



CITY OF
PARRAMATTA

City of Parramatta Environmental Sustainability Strategy 2017

A GREAT CITY GROWS BETTER EVERY DAY

Our plan to create a nature inspired, efficient and resilient City.





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THE ENVIRONMENTAL SUSTAINABILITY STRATEGY HAS BEEN PREPARED FOR EVERYONE IN THE CITY OF PARRAMATTA LOCAL GOVERNMENT AREA.

ITS GOAL IS TO ENSURE THAT AS THE CITY GROWS, OUR NATURAL ENVIRONMENT IMPROVES WITH IT, AND THAT WE ALL ENJOY THE BENEFITS OF OUR SURROUNDINGS.



GREAT PLACES
DON'T JUST HAPPEN.
THEY TAKE
PLANNING.

The City of Parramatta is going through great change and transformation. As Sydney's Central City a strong focus on environmental sustainability will prepare our City for the opportunities and challenges that unprecedented growth brings.

As the City grows, we need to ensure that the natural environment improves with it, creating a better quality of life, not just for people, but for all living things.

We believe a great city is one that grows better every day.

It's a place where parks and green spaces, transport, swimming places and the skyline all grow together.

A great city is also one where everyone shares in the City's success. To ensure this happens, we need a strong framework.

The City of Parramatta Environmental Sustainability Strategy outlines our key environmental sustainability directions and priorities as our City grows, so that all of us – residents, workers and visitors – feel the benefits of our growing City, while meeting our bigger goal of building Australia's next great city.

RECOGNITION FOR THE DARUG PEOPLE

As the first people of our country – and the longest continuous culture on Earth – the Aboriginal people managed and nurtured the land and waters for thousands of generations.

Parramatta has always been an important meeting place for Aboriginal peoples, particularly our iconic Parramatta River. Indeed, the word Parramatta itself is based on the Darug word, Burramatta, meaning ‘place where the eels lie’.

By showing respect for the land in the way the Aboriginal people do, we can create the same sense of belonging that has been felt by Aboriginal people for 60,000 years, and work towards the same sort of approach to the environment that allowed Aboriginal people to live with such connection and harmony for so long.

City of Parramatta respectfully recognises the Traditional owners and custodians of the land and waters of Parramatta, the Darug peoples.

We acknowledge that Aboriginal and Torres Strait Islander people continue to play a vital role in the ecological, economic, social and cultural life of Parramatta, while maintaining a distinct culture built on the principles of Caring for Country, the primacy of family, and the dignity and governance of Elders.

We are committed to working with Traditional Owners on matters of land, water, culture, language and cultural heritage.



Ray Park, Carlingford

OUR CITY IN NUMBERS



RIVERS & WATERWAYS

266km²

that's the extent of the Parramatta River catchment area

11km²

that's the extent of the Lane Cove River Catchment area

The river's vast network of creeks and tributaries adds up to

65km

13.4km

of open channel waterways

NATURAL



BUSHLAND, PARKS & OPEN SPACES

459ha

of bushland

212ha

of parks for passive recreation

143ha

of sports grounds exist for our enjoyment



TREE COVER

33%

canopy cover from trees across the Local Government Area



HEAT

Over 15 days per year over

35°C



PLANTS & ANIMALS

600

unique species of flora

230

unique species of fauna

10

native fish species live in our bushland and waterways

SOCIAL



MORE PEOPLE

245,000+

people live in the City of Parramatta

By 2036, this is estimated to increase to

400,000

186,000

people work in Parramatta

By 2021 this will increase by

14%

21,000+

businesses call Parramatta home – and counting



MORE DEVELOPMENT

50%

more dwellings by 2038



VULNERABLE COMMUNITIES

15%

of households are 'low income', earning less than \$600 per week

Nearly

14%

of people do not have an internet connection at home, and 4% of people require support with activities and daily needs

ECONOMIC



GREATER INVESTMENT

\$10B

will be invested in roads, light rail, schools, Westmead hospital, university offices, shops, accommodation, a museum, a sports stadium and new public spaces in the next five years



GREATER DEMAND FOR PREMIUM BUILDINGS

ZERO

vacancy in our A-grade premium commercial office buildings

HOW DO WE DEFINE ENVIRONMENTAL SUSTAINABILITY?

When you think of the environment you probably think of trees, air and water.

It's true; it is these things. But it's also much more.

Our environment defines how we live and what we do.

It's the spaces we play in, and the places we build.

It's how we get around, and the community around us.

It's where we work, and where we call home.

To us, environmental sustainability is maintaining all the things we love about where we live, work and play. It's about preserving everything that makes our City great, even as it grows.

It is the landscape upon which we seek to grow Australia's next great city, by bringing together nature, transport and a better built environment for the benefit of all.



Centenary Square – Parramatta CBD



Environmental sustainability affects decisions we make at every level of planning and doing. It underpins the four pillars of our Vision & Priorities Framework: liveability, productivity, sustainability and leadership.

Liveability is about creating a great city to live in. Tree-lined streets and parks to play in are examples of environmental sustainability leading to better liveability. So too are healthy bushland and rivers that provide habitats for plants and animals, which make our City a nicer place to be.

Liveability is also about health and cultural amenity, and universal access to these things. And it's about planning for and adapting to weather events so that communities can bounce back.

If we want our City to grow better, we need to ensure liveability is constantly improved, not reduced.



Productivity is about efficiency, from reducing waste to doing more with less water and energy. It's about better buildings that attract high quality businesses and investors. It's also about better transport that allows the best talent to commute here, and that makes people want to come and visit.

Environmental sustainability is key to productivity. Workers need good indoor and outdoor environmental quality for their physical and mental wellbeing. We need to write this into our City's future.



Sustainability is about managing the relationship between economic growth and liveability. It's about creating the right balance between the urban and natural environment – something we must strive for if we want our City to grow for the better.



Leadership is about inspiring the best people and businesses to join us in Australia's next great city. By leading the way in key issues, we can set the agenda and be a place of choice for people and business, which in turn has positive benefits for our community and lifestyle.

THE BIG ISSUES



The environment is important because it has the ability to enrich our lives and make them better.

To achieve these benefits, we acknowledge that we face a number of challenges to get there.

GROWTH

More than 245,000 people live in the City of Parramatta today. This number is estimated to increase to 400,000 by 2036. That's 62% growth in the next 20 years. And that doesn't include the growing numbers of people who will commute here to work, and to visit.

As population grows, and space becomes a premium, we'll see an increase in high-density living. We'll also see more development. By 2038, the number of dwellings in the City is expected to rise by 50%. Major new developments such as Parramatta Square, Westmead precinct, Parramatta Stadium and the light rail are also underway.

With growth comes a greater demand on resources. Without action, current predicted development projects could see Parramatta's emissions from energy and water consumption increase by 42% and 50% respectively over the next 20 years.

All this puts growing pressure on our natural environment and the need to balance future growth against potential impacts.

LIVEABILITY

Population growth, urban development, and loss of natural environment all impact the liveability of our City – in other words, our quality of life.

We must ensure our City remains a great place to live as it grows. We need more natural places to play, relax and connect with nature and each other. Bushland and green spaces are proven to improve both physical and mental health. They can alleviate the stress that comes from living and working in the City. They make our children healthier and happier.

Urbanisation makes our cities hotter. As we turn on our air-conditioners and use our cars to escape the heat, we increase our cost of living. Planting more trees will help cool down our buildings and streets. Creating shaded walkways and cycleways that connect up our City will help get us out of our cars and into nature.

By building the natural environment, connectivity and efficiency into our planning, we can make our City more liveable for our community today, and for future generations.

RESILIENCE

Our climate is changing. How we cope with that depends on how we adapt now, and how we plan for the future.

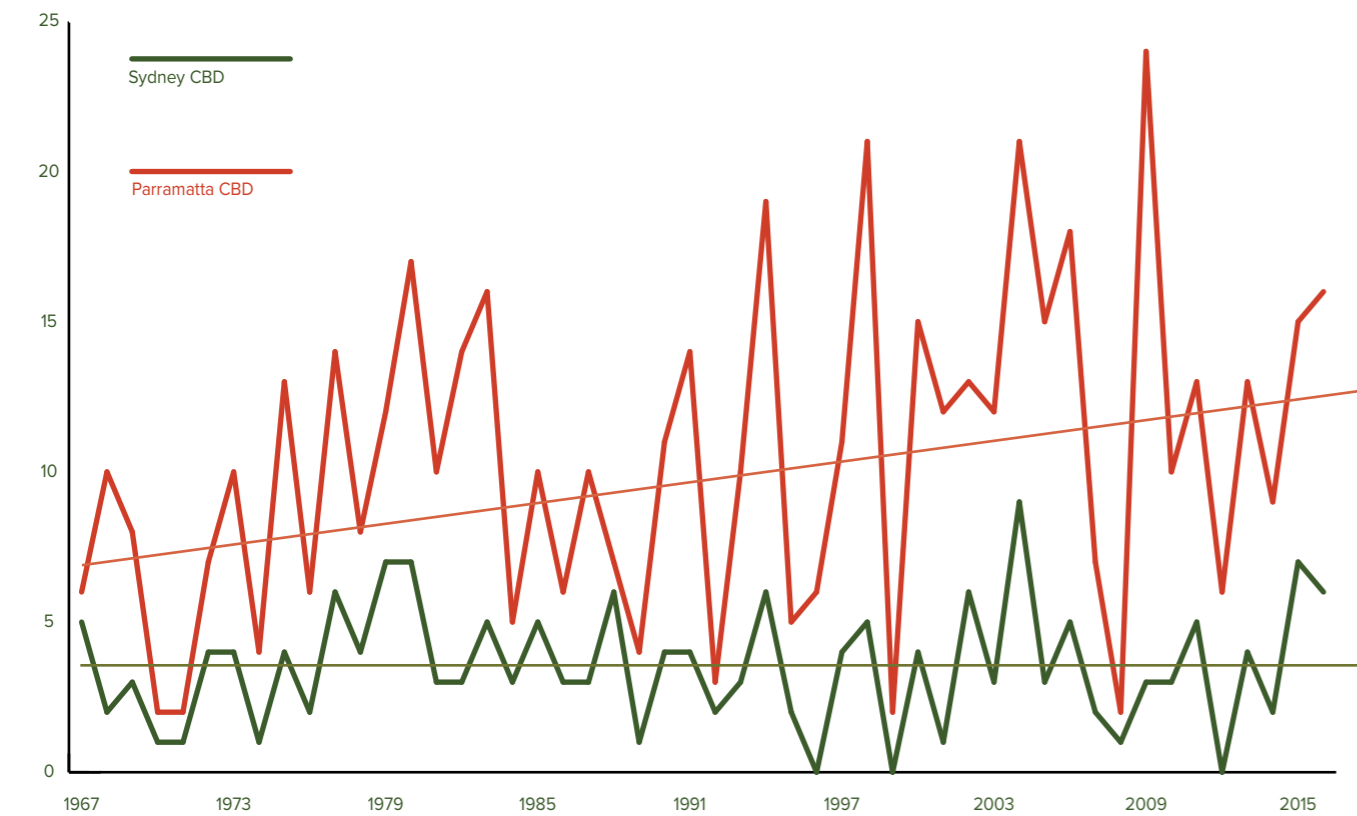
Change in climate such as higher temperatures and increased rainfall bring with them a greater risk of heat stress, drought, flooding, bushfires and storms.

Heat affects our health, productivity and our economy. It puts the young and the elderly at risk and forces some people to take time off work. It drives up our energy and water consumption and our cost of living.

With our proximity to the Parramatta River, we live with the risk of flooding. With more extreme weather, the risk of flash flooding increases, which makes it harder to prevent the loss of businesses and livelihoods.

We need to plan for and mitigate the effect of more extreme weather events – from greening our City, to more sophisticated flood warning systems. We also need to provide our communities with the kind of resilience they need to bounce back – through education, support and by helping them be better connected.

Figure 1. Number of days 35 degrees or over in Parramatta and Sydney CBD, from 1967 to 2015



Source: Climate Council (Bureau of Meteorology Data)



WHAT DOES OUR COMMUNITY WANT?

Recent community consultation undertaken by the City of Parramatta has told us that the following issues are the most important ones for our community.



GREEN AND BLUE SPACES

People want green and blue spaces such as parks, waterways and bushland to relax, escape to, and enjoy. They want a healthy river and healthy bushland and more trees for passive and active recreation. Convenience is important too – people want to see these places accessible and spread out across the City.



WELL MANAGED GROWTH

Community sees growth as important, but not at any cost. Loss of environment is seen as permanent. People want a holistic approach to development that sees the environment, the economy and other social infrastructure improved at the same time.



BUILDINGS THAT MAKE LIFE BETTER

People want an eco-efficient, smart City where our buildings can use less energy and water and where we can recycle more waste efficiently as the City grows – doing more with less.



IMPROVED TRANSPORT

People want transport options: improved public transport, cycleways, walking routes and less road traffic.

YOU TOLD US...

“This is urgent. If the environment is destroyed, we won’t get it back.”

“You already can’t move on the roads and there are hundreds more units coming.”

“Open space is important for our wellbeing. More trees means more shade.”

“With more apartments, children will need more places to play.”

“We need to maintain the parks and trees so people have a place to escape the rat race.”

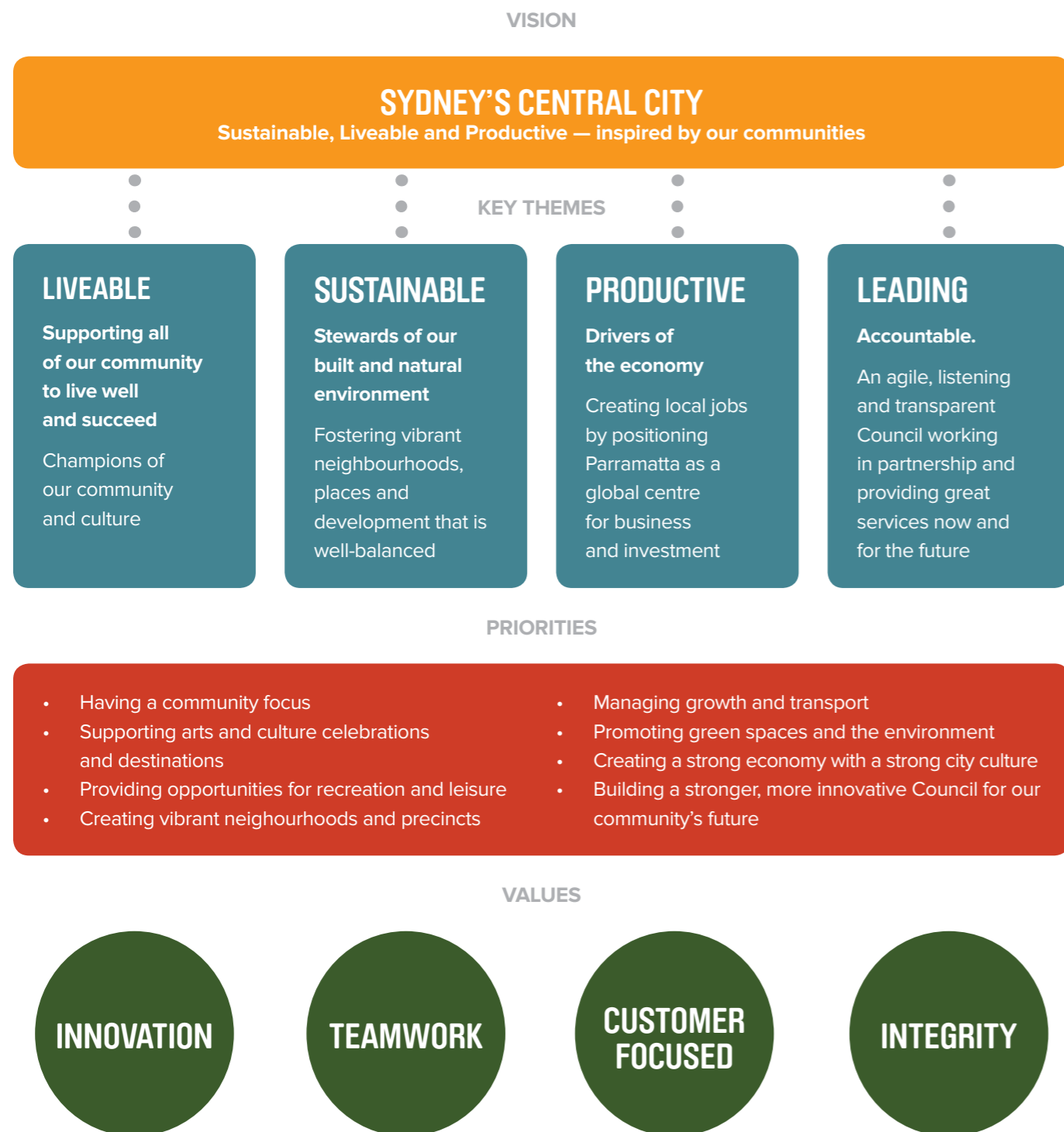
“People will give up their cars if we improve public transport and cycleways.”

OUR VISION & PRIORITIES

The City of Parramatta engaged over 9000 people in 2016 across the Local Government Area to develop a Vision and Priorities framework as a starting point for the preparation of the Draft Community Strategic Plan. The following summarises the Framework.

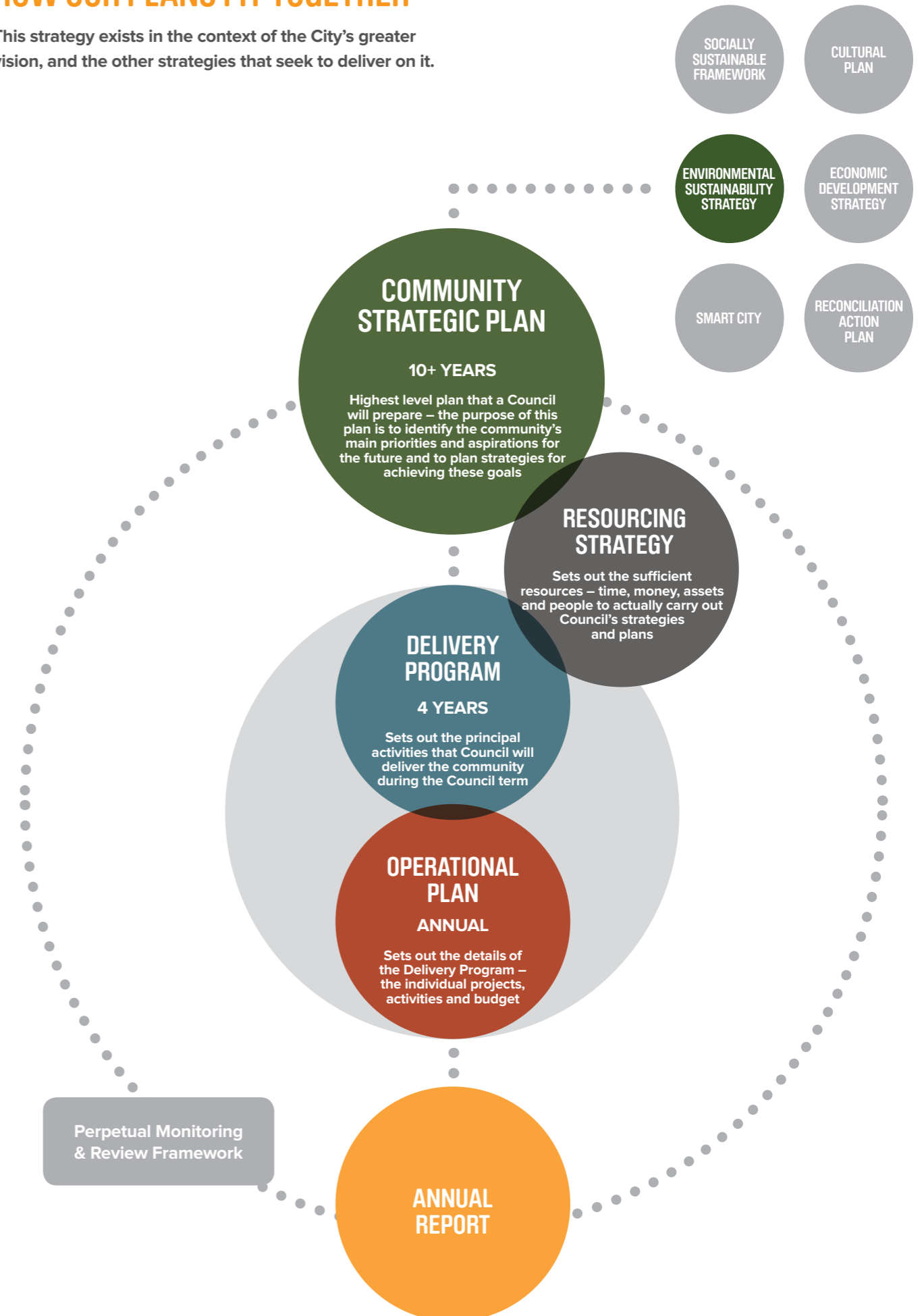
CITY OF PARRAMATTA VISION & PRIORITIES FRAMEWORK

Environmental sustainability underpins all the pillars of our Vision & Priorities Framework.



HOW OUR PLANS FIT TOGETHER

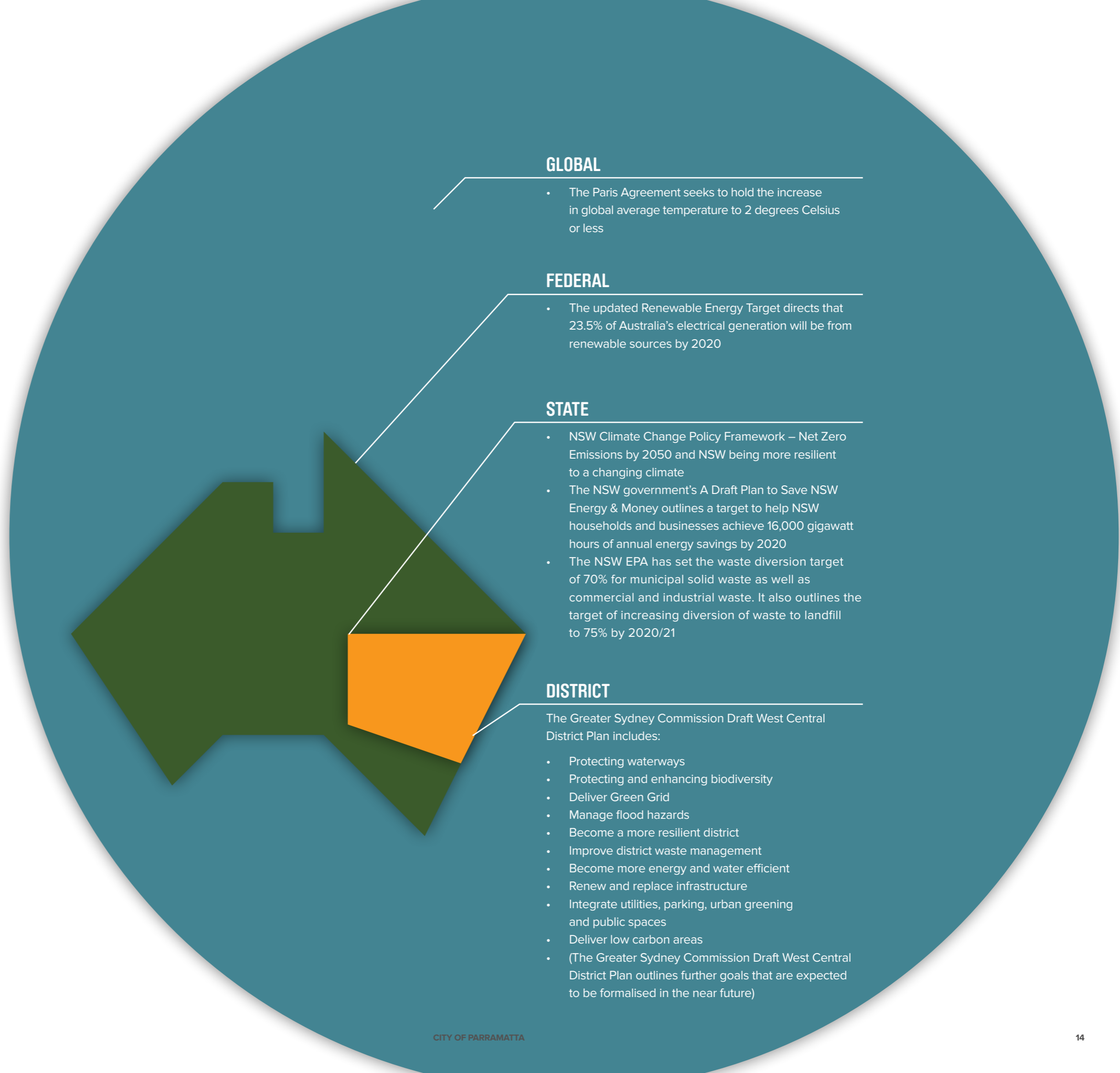
This strategy exists in the context of the City's greater vision, and the other strategies that seek to deliver on it.



FROM GLOBAL TO LOCAL

A strategy should co-exist, interact with and help deliver on relevant, complementary strategies.

These are some of the strategies we have considered and integrated with in preparing the City of Parramatta Environmental Sustainability Strategy.



HOW DID WE DEVELOP OUR STRATEGY?

1

LOOKED AT EXISTING WORK

Environmental sustainability is already well established in our Local Government Area, so looking at efforts and success to date provided the playing field for future planning.

2

BASELINE MEASUREMENT AND OPPORTUNITY IDENTIFICATION

By measuring existing baselines and outlining potential pathways for key issues, we were able to identify the best opportunities for Council and our community.

3

BENCHMARKED OTHER CITIES

Learning what other comparable cities are doing and identifying and replicating best practice in certain issues has helped us define our future pathways.

4

INTERNAL CONSULTATION

By working across disciplines in Council to identify priorities, needs and opportunities, we have sought to create a strategy that is relevant to all teams and can deliver economic, environmental and community outcomes.

5

COMMUNITY ENGAGEMENT

Asking community what they see as the most pressing issues and outcomes has helped prioritise issues and also put them in terms of benefits that people seek and understand. Key consultations include:

- Urban Heat survey 2017
- Our Vision & Priorities consultation, September to November 2016
- Benchmarking Sentiment Study, August to October 2016
- Waste Service Review, November 2016
- Pop Up kiosk community engagement, August 2016
- Care Factor Survey, June 2016
- Walking Surveys, 2016
- Environmental Attitudes and Behaviours Research, 2016

6

EXPERT ENGAGEMENT

Seeking outside subject matter experts has helped us outline pathways that are both ambitious and achievable.

OUR STRATEGY

Our Environmental Sustainability Strategy is putting in place the thinking, planning and actions to ensure that the City grows economically, while also creating vibrant, smart, resilient neighbourhoods, and great places to play.

The strategy focuses on four key themes:

- A City in Nature
- Built for the Future
- Connected and Resilient Communities
- Leading by Example

Each theme covers key environmental priorities for that theme, as shown in the diagram. Each priority sets a goal for the future, outlines why it is important, what we have already done and actions we will undertake to meet these goals.



GOALS & PATHWAYS

“SUSTAINABLE DEVELOPMENT IS THE
PATHWAY TO THE FUTURE WE WANT
FOR ALL. IT OFFERS A FRAMEWORK
TO GENERATE ECONOMIC GROWTH,
ACHIEVE SOCIAL JUSTICE, EXERCISE
ENVIRONMENTAL STEWARDSHIP AND
STRENGTHEN GOVERNANCE.”

– Ban Ki-Moon

A CITY IN NATURE



PARKS &
GREEN SPACE



BUSHLAND &
BIODIVERSITY



THE URBAN
FOREST



RIVER &
WATERWAYS

Nature changes a city. It creates a feeling of connection and gives us great places to go – with family, friends, or to spend time alone.

Our community cherishes nature. They've told us that their main concern is 'protecting and enhancing green spaces and the environment'.

But creating a City in nature takes planning – it doesn't just happen organically. The City of Parramatta has identified the goals we need to achieve to create a City where nature abounds.

We need to protect and enhance our parks and green spaces.

By doing so we ensure our residents have places to play, to relax, to escape the stresses of the City and to connect with nature, and with each other.

We must protect the health of our bushland and waterways.

In turn, we'll protect the biodiversity of the plants and animals living around us, and the health of ecosystems vital to our quality of life.

We want a City that's shady and cool.

To do this, we need more trees and canopy cover. Tree-lined streets are places where people want to live. Shaded walkways and bike routes encourage us to get active rather than sit in our cars. And trees help us tackle the rising issue of urban heat by cooling down our City.

We want to restore the Parramatta River to its former glory.

By cleaning it up, we can all enjoy a wonderful, natural swimming pool in our backyard. We want nature to be a feature of our Local Government Area – something that everyone notices and enjoys. Nature is the key to a more sustainable, liveable and productive place. This is what a City in nature means to us, and this is how we will create a City that grows better every day.



PARKS & GREEN SPACE

OUR GOAL:

**PROTECT, ENHANCE
AND INCREASE OUR
PARKS AND GREEN
SPACES TO MAKE
THEM A COMMUNITY
FEATURE**

OUR ACTIONS (1-4 YEARS)

- Maximise quality green and open space in new growth precincts
- Develop a new Open Space & Recreation Plan
- Implement Parra Play policies through formal play spaces
- Promote the use of shared green space by educating and engaging our community
- Continue to activate our parks and open spaces via our bike and walking networks



PARKS & GREEN SPACE

WHY IS THIS IMPORTANT?

Globally, there is a move to ensure that as density increases and population grows, so too does the green space that provides essential health, wellbeing and recreational amenity.

As our population grows here in our Local Government Area, we face a future gap in recreation facilities, such as sports fields, and green spaces to keep cool on a hot day.

Currently one in four of our residents (26.6%) live in high-density properties, and this will grow over time. Parks and reserves will become important places for people and families to interact with the community and socialise – becoming the new back garden as densities increase in our City. They need to be local, accessible and good quality.

WHAT WE'RE ALREADY DOING

- Developing a Parra Play Policy that encourages nature play
- Investigating our social infrastructure to understand our current and future space needs
- Implementing a capital works program to upgrade existing park infrastructure
- Developing Open Space masterplans to increase the quality and capacity of existing facilities

KEY STATISTICS

212_{ha}

across a total of 367 Council managed parks and reserves

143_{ha}

of sports grounds



Phillip Ruddock Water playground – Dundas Park



Jubilee Park – Parramatta CBD



BUSHLAND & BIODIVERSITY

OUR GOAL:

PROTECT AND ENHANCE THE HEALTH OF OUR UNIQUE NATURAL ECOSYSTEM OF PLANTS AND ANIMALS

OUR ACTIONS (1-4 YEARS)

- Develop management plans for bushland areas across the Local Government Area covering fire hazard management, restoration and rehabilitation works, preservation of flora and fauna and iconic species, feral animal control, increased revegetation and protection of endangered flora and fauna species
- Expand the bushland regeneration program to improve vegetation conditions
- Continue to deliver the Council’s biodiversity strategy “Life in our City”, creating new targets for the Local Government Area
- Review bio banking potential for sites in bushland areas
- Continue our “get into nature” program to get more people enjoying our natural surrounds
- Manage threatened species with threat abatement and recovery action plans
- Grow our bush regeneration and bushcare volunteers program
- Continue working with our neighbouring Councils, via the Parramatta River Catchment Group, to build connected habitat corridors across boundaries, and provide sanctuaries for all species, including our five iconic species
- Continue to collaborate across all land tenures to promote biodiversity and bushland conservation including State Government land, land owned by utilities, University of Western Sydney lands, industrial, commercial and residential land
- Continue managing the interface between conservation areas and other land uses through planning, policy, compliance, education and preservation activities

“WITHOUT HABITAT, THERE IS NO WILDLIFE. IT’S THAT SIMPLE”
– Wildlife Habitat Canada



BUSHLAND & BIODIVERSITY

WHY IS THIS IMPORTANT?

Bushland and biodiversity are the bedrock of natural ecosystems. The plants, trees, organisms, ecosystems and ecological processes that occur all around us supply us with oxygen and clean water.

Our City's population growth and growing urbanisation place pressure on bushland and the variety of natural species that rely on our natural assets.

Our City is often seen as a place for adults, but we are also home to over 60 schools. Providing natural places for children to learn and experience the world is important for growth and development. According to a report published by Beyond Blue in 2010: "Children who experience contact with nature develop improved self-worth and higher cognitive function".

By protecting our natural assets, we can improve the quality of life for our residents, workers, visitors, and also for greater Western Sydney. And by protecting our bushland and biodiversity, we can make sure native Australian animals and plants thrive.

KEY STATISTICS

600

species of plants

230

species of animals

459ha

of remnant bushland

38

volunteer bushcare groups
across the Local Government Area

17,783hrs

committed by volunteers,
regenerating bushland since 2013

110,000+

native plants and grasses grown
in our Council nursery for 2016/17

WHAT WE'RE ALREADY DOING

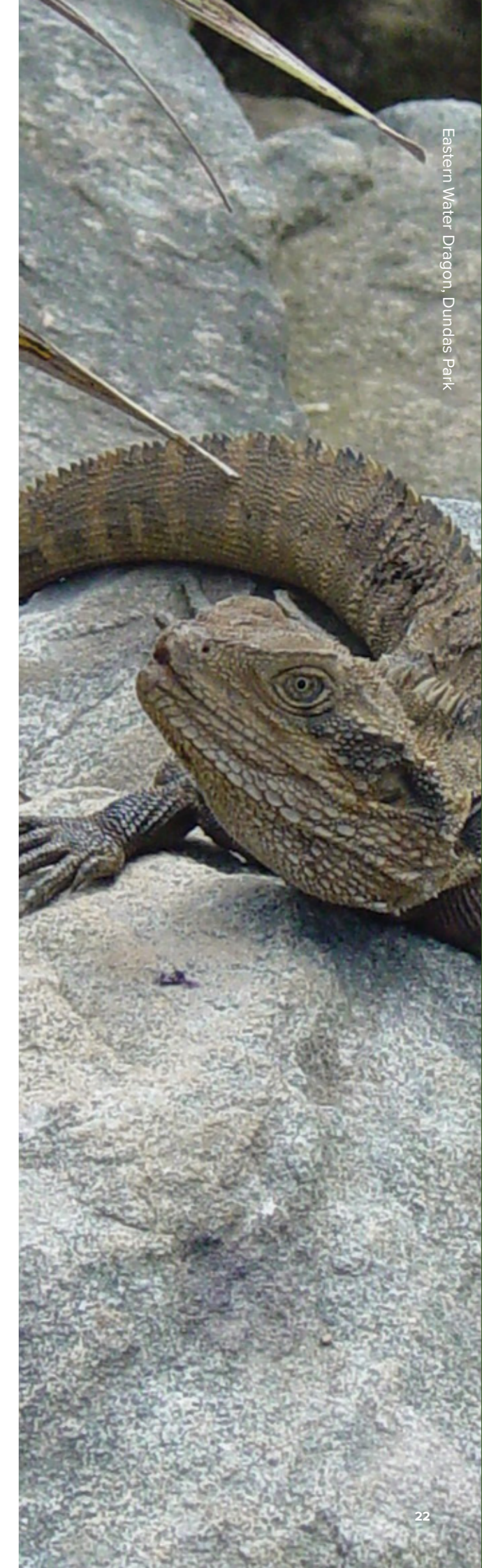
- Delivering our bushland regeneration program including 187 hectares of land under regeneration
- Implementing our waterways master plans for estuary, river and creek preservation
- Expanding habitat for fauna by planting diverse species of trees, shrubs, and grasses, and by installing nest boxes
- Feral animal control and bushfire hazard management
- Maintaining and building walking tracks to give our community better access to bushland and reserves
- Delivering our Bushcare Volunteers program
- Engaging our community around bushland and biodiversity through our "get into nature" program
- Working with neighbouring Council areas to expand, restore and manage habitats for native animals
- Protecting Aboriginal heritage items in consultation with the City of Parramatta's Aboriginal and Torres Strait Islander Advisory Committee.

12

Endangered Ecological
communities

32

threatened fauna species



Eastern Water Dragon, Dundas Park



THE URBAN FOREST

OUR GOAL:

INCREASE CANOPY COVER TO 40% BY 2050 (BASED ON 2016 LEVELS)

OUR ACTIONS (1-4 YEARS)

- Develop an Urban Forest Strategy to help meet our canopy target and determine the best trees for locations and purpose
- Prioritise street tree planting along cycleways and the Parramatta Ways walking network
- Plant more diverse street tree species to withstand pests, disease and the changing climate
- Work with energy providers to reduce conflict between street trees and power lines
- Review and improve planning and development controls to protect existing trees and maximise the opportunity for new ones
- Regulate planting on new growth precincts to ensure canopy trees are planted in streets and on private properties
- Continue to plant tube stock in Council reserves
- Get our community more involved in National Tree Day and similar events
- Develop a community engagement program to provide information and improve understanding of the value of trees in our City



THE URBAN FOREST

WHY IS THIS IMPORTANT?

Trees aren't just nice to look at. They actually make us feel good.

As the City becomes more densely populated, trees are being removed from private properties and public areas, including our streets. The City's recent urban heat survey found that 85% of community respondents would like more shade in their local area to provide cover on hot days*.

Streets filled with trees have plenty of shade. They draw us outside, where we interact with people, and connect with nature. Shaded streets and paths make us feel like walking or cycling instead of driving. They keep things cooler.

According to the United Nation's New Urban Agenda, 2016: "Trees can cool cities by between 2 and 8 degrees Celsius. When planted near buildings, trees can cut air conditioning use by 30%. One large tree can absorb 150kg of carbon dioxide a year, as well as filter some of the airborne pollutants."

By selecting the right tree species and planting them in the right location, we can reduce problems like damaged footpaths and dropping branches. In doing so, we will also capture the benefits and value that trees provide – things like improved property value, improved amenity and greater spaces for children to play.

WHAT WE'RE ALREADY DOING

- Delivering the City of Trees program, planting around 1,000 street trees every year
- Responding to community requests for tree removals, pruning and planting
- Engaging our community on the value of trees through National Tree Day

*City of Parramatta Urban Heat Survey April 2017



OVER THE LAST FIVE YEARS COUNCIL HAS RESPONDED TO

2,373

tree removal requests

3,673

tree pruning requests

321

tree planting requests

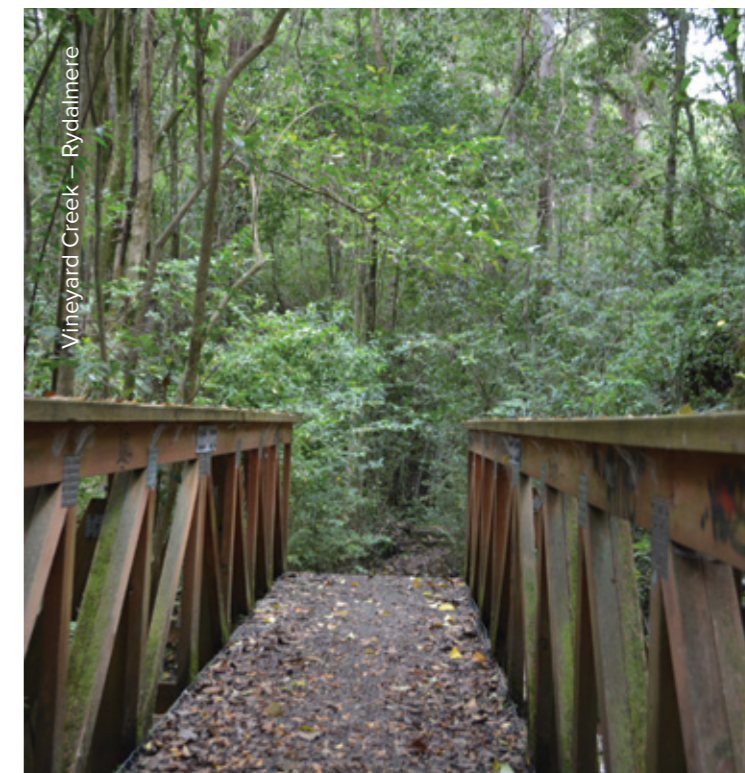
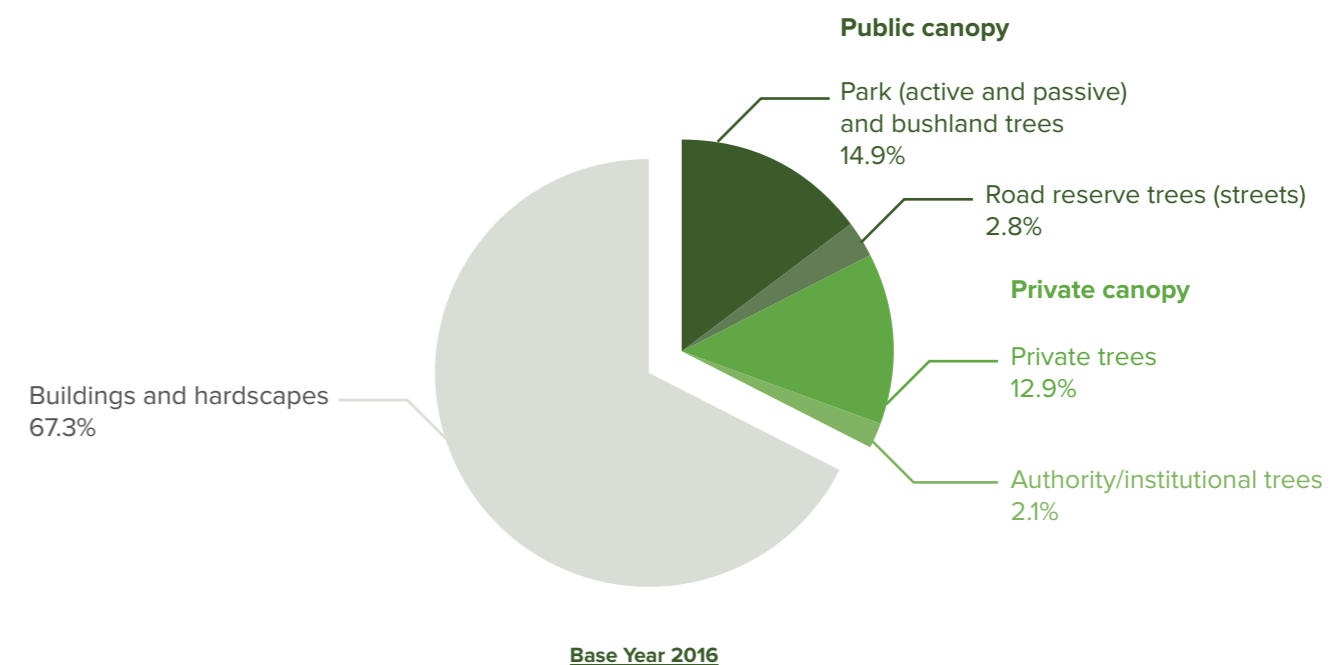
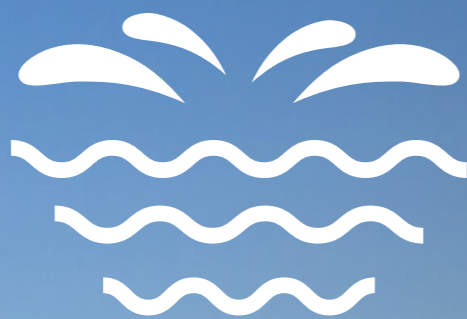


Figure 2. City of Parramatta existing canopy cover (33%) by land use



Source: City of Parramatta (2017)



RIVER & WATERWAYS

OUR GOAL:

**MAKE THE
PARRAMATTA
RIVER SWIMMABLE
AGAIN BY 2025**

OUR ACTIONS (1-4 YEARS)

- Continue to provide a high-quality swimming environment at Lake Parramatta
- Continue working with the Parramatta River Catchment Group to deliver the Parramatta River Masterplan, the Riverkeeper Network and River Aware program, and to enhance priority habitat corridors for our five iconic species and native fish
- Review needs and opportunities for the Lane Cove River Catchment which ultimately feeds into the Parramatta River
- Update the “Rivers of Opportunity” Water Strategy to identify and prioritise local initiatives to support the broader catchment goal
- Continue compliance initiatives to reduce pollution entering the river
- Construct new wetlands to create new animal habitats
- Create water sensitive urban design that filters pollution from stormwater runoff
- Implement recommendations from Water Sensitive Urban Design policy and practice review
- Increase stormwater harvesting and reuse on public and private land
- Work with water utilities to improve stormwater and sewer infrastructure
- Further investigate the delivery of the four new natural swimming facilities on the river
- Continue acting on the Parramatta River Estuary Coastal Zone Management Plan, and contribute to future revisions



RIVER & WATERWAYS

WHY IS THIS IMPORTANT?

The Parramatta River is one of Australia's most iconic waterways, being central to Australia's Indigenous and colonial history, and to the development of modern Sydney.

The river is the natural centre of our City. It's our backyard. With its long, meandering shoreline, it's as valuable as Sydney's beaches. By restoring it to its former glory, we want to make it a way of life for our residents, and a destination for our visitors.

A clean, clear river supports life. It promotes healthy ecosystems in the river, the catchment and the natural creeks. The key to making the river swimmable again is to limit pollutants from entering the river through the stormwater and drainage system in our streets, and the sewer system across our catchment.

65km
of creeks and tributaries connect to the river

291
stormwater pollution devices and eight floating booms installed in the Local Government Area, removing 267 tonnes of sediment and litter in 2015/16

40,000
visitors to Lake Parramatta during summer 2016/17

1 in 10
swimmers have swum in the Parramatta River in the past 12 months*

54%
of people would prefer to swim in the Parramatta River if it took them half as long to get to the beach*

68%
of residents who swim are interested in swimming in a designated area in the Parramatta River*

*City of Parramatta Urban Heat Survey April 2017

WHAT WE'RE ALREADY DOING

- Reintroduced swimming to Lake Parramatta in 2015 following catchment improvements to reduce pollution, and upgraded park infrastructure to attract more visitors
- Supporting water sensitive urban design in new developments and public areas
- Partnering with our neighbouring Councils and State agencies as a member of the Parramatta River Catchment Group to make the river swimmable again
- Identified four proposed new swimming locations on the river
- Working toward a River Masterplan and the Parramatta River Estuary Coastal Zone Management Plan
- Engaging the community through the Riverkeeper network
- Working on compliance initiatives and habitat restoration projects
- Parramatta River Masterplan Community Research Project November 2016



FIVE ICONIC SPECIES REPRESENT THE CONNECTION BETWEEN HEALTHY PLANTS AND ANIMALS AND SWIMMING

Eastern Long Neck Turtle



Powerful Owl



Bar-Tailed Godwit



Striped Marsh Frog



Southern Myotis

BUILT FOR THE FUTURE



ENERGY & CARBON



WATER USE



WASTE & LITTER

Our built environment provides the setting for our everyday lives. It's what comes to mind when we think of a city. It affects how we think, feel, interact and live. Our built environment is the foundation on which we can seek to make our lives more efficient, connected, affordable and comfortable.

Where and how we build also affects the natural environment around us. We have to be mindful of where we place buildings and how they interface with our bushland, biodiversity and waterways.

Built for the future is about sustainable design that uses less – water, energy and materials – to do more.

It's about improving efficiencies in existing buildings, new buildings, and growth precincts, and across major infrastructure investments. It's about ensuring that our lives become more liveable, while at the same time reducing our impact on the natural environment.

We can use technologies to make new and existing buildings more efficient.

By increasing efficiency particularly during peak periods, we can reduce pressure on existing electricity, gas and water networks, and reduce costs, urban heat and our use overall.

We can also diversify, using alternative energy sources, including renewables and battery storage.

Only 1% of our total energy (or 25GWh/year; see Figure 3 – resource flow chart) is currently supplied by renewable energy sources. There is a significant opportunity to take advantage of renewable energy technologies, such as solar PV or hot water and battery storage, thermal, and waste-to-energy, especially in our new developments and key growth precincts.

We can do the same for our water, making use of all our sources.

For instance, by using the stormwater and wastewater that currently flows away, we can limit our reliance on potable water, and drought-proof the City. We currently use 50% of potable water for purposes other than drinking (e.g. irrigation, toilets and cooling towers). By using alternative water sources, we can keep our parks and trees watered, include water features in public spaces, and tackle the problem of urban heat.

With waste, the challenge is to consider it a resource rather than waste.

On that premise we start to close the loop and create circular economies by consuming less and recovering what we use, considering new technologies such as waste-to-energy opportunities.

On the basis of good design, new technology and emerging new infrastructure models, the City has an enormous opportunity to not only think, but also to plan and help deliver a built environment that is 'doing more with less'.

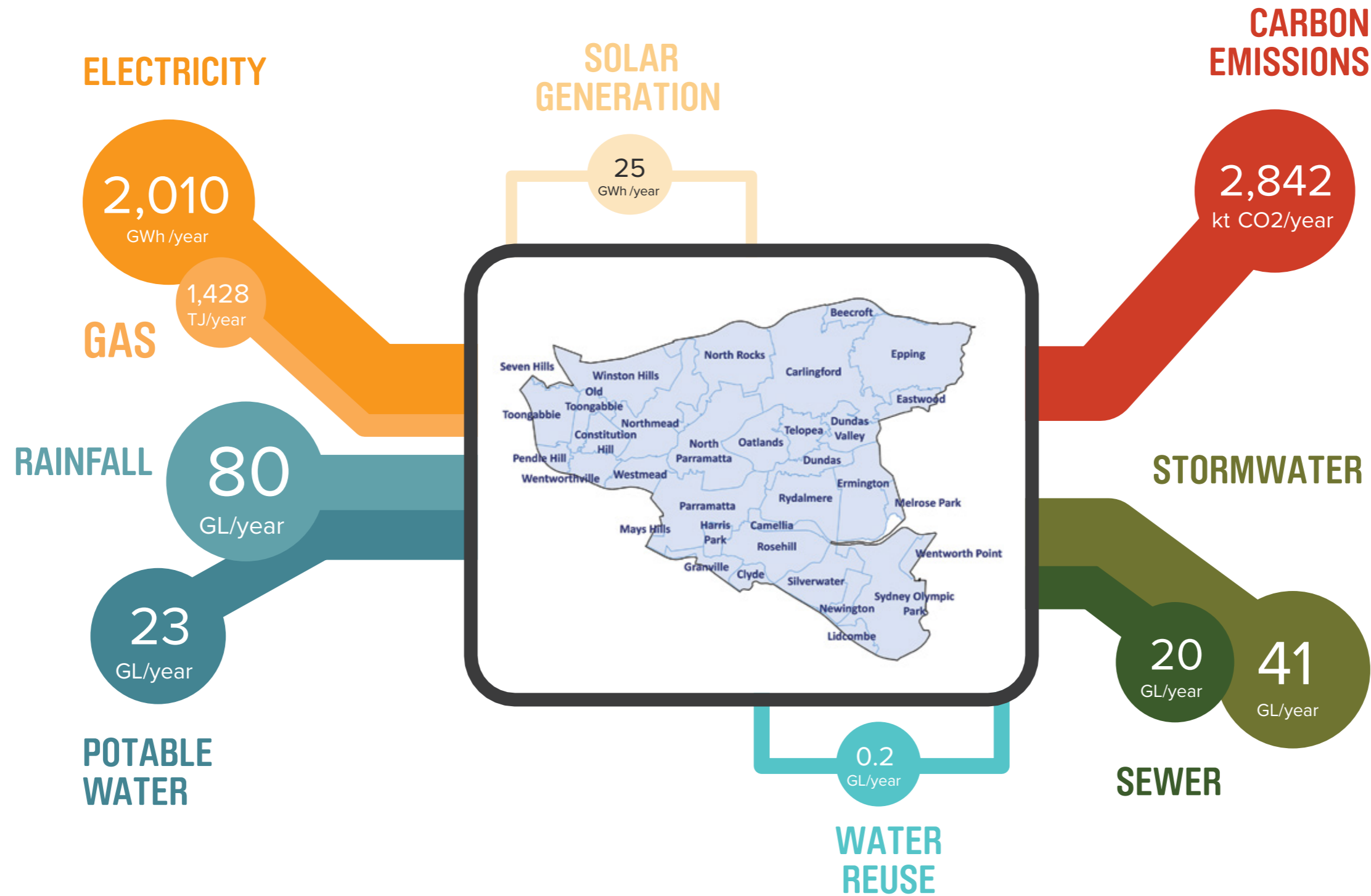
While doing this, we need to design our City to adapt to the impacts of climate.

This means that our infrastructure, buildings and public domain need to be able to cope with climate extremes.

Built for the future is a priority area of this strategy. It's about creating a City that gets better at embracing the future by integrating new thinking, design and technology. It's about growing the ultimate City that is built for the future.

Figure 3 – City of Parramatta resource flows

CITY OF PARRAMATTA'S RESOURCE FLOWS – 2015



Source: Kinesis (2017)



ENERGY & CARBON

OUR GOALS:

60% EMISSIONS REDUCTION BY 2038 (BASED ON 2015 LEVELS)

50% OF ELECTRICITY DEMAND TO BE MET BY RENEWABLE ENERGY BY 2038

“WE’RE RUNNING THE MOST DANGEROUS EXPERIMENT IN HISTORY RIGHT NOW, WHICH IS TO SEE HOW MUCH CARBON DIOXIDE THE ATMOSPHERE... CAN HANDLE BEFORE THERE IS AN ENVIRONMENTAL CATASTROPHE.”

– Elon Musk

OUR ACTIONS (1-4 YEARS)

- Develop an Energy Implementation Plan which addresses:
 - How we support renewable energy for residents, businesses and other significant land users and partnership opportunities for large scale solar
 - Investigate planning and development controls for energy efficiency and renewables in new growth precincts
 - Energy Efficiency and thermal performance opportunities for existing buildings
 - Advocate for higher new building standards, new policy and technology for increased renewable energy, reduction in greenhouse gas grid intensity and rule changes for increased proliferation of local and micro-grid renewable energy sharing or ‘peer to peer’ arrangements
 - Engagement with developers and utilities to encourage renewable and low carbon energy options across new developments and key growth precincts
 - Working with all levels of Government, Industry and Education to identify future technology and infrastructure opportunities for the City



ENERGY & CARBON

WHY IS THIS IMPORTANT?

Our buildings account for 72% of our City's emissions (see Figure 4).

To do more with less we need to improve the efficiency of all our buildings – both new and existing ones. This will not only reduce household and business energy costs but also make our buildings and homes more efficient and fit for the future.

This is a major task, as modelling shows that a business-as-usual approach with our predicted population, job and housing growth will result in a 42% rise in energy emissions across our Local Government Area by 2038.

The majority of scientific projection scenarios, such as those published by the Climate Institute, suggest that in order for Australia to adhere to its equitable share of the remaining global carbon budget (in order to avoid warming of 2 degrees Celsius), as a nation, we must reduce our annual emissions by roughly 60%.

WHAT WE'RE ALREADY DOING

- Drafted new planning controls for the Parramatta CBD setting best practice energy targets for new developments
- Supported the retrofit of two buildings in the Parramatta CBD through Environmental Upgrade Agreement Financing, valued at \$1.8 million, with \$352,000 saved annually
- Offered solar energy advice for residents across our Local Government Area through the 'Our Solar Future' program

KEY STATISTICS

75%
of building emissions come from non-residential sources

1%
of the City's energy currently comes from renewable sources

0
vacancies in our A-Grade commercial office buildings

Figure 4 – Total City of Parramatta emissions

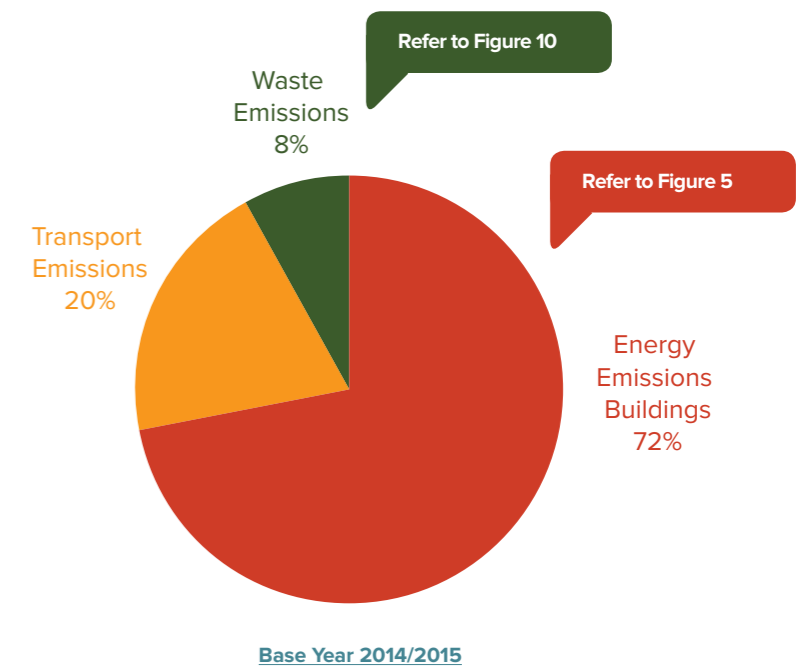
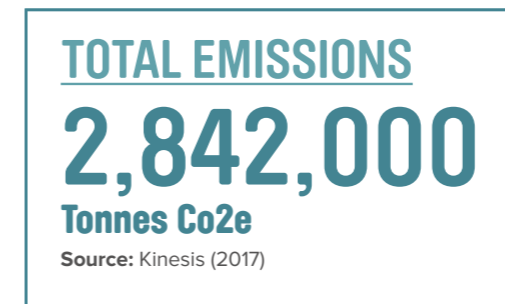
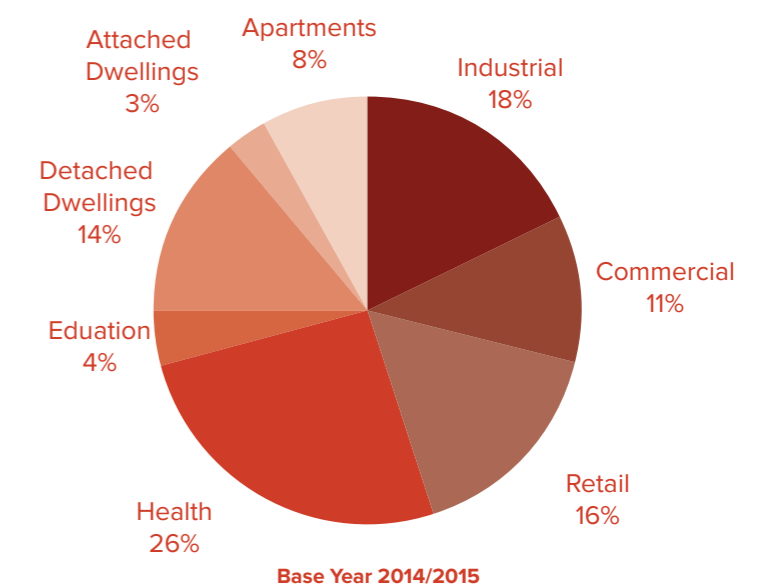
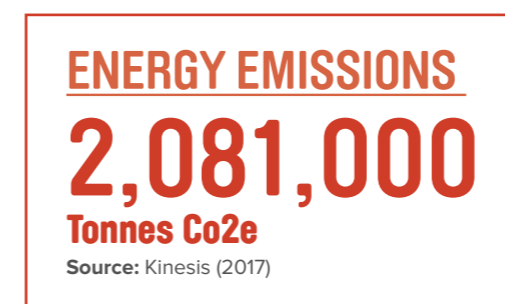


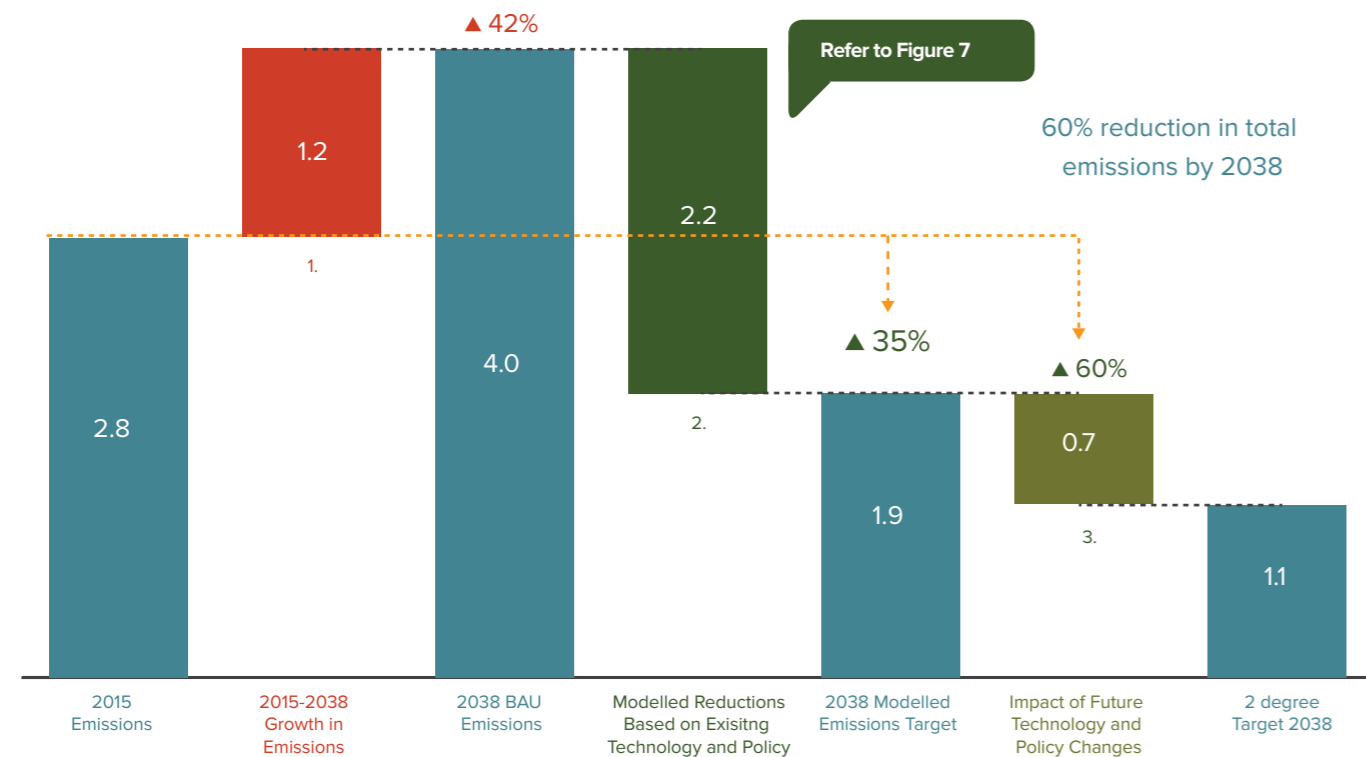
Figure 5 – Emissions across the City of Parramatta by building type



THE CITY OF PARRAMATTA IS COMMITTED TO DOING ITS FAIR SHARE, SO WE'RE COMMITTING TO A 60% REDUCTION IN ABSOLUTE EMISSIONS BY 2038 BASED ON 2015 LEVELS (SEE FIGURE 6)

This is a highly ambitious target given the predicted growth in Parramatta over the coming decades, but one we believe is important to achieve. The key opportunities that we have identified to help achieve this target are provided in the emission waterfall chart (see Figure 7). These emission reduction opportunities equate to a 35% reduction from known technology and policy, with a strong focus on renewables.

Figure 6 – City of Parramatta emissions reduction target



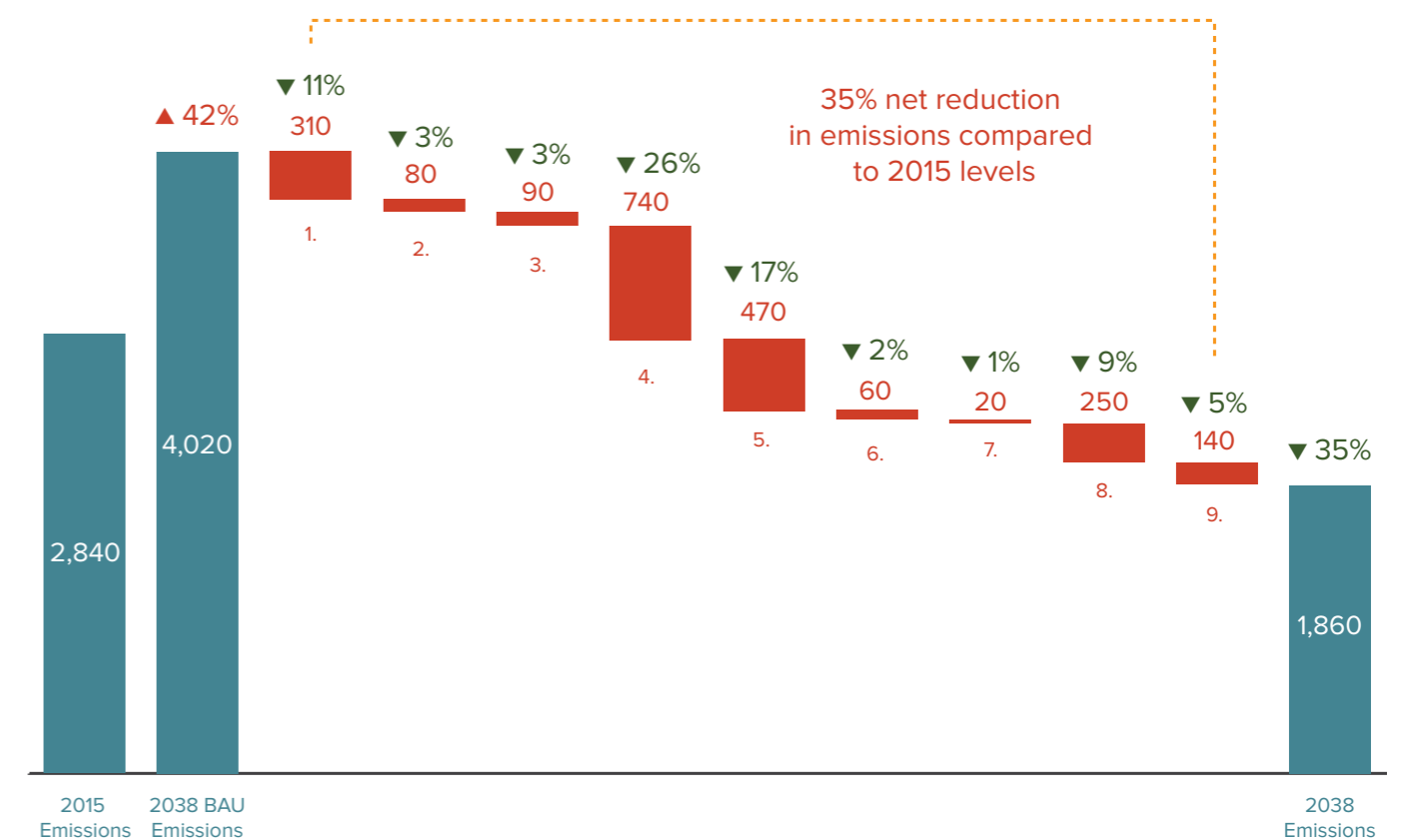
1. If present trends continue, emissions are projected to grow by 42% between 2015 and 2038.
 2. Relative to 2015 levels, implementing sustainability measures based on existing technology and policy would result in a 35% decrease in emissions. Future technology and policy would lead to a further 25% decrease leading to a total 60% reduction in emissions.
 3. Future technology and policy would lead to a further 25% decrease leading to a total 60% reduction in emissions.
- NB. However if measured relative to 2038 BAU projections – for a like-for-like comparison of two scenarios over the same year, implementing sustainability measures based on existing technology and policy would result in a 53% decrease in emissions. Future technology and policy would lead to a further 20% decrease leading to a total 73% reduction in emissions.

Source: Kinesis (2017)

The remaining 25% required to meet our 2038 emissions target of 60% will be met through future technology and policy changes.

As a leading city, we will play our part to reduce emissions, while continuing to grow our economy. We believe this is the best thing for our community.

Figure 7 – City of Parramatta's Emissions Reduction Opportunities



1. Federal Government Renewable Energy target
2. Residential new building standards - 'NSW Government current energy BASIX target' (BASIX 50 for detached and attached dwellings, BASIX 30 for multi-unit dwellings - commencing 1/7/2017)
3. Residential new building standards - 'NSW Government higher energy BASIX targets' (BASIX 80 for detached and attached dwellings, BASIX 50 for multi-unit dwellings)
4. Efficiency in appliances and equipment - Minimum Energy Performance Standard - (MEPS)
5. Local renewable energy generation for residents, business and other significant land users and large scale opportunities
6. New build standards for non-residential buildings
7. New retrofit program for all existing buildings
8. Parramatta Light Rail (Stage 1) and Parramatta Ways Walking Strategy and Parramatta Bike Plan
9. Community waste diversion from landfill

Source: Kinesis (2017)



WATER USE

OUR GOAL:

**NO NET INCREASE
IN POTABLE WATER
CONSUMPTION BY
2038 (BASED ON
2015 LEVELS)**

OUR ACTIONS (1-4 YEARS)

- Investigate planning and development controls for higher water efficiency in our growth precincts
- Work with developers and water utilities to encourage recycled water options in new developments and key growth precincts
- Advocate for higher BASIX Water targets for all new residential developments
- Develop a retrofit program for existing buildings to improve their water efficiency and cost savings
- Increase water sensitive urban design and rain gardens in developments and in public domain
- Work with all levels of Government, Industry and Education to identify future technology and infrastructure opportunities for the Local Government Area



WATER USE

WHY IS THIS IMPORTANT?

The millennium drought in Sydney changed the way Australia treated its water resources with many State governments attempting to “drought-proof” their States with more permanent solutions such as grey and blackwater water recycling, government rebates for home-owners to install water tanks, and tougher restrictions on industries.

In the City, 70% of potable water demand comes from the residential sector, for irrigating our gardens, for household use and pool use (see Figure 8). Industry and business accounts for the remaining 30%.

With an increase in overall growth it is expected our overall water use will increase by 50% by 2038. This means that the pressure will grow on the water and sewer networks. It also means we will need to be smarter with our water and find new ways to be efficient with stormwater and recycled water.

A pathway of opportunities has been modelled for the City to meet a no net increase in potable water consumption by 2038 (see Figure 9).

WHAT WE'RE ALREADY DOING

- Drafted new planning controls for the Parramatta CBD setting best practice water targets for new developments, including a future-proofing dual piping requirement for all new developments
- Delivered the Sydney Water Partnership Program for businesses in the Parramatta CBD
- Provided rainwater tank rebates and information packs for residents
- Advocated to expand existing or create new recycled water schemes in the Local Government Area



THE RECENT HEAT WAVES EXPERIENCED IN SYDNEY 2017 PRODUCED THE SINGLE HIGHEST WATER USAGE DAY SINCE 2003, OR FOR 14 YEARS

Figure 8 – Breakdown of potable water consumption across the City of Parramatta by land use

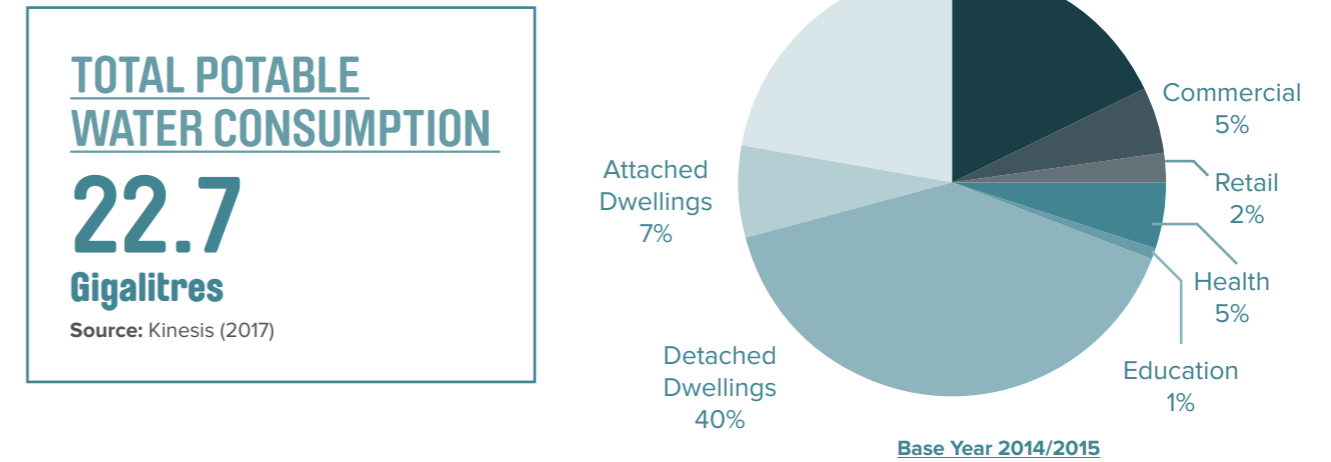
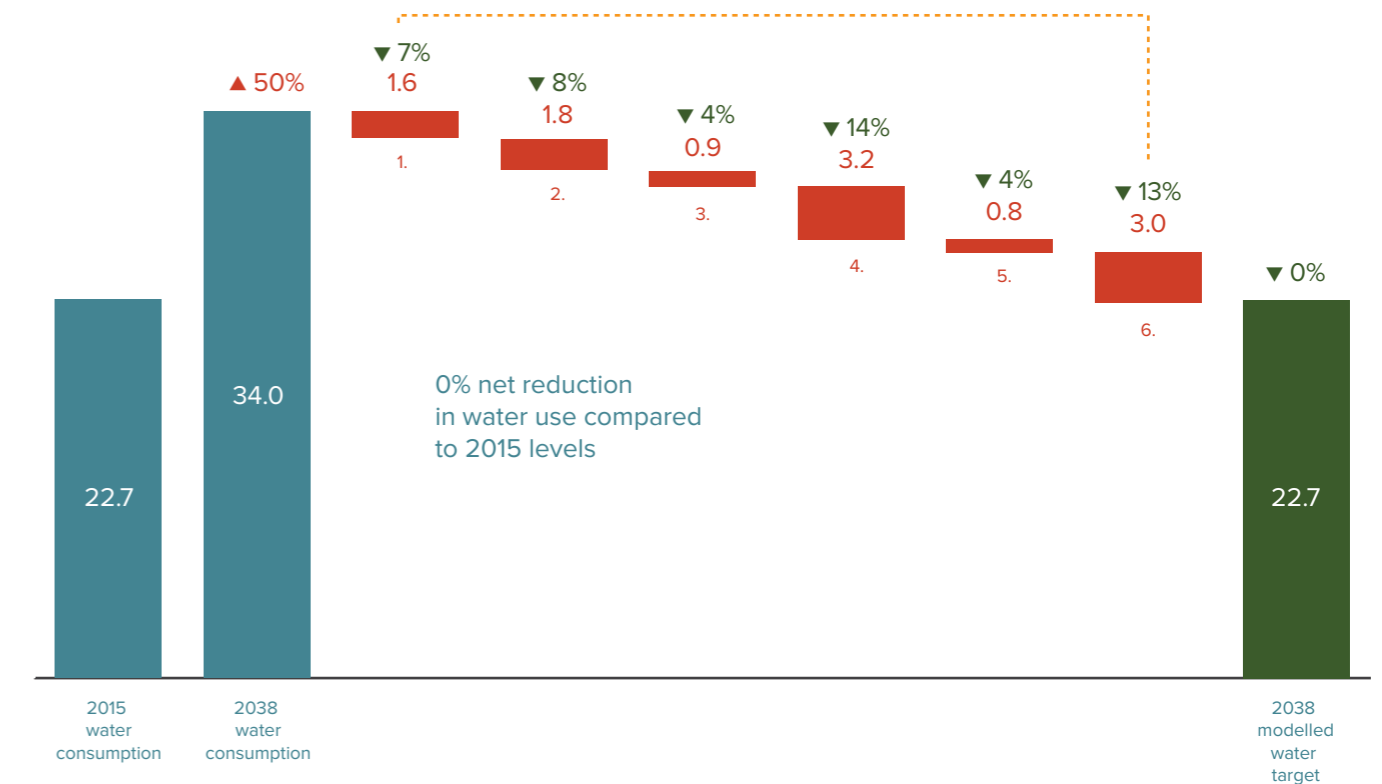


Figure 9 – Potable water reduction opportunities (refer to key below)



1. NSW Government current BASIX standards
2. NSW Government higher BASIX standards
3. Non-residential new build standards
4. Residential water efficiency retrofits
5. Non residential water efficiency retrofits
6. Stormwater harvesting and treated recycled water

Source: Kinesis (2017)



WASTE & LITTER

OUR GOALS:

REDUCE RESOURCE CONSUMPTION FROM 8.2KG TO 6.1KG PER PERSON BY 2038 (BASED ON 2015 LEVELS)

INCREASE DIVERSION FROM LANDFILL TO 85% BY 2038

REDUCE THE VOLUME OF LITTER BY 40% BY 2020

OUR ACTIONS (1-4 YEARS)

- Revise Waste Avoidance & Resource Recovery (WARR) Strategy to 2021, to address issues including public domain litter, illegal dumping and future technology
- Work with business and industry to reduce plastics and packaging including plastic bag bans
- Advocate for policy changes at State and Federal Government levels to reduce plastics and packaging
- Continue community education programs targeting various waste streams from the perspective of avoidance, reuse, repair and recovery, e.g. reducing food waste and awareness of local food production through programs such as Clean Seed network and Grow Our Own Food (GOOF) series
- Expand the Bower’s “Rehoming and Collection Service” to increase the amount of items rehomed before they’re recycled through Curbside Cleanup
- Increase waste diversion from landfill through various treatment processes, and investigate waste-to-energy, both bio-digestions and gasification
- Investigate alternative systems to divert food organics and nappy waste from red bins
- Continue working with the NSW Government and local business to target commercial and industrial (C&I) waste
- Continue public place litter education and recycling programs and the strategic use of street sweeping, gross pollutant traps and enforcement that targets hotspots



WASTE & LITTER

WHY IS THIS IMPORTANT?

When it comes to waste, we have become a disposable society. In Australia, we have historically relied on landfill for getting rid of a lot of our waste. However, there is a limit to the amount of landfill space we have across the Sydney metropolitan area. Our forecast population growth points only one way: greater waste volumes in the future.

Litter has also been identified as a major environmental concern for our community*, so we know our community cares. And in 2016, the NSW Government set an ambitious target to reduce litter by 40% by 2020.

In November this year we will start a new and more comprehensive waste service for our residents, including treating the waste that we can't recycle by means such as composting. This will achieve a 73% diversion from landfill, exceeding the current NSW Government target.

The rapid urban development occurring across the City will also facilitate the need to focus on reusing and recycling construction and demolition (C&D) waste.

WHAT WE'RE ALREADY DOING

- Collection contract where all waste streams go to treatment facilities increasing recovery
- E-waste drop-off days
- Library drop-offs for batteries, disks and spectacles
- Chemical clean-out drop-off days
- Mobile community recycling service for problem waste
- Residential asbestos collections
- Community education targeting reduction, reuse and repair, recycling, waste avoidance

*City of Parramatta Environmental Attitude and Behaviours Research, July 2016.

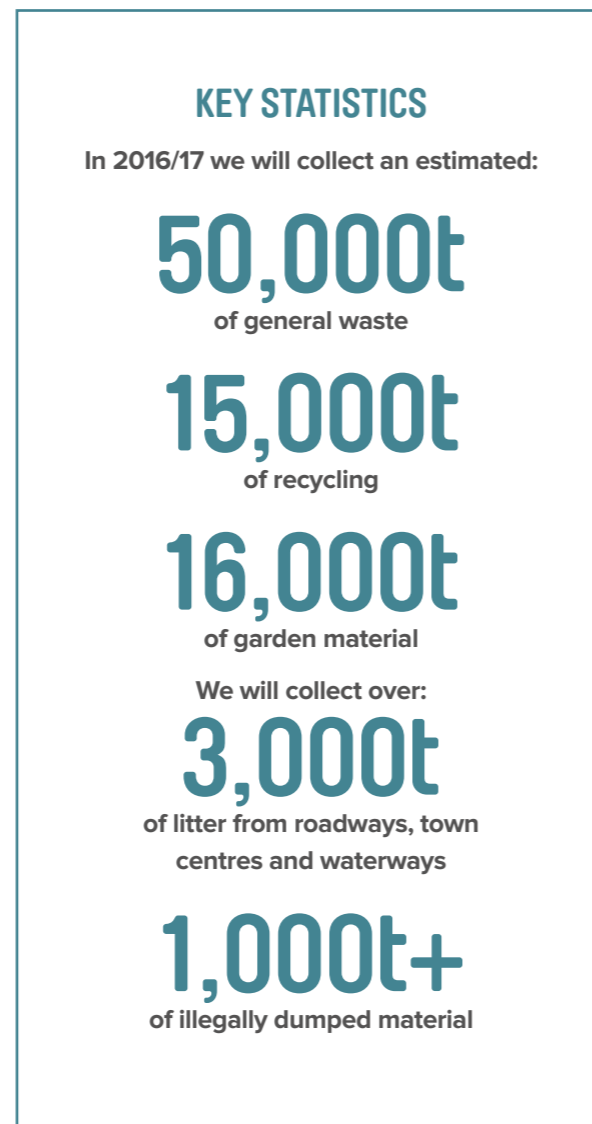
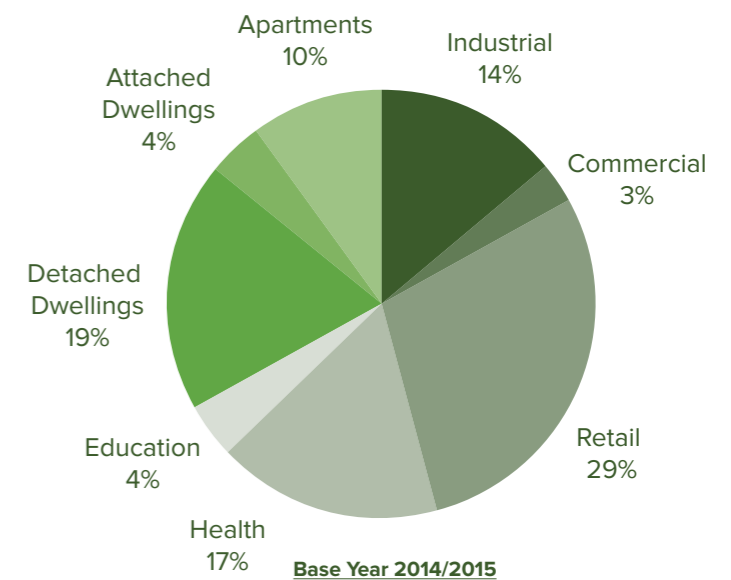


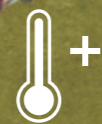
Figure 10 – Breakdown of emissions from waste to landfill across the City of Parramatta by land use



CONNECTED & RESILIENT COMMUNITIES



SUSTAINABLE
TRANSPORT



URBAN HEAT



FLOODING

As our City grows and our environment changes, we face new challenges that require our communities to be more connected and resilient.

Some of our greatest challenges include the growing need for transport options, urban heat and its impacts, and the risk that flooding poses to our community.

Addressing these will help guarantee the long-term liveability of our City as it grows.

Keeping connected as our City grows means people can get where they need to, when they need to.

Sustainable transport options such as walking, cycling and public transport will help overcome our geographic dispersion while improving health, increasing equity through increased low cost travel options, reducing congestion, heat from car exhausts and carbon emissions.

As our City grows, urban heat grows.

Hotter days impact our daily activities and liveability, especially for vulnerable people, such as infants and the elderly.

Heat deters us from walking or cycling. And as we take to our cars, we spend more on fuel, create more congestion and more heat. As we try to cool down with air-conditioning, our electricity costs go up.

Heat also puts pressure on our natural environment – our native animals and plants, even our pets.

We need to raise awareness around flood planning, preparedness and response.

As our population grows and jobs bring more people into our City, we have ever more people to protect, and more people to evacuate in the most serious flood events.

In Australia, floods are the most expensive type of natural disaster. And apart from the financial cost, floods have massive social consequences for communities and individuals.

Floods damage our natural ecosystems too, destroying habitat for plants and animals, increasing erosion and polluting our waterways.



SUSTAINABLE TRANSPORT

OUR GOAL:

**10% OF TRIPS MADE
BY WALKING AND
CYCLING BY 2038**

“PEOPLE WILL GIVE UP THEIR CARS
IF WE IMPROVE PUBLIC TRANSPORT
AND CYCLEWAYS.”

– Resident at our workshop,
A Shared Vision for Parramatta, 2016.

OUR ACTIONS (1-4 YEARS)

- Support implementation of the Parramatta Bike Plan, including \$1M from the Stronger Community Fund for the Epping to Carlingford cycleway connection
- Support implementation of the Parramatta Ways Walking Strategy
- Support the delivery of Stage 1 – Parramatta Light Rail to ensure that active transport connects to light rail stops and that high quality amenity is provided for user comfort
- Develop an Integrated Transport Plan, including demand management and advocate for its delivery
- Review planning and development controls for car share, electric vehicle and active transport facilities and connections across the Local Government Area
- Advocate for major public transport initiatives such as Sydney Metro West rail link and other projects



SUSTAINABLE TRANSPORT

WHY IS THIS IMPORTANT?

Our community has identified transport, congestion and getting around as one of its top three concerns, and we are committed to improving it in a sustainable way.

The existing Parramatta Valley Cycleway demonstrates a strong case for the value of high-quality active transport infrastructure. With strong investment, the active transport corridor has seen consistent 10-20% year-on-year growth in its use over the past four years.

The City of Parramatta is planning to deliver sustainable transport infrastructure through the release of the Parramatta Bike Plan, CBD Pedestrian Strategy and the Parramatta Ways Walking Strategy.

The City is also supporting major public transport projects including the Parramatta Light Rail and the Sydney Metro West to provide an integrated transport network consisting of both active and public transport options.

It's not just about getting cars off the road; it's also about our choice in vehicle. This means increasing the number of low carbon cars like electric vehicles and building appropriate infrastructure to support their use.

WHAT WE'RE ALREADY DOING

- Developed the Parramatta Bike Plan outlining future cycling network plans, education and behaviour change policies
- Developed the Parramatta CBD Pedestrian Strategy to provide safe, accessible and simple CBD pedestrian journeys
- Developed the Parramatta Ways Walking Strategy to improve walkability across Parramatta through a network of green streets, open space and connections to local centres
- Delivering the "Connecting Centres" program which includes a combination of connectivity works between local centres and green spaces
- Undertook the Parramatta Light Rail feasibility study, which helped secure State Government commitment to deliver Stage 1 of the network
- Completed CBD Strategic Transport Study
- Developed Draft CBD Public Car Parking Strategy to support economic activity in CBD without contributing to congestion

KEY STATISTICS

68%

of the trips we make in our Local Government Area are by car

88%

of our total transport emissions is made up of cars

16.5km
of off-road dedicated paths make up the Parramatta Valley Cycleway along the Parramatta River Foreshore.

This gets:

150,000
people cycling

120,000
people walking per year

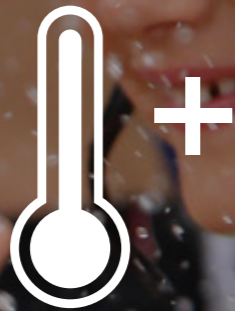
Once complete, the walking network will be:

540km
and the cycleway will be:

270km
Our Greater Parramatta and Olympic Peninsula strategic direction is to design Parramatta as our central

30min
city with good connectivity

*CBD transport study. Source: STM, Transport for NSW, 2016



URBAN HEAT

OUR GOAL:

**IMPROVE LIVEABILITY
BY COOLING THE CITY
AND PROTECTING
PEOPLE AND
COMMUNITIES
FROM HEAT STRESS**

OUR ACTIONS (1-4 YEARS)

- Protect, enhance and increase our existing bushland, parks and green spaces
- Continue to deliver the Cool Parramatta initiative, which promotes cool and safe places to our community to go during extreme heat
- Investigate planning and development controls to help reduce urban heat across the Local Government Area
- Undertake a baseline study and determine monitoring approaches to measure progress
- Develop a Community Resilience Plan and incorporate into Council's Disaster Management Plan
- Continue to build partnerships and innovation to tackle Western Sydney heat
- Improve public and community space design to reduce summer heat by incorporating shade structures, drinking fountains, water features, and by capturing rainwater to irrigate trees and plants and cool public spaces
- Encourage and promote green infrastructure such as green roofs and walls and water sensitive urban design



URBAN HEAT

WHY IS THIS IMPORTANT?

Here in the City of Parramatta and Western Sydney, we're really feeling the heat.

Heat impacts our community, businesses and natural environment in many ways, as illustrated in Figure 11.

We have the opportunity to use the City's assets, such as the river and green spaces, to ensure people can cool down on hot days. We can also use direct measures, such as street tree planting and water features in our public places, to give communities relief from the heat.

These actions ultimately aim to improve liveability and to prioritise protection for people and communities.

WHAT WE'RE ALREADY DOING

- Delivering the Cool Parramatta initiative which guides people to prepare and respond to hot weather including cool places such as swimming pools, Lake Parramatta, parks and air conditioned Council facilities
- Reintroduced swimming to Lake Parramatta in 2015
- Developing urban heat design guidelines to promote best practice design and development measures to reduce urban heat
- Planting around 1,000 trees annually through the City of Trees program
- Working with our neighbouring Councils, Western Sydney Region of Councils and Western Sydney Local District health to tackle the urban heat issue

KEY STATISTICS

In Western Sydney, the number of very hot days (35 degrees Celsius and above) has risen by

250%

over the past three decades¹

The City currently experiences over 15 days each year above

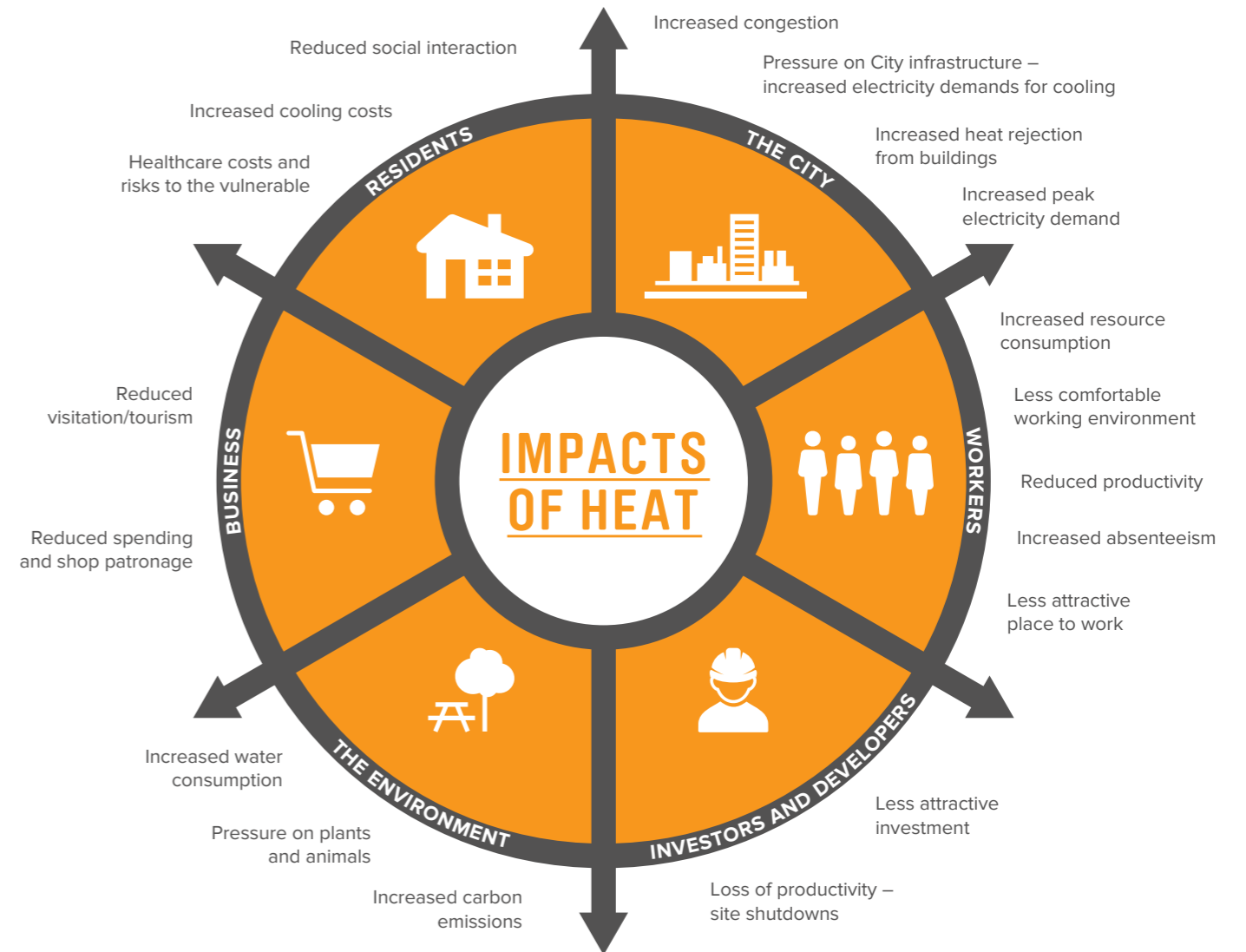
35°C

Temperatures at night are known to be up to

27°C*

¹According to Greening Australia

Figure 11 – Impacts of heat



48%

of our residents are concerned about the electricity costs to run their air-conditioners*

62%

would value receiving information on how to stay safe during heat waves*

64%

of people stay indoors with the air-conditioner on during hot days*

*City of Parramatta Urban Heat Survey April 2017



FLOODING

OUR GOAL:

MINIMISE THE IMPACT OF FLOODING ON THE COMMUNITY

OUR ACTIONS (1-4 YEARS)

- Complete the Parramatta River Flood Modelling and Risk Management Plan, including mainstream and overland flows
- Launch Flood Information System Hub (FISH), including a public warning service and access to river and rain gauge information
- Continue to improve our drainage network
- Develop community engagement and awareness on how to identify and respond to flood risks
- Work with partners including Sydney Water, Bureau of Meteorology, Local Land Services and State Emergency Service around flood management and evacuation
- Update the planning controls to appropriately manage flood risks as the City grows
- Continue to coordinate the Parramatta River Floodplain Risk Management Committee



FLOODING

WHY IS THIS IMPORTANT?

For most people who live through a flood, normal life is put on hold. Homes and businesses are damaged. Services such as clean water and electricity are disrupted.

In recent decades, significant floods occurred in Parramatta in 1986, 1988, 1991 and 2015. The Parramatta CBD is the most flash flood affected major CBD in Australia, at worst case with only minutes warning of a forthcoming flood. This limits emergency response time and the ability to protect our homes and communities.

To help respond to the growing population and the limitations of our City environment, we need to increase our capacity to deal with flood events. By doing so we can create a more resilient community, one where our residents bounce back to normal life faster, at home and at work.

KEY STATISTIC

In the worst possible flood, up to

20%

of our area could be covered
in floodwaters

WHAT WE'RE ALREADY DOING

- Drainage works, maintenance and upgrades are undertaken across the City to manage nuisance or local overland flooding
- Developing a Local Government Area-wide flood model for the Parramatta River to help us understand flood risk and make effective planning decisions
- Updating our Floodplain Management Plans for the Parramatta River Catchment in accordance with NSW Government guidelines
- Initiated the development of a Flood Information System Hub (FISH) which will:
 - Give advanced warning of a forthcoming flood
 - Enable us to see the progress of flooding in real time and help direct emergency response during a flood
 - Help build community and business flood resilience through an "opt-in" warning alert system
- Maintain a range of flood detention and defence structures aimed at reducing flood risk
- Undertaking a flood evacuation assessment for the Parramatta CBD
- Coordinating a Flood Plan Risk Management Committee, which consists of community members, business and government representative and which reviews all flood planning and projects across the Council area



"NUMEROUS STUDIES HAVE SHOWN THAT EVERY DOLLAR INVESTED IN WELL-PLANNED PRE-DISASTER RISK REDUCTION ACTIVITIES SAVES 10 DOLLARS IN DISASTER RESPONSE AND RECOVERY COSTS"

– Floodplain Management Australia
– Monthly Flyer 4 April 2017

LEADING BY EXAMPLE



COUNCIL
ENERGY, WATER
& WASTE



FLEET &
STAFF TRAVEL



RESPONSIBLE
INVESTMENT &
PROCUREMENT

We know the big issues that affect our City, from urban heat to the health of our waterways. While we can influence businesses and the wider community, we can make direct change through how we conduct our own business.

This means the decisions we make every day – the energy and water we use, how we minimise our waste, how we manage our fleet and staff travel, and the purchase decisions we make – can be best in class.

By showing how it's done, we can inspire best practice among local business and our residents.

We can also have an impact beyond our borders, inspiring Councils in other states and even other countries to take the lead on sustainability.

As Sydney's Central City, we want to lead the way in sustainability and environmental performance.

Our community expects it, and we are committed to it. By doing this, we will reduce our running costs, minimise the use of valuable resources and play our part in mitigating against climate changes and its impacts.



COUNCIL ENERGY & CARBON

RYDALMERE OPERATIONS CENTRE

OUR GOALS:
**CARBON NEUTRAL
BY 2022**

**60% EMISSIONS
REDUCTION BY 2038
(BASED ON 2015
LEVELS)**

OUR ACTIONS (1-4 YEARS)

- Deliver Phases 2 and 3 of the Light Years ahead LED streetlight replacement program
- Continue with energy efficiency upgrades across our buildings and facilities
- Validate existing audits based on asset type and new technologies available
- Develop Green Building Policy to ensure new assets are designed and built to maximise energy efficiency, increase renewable energy and reduce urban heat impacts
- Investigate and implement renewable energy opportunities on our Council buildings and facilities



COUNCIL ENERGY & CARBON

WHY IS THIS IMPORTANT?

Our Council buildings, vehicles and activities contribute 0.8% of the total emissions generated across our entire Local Government Area. Half of this comes from our street lighting and another 12% from our fleet and plant (see Figure 12). With GreenPower purchase, we are reducing our energy emissions to 0.4% of the City's total emissions.

The City has worked hard to reduce emissions through energy efficiency upgrades and alternative energy. There are, however, more opportunities for deeper energy savings through continuing with these in the future.

To lead by example, the City of Parramatta has set a goal to reach carbon neutrality by 2022. Progress towards this goal has already begun through energy efficiency upgrades and the installation of alternative energy solutions.

In the long term, a pathway has been modelled where we can meet a 60% emissions reduction by 2038 as per Figure 13.

WHAT WE'RE ALREADY DOING

- Delivered Phase 1 LED streetlight replacement (Light Years Ahead program)
- Delivering an energy efficiency program for Council buildings
- Inclusion of hybrid vehicles within our fleet
- Providing a Green offsets scheme for Council fleet
- We are a founding member of Western Sydney carpool
- Purchasing GreenPower for Council buildings

Figure 12 – Council contribution to City of Parramatta emissions

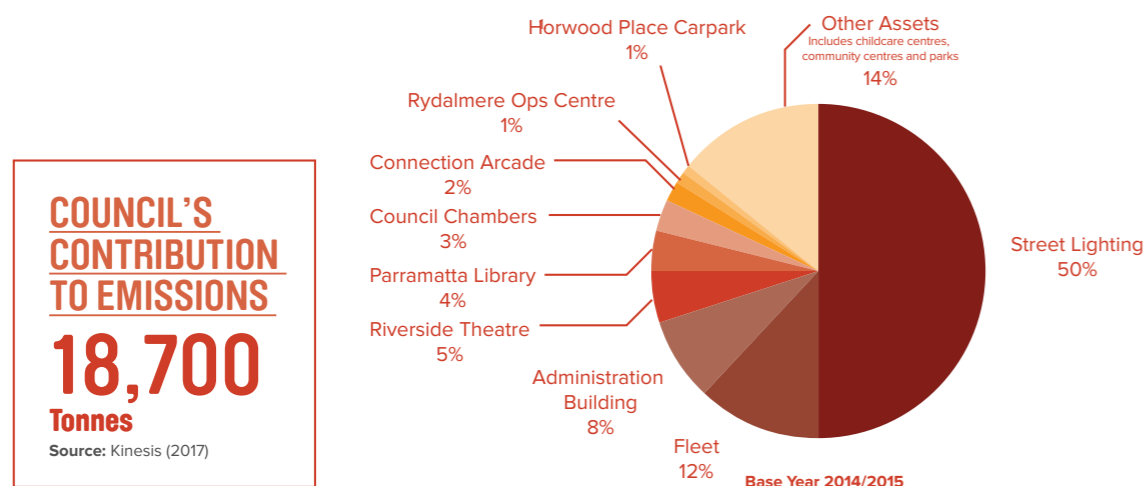
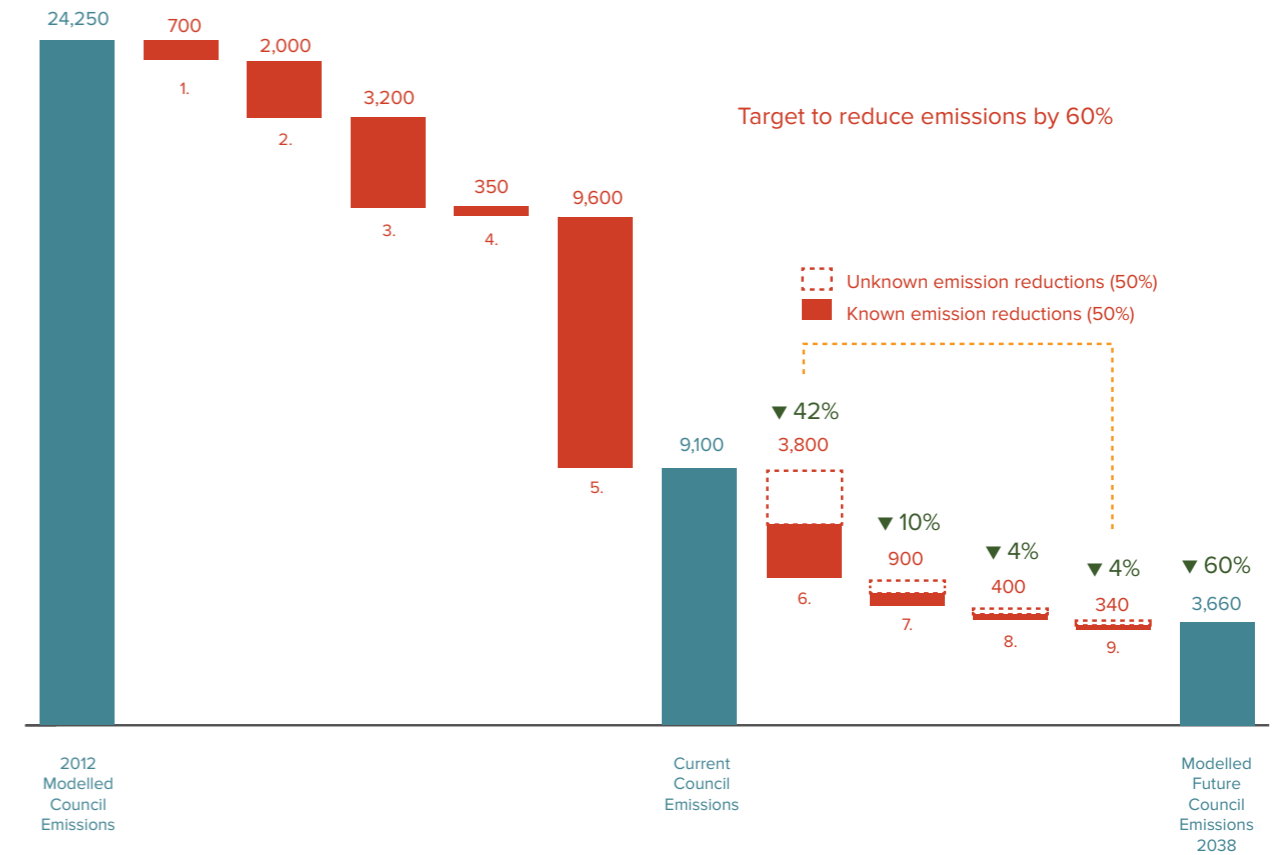


Figure 13 – Council emissions reduction opportunities



1. Energy efficiency strategies
2. Carbon offset planting trees
3. Loss of assets from new Council
4. Increase in assets from new Council
5. Green Power purchase
6. Street lighting efficiency improvements
7. Improve efficiency and reduce car trips to and from work
8. Implementing more energy efficiency initiatives
9. Installing solar PV

Source: Kinesis (2017)

50%

of Council emissions come from streetlights

1,114

LED street lights have been installed to date

~\$1.7m

in energy savings over the life of the assets (20 years)

COUNCIL WATER USE



OUR GOAL:

**NO NET INCREASE
IN POTABLE WATER
CONSUMPTION BY
2038 (BASED ON
2015 LEVELS)**

OUR ACTIONS (1-4 YEARS)

- Continue to install rainwater and stormwater tanks on Council buildings
- Increase the supply of recycled water for irrigation and other uses where appropriate
- Continue with water efficiency upgrades at Council buildings and facilities
- Continue to improve the water efficiency of our parks through improvements to soil structure, irrigation systems, and management practices



COUNCIL WATER USE

WHY IS THIS IMPORTANT?

Our Council operations contribute 0.7% of the City's total water consumption. Predominantly this is for irrigation in our parks and green space.

Parks and green spaces are crucial to the physical and mental health of our communities. They are also a top priority for our community.

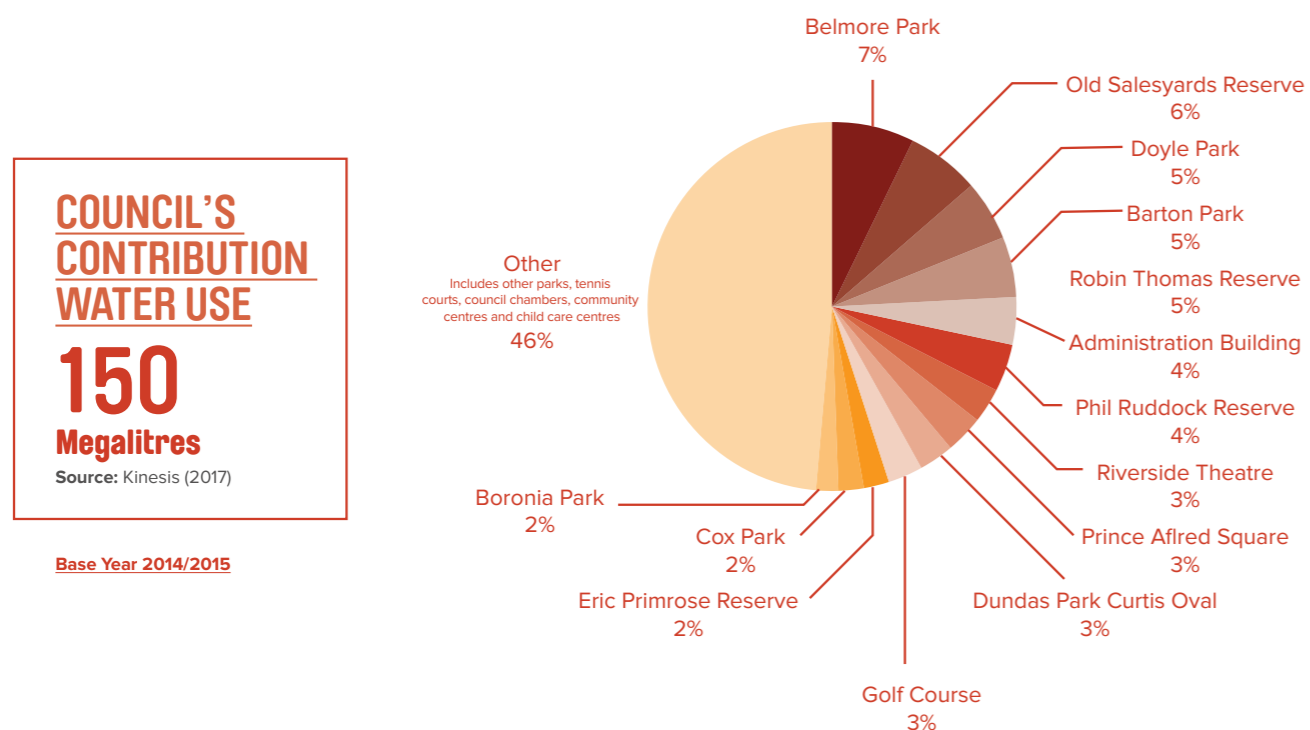
By capturing and using sustainable sources of water for parks and green spaces, and keeping them well watered and lush, we can counteract some of the heat that's generated by our built environment.

Our goal aims to minimise the impact of climatic conditions such as drought and heat waves on our operations.

WHAT WE'RE ALREADY DOING

- Completed irrigation upgrades at high-water-using parks
- Implemented stormwater harvesting, treatment and reuse at several of our parks
- Installed rainwater collection tanks at a number of sites including Council's Operations Centre, our nursery and childcare centres
- Installed water efficient fixtures and fittings to Council buildings in order to reduce potable water use

Figure 14 – Council contribution to City of Parramatta water use.



COUNCIL'S CONTRIBUTION WATER USE
150
Megalitres
 Source: Kinesis (2017)

Base Year 2014/2015

KEY STATISTICS

50+%
 of Council's water use goes to irrigating our parks, green and open spaces with the remainder used within our buildings and facilities

150ML
 of water is used by the Council per annum

200ML
 of stormwater is reused by the Council per annum



COUNCIL WASTE & RESOURCE RECOVERY

 Mobile Community
Recycling Service

Book a pick-
up to remove
problem waste
from your
home

FREE
SERVICE

OUR GOAL:

**90% DIVERSION RATE
FOR COUNCIL WASTE
BY 2038**

OUR ACTIONS (1-4 YEARS)

- Introduce requirements into all capital and civil works tenders to require reuse and recycling of waste and reporting on diversion rates
- Ensure all waste contracts enable tracking and reporting of waste streams
- Work with staff to improve resource recovery
- Develop a business case to procure screening and sorting equipment for civil works waste at Council's Operations Centre
- Investigate systems to divert food waste from the general waste stream
- Collect and report on data from all corporate waste streams
- Increase staff understanding of waste avoidance, disposal options and contamination



COUNCIL WASTE & RESOURCE RECOVERY

WHY IS THIS IMPORTANT?

Council uses a wide range of products in its day-to-day operations, including construction.

We have set an ambitious community waste diversion target. To lead by example, we want to demonstrate leading practice within our own operations.

This means we want to work with all areas of Council operations to ensure that we minimise the generation of waste and maximise reuse and resource recovery.

WHAT WE'RE ALREADY DOING

- Implemented staff recycling at Council facilities
- Implemented Standardised Security / Confidential Waste Paper shredding service
- Providing E-waste recycling
- Working with suppliers and contractors to minimise waste and ensure proper recycling and disposal
- Conversion of street banners into banner bags for events and sale through Council libraries
- Piloting of a screening and reuse scheme for construction and demolition waste at Council's Operations Centre
- Food organics separation, composting and reuse in vegetable gardens at the Rydalmere Operations Centre

KEY STATISTICS
Provided

4,000+
repurposed banner bags for community members at Parramatta City library

5,000+
lights recycled from Council facilities since 2013



Between Jan 2014–Dec 2016 we recycled

695kg+
of toner cartridges and bottles.

In 2015/16 we recycled:
Soil / Rubble =

2,580t

Asphalt =

2,425t

Concrete =

3,370t

In 2015/16 we purchased recycled materials:
Soil =

6,970t

Road Base =

840t

CBD transport study. Source: STM, Transport for NSW, 2016



FLEET & STAFF TRAVEL

OUR GOALS:

**REDUCE COUNCIL
FLEET EMISSIONS BY
20% BY 2038 (BASED
ON 2015 LEVELS)**

**REDUCE SINGLE-
OCCUPANCY CAR
COMMUTES TO AND
FROM WORK BY
COUNCIL STAFF TO
35% BY 2023 (BASED
ON 2016 LEVELS)**

OUR ACTIONS (1-4 YEARS)

- Transition passenger and heavy vehicles to low carbon options as technology improves
- Promote on-going ride sharing initiative such as Western Sydney carpool
- Investigate incentive schemes to support the transition to low carbon travel to and from work for staff
- Promote video conferencing
- Investigate adding bikes or e-bikes to our fleet for short trips during the day



FLEET & STAFF TRAVEL

WHY IS THIS IMPORTANT?

Council operates a fleet of 154 passenger vehicles, 56 light commercial vehicles and 111 heavy plant and trucks. While we have a direct influence over our own fleet, we have an opportunity to influence staff travel choices both in their commute to and from work, and in travel for business purposes.

If we're encouraging our residents to swap their cars for other means of transport, we should show that the Council can too. Based on results of staff travel surveys, over half of us commute to and from work as single occupant car users.

There are opportunities for Council to reduce fleet emissions and to increase the shift away from single occupant car trips to and from work.

WHAT WE'RE ALREADY DOING

- Opted into a car share program for staff trips during work hours
- Provide an incentive to employees who choose vehicles that are lower emission
- Joined the Western Sydney carpool initiative
- Developed educational materials for staff, promoting sustainable travel options
- Established secure bike parking and end-of-trip facilities at the Rydalmere Operations Centre and Church Street offices
- Provided Opal Cards for staff work-related travel



KEY STATISTICS

Car journeys to and from work account for

51%

of Council commutes

61%

of passenger fleet vehicles are green rated

29%

of trips to and from work are by train



RESPONSIBLE INVESTMENT & PROCUREMENT

OUR GOAL:

**SUSTAINABILITY
CRITERIA ARE
CONSIDERED IN
ALL OF COUNCIL'S
PROCUREMENT
ACTIVITIES**

OUR ACTIONS (1-4 YEARS)

- Ensure sustainability considerations in all procurement decisions, including mandatory weightings in tenders
- Improve procurement guidelines, processes and tools to support staff to actively engage in sustainable procurement
- Measure and report on the sustainability of procurement practice
- Investigate divestment options with the intention of developing a divestment policy



RESPONSIBLE INVESTMENT & PROCUREMENT

WHY IS THIS IMPORTANT?

The City uses a wide range of goods and services to run our Council.

Sustainable procurement considers where things are sourced from, the impact they have on the environment during their lifetime, and what happens to them when we no longer need them.

Sustainability is an issue we want to lead on. That means working with our suppliers to make sure they provide goods and services that are high quality, competitive *and* sustainable.

WHAT WE'RE ALREADY DOING

- Developed a Sustainable Procurement Policy
- Including sustainability considerations in some major tenders
- Requiring sustainable measures in contracts, including cleaning, painting, electrical and plumbing
- We participate in the Sustainable Choice program, and monitor our progress through it

KEY STATISTIC

Including tenders, we currently make

7,500

purchasing transactions every year





HOW WILL WE DELIVER THIS STRATEGY?

This strategy seeks to provide a consistent, integrated approach for environmental sustainability at the City of Parramatta, setting a strategic direction, goals and actions for the future. The timelines for the strategy look to 2038 and beyond to align with our Community Strategic Plan. This allows us to be ambitious and tackle long-term issues that simply cannot be affected overnight. These issues include reducing heat, increasing transport options and creating more shade on our streets through mature tree canopy.

As a starting point, the strategy identifies priority actions to be delivered over the next four years to commence meeting our goals. This document will be reviewed on a four-year cycle to align with Council terms.

Monitoring and reporting

An annual Environmental Sustainability Report will be prepared for the community to report implementation and progress against goals. This report will be linked to the Council's Integrated Plan and Reporting Framework.

Council's role in delivering the strategy

Four ways the City of Parramatta will help deliver a sustainable future:

Leadership

through our own actions, and by driving innovative approaches in the built space and natural environmental, and in the management of resilience.

Advocacy

for changes in policy and action at different levels of government and industry for community benefit.

Partnership

with commercial, government and community stakeholders to deal with a broad range environmental issues.

Delivery

of programs, services and policies to achieve positive outcomes for the City.

SUMMARY OF STRATEGY THEMES AND GOALS

A CITY IN NATURE



PARKS & GREEN SPACE

Protect, enhance and increase our parks and green spaces to make them a community feature



BUSHLAND & BIODIVERSITY

Protect and enhance the health of our unique natural ecosystem of plants and animals



THE URBAN FOREST

Increase canopy cover to 40% by 2050 (based on 2016 levels)



RIVER & WATERWAYS

Make the Parramatta River swimmable again by 2025

BUILT FOR THE FUTURE



ENERGY & CARBON

60% Emissions reduction by 2038 (based on 2015 levels)

50% Of electricity demand to be met by renewable energy by 2038



WATER USE

No net increase in potable water consumption by 2038 (based on 2015 levels)



WASTE & LITTER

Reduce resource consumption from 8.2kg to 6.1kg per person by 2038 (based on 2015 levels)

Increase diversion from landfill to 85% by 2038

Reduce the volume of litter by 40% by 2020

CONNECTED & RESILIENT COMMUNITIES



SUSTAINABLE TRANSPORT

10% of trips made by walking and cycling by 2038



URBAN HEAT

Improve liveability by cooling the City and protecting people and communities from heat stress



FLOODING

Minimise the impact of flooding on the community

LEADING BY EXAMPLE



COUNCIL ENERGY, WATER & WASTE

Carbon neutral by 2022

60% Emissions reduction by 2038 (based on 2015 levels)

No net increase in potable water consumption by 2038 (based on 2015 levels)

90% Diversion rate for council waste by 2038



FLEET & STAFF TRAVEL

Reduce council fleet emissions by 20% by 2038 (based on 2015 levels)

Reduce single-occupancy car commutes to and from work by council staff to 35% by 2023 (based on 2016 levels)



RESPONSIBLE INVESTMENT & PROCUREMENT

Sustainability criteria are considered in all of Council's procurement activities





**CITY OF
PARRAMATTA**