#### Live with our climate

We adapt to sustain our quality of life and our environment, so people have access to public and recreation space and natural environments throughout the city for climate comfort and safety, health and city connections.

### DIRECTION 3

#### Connect to strength

Every Sydneysider will feel they belong in Sydney as part of the community with equal access to engage in society, the economy and all the city has to offer.

### DIRECTION 4

#### Get ready

We know how to prevent, prepare, respond and recover, where Sydneysiders and organisations understand the risks they face and how to work together to respond to them, now and in the future.

### DIRECTION 5

#### One city

We are one city, where governing organisations across Sydney pledge to build their capacity to understand and manage vulnerabilities, interdependencies and risks for everyone in a resilient metropolitan Sydney.

## Key to the actions

**The strategy has five directions in a five year action plan of 35 actions. The following outline explains the types of actions and roles and responsibilities of participants.**

### Action status

Actions are activities that are being initiated, strengthened or amplified in Sydney.

- initiate: action has begun as a result of this strategy, bringing together new partners to solve Sydney's challenges
- strengthen: action is under development though requires more support, research or new partners to be a more effective intervention in our city
- amplify: action is underway in an effective pilot or small scale and will now be shared for wider adoption across Sydney.

### Flagship actions

One or more Flagship Actions will spearhead community change for each direction. These have been selected because individually or collectively they:

- address our resilience challenges and opportunities by understanding risks, knowing our role in managing these risks, including those impacted in our decisions, collaborating with others and investing to take action;
- increase capacity for a resilience based approach where the action supports Sydney to:
  - prevent or mitigate stresses and shocks
  - adapt to unexpected shocks and stresses
  - rapidly return to normal and revitalise after disruptions
  - access benefits when there are no disruptions
  - improve equity and prosperity in times of stability.
- deliver tangible benefit to our city and its people.

Flagship Actions are either underway now, or have been identified as a priority for the first year of implementation of the Resilient Sydney strategy.

### Supporting actions

Supporting actions are important, often structural activities that enable the longer term delivery of the resilience direction. These are more likely to be facilitated by a third party rather than Resilient Sydney.

### The role of the Resilient Sydney Office in delivering flagship and supporting actions:

Flagship actions are also those in which Resilient Sydney will play an active and material role, including:

- direct participation in the activity – staff from the Resilient Sydney Office will attend meetings, contribute strategic advice, undertake research and/or project specific tasks

- providing evidence and the resilience decision making framework to guide development of the action through:
  - problem definition - identifying shocks, stresses, interdependencies and vulnerabilities
  - engagement to co-design the action – ensuring a diversity of stakeholders and communities are engaged, and the most impacted are included
  - clarifying the role of the collaborative action team and each participant in delivering the action/outcome
- providing a framework and support to develop a collective impact; and
- monitoring and evaluating the action with participants.

The Resilient Sydney Office may also provide resources, including support for funding, staff or other support as agreed through the Resilient Sydney Steering Committee.

### Aligned actions

Aligned actions have been chosen for their collective capacity to deliver change for resilience.

Engagement to develop the Resilient Sydney strategy highlighted activities currently being undertaken across our city, state and country that play a vital role in contributing to Sydney's resilience. Aligned actions are included to promote these activities, helping to amplify their reach and scale.

Others are proposed activities to be developed in future iterations of Resilient Sydney, once the flagship and supporting actions are underway.

Descriptions of aligned actions are brief and include an outline of the activity, the challenge it will address, and where relevant the organisations or individuals currently involved.

### The role of the Resilient Sydney Office in delivering Aligned actions:

For aligned actions that are already underway the Resilient Sydney Office will:

- provide active promotions through our networks via newsletters, social media, online platforms and media
- provide connections and networking opportunities through our events and engagement activities
- provide a framework and support to develop a collective impact; and
- monitor and evaluate the action with participants.

The Resilient Sydney Office may play a more active role in these actions in future.

## Roles and responsibilities

### Facilitator

Facilitators are individuals or organisation who have agreed to facilitate an action over the first one to five years of implementation of the Resilient Sydney strategy. Facilitation involves.

- strategic coordination of initial efforts. These include:
  - building shared understanding of the challenges
  - identifying other stakeholders/collaborators to join a collaborative action team
  - agreeing the process for working together; and
  - identifying and progressing formal arrangements such as governance structures and funding arrangements.
- strategic coordination of co-design for measures, monitoring and evaluation of the action.
- This may be provided by facilitators, to be agreed with the Resilient Sydney Office. This may involve providing backbone administrative support, funding and resources, and monitoring, evaluation and reporting to the Resilient Sydney Office.

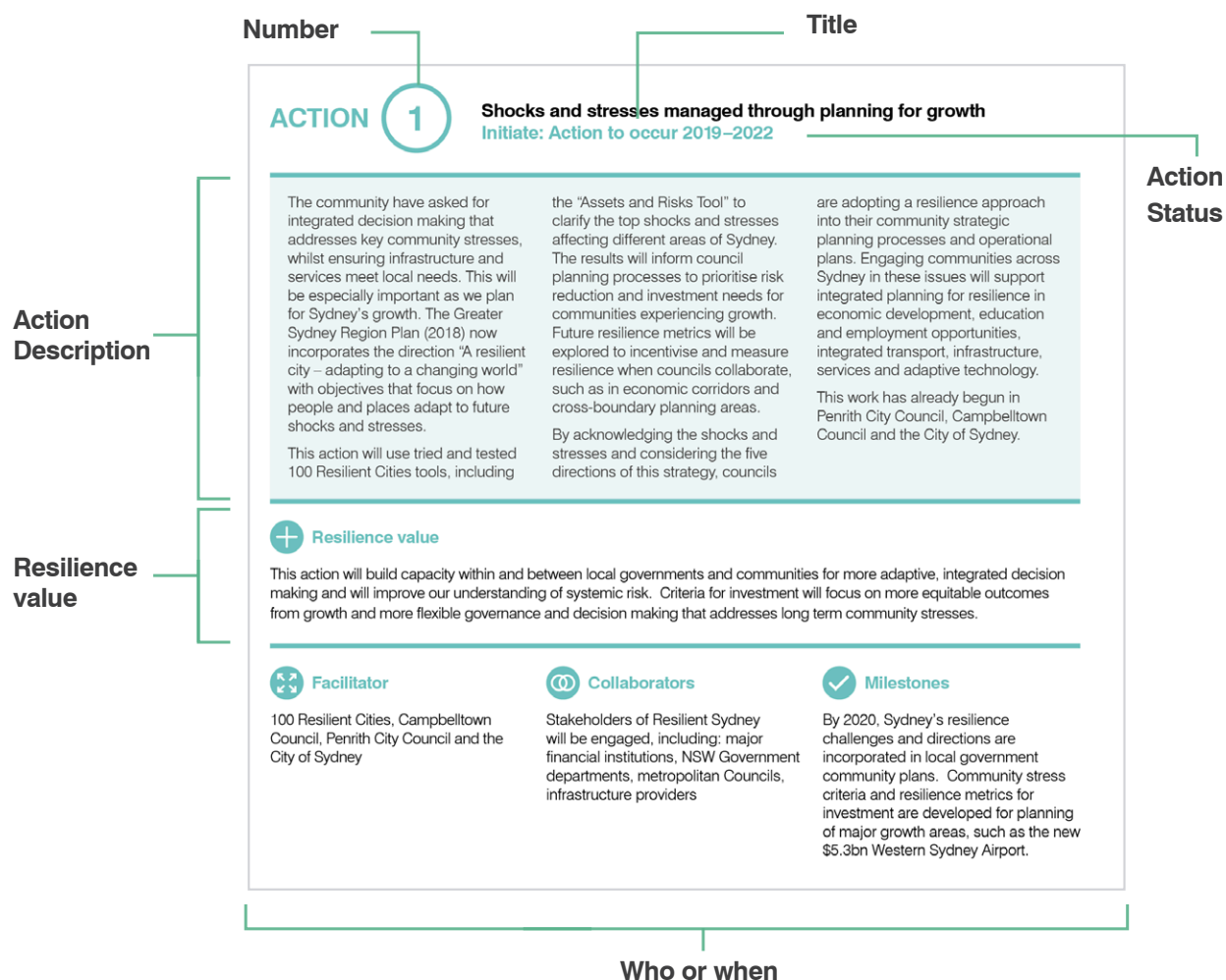
### Collaborators

Collaborators are individuals or organisations who have agreed to participate in the design and/or implementation of an action. Collaborators will engage in one or more of the following activities:

- working with facilitators and other collaborators in an action team to build a shared understanding of the challenges, identifying other stakeholders/collaborators, working to agree the process for working together and participating in formal arrangements such as governance structures and funding arrangements
- practical tasks to deliver the actions; and
- monitoring and evaluation activities.

Collaborators may provide practical support such as funding and resources.

## Key to the actions









**DIRECTION** **1**

---

**People  
centred  
city**

---



## Resilience challenge: Inequitable growth

**Our city is growing, inequity is rising, and infrastructure and services lag behind.**

**Sydney's population is rising rapidly. It is projected to grow from 5 million people in 2016 to 6.4 million by 2036<sup>1</sup>. Most of this growth will occur in the west and south west - 45% of Sydneysiders will live there 2031 – as well as some parts of the inner east. Infrastructure, transport, schools and health services have not kept up with population growth in these areas.**

Sydney is the most unequal major city in Australia<sup>2</sup>. Lower income earners tend to live in Sydney's western and south western growth areas. These areas are less well served by public transport infrastructure, essential social services and job opportunities. Most commutes from these places to surrounding areas are made by car.

Sydney is the second least affordable city in the world with the median

house price 12.2 times the median household income. The average household is required to spend 28% of their income on rent to access a rental dwelling, putting them very close to the 30% rental stress threshold<sup>3</sup>. These households are likely to be more vulnerable to the impacts of sudden economic disruptions.

Our economy continues to grow, but the benefits of prosperity are

not shared by everyone. The short timeframes and lack of integrated and inclusive decision making contribute to growing inequalities and impactful stresses. Opportunities for change lie in longer term planning for more resilient infrastructure in growth areas, including the most impacted in decisions that affect them and better collaboration between governments and agencies.



### Housing

- Sydney is the second least affordable city in the world<sup>5</sup>. The median house price in Sydney is 12.2 times median household income<sup>6</sup>.



### Transport

- Sydney has the highest rate of trips by private vehicles in Australia (up to 80%), especially in the west and southwest<sup>7</sup>.



### Income and jobs

- 20% of all income goes to 1% of Sydney's population in Sydney's east<sup>8</sup>. Less than 6% of all income goes to earners in Blacktown, Campbelltown and Penrith<sup>9</sup>.
- 37% of all employment is located in Sydney's CBD<sup>10</sup>.
- Manufacturing (which is in decline) employs the most people in the west, followed by retail, health care and social assistance<sup>11</sup>.



### Education

- Western Sydney has lower high school completion rates than the rest of Sydney<sup>12</sup>.
- 71.9% of people in northern Sydney and 44.9% in south western Sydney have post-school qualifications.
- Most of Sydney's major universities are located in the east



### Health Services

- Western Sydney has almost 10% fewer hospital beds per 100,000 residents than in other parts of Sydney, and fewer staff proportionally. Yet there is higher demand, and higher rates of admissions in western Sydney<sup>13</sup>.



## People centred city objective

We include communities in decision making for growth and equity

Our community highlighted the need for affordable access to infrastructure, services, transport and shelter for everyone in Sydney, regardless of geographic and economic position. They also asked for skills and employment opportunities that are accessible for everyone in metropolitan Sydney.

Our community asked us to take a people-centred view of our city, including them in the investment and planning decisions that shape their lives.

This direction addresses the priorities of our metropolitan community to deliver benefits that will help people all over Sydney to thrive. The following principles will guide our actions:

### Resilient growth

We will take opportunities to invest in growth, transport connections and employment options that improve the resilience to key stresses of metropolitan Sydney, bringing multiple benefits and reducing vulnerabilities for all residents.

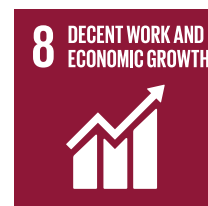
### Inclusion

We will provide our diverse communities with a genuine say in the decisions that affect them, ensuring those most impacted are included.

### Equity

We will put people first by ensuring skills and services are accessible to communities across metropolitan Sydney.

This direction aligns to:



**Previous page** Surry Hills: Library and Community Centre. Photo: Katherine Griffiths  
**Icons** UN Sustainable Development Goals

<sup>1</sup> Greater Sydney Commission, referencing NSW Department of Planning and Environment 2016.

<sup>2</sup> Income Inequality across Australian Regions during the Mining Boom: 2001–11. (2015). David A. Fleming & Thomas G. Measham. Australian Geographer Vol. 46, Iss. 2, 2015 CSIRO.

<sup>3</sup> Rental Affordability Index, RAI Release Report (2015). Community Sector Banking, Shelter Australia and SGS Economics & Planning

<sup>4</sup> www.domain.com.au/news/sydney-melbourne-houses-in-worlds-top-five-most-unaffordable-demographia-20160125-gmd7x2/

<sup>5</sup> News.com.au, 2016, Australian City Has Come In as Second Least Affordable in Housing Survey

<sup>6</sup> Infrastructure NSW, 2014, State Infrastructure Update

<sup>9</sup> SGS Economics and Planning, 2016, Effective Job Density

<sup>10</sup> WSROC Economy and Employment, accessed 25/01/17 wsroc.com.au/issues-campaigns/economy-and-employment

<sup>11</sup> WSROC, 2016, Education

<sup>12</sup> WSROC, 2016, Education

<sup>13</sup> WSROC, 2012, Comparative Study of Health Services







## Flagship action

### ACTION

1

#### Shocks and stresses managed through planning for growth Initiate: Action to occur 2019–2022

The community have asked for integrated decision making that addresses key community stresses, whilst ensuring infrastructure and services meet local needs. This will be especially important as we plan for Sydney's growth. The Greater Sydney Region Plan (2018) now incorporates the direction "A resilient city – adapting to a changing world" with objectives that focus on how people and places adapt to future shocks and stresses.

This action will use tried and tested 100 Resilient Cities tools, including

the "Assets and Risks Tool" to clarify the top shocks and stresses affecting different areas of Sydney. The results will inform council planning processes to prioritise risk reduction and investment needs for communities experiencing growth. Future resilience metrics will be explored to incentivise and measure resilience when councils collaborate, such as in economic corridors and cross-boundary planning areas.

By acknowledging the shocks and stresses and considering the five directions of this strategy, councils

are adopting a resilience approach into their community strategic planning processes and operational plans. Engaging communities across Sydney in these issues will support integrated planning for resilience in economic development, education and employment opportunities, integrated transport, infrastructure, services and adaptive technology.

This work has already begun in Penrith City Council, Campbelltown Council and the City of Sydney.

#### + Resilience value

This action will build capacity within and between local governments and communities for more adaptive, integrated decision making and will improve our understanding of systemic risk. Criteria for investment will focus on more equitable outcomes from growth and more flexible governance and decision making that addresses long term community stresses.

#### Facilitator

100 Resilient Cities, Campbelltown Council, Penrith City Council and the City of Sydney and Bayside Council.

#### Collaborators

Councils involved in the Eastern Economic Corridor, and the Western City Deal are collaborating to consider resilience in their plans.

#### Milestones

By 2020, Sydney's resilience challenges and directions are incorporated in local government community plans. Community stress criteria and resilience metrics for investment are developed for planning of major growth areas, such as the new \$5.3bn Western Sydney Airport.



"Sydney is one city. We need to plan and invest so everyone thrives."

Lindy Deitz, General Manager, Campbelltown City Council

Far Left Fairfield: aerial view of Western Sydney suburbs  
Left Harris Park. Photo: Sarah Rhodes

## Supporting actions

### ACTION

# 2

### Network metropolitan practitioners for community agency

Initiate: Practitioners network began May 2017

The community have asked for a greater say in the strategic decisions that shape metropolitan Sydney, and their lives. This will require commitment and effort on the part of multiple organisations within our city, both, to engage communities and ensure their views are better reflected in metropolitan-scale decisions.

The first step is connecting community research and engagement practitioners - the people within these organisations with deep understanding of community views and priorities, and specialist expertise in the design, delivery, analysis and reporting of engagement activities. Sydney's practitioners are already delivering innovative activities within their

individual organisations, and are well-placed to advocate for the inclusion of community views in key decisions. They are developing options for the co-design of engagement platforms, processes, tools and communications that people want to use.

This action began in May 2017 with meetings of Sydney's government engagement practitioners in a new network. The network will:

- identify community priorities across metropolitan Sydney
- build data around current engagement practice
- explore best practice and innovation

- build professional capacity
- develop consistent standards for how we engage communities in the decisions that affect them.

The network will explore community engagement in strategic decisions that address metropolitan scale risks, challenges and investments. In other global cities, these decisions are made through techniques like large, representative community reference panels. The network will explore these techniques for Sydney. The network will enable engagement practitioners to work together to ensure those most impacted have a voice, and key strategic decisions are truly people-centred.

### + Resilience value

This action will create a network of practitioners from diverse organisations and communities to collaborate for awareness and integration of community views within key planning and investment decisions. It will increase equity and self-regulation through more people-centred decisions.

### Facilitator

Resilient Sydney

### Collaborators

All metropolitan councils, NSW Government departments and agencies, Greater Sydney Commission

### Milestones

Year 1 – Agreement on ways of working together, governance structure formalised, progress on establishing baseline data





## Supporting actions

### ACTION

# 3

#### Collaborate for cross-city active transport

Initiate: Practitioners network began May 2017

We face challenges around connections and mobility as our city grows. These issues become critical during shock events when transport options are limited.

We are also increasingly sedentary and chronic lifestyle illnesses are impacting the health and wellbeing of our communities.

This action will address these issues by connecting mobility and transport practitioners in a metropolitan network. The network will build capacity for collaboration and innovative solutions. Participants will implement these solutions to create active transport connections across metropolitan Sydney.

In May 2017 local and state government practitioners began to share knowledge on active transport management and policies.

Over the coming years the network will explore opportunities for standards for a cross city bicycle network, bike share regulations, walkable neighbourhoods and integrated and accessible mobility planning.

#### + Resilience value

By connecting diverse practitioners this action will build capacity for adaptive, integrated active transport that facilitates adaptation by enabling communities to manage their health and wellbeing, and safety during a crisis.

#### Facilitator

City of Parramatta and  
City of Sydney

#### Collaborators

Transport for NSW – active transport  
and policy teams, transport planners in  
metropolitan councils

#### ✓ Milestones

Year 1-2 – Network formalised, joint  
policy emerging



“This process has been an education in the need for openly sharing our challenges.”

Alan Stoneham, General Manager, Penrith City Council

Far Left Sydney: bike riders in the city. Photo: Katherine Griffiths

Left Waverley: Bondi Junction transport hub. Photo: Hamilton Lund

## Aligned actions

### ACTION 4

#### Support people to work closer to home

##### Amplify: Advocacy

The costs and time of work related travel are a chronic stress on Sydney families where over 80% of all commuting still occurs in a private vehicle.

Work by Deloitte Western Sydney through the Shaping Future Cities project is creating strong local connections and economic transformation by enabling people to work close to where they live, reducing the time and cost of commutes.

This action seeks to amplify work promoting flexible work arrangements, co-working spaces, digital tools, use of vacant suburban spaces for startups, and new training for young people.

The Greater Sydney Commission are also highlighting the benefits of working close to home via the concept of a '30 minute city' in the Greater Sydney Region Plan.

### ACTION 5

#### Improve access to health precincts

##### Amplify: Advocacy

Accessing health precincts is difficult without access to private vehicles, especially in the growth areas of our city. Solutions are increasingly available and this action highlights three different approaches for wider adoption:

- e-health initiative of Wollondilly Health Alliance, a partnership of local, state and federal governments has successfully trialled digital consultant appointments (e-health) in the growth areas of Sydney, reducing travel
- advocacy for new on-demand health transport services in the Greater Sydney Region Plan
- active transport plans with priority routes to and from health precincts.



“Resilience is the habit of collaboration.”

**Greg Dyer, former General Manager,  
Parramatta City Council**

**Above** Wollondilly: the Wollondilly Wanderer community health bus

**Right** Campbelltown. Photo: Sarah Rhodes



## Aligned actions

### ACTION 6

#### Build community capacity through co-design Strengthen: Research

Sydney communities asked for more involvement in designing solutions for the issues that affect them, providing direct user experiences into decision making. Organisations such as The Australian Centre for Social Innovation, the Foundation for Young Australians and Youth Action are demonstrating the value of community involvement in designing and operating services with the communities who use them. These include child and youth services and family violence support services. Communities and people who participate learn new skills, make lasting connections and contribute their expert knowledge of the challenges to ensure services are effective in meeting their needs. Amplifying user engagement in service design and delivery will build the capacity of our community to solve resilience issues. This action will bring together partners to deliver a leadership paper and event, inviting policy change to engage more residents in the design and provision of services.

### ACTION 7

#### Advocate for affordable housing for everyone Strengthen: Research

Housing affordability is a critical issue for communities across metropolitan Sydney. The financial accessibility of housing is determined through a complex set of market conditions, investment controls, tax settings, wage trends and city planning controls. This system is influenced by all three layers of government and the development and housing industries.

Collective leadership across metropolitan Sydney is needed to develop an urban housing agenda to increase access to affordable housing for people on all incomes, and aiming to decrease homelessness. Coordination by collectives such as the Sydney Alliance are bringing focus to this issue. Resilient Sydney will support research towards a policy agenda that enables financially accessible housing for everyone.

### ACTION 8

#### Develop skills for equity Strengthen: Information sharing

Opportunities and education are not the same for everyone in Sydney due to the uneven impact of chronic stresses across the city. Businesses, the community sector and governments already provide tools and services to help, but these are not well known. This action encourages organisations, especially councils, to digitally share and amplify initiatives that focus on improving equity through knowledge sharing with groups adversely affected, such as providing:

- affordable insurance for low income earners
- financial literacy training for younger and older women
- job retraining and skills development for over 50s
- free English lessons for migrants and refugees
- drivers licence training for Indigenous and vulnerable young people to provide access to training and jobs.







DIRECTION

2

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**Live  
with our  
climate**

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## Resilience challenge: Pressure on our health, the environment and economy

**Our climate and weather are intense, chronic illness is increasing and our environment is under pressure.**

**Sydney's weather is changing: the climate is getting hotter and storms are becoming wilder and more frequent. Sea levels are rising, and heatwaves, droughts and bushfires are becoming more frequent and more intense. These trends are forecast to continue<sup>14</sup>.**

Extreme heat is our biggest risk. Vulnerable populations with an underlying illness are more likely to die in a heatwave. Heatwaves cause soaring demands for energy, water and health services<sup>15</sup>. Our primary growth areas in Western Sydney are located inland in relatively hotter areas. But new homes are usually not constructed to provide maximum protection from heatwaves and there is less tree canopy cover to reduce surface temperatures.

Our communities are less able to exercise outdoors in some parts of the year due to heat, and we have rising incidents of chronic disease such as obesity and diabetes. Chronic illness and lifestyle diseases are now the highest causes of death in Sydney.

Our electricity network is reliable, but extreme weather causes problems. Wild storms bring down power lines. Demand soars when

people use their air conditioning during heatwaves and refrigerators work overtime. Extreme weather is the biggest cause of electricity network failure, along with flooding. The growth of investment in innovative energy, water and mobility technologies is impacted by market settings. The private sector is already investing in more resilient built environment and infrastructure.



### Extreme weather

- In an average year Parramatta already experiences 13 days where temperatures are 35 degrees and over.
- Cities are often hotter than surrounding areas. This is because we clear vegetation and replace it with concrete, bitumen and other heat absorbing materials, resulting in energy being trapped in city buildings and infrastructure. This is then radiated back out, heating the air and people.



### Chronic disease

- Around 50% of our population is overweight or obese – 45% of people in the north and 55% of people in the west<sup>16</sup>.



### Open space and biodiversity

- Every 10 per cent increase in tree canopy can reduce land surface temperatures by 1.13 degrees C<sup>17</sup>.
- Average tree canopy cover for urban NSW (including metropolitan Sydney and Newcastle) is 26.64% in 2016, down 0.83% from 27.47% in 2009<sup>18</sup>.

<sup>14</sup> CSIRO and BoM, 2015, Climate Change in Australia and NARCLiM, 2016, Metropolitan Sydney Climate Change Snapshot

<sup>15</sup> NARCLiM, 2016, Metropolitan Sydney Climate Change Snapshot

<sup>16</sup> Department of Planning 2013, Towards a Resilient Sydney – Socio-Economic Profile.

<sup>17</sup> Technical Guidelines for Urban Green Cover in NSW. NSW Office of Environment and Heritage.

<sup>18</sup> Where should all the trees go? Investigating the impact of tree canopy cover on socioeconomic status and wellbeing in LGA's. (2017). Amati, M. at al. RMIT University with CSIRO Data 61, University of Western Australia. Referenced at: 202020vision.com.au/



## Live with our climate objective

We make changes to sustain our quality of life and our environment.

Our community are concerned about the risks posed by extreme weather, and the daily impacts of a changing climate. They have asked for actions to make homes and neighbourhoods safe, green and liveable.

Consultation also revealed a need to improve understanding of risks and impacts as being key in preparing our community and our city.

Our city, state and nation have made global commitments to make the changes necessary to live with, and adapt to, our climate. These necessitate an understanding of how our city contributes to local and global climate changes, as well as actions to manage and mitigate risks.

As we build our capacity to manage extreme weather, it is vital we grow our economy by leveraging the market development and employment opportunities that arise as we put ideas into action.

This direction addresses community priorities and our challenges via the following guiding principles:

### Local adaptation

We will build awareness of risks and capacity for local action to manage extreme weather and changes to our climate across our city.

### Global performance

We will honour our global commitments to understand our contributions to our changing climate and manage and mitigate the risks posed by extreme weather.

### A diverse economy

We will invest in diverse technologies and tools for mobility, energy, water supply and resilient buildings and infrastructure to build new markets and jobs in our economy.

This direction aligns to:



PARIS2015  
UN CLIMATE CHANGE CONFERENCE  
COP21 • CMP11



Previous page Storm over Sydney. Photo: iStock/RugliG

Icons UN Sustainable Development Goals





## Flagship action: Cool suburbs - turn down the heat

### ACTION

9

#### Policy and action to cool homes and streets

Initiate: Program began 2017

Extreme heat is our biggest risk in terms of shocks. It affects all our communities, with those in western Sydney experiencing the most significant impacts including decreasing safety, health, wellbeing, and increasing living costs.

Reducing impacts for western Sydney requires large scale collective action. The first step is connecting all the organisations and individuals managing extreme heat and its impacts to build a consistent understanding and approach to the challenge.

This action began in 2017 when the Western Sydney Regional Organisation of Councils (WSROC) brought together a multi-stakeholder group involving state and local government, universities, business

organisations, health agencies and scientific research institutions.

Progress has been swift to date. The group has begun by:

- establishing a backbone governance structure
- establishing baseline data and commissioning new research
- delivering two forums to review the issues and agree priorities
- developing a “Cool Suburbs” strategy for rating housing estates and existing suburbs
- advocating for extreme heat management as a NSW Premier’s priority.

The Cool Suburbs initiative will use the latest in data sensing, materials science, built environment planning

and performance monitoring to offer a “Cool Score” for new and existing suburbs. It will pilot a voluntary measurement and performance tool to identify the places in a city that will be lower in temperature and more comfortable, productive and safer for humans in times of extreme heat.

Cooling initiatives have already been tested in Sydney in terms of cost effectiveness, timeliness and effect. These include: cool roofs; permeable or porous roads, driveways and footpaths; cool building and shading designs; irrigation and tree canopy cover. This action will engage householders, developers, governments and businesses to implement practical changes to our streets and homes for a cooler, safer city.

### + Resilience value

This collaboration of diverse stakeholders is building a shared understanding and awareness of how to reduce the impact of extreme heat. They will integrate science, planning, product design and performance tools to reduce vulnerability of communities to extreme heat and support liveability and wellbeing. This new voluntary governance approach is pioneering self-regulation for managing climate risk in our city.

### Facilitator

Western Sydney Regional Organisation of Councils (WSROC) including WSROC’s member councils and councils of the Western Parkland City: Blacktown, Blue Mountains, Cumberland, Fairfield, Hawkesbury, Liverpool, City of Parramatta, City of Penrith, Greater Sydney Commission and Resilient Sydney

### Collaborators

ASBEC (Australian Sustainable Built Environment Council), Cooperative Research Centre (CRC) for Low Carbon Living, CSIRO, Government Architect NSW, NSW Office of Environment and Heritage (OEH), Resilient Sydney, Western Sydney Health Districts, Western Sydney University

### Milestones

Years 1 – 3; Cool Suburbs strategy and action plan published, targets set to: reduce temperatures, improve canopy cover, reduce morbidity and mortality and monitor economic impacts of extreme heat

## Supporting action

### ACTION 10

#### Develop investment in resilient buildings, assets, precincts and cities Strengthen: Tool development began 2017

Adapting our infrastructure and built environment to reduce the impacts of extreme weather is critical to maximise the safety and comfort of Sydney communities. Business is increasingly aware of the need to manage risks and understand interdependencies, as well as the potential for innovation and new economic opportunities.

Australia's industry associations have begun pioneering voluntary tools and processes for assessing building, infrastructure asset and precinct resilience. A range of tools is needed to support decision making about climate risks and adaptation priorities. Australian rating tools

support businesses to quantify and explain their performance for local and international benchmarks for investment.

This action will support business-led decision making tools for asset and precinct resilience. Once adopted, these will enable future use of investment products that improve resilience such as resilience bonds. The following tools are now under development:

- Buildings and precincts: Green Building Council of Australia (GBCA): Green Star Resilience Innovation Challenge

- Infrastructure assets: Infrastructure Sustainability Council of Australia (ISCA): ISCA v2.0 Resilience Credit
- Government infrastructure and asset interdependencies: NSW Office of Environment and Heritage is piloting a tool 'XDI – Sydney' that quantifies risks to interdependent critical infrastructure in Sydney, to inform prudent investment, in partnership with the City of Sydney, Sydney Water, Transport for NSW, Sydney Trains, Roads and Maritime Services, and in consultation with emergency services and Infrastructure NSW.

#### + Resilience value

This action will build awareness and management of risk in investment decisions for buildings, infrastructure and places. It will ensure future investment focuses on adaptive technologies and tools.

#### Facilitator

Green Building Council of Australia  
Infrastructure Sustainability Council of Australia  
NSW Office of Environment and Heritage

#### Collaborators

City of Sydney, Department of Planning and Environment NSW, Office of Environment and Heritage, Roads and Maritime Service, Resilient Sydney, Sydney Trains, Transport for NSW, NSW Office of Emergency Management

#### ✓ Milestones

Years 1-3. Sector based tools and accreditation for resilience. Measure of the value of assets rated using resilience tools for buildings, assets and precincts across metropolitan Sydney.

**Right** Parramatta: household solar panels are increasing. Photo:nullplus



## Supporting action

### ACTION

# 11

### Enable affordable access to renewable and resilient energy Strengthen: Research began 2018

Access to secure, clean energy supply was a key concern for our community, particularly during extreme weather when network failures are most likely to occur. They saw renewable energy as a key solution, emphasising the importance of affordability for vulnerable people.

This action has begun, bringing new partners together to collaborate and develop a large scale renewable energy and energy storage model for take up by households in the city. The model will encourage institutional investment in household energy to make solar power accessible and affordable for more people.

This is especially necessary in the hottest areas of our city where access to cheaper air conditioning can be lifesaving. Investment in complementary battery technology has the potential to provide local energy backup in times of peak demand, whilst also reducing our contribution to climate change.

#### Resilience value

This action will build awareness and management of risk in investment decisions for buildings, infrastructure and places. It will ensure future investment focuses on adaptive technologies and tools.

#### Facilitator

Southern Sydney Regional Organisation of Councils (SSROC)

#### Collaborators

Northern Beaches Council, the City of Sydney and the NSW Office of Environment and Heritage

#### Milestones

Year 1-3: Enabling structural and procurement models, expressions of interest invited for participation.



## Aligned actions

### ACTION 12

#### Adopt urban resilience in research and teaching curricula Initiate: Curriculum development

Academic research and teaching need to support systemic and integrated planning and management of our city, buildings, infrastructure and places to improve resilience outcomes for metropolitan Sydney. This action will ensure tomorrow's decision makers and influencers are able to understand and manage our risks as our city grows.

This action will bring international expertise on resilience curricula from 100 Resilient Cities' Rebuild By Design program together with local

academics, teachers and students. They will co-design resilience units and curricula applicable to high school, tertiary and vocational education in Sydney via a tried and tested engagement process used throughout the 100 Resilient Cities network.

Sydney's academic institutions are already engaging in international urban resilience research and local implementation practices. In 2016, the University of NSW appointed a professorial chair in architecture with a focus on urban disaster resilience.

The University of Sydney, University of Technology Sydney and Western Sydney University have begun integrating resilience content into courses.

This process will bring a multi-disciplinary approach to creating education focused on reducing inequity, adapting to a changing climate, growing innovation and the green economy, increasing social cohesion, emergency preparedness and collaborative governance for change.

### ACTION 13

#### Measure metropolitan carbon emissions and report on progress Strengthen: Reporting at metropolitan scale

On a city, state and national level we have made global commitments for action that will contribute to managing and mitigating extreme weather in Sydney. Actions to meet commitments such as the Paris Climate Agreement must begin with an understanding of our current emissions across metropolitan Sydney. Individual councils have previously reported emissions, however fragmented

governance across the city has made metropolitan data collection, reporting and action inconsistent.

This action will pioneer a standardised metropolitan-wide process for measuring and reporting on carbon emissions in Sydney. This science-based approach will support decision making for action at the scale we need. The opportunities for reducing emissions are different across the city. This process will

support councils and communities to better understand how they can act, now.

A network of councils will draw on data from the Greater Sydney Commission and expertise from the international C40 Cities program and the City of Sydney. The gapfill develop protocols, monitor, evaluate, repair and take action to monitor, evaluate, report and take action.



## Aligned actions

### ACTION

14

#### Support a more flexible and resilient water cycle Strengthen: Advocacy for statutory policy

The Metropolitan Water Plan (2017), highlighted the need to diversify Sydney's water cycle management to secure a liveable, growing and resilient Greater Sydney. Use of technologies such as water recycling of wastewater and stormwater are currently stifled by market settings and short term policies. A secure, flexible and resilient water supply is

essential to manage the combined stresses of the combined stresses of ageing infrastructure, growth, inequity and future shock events from extreme weather, such as droughts and heatwaves.

More diverse water supplies are being achieved in other cities through long term policy with targets. This action

will focus on securing agreement across government, business, market regulators and the community on practical policy and market settings. This will secure water over a 20-40 year period, aligned to population growth and the Greater Sydney Region Plan and enable stable investment and implementation of a range of water technologies.

### ACTION

15

#### Reduce reliance on liquid fuel Initiate: Resilience Challenge event

Sydney relies on overseas imports for 90% of our liquid fuel supply. This means we are significantly exposed to supply-chain disruptions. The functionality of our city depends on diversifying our fuel sources and increasing self-sufficiency.

This action seeks leadership and collaboration to develop a metropolitan plan to reduce the risks to our current mobility, whilst planning for new ways of powering transport technology in the future. Practical policy and market settings will be required for a 20-40 year period,

aligned to population growth and the Greater Sydney Region Plan. A 'City Resilience Challenge' event will bring together organisations to research potential targets and policy for investment in more diverse transport options.



Left Port Botany







**DIRECTION** **3**

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**Connect  
for  
strength**

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## Resilience challenge: Declining social cohesion

**Our communities are diverse and cohesive, but intolerance and inequity is growing.**

We are a fast growing city with high levels of cultural diversity. Social cohesion has traditionally been high in Australian society, defined as the presence or absence of social trust and cooperation between citizens<sup>20</sup>. However, social cohesion between our different communities is decreasing, and social isolation is increasing. This undermines the vital connections we need to live well as well as how we respond together in a shock event.

Sydney today is home to Australia's largest population of Aboriginal and Torres Strait Islander peoples. We are also amongst the most culturally diverse cities on earth – 39% of us were born overseas and around 32% speak a language other than English at home.

Some parts of Sydney are extremely culturally diverse, while others are made up of communities where almost everyone has been settled in Australia for generations<sup>21</sup>. The extent to which we meet people from different cultural backgrounds

depends largely on where we live and work. A lack of transport options inhibits our ability to visit different communities that have different cultural backgrounds.

Tolerance of cultural diversity is declining in Sydney.<sup>22,23</sup> Attitudes to cultural diversity are complicated and depend on many factors, but there is evidence that over time contact with different cultural groups decreases racism, and there very little increase in positive attitudes amongst those who live in areas of low diversity<sup>24</sup>.



### Cultural diversity

- We are more culturally diverse than London, Singapore and New York on the basis of number of people born elsewhere<sup>25</sup>.
- Around 38% of Sydney households speak a language other than English at home<sup>26</sup>.



### Intolerance

- 54% of people in Sydney disagree with the statement 'the government should assist with ethnic minorities', compared with 44% of people from Melbourne<sup>27</sup>.
- 25-27% of Sydneysiders expressed negative or strong negative attitudes towards Muslims, compared to 16% of people surveyed in Melbourne<sup>28</sup>.
- Further research has found Muslim, Aboriginal and Torres Strait Islander and African people experience high levels of discrimination. 77% of South Sudanese people surveyed reported experiencing discrimination<sup>29</sup>.



### Fragmentation

- In Parramatta 76% of people were born overseas, and twice as many people speak a language other than English at home than the national average<sup>30</sup>.
- The ability to move around Sydney and interact with different cultural groups can be difficult due to poor transport links in areas with concentrations of different cultural groups<sup>31</sup>.

<sup>20</sup> Larsen 2014, published by the UN. Social cohesion: Definition, measurement and developments.

Christian Albrekt Larsen, Professor, Centre for Comparative Welfare Studies ([www.ccws.dk](http://www.ccws.dk)), Aalborg University, Denmark

<sup>21</sup> SBS, 2016, How Diverse is My Suburb?

<sup>22</sup> Markus, 2015, Mapping Social Cohesion, The Scanlon Foundation Surveys 2015

<sup>23</sup> Markus, 2015, Mapping Social Cohesion, The Scanlon Foundation Surveys 2015

<sup>24</sup> Forrest and Dunn, 2010, Attitudes to Multicultural Values in Diverse Spaces in Australia's Immigrant Cities, Sydney and Melbourne

<sup>25</sup> Resilient Sydney, 2016, City Context Report

<sup>26</sup> Australian Bureau of Statistics, 2016. Greater Sydney Community Profile

<sup>27</sup> Markus, 2015, Mapping Social Cohesion, The Scanlon Foundation Surveys 2015

<sup>28</sup> Markus, 2015, Mapping Social Cohesion, The Scanlon Foundation Surveys 2015