

ENVIRONMENTAL SUSTAINABILITY STRATEGY

Regenerative, Climate Positive and
Resilient Parramatta

DRAFT FOR EXHIBITION - AUGUST 2023



| PARRAMATTA

2023 — 2032

» **Parramatta Environmental Sustainability Strategy**
Draft for public exhibition

This Strategy has been developed in consideration and coordination with other Council Strategies and Plans, ensuring alignment of priorities, objectives and actions over the next 10 years to 2032

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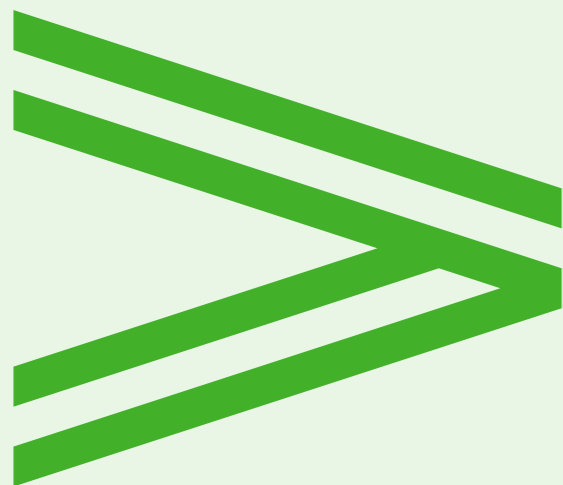
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FIRST NATIONS ACKNOWLEDGMENT

We respectfully acknowledge the Traditional Owners and Custodians of the land, waters and skies of Parramatta, the Dharug people.

Nunanglanungdyu baramada
gulbağa mawa naa Baramadağal
dharug nurrawa badura baramada
dharug yuru



We acknowledge that First Nations people have a vital role in the ecological, economic (trading and bartering), social, and cultural life of Parramatta, while maintaining a distinct culture built on the principles of Caring for Country, nationhood, the primacy of family, and the dignity and governance of Elders.

First Nations people of the longest continuous culture have managed and nurtured the land and waters for thousands of generations, and Parramatta has always been an important meeting place. The Burrumattagal of the Dharug Nation first settled upon the upper reaches of the Parramatta River, and the name Parramatta is based upon the Dharug word *Burrumatta* meaning 'place where the eels lie'.

The local landscape is of great value to the Dharug and is core to their cultural practices and obligations. Wellbeing of Country recognises the interconnectedness of all, including past, present and future generations.

At City of Parramatta, we imagine a future where the cultures, histories and rights of all First Nations peoples are understood, recognised, and respected by all Australians. The City of Parramatta is committed to playing an active role in making this future a reality.

Council is committed to embedding meaningful First Nations and Dharug-led involvement at all levels of urban planning and decision-making, to improve sustainability and resilience.

City of Parramatta is proud to acknowledge the ongoing stewardship of Country by Dharug and we recognise the Dharug peoples as true sovereigns, caretakers, and custodians of the land, plants, animals, water, and skies now known as Parramatta.

**"We do not inherit the Earth
from our ancestors, we borrow
it from our children."**

Native American proverb

LORD MAYOR MESSAGE

Message to be included after
adoption



STRATEGY AT A GLANCE

OUR VISION

A City for nature, sustainable, resilient, and on a journey of regeneration.

Our environment is at the heart of Parramatta's identity and wellbeing, and central to our action in the face of climate change and growth of our community.

Building on the long-term vision outlined in our Community Strategic Plan 2018-2038 (CSP), and through consultation with the community and stakeholders, the Environmental Sustainability Strategy 2023-2032 outlines our plan to make this vision a reality.

The Strategy responds to the below key drivers:

- > **Climate action**
- > **Urban resilience**
- > **Environmental and cultural regeneration (Regeneration).**

Through our vision we aim to support local environmental values including positively supporting First Nations cultural values and caring for Country.

OUR PRINCIPLES

The Strategy is founded on the below principles, which will guide our actions:

- > **Council Leadership**
- > **Strong Partnerships**
- > **First Nations Collaboration**
- > **Community Empowerment.**

OUR PRIORITIES

To achieve our vision for Parramatta, this strategy establishes five priority areas:

- > **Climate positive:** we champion climate change action to move beyond net zero.
- > **Future ready community:** our City and communities are resilient and sustainable.
- > **Blue green City:** our blue and green networks are central to the planning of our City.
- > **Nature positive:** We regenerate and safeguard our natural spaces, waterways and wildlife.
- > **Circular economy:** We champion the circular economy and whole-of-waste system transition.

These priorities build on the strengths of our City, leverage ongoing partnerships and investment, set the direction for the future, and guide decision-making, to ensure our environment is at the heart of Parramatta's identity and wellbeing.

OUR ACTION PLAN

To realise the aspirations outlined in this Strategy, we must actively build our City's capacity to achieve our goals and respond quickly to opportunities as they emerge. The action plan outlines detailed actions that Council will undertake over the span of this Strategy to help us reach the objectives within our priorities and position our City for continued success. This action plan will be monitored annually and will be updated after four years to ensure progression of the Strategy's implementation.



INTRODUCTION

01



Nura (country) and
Yura (people) are one.



Photo 1

OVERVIEW

The environment is at the heart of Parramatta's identity and wellbeing, and central to our action in the face of climate change and the growth of our community.

Environmental sustainability is a critical concern for our community, and the time to act is now. Strong Council environmental leadership and an empowered community will ensure our city can respond to the impacts of climate change, natural disasters, and environmental degradation alongside care for the many natural features that make Parramatta a great place.

"... if we care for Country, Country will care for us."

Designing with Country Framework, Government Architect NSW

WHAT IS ENVIRONMENTAL SUSTAINABILITY?

In defining environmental sustainability, we take into consideration current and future environmental, social, and economic challenges and opportunities.

In previous strategies, Council's environmental sustainability definition has centred on ecologically sustainable development, intergenerational equity and the precautionary principle. That is, we prioritised giving back as much as was taken.

We now view environmental sustainability through the inclusion of a regenerative lens. That is, to actively restore and enhance nature through both ecological and social system perspectives.

Regeneration means to grow, particularly after loss or damage. To foster regeneration as a city is to grow the vitality, viability and capacity for life to continue to evolve within a place. It is inspired by nature and recognises First Nations perspectives, nature-human interconnections, and the United Nations Sustainable Development Goals (SDGs).

Regeneration is a process of renewing, restoring, and improving. It is a powerful and positive concept that speaks to Parramatta as a City, our aspirations for the environment, our culture, our communities, and the legacy we leave future generations.

With a focus on regeneration, resilience and climate action, this Strategy sets direction for our community and Council to:

- > reduce carbon emissions
- > deliver better built environment environmental performance
- > improve air and water quality
- > connect our network of bushland and waterways
- > foster biodiversity across the City
- > empower our community.

The strategy's principles of Council leadership, partnerships, First Nations and community empowerment are incorporated within the city-scale, community, and operational scaled actions.

Cooperation across all levels of government, all scales of business and organisations and support from communities, right down to the level of individual will drive investment in nature, our community, and our city for today and our shared futures.

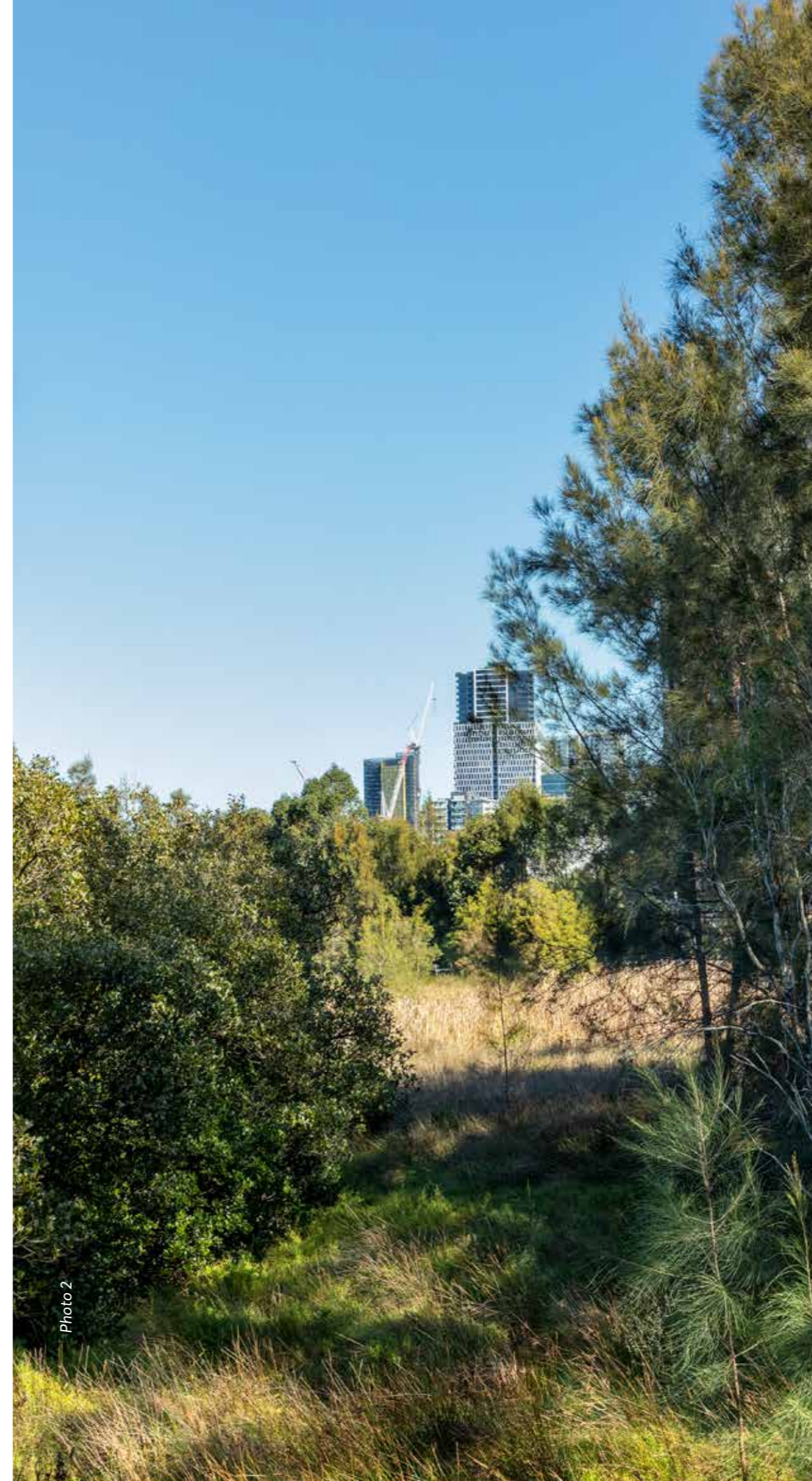
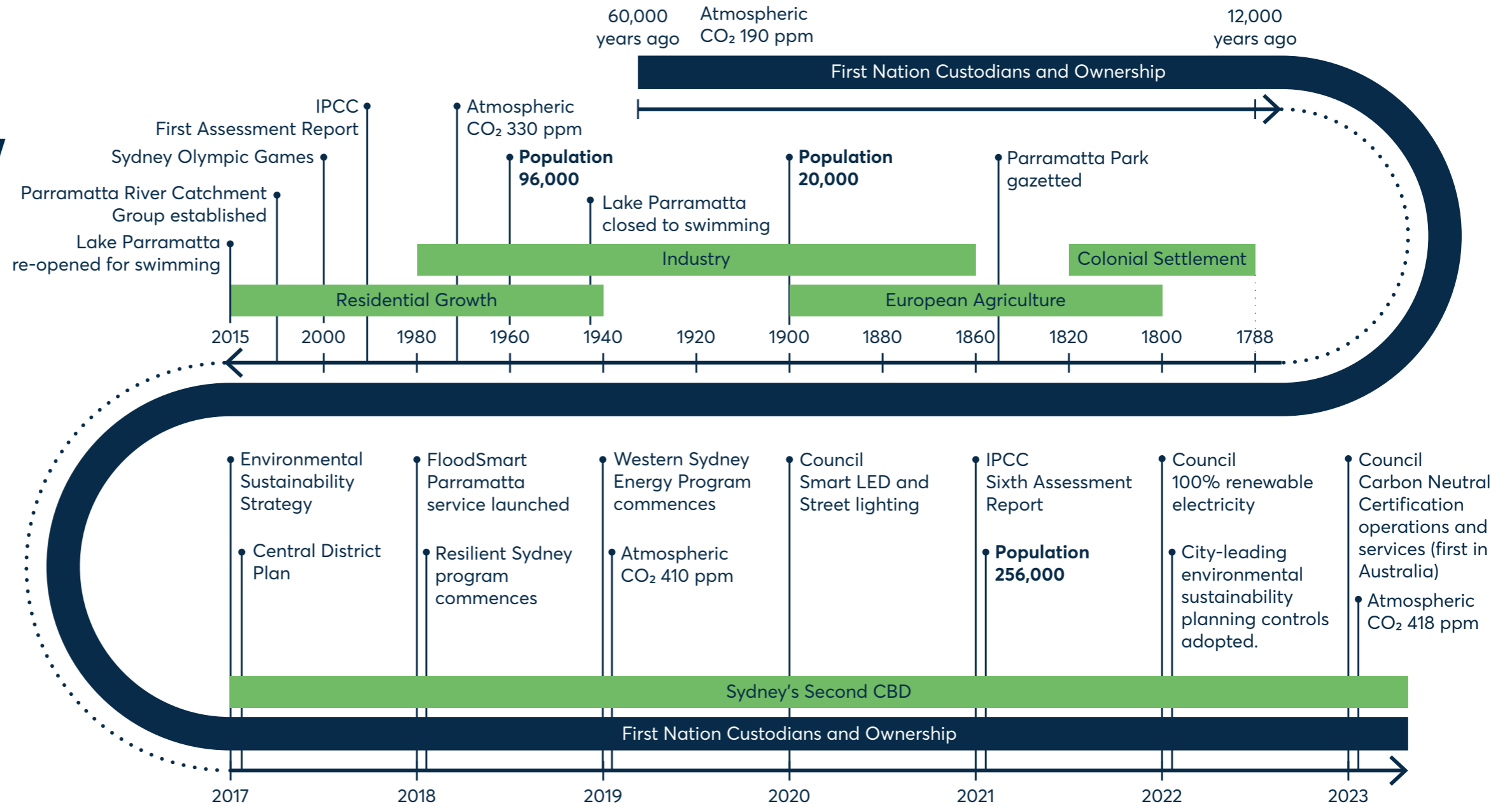


Photo 2

OUR JOURNEY



OUR JOURNEY SO FAR

For thousands of years Parramatta has been an important meeting place for First Nations peoples, with the **Burramattaḡal**, a clan of the **Dharuḡ**, first settling along the upper reaches of our iconic Parramatta River.

Extensive river, wetland, and land modification commenced in 1788 with colonial settlement, European agricultural, industrial development, and urbanisation (Figure 1). This shift in land management resulted in a legacy of environmental challenges and health risks, including the decision to disallow swimming in Parramatta River in 1943.¹

COMMUNITY ADVOCACY AND ACTIVATION

Our community is passionate about preserving the local environment, and their advocacy has led to improved environmental legislation, on-ground restoration, and remediation programs to transform extensive areas of our LGA into green recreational spaces. The 2000 Sydney Olympic Games exemplified this regenerative environmental shift, with 640 hectares of industrial land transformed into parkland and urban precincts to enhance wetlands, river, and endangered species.²

SETTING A STRATEGIC DIRECTION IN ENVIRONMENTAL SUSTAINABILITY

City of Parramatta Council has been a leader in environmental sustainability. We committed to strategic action in our award winning 2017 Environmental Sustainability Strategy (2017 ESS), and this has already delivered benefits to our community including reducing emissions, pollution, and creating new economic opportunities for our City.

Council's increasingly sophisticated approach to key environmental issues includes research, piloting and driving innovation and strong partnerships to achieve community and City outcomes.

Figure 1: Our journey: Timeline of key events influencing Parramatta's environmental journey. Changing population and carbon emissions highlighting increasing challenges.

Implementing this approach provided a coordinated water quality and catchment health improvement partnership program to return natural swimming to Lake Parramatta.*

Another example are our exemplar CBD and growth precinct planning controls that incorporate heat resilience, urban cooling, electric vehicle ready and energy and water efficient outcomes.

*Swimming in Lake Parramatta delivered by Council in partnership with Parramatta River Catchment Group

"Love of place, affective bond between people and place."

Yi-Fu Tuan 1990

OUR JOURNEY AHEAD

State government district plans released in 2017 nominated Parramatta as the geographical heart of Sydney, and since then, Parramatta has been on a continuous journey of increased densification as Sydney's Central River City.

As more people call Parramatta home, our relationship with the environment becomes increasingly important in defining the liveability of our City and our ambitions to become recognised as a Global City.

Higher-density living can reduce environmental building footprints and will provide opportunities for coordinated services including resource recovery, community solar and electric vehicle charging. Higher populations present the challenge of managing climate hazards, and ensuring people have easy access to nature and green open space.



Photo 3

Our opportunity and challenge moving forward is to support our journey of regeneration through current growth and investment whilst also protecting the values that sets Parramatta apart as a place.

Our strategy aims high to ensure that our environmental performance and thought leadership meet global expectations and standards. The strategy sets actions to protect and enhance our environment, so it can thrive alongside the development and growth of our city, ensuring liveability for all.

Through re-shaping our relationship with nature and our environment Council supports not just the quality of our local environment but also our identity as a regenerative city on the global stage.

EGO TO ECO

To be environmentally sustainable, there needs to be a shift from a human-centred approach which places people at the top of the ecosystem hierarchy and decision-making process, instead to an eco-driven approach which recognises the interconnectedness of all beings (Figure 2).

Disrupting this narrative and changing from ego to eco also acknowledges that this has been the approach of generations of First Nations people in supporting the wellbeing of Country.

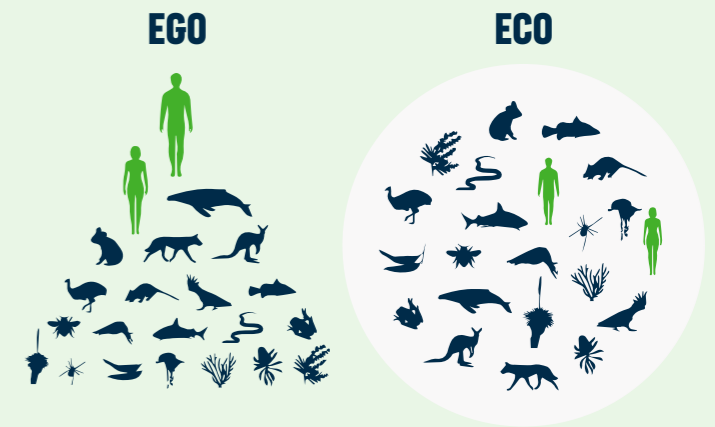


Figure 2: Human-centred and eco-driven management approaches. Achieving wellbeing of Country requires shifting from a human-centred approach (left) to an eco-driven (right) approach that recognises the interconnectedness of all beings. Adopted from *Designing with Country Framework*, Government Architect NSW

HOW WE DEVELOPED

BEST PRACTICE RESEARCH

In preparing the Strategy, Council developed a research paper to examine the following areas:

- **A horizon scan of successful regenerative, resilient and sustainable cities** around the world, to identify leading approaches and key lessons.
- **An analysis of local and international legislative commitments, scientific evidence, indicators and reporting frameworks** to determine approaches that could most benefit our City's growth, liveability, sustainability and prosperity (Figure 3).
- **An assessment of Council's environmental sustainability journey**, including the 2017 ESS and the 2017 – 2021 ESS Progress Report.
- **An independent risk audit of the 2017 ESS** that reviewed governance frameworks, state and federal cohesion and appropriate metrics.
- **Engaging external net zero and water sensitive consultants** to identify Council's key areas of influence and model actions that provide the most value.
- **A strategic analysis of Council's processes and systems** to identify opportunities that embed resilience and regenerative environmental sustainability into business as usual.

COMMUNITY AND STAKEHOLDER ENGAGEMENT

Council conducted extensive engagement with the community and key stakeholders to gather input and feedback. We used this feedback to inform, refine and improve the Strategy, ensuring it reflects the current and future needs and priorities of our community and environment. Insights from what the community has told us have been integrated across the Strategy.

- **25+ environmental experts** provided advice, including Council's Environmental Sustainability Advisory Committee (see breakout box).
- **50+ stakeholders** such as state agencies, Resilient Sydney, Parramatta River Catchment Group, WSROC, Committee for Sydney and neighbouring local governments provided input via meetings and interviews.
- **100+ internal staff and Councillors** shared their priority areas and actions that they can undertake.
- **350+ community members** including residents, businesses, workers and visitors provided feedback by attending pop-up kiosks, completing online and paper surveys or attending online focus groups to provide feedback about specific parts of the Strategy.
- **950+ community members** completed Council's 2022 Environmental Behaviours Survey to prioritise environmental issues and behaviours.
- Review of community views shared on many other plans and strategies, covering a range of issues since 2017.

THIS STRATEGY

KEY AREAS TO ADDRESS

The following challenges and opportunities were identified through the community and stakeholder engagement process:

CUSTODIANSHIP

People want to be environmental custodians, but many are unaware or unsure how they can make a difference. They want First Nations voices, culture, and stewardship to be heard and embedded into Council's decision making. They are seeking Council leadership, advocacy, and partnerships to deliver a comprehensive environmental education and behaviour change program to support them to reduce their environmental impacts, provide incentives and help them save money.

BLUE AND GREEN SPACES

People want green and blue spaces such as parks, waterways and bushland to relax, escape to, and enjoy. They want our rivers, mangroves, and bushland to be healthy, increased and connected, and for local wildlife to thrive. Increasing green space, tree canopy and retaining water in the landscape for urban cooling is critical. They also want Council to act on flood, bushfire and storm management and mitigation.

WELL MANAGED GROWTH

The 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, economy and other social infrastructure improved at the same time. They want our City to be future ready, enhancing social cohesion and embracing electrification and other innovative approaches.

A RESILIENT AND SUSTAINABLE CITY

People want an eco-efficient, smart and circular City where our buildings and public domain are resilient, regenerative and have net zero carbon emissions. People want our City to reduce, reuse and value water, energy and waste, especially food organics. Our community is seeking Council leadership to support, prepare and enhance their resilience through environmental challenges and community-wide shocks including pandemics, and to mitigate impacts from City systems disruptions including electricity, transport, and internet.

ENVIRONMENTAL ADVISORY COMMITTEE (EAC)

Council's EAC was formed in November 2022 to seek ongoing community and expert advice, input, and feedback on environmental and sustainability issues in relation to Council policies, programs, and services. The Committee meets bi-monthly, and their valuable contributions led to the development and implementation of the 2023 ESS.

STRATEGIC CONTEXT

The best practice research identified the following policies and initiatives as influential for our Strategy:

The 2015 Paris Agreement is a legally binding international treaty that recognises the importance of strengthening climate change responses worldwide. As a signatory Australia has committed to a Nationally Determined Contribution (NDC) to achieve the Agreement's main aim of limiting global average temperature increases to below 2°C above pre-industrial levels. As Sydney's third highest carbon emitting LGA, reducing our emissions is critical if Australia is to achieve our Paris Agreement commitments.

The NSW Climate Change Policy Framework maximises the economic, social and environmental wellbeing of NSW in the context of a changing climate and current and emerging international and national policy settings and actions to address climate change. This Strategy aligns to the state government's framework of achieving net-zero emissions by 2050 and that our LGA is more resilient to a changing climate.

The State of the Environment Report assesses the condition of Australia's natural environment every five years as legislated by the Environmental Protection and Biodiversity Conservation Act 1999. The findings of the 2021 report highlighted how growing urban populations and resource demand, plus the steady threat of climate change, are contributing to wellbeing in urban environments, like Parramatta. These issues need to be addressed to ensure our City thrives.

The Central City District Plan aims to manage growth and improve liveability and environmental assets across the LGAs within the district including the cities of Parramatta, Blacktown and Cumberland and the Hills Shire Council. The District Plan informs strategies and policies across these LGAs through identifying planning priority areas. Waterway health, biodiversity, bushland, open space, and urban canopy cover are highlighted within the District Plan and are supported by the Strategy's priorities.



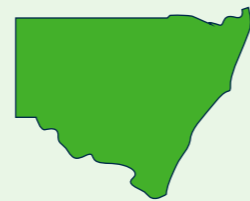
LOCAL

- Parramatta LGA
- Environmental Planning and Assessment scheme
- Integrated Planning and Reporting Framework (featuring Community Strategic Plan)
- Council's strategies, policies, and plans.



REGIONAL

- Dharug Nation (dotted)
- Central District Plan (green)
- Resilient Sydney Strategy
- Six Cities Discussion Paper
- Central City District Plan
- Parramatta River Masterplan
- WSROC Turn Down the Heat Strategy
- Western Sydney Energy Program & Electric Vehicle Roadmap
- Western Sydney Waste and Resource Recovery Plan
- Sydney Olympic Park Masterplan
- Regional Litter Prevention Strategy.



STATE

- Climate Change Adaption Plan 2022
- Climate Change Policy Framework
- Energy Plan
- Net Zero Plan
- Future Transport Strategy 2056
- Premier's Priorities
- Sustainable Buildings SEPP 2023
- Circular Economy Policy Statement
- Waste and Sustainable Materials Strategy
- Biodiversity Strategy
- Blue Carbon Strategy 2022
- Plastics Ban 2022.



NATIONAL

- State of Environment Report 2021
- National Climate Resilience and Adaptation Strategy 2021
- Climate Change Bill 2022
- Environment Protection and Biodiversity Conservation Act
- National Waste Policy and Action Plan and National Waste Report 2022
- Resilience and Hazards SEPP
- Nature Positive Plan 2022.



GLOBAL

- Paris Climate Agreement
- Glasgow Climate Pact
- United Nations Convention on Biodiversity
- Global Biodiversity Framework
- United Nations Sustainable Development Goals
- State of the Global Climate 2022
- Intergovernmental Panel on Climate Change (IPCC) Climate Change Report 2022
- United Nations Declaration of Rights of Indigenous People.

The United Nations Sustainable Development Goals are the international blueprint to achieve a better and more sustainable future. As a signatory Australia has committed to implementing the 17 Goals. This Strategy aligns to clean water and sanitation (goal 6), affordable and clean energy (goal 7), sustainable cities and communities (goal 11), responsible consumption and production (goal 12), climate action (goal 13), life below water (goal 14) and life on land (goal 15).

Figure 3: Local to global policies and initiatives that influence, guide, and support this Strategy.

HOW WE PLAN

INTEGRATED PLANNING AND REPORTING

All planning at Council is conducted within the Integrated Planning and Reporting (IP&R) framework – a mandatory framework for all NSW councils (Figure 4).

City of Parramatta's Community Strategic Plan 2018 – 2038 (CSP) is the leading plan in this framework. The CSP sets out the City's long-term goals and outlines our vision to become

"Sydney's Central City: sustainable, liveable and productive – inspired by communities".

COUNCIL'S ROLE

Council plays a very broad role in delivering the Strategy across the City. To support clarity around our levels of responsibility this Strategy uses a 'deliver, partner, advocate' model.

➤ DELIVER

Council delivers a wide range of programs and services including waste collection, libraries, childcare, maintenance of local roads and public spaces, recreation facilities and programs, community care, special events and regulatory functions.

Example – We can deliver sustainability outcomes through our business operations, community and infrastructure services including waste, recycling and litter, drainage, and green space management.

The Environmental Sustainability Strategy 2023-2032 has been developed in response to the CSP, and addresses the challenges currently facing the community. It supports our CSP vision by establishing further priorities and action areas that foster a climate positive, resilient, and regenerative Parramatta.

➤ PARTNER

Council builds strategic partnerships with federal and state government agencies, the private sector, community organisations, and a range of other stakeholders that will contribute to delivering the Strategy's objectives.

Example - We can partner with other organisations to deliver water quality improvements over an entire river catchment, or across areas we might not have responsibility for, such as Sydney Waters sewer system.

➤ ADVOCATE

When we are not in partnership or do not have direct control over an issue, Council gives voice to the needs and aspirations of the community through advocacy. We advocate for changes in policy and action at relevant levels of government and industry to bring about the best outcomes for our community and environment.

Example- We can advocate for planning and legislation changes at state and federal government levels that enable progress on climate action for our local community.

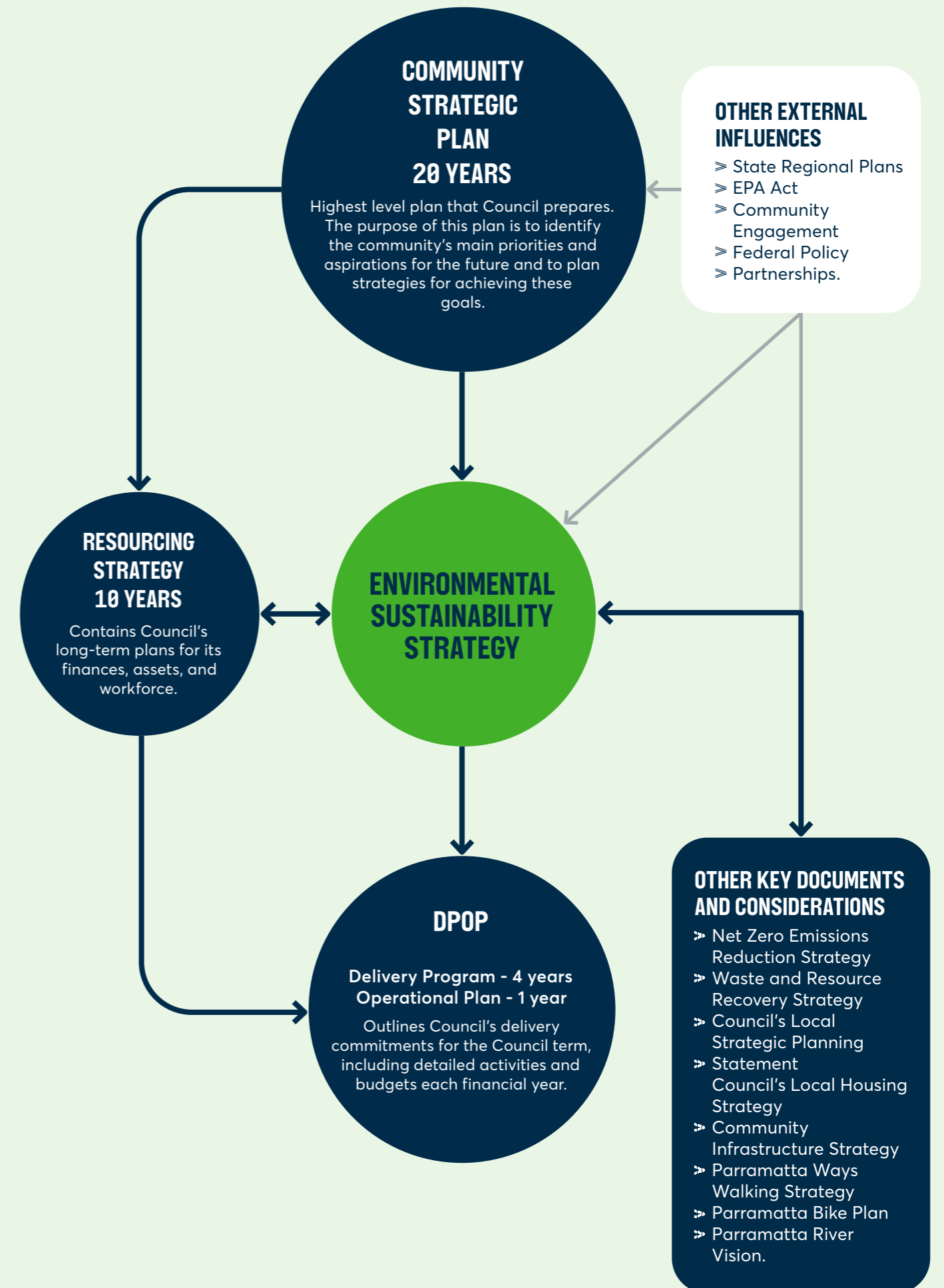


Figure 4: Council's Integrated Planning and Reporting framework

OUR CITY

02



Photo 4



Environment is at the heart of Parramatta's identity and wellbeing, and central to our action in the face of climate change and the growth of our community.



A CITY IN NATURE

Parramatta is a City in nature, located at the head of Sydney Harbour. At its heart flows the Parramatta River, an ancient waterway that has attracted and sustained communities for thousands of years.

Regarded as a living entity by First Nations people both in spirit and body, Parramatta River provides life and is a valuable transition zone between salt and fresh water. Our 105km of waterways support extensive networks of 863ha green open space including 389ha remnant bushland, intrinsically valued by wildlife and our community (Figure 5).

Our City is also defined by two regional parklands: Parramatta Park and Sydney Olympic Park. Both these destinations are the centrepieces of an expansive network of open space, protecting valuable and endangered local flora and fauna including the Green and Golden Bell Frog (*Litoria aurea*) and migratory bird species. They are of vital cultural and environmental significance to our community and to Greater Sydney and contribute to the health and social wellbeing of our community.

Parramatta is Australia's second-oldest city, the oldest inland European settlement, and largest city centre in Greater Western Sydney. Community and visitors readily experience the intermingling of past and present at destinations such as the UNESCO World Heritage listed Parramatta Park, Parramatta North Heritage Precinct or the nationally significant Harris Park heritage precinct, which includes Experiment Farm.

Parramatta is the geographic and demographic centre of Sydney – accessible to 2.3 million people by car or public transport within 45 minutes. Parramatta is recognised as a leading destination for government, business, education and research, arts and culture, recreation, nature, and heritage experiences.

City-shaping infrastructure projects like Parramatta Light Rail, Metro West, Museum of Applied Arts and Sciences, Civic Link, PHIVE, and Parramatta Square continue to redefine Parramatta as a global city that is connected, vibrant, with diverse cultural opportunities.

Parramatta's identity is linked to the quality of our environment, so Council's leadership and commitment to sustainability is integral in supporting our past, and ensuring we continue to be a global city in nature into the future.

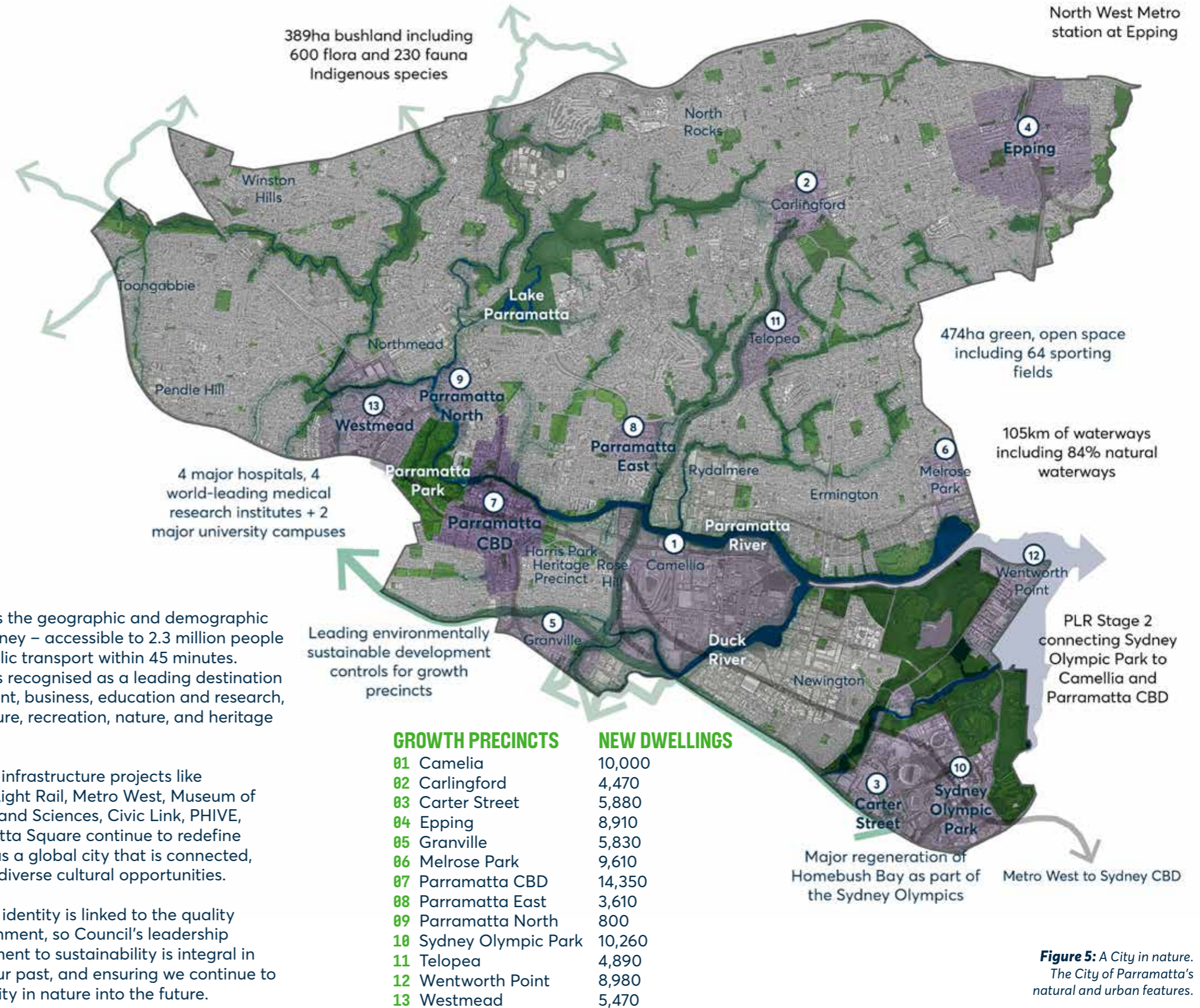


Figure 5: A City in nature. The City of Parramatta's natural and urban features.

THE BIG ISSUES

Our environment is deteriorating, impacting the wellbeing of all Australians.

The Australian Government's 2021 State of Environment report (Figure 6) clearly articulates growth, climate change and resource consumption as the big issues for urban areas.³

Together these issues create compounding and interrelated impacts on our community and need to be addressed simultaneously.

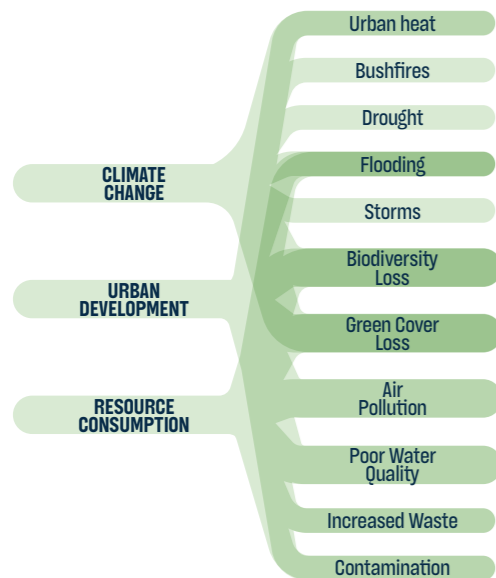


Figure 6: 2021 State of Environment Report: Big issues and their compounding and interrelated environmental impacts.

CLIMATE CHANGE

Our climate is changing due to increased carbon emissions* in the atmosphere.⁴ Australia has experienced warming of 1.4°C and even with current global commitments, the planet is on-track to overshoot both the 1.5°C and 2°C human and environmental health thresholds.⁵ To stay within the 1.5°C threshold and achieve the 2015 United Nations Paris Agreement, Australia would need to cut emissions by 74% by 2030 and reach net zero emissions by 2035.⁶

Climate impacts within our LGA include higher temperatures, an increased number of heat events, reduced rainfall, sea level rise, and more intense rainfall. These impacts bring with them a greater risk of human health impacts, heat stress, drought, flooding, bushfires, storms and infrastructure damage (Figure 11).

Natural disasters alone currently cost the Australian economy \$38 billion each year and this is estimated to increase to between \$73 billion and \$94 billion by 2060.⁷

Heat stress affects our health, productivity, liveability and economy. It puts our most vulnerable people at risk, drives up energy and water consumption and increases cost of living.

With more extreme weather, in addition to sea and river level rises, there is an increased risk of flash flooding, making it harder to prevent the loss of businesses, homes, and lives.

We must plan for, mitigate, and adapt to the effects of climate change to ensure our community is prepared and can bounce back.

GROWTH

The City of Parramatta's population is estimated to increase by 73% to 446,000 by 2041. The number of dwellings is estimated to grow by 77%, while the number of people commuting for work and visiting is also expected to increase. Parramatta is uniquely placed, with 45% of our community living in high-density dwellings, which is significantly higher compared to the rest of Greater Sydney.⁸

Growth brings both opportunities and challenges.

Investment and changes to land use provide opportunities to improve the quality of degraded land, while also strengthening connections and relationships with nature. It also creates challenges, including managing competing demands for space, increases in resource consumption, waste generation, and carbon emissions.

As population grows and space becomes a premium, there has also been an increase of residents in high-density living from 34% in 2016 to 45% in 2021. This trend has an impact on the type, quality and value of infrastructure and spaces our community needs.

We must balance future growth against increasing pressure on our natural environment.

*Scientists have developed methodology that allows all greenhouse gases (including carbon dioxide, methane, nitrous oxide) to be calculated as tonnes of carbon equivalent (tCO₂e). This is referenced as carbon emissions which we use within this Strategy.

WELLBEING

Population growth, urban development, and loss of natural environment all impact quality of life for our community.

The wellbeing of our community relies on natural places for everyone to play, relax, and connect with nature and each other. Bushland, waterways and green spaces improve happiness, physical and mental health, especially for our children.⁹ These must be protected to ensure Parramatta remains a great place to live.

Planting more trees and creating connected shaded walkways and cycleways will reduce urban heat created by urbanisation and reduce our reliance on air conditioners and cars.

By prioritising natural environment, connectivity, resource efficiency and sustainability in our planning, we can help ensure our City will be liveable for humans, plants and animals today and for future generations.

THE STRATEGY



"The first rule of ecology is that everything is connected."

Commoner, 1971



OUR VISION & PRINCIPLES

OUR VISION

A City for nature, sustainable, resilient, and on a journey of regeneration.

Council imagines Parramatta as a regenerative city that proactively take climate action and strengthens urban resilience.

First Nations wisdom and cultural environmental practices are embedded into our planning and decision making, to deliver eco-focused and co-designed outcomes (see First Nations Strategy breakout box).

Parramatta River and our waterways are central to our identity and our built environment operates in harmony with the natural landscape. Our liveability is enhanced through a water-sensitive city that not only manages flooding but retains, reuses, and celebrates water throughout our local neighbourhoods and open space corridors.

Strong social cohesion ensures the community is prepared for, adaptive, and resilient in the face of climate hazards. Biodiversity is thriving and utilises blue and green corridors across our local government area.

Parramatta's flourishing economy embraces circular economy principles, circling resources to their highest value and enhancing our City's investment, procurement and supply chain connections. Collaboration between enterprises, research institutes and community promote a culture of innovation and drives economic competitiveness, including in renewable and emerging sustainability industries.

Embracing circular and green economy principles creates a City that cares for Country, community, and the global future.

FIRST NATIONS STRATEGY

The cultural environmental practices within this Strategy are guided by Council's draft First Nations Strategy and centred around its pillars of social justice, cultural leadership, social cohesion, celebration, and accountability.

OUR IMPLEMENTATION PRINCIPLES

The Strategy is founded on the following principles, which will guide implementation of our actions:

COUNCIL LEADERSHIP

Achieving our sustainability ambitions requires strong organisational leadership. Council will respond to the climate emergency by taking bold steps to reduce the City's environmental footprint and transition to a zero-carbon and regenerative economy.

We will show respect, have integrity and be accountable. We lead through stewardship and our organisation is governed responsibly and sustainably.

We have the courage to look for new ways and try new things, and to step up and take risks if it means making a difference. We will be ambitious in our journey to achieving our vision, leading the way for other local governments.

STRONG PARTNERSHIPS

To maximise environmental sustainability outcomes, governments, stakeholders, the private sector, academics, and residents must work together. We will maximise strategic partnerships to create a culture of collaboration, experimentation, and creative thinking that tests new ideas and delivers environmental solutions to benefit our community and nature.

FIRST NATIONS COLLABORATION

We acknowledge the United Nations Declaration of Rights of Indigenous People (UNDRIP) and will work together with our First Nations peoples, especially the Burramattagal of the Dharug nation, to value nationhood, primacy of family, language, cultural and spiritual identity, dignity and governance of Elders, and rights to and protection of Country.

COMMUNITY EMPOWERMENT

Our community is passionate about protecting and enhancing the environment, and it is only through collaborative efforts that we can achieve significant environmental sustainability ambitions. Through continued engagement and provision of knowledge and resources, the community will be empowered to participate in transforming Parramatta into a resilient and regenerative City.

OUR PRIORITIES

STRATEGIC DRIVERS

Creating a great City that cares for Country, community and our global future.

The Strategy responds to the big issues, challenges, and opportunities to support cultural practice through the following strategic drivers:

CLIMATE ACTION

The need for immediate and urgent action to reduce our emissions, contributing to global efforts in reducing the severity of climate change.

URBAN RESILIENCE

The need to ensure our community, environment, and City is prepared and has the capacity to positively respond or adapt to external shocks and stresses such as climate change.

REGENERATION

The need to not only maintain or minimise our impact on our environment but to actively support its recovery, remediation, and capacity to thrive, supporting our health and that of future generations.

PRIORITIES

Our priorities provide long-term directions and a framework for guiding Council to support our community, businesses, and City achieve our vision (Figure 7). Our five priorities are:

01 CLIMATE POSITIVE

From a carbon emitting community to... a leader in climate action

02 FUTURE READY COMMUNITY

From a city of high growth precincts to... resilient and sustainable communities

03 BLUE GREEN CITY

From forgotten waterways at the head of Sydney Harbour to... a water sensitive city known for green space

04 NATURE POSITIVE

From a city with nature to... a city for nature

05 CIRCULAR ECONOMY

From a city that manages waste to... a no waste community

Each priority delivers city, community and organisational regenerative sustainability solutions relevant to Parramatta as a place, scientific evidence, legislative requirements, and aspirations which have been identified by our community.

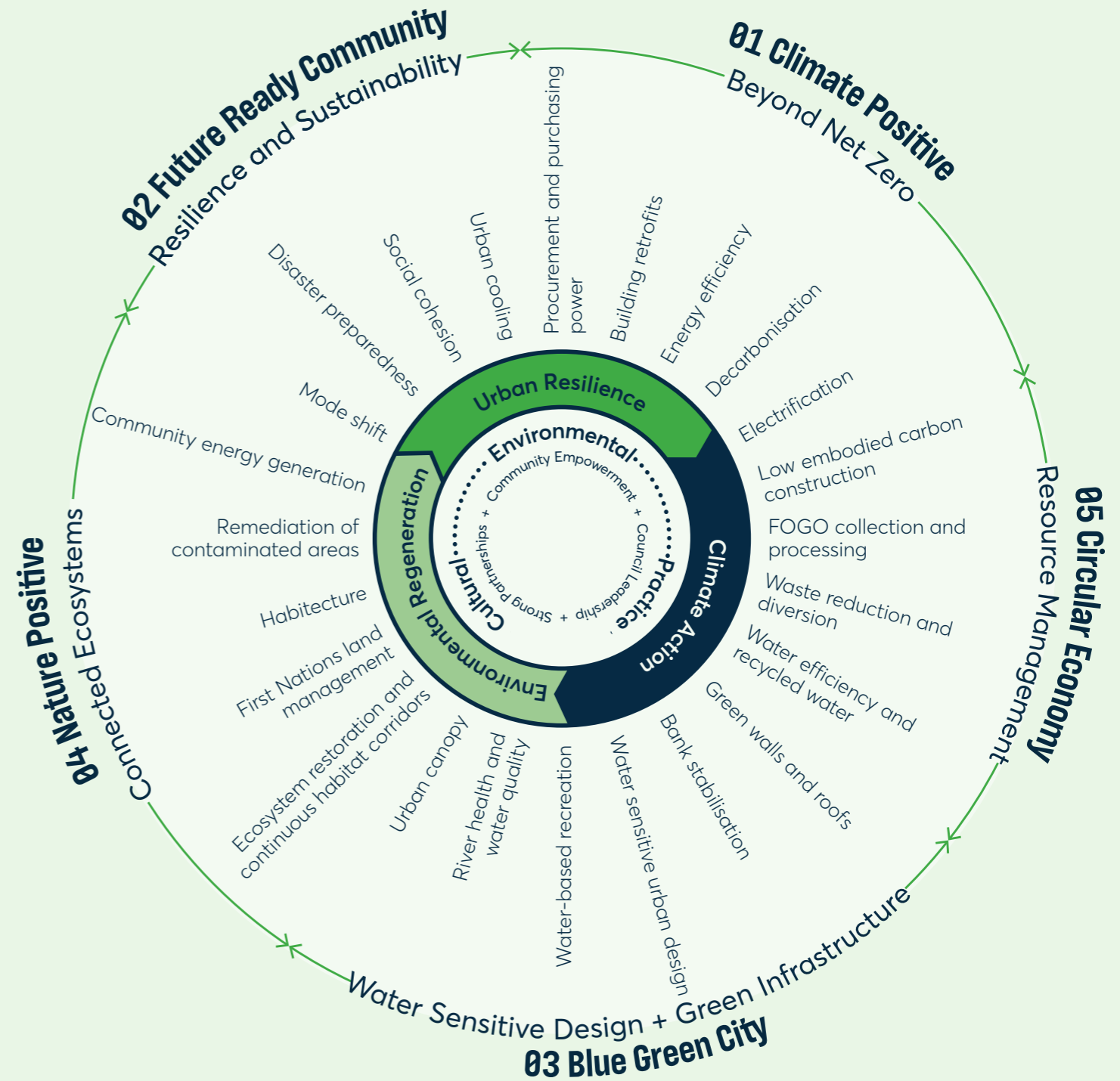


Figure 7: Our priorities framework. Our five priorities set a framework that spans a spectrum of environment and sustainability outcomes, radiating from our three key strategic drivers and four principles.

PRIORITY 01

CLIMATE POSITIVE

We will implement urgent, strong, and equitable climate change action to move beyond net zero.

WHY IS IT IMPORTANT?

Australia has already experienced a 1.4°C warming, and 2020-2030 has been identified as the critical decade for action.¹⁰ We need greater coordinated action and more targeted efforts to mitigate the worst impacts from a changing climate.

“Sydney is not on track to meet its 2030 or 2050 targets.”

Committee for Sydney

Climate Positive is the ambitious and important next step in the effort against climate change and requires activity that goes beyond achieving net-zero emissions to reverse impacts of climate and remove carbon from our atmosphere.

City of Parramatta is the third-largest source of carbon emissions in metropolitan Sydney (Figure 8). Parramatta has a significant role to play as it is imperative to act now to reduce and remove carbon emissions through greening the electricity grid, electrification of buildings and transport, minimising waste, reusing resources to their highest value, and constructing or retrofitting buildings with minimum embedded and operational emissions (Figure 9).

Our target is to achieve a 75% reduction in emissions by 2038. This aligns with the 1.5°C threshold and 74% reduction in emissions within Australia to achieve the 2015 United Nations Paris Agreement and reach net zero emissions by 2035 (see big issues section on page 30).⁷

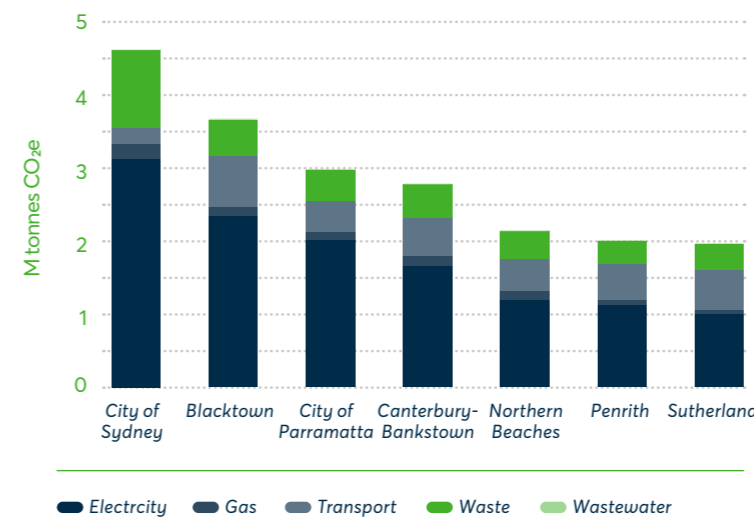


Figure 8: Metropolitan Sydney carbon emissions by LGA. Parramatta LGA is the third largest carbon emitter in metropolitan Sydney, after City of Sydney and City of Blacktown for FY21/22. Source: Adapted from Resilient Sydney (accessed June 2023).

NET ZERO & CARBON POSITIVE

Council will work with state government, partners, businesses, and community to achieve an overall balance between carbon emissions produced or consumed and carbon emissions removed from the atmosphere. Balanced to zero. The purchase of carbon offsets is usually required to achieve this. Council is committed to avoiding and reducing operational emissions, with the use of carbon offsets as our last resort.

Carbon positive companies go further than net zero. They remove more carbon than they emit and deliver environmental benefit to other companies or localities. Council is seeking to be a carbon positive business where opportunity arises. Examples include generate more renewable energy than it needs and feed the surplus back to the grid or community batteries, or through blue (mangroves and wetlands) and green (trees) carbon sequestration.

HOW WE WILL ACHIEVE THIS PRIORITY

While the most significant movement on climate action will occur at state and federal government levels, Council can have a significant impact on local emissions through our waste services, planning controls, and community capacity building programs.

We will achieve this priority through supporting and advocating for our community to be net zero, facilitating decarbonisation, and demonstrating carbon positive leadership within Council assets, operations, and services.

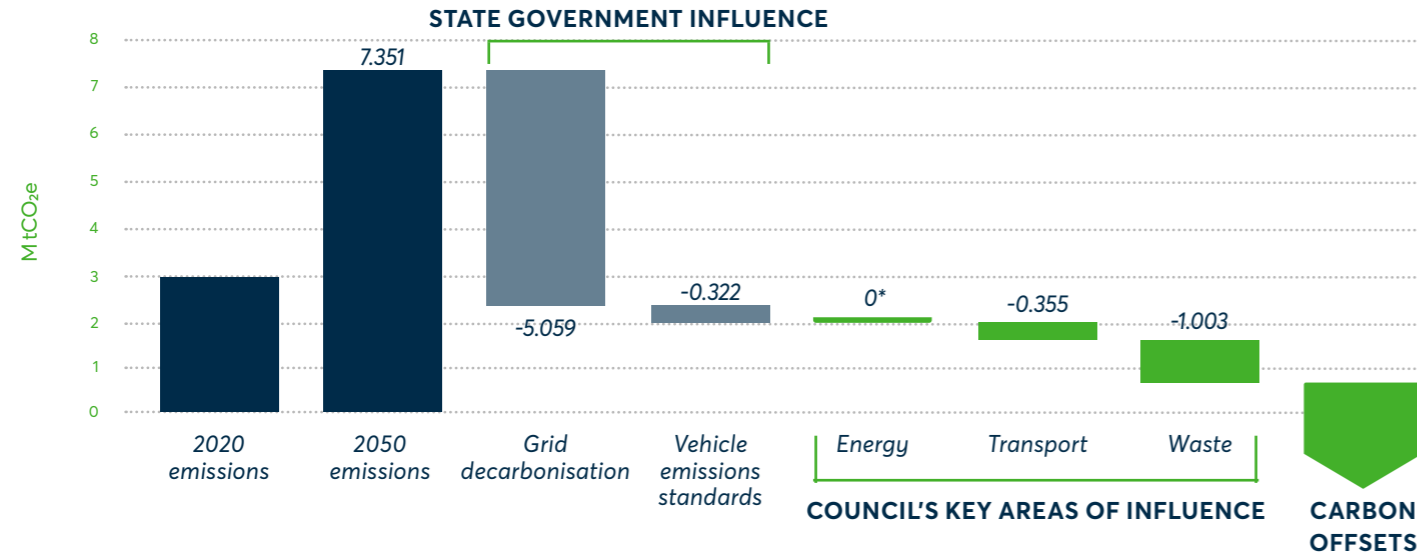


Figure 9: City of Parramatta's LGA emissions reduction pathway by savings type. We will target our actions to savings where Council has the most capacity to influence outcomes for our community such as waste, local transport initiatives, building performance and community behaviour change actions. Source: Adapted from Resilient Sydney Net Zero app (accessed June 2023). *Energy is 0 through grid decarbonisation.

WHAT WE WILL DO

These are Council's Objectives and expected outcomes relating to Climate Positive. Further detail can be found in the action table at Section 04.

OBJECTIVES

1.1 We champion equitable decarbonisation across our City through action and advocacy

OUTPUTS

Work with partners to support equitable carbon emission reductions for our community

Encourage low carbon emission development, building retrofits and public spaces

Reduce transport emissions

1.2 Our community is empowered to make equitable net zero decisions

Provide community education and behaviour change programs, supporting decarbonisation

1.3 Council leads carbon positive practices, research, and communication

Transition Council to be carbon positive, minimising carbon offsets

OBJECTIVES

INDICATORS

TARGETS

OBJECTIVES	INDICATORS	TARGETS
1.1	Total community tCO ₂ e reduced from baseline	50% carbon emission reduction by 2030 and 75% carbon emission reduction by 2038 (from 2016/17 baseline)
1.2	Community perception of Council's environmental leadership	Maintain or improve community's perception of Council's environmental leadership
1.3	Corporate tCO ₂ e emissions reduced and removal from baseline	Maintain annual carbon neutral status 75% carbon emission reduction by 2038 (from 2016/17 baseline)

COUNCIL SNAPSHOT MOVING TO NET ZERO

Our 2017 ESS identified streetlighting and building electricity as the predominant sources of our organisational emissions. We have implemented the following key projects, placing Council on track to achieve our 2017 ESS target of 60% emission reduction by 2038 and providing a strong foundation for this Strategy:

- Transitioned all residential streetlights to energy efficiency LEDs and delivered NSW's largest smart and LED major road upgrade. Using internet of things (IoT) and data-driven adaptive light programming that considers vehicles, pedestrians, and wildlife requirements, we transformed major road lighting from an infrastructure to a community responsive asset, reducing energy consumption by 74% and saving \$10 million.
- Purchased 100% renewable electricity from July 2022, eliminating electricity emissions from all council buildings and streetlights.
- Built our first 6 Green Star building PHIVE (opened in September 2022) incorporating library, council chambers and community spaces.
- Became the 16th LGA in Australia to achieve Climate Active Carbon Neutral certification (commencing 2021/22), while Parramatta Square is the first public domain to achieve this within Australia.

We also collaborated with eight other Western Sydney councils to form the Western Sydney Energy Program (WSEP). Since 2018, WSEP has coordinated and supported annually reduced emissions by 500,000 tCO₂e each year through lighting and equipment upgrades, waste management, solar installations, electric vehicle transition and smart city initiatives.

This equates to taking 100,000 cars off the road annually and has delivered financial savings of \$20 million. The Western Sydney Energy Program (WSEP) is coordinated by Western Sydney Regional Organisation of councils (WSROC) and is a collaboration of nine Western Sydney councils.

By demonstrating the environmental, economic and social benefits of emission reduction, others are inspired to take action, leveraging progress towards community net zero for the welfare of current and future generations.



PRIORITY 02

FUTURE READY COMMUNITY

We will lead Parramatta towards a resilient and sustainable future.

“If we want a prosperous, climate-resilient future, we must invest in sustainable infrastructure; it is the growth story of the future.”

The World Bank

WHY IS IT IMPORTANT?

Promoting sustainable places and strengthening community preparedness is critical for Parramatta to be a successful, future ready City.

City resilience is the ability of individuals, communities, businesses, and systems within a city to survive, adapt and thrive no matter what kinds of chronic stresses and acute shocks they experience.¹¹ A future ready community can continue to thrive through both isolated events and ongoing challenges, without a decline in the city's functions. To achieve this, a sustainable and resilience-focused approach in planning and communication is required (Figure 10).

Chronic stresses are incidents that weaken the fabric of a city on a day-to-day or cyclical basis. In Parramatta, these could include climate change, homelessness and housing affordability, lack of

access to public transportation systems, family violence, structural inequity, and chronic food or water shortages.

Acute shocks are sudden, short-term events that threaten the city, such as major storms, heatwaves, floods, bushfires, disease outbreaks, terrorism, and cyber-attacks. They can also amplify chronic stresses like biodiversity loss, water and air quality, conflict, and wellbeing of the young, old, ill and those who work outdoors.¹²

The most disadvantaged in our community are disproportionately impacted by both chronic stresses and acute shocks to the city, and often have less access to resources to respond to these, so this Strategy emphasises supporting all within the community.

To create a future ready Parramatta, we will continue to work with our partners and continually review Council planning, systems, and practices to ensure we support, educate, and empower the community in the face of change.

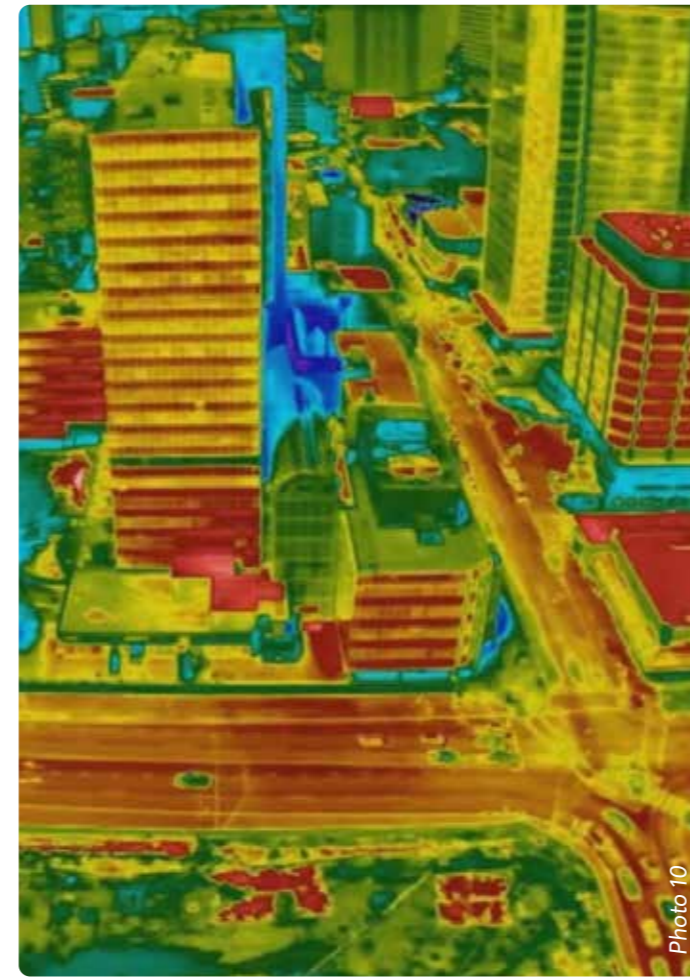


Photo 10



Photo 11



Photo 12

CITY RESILIENCE DIMENSIONS

In the context of cities, resilience helps to bridge the gap between disaster risk reduction and climate change adaptation. Resilience focuses on enhancing the performance of a system in the face of multiple hazards, rather than individual events.

LEADERSHIP AND STRATEGY

- Effective Leadership & Management
- Empowered Stakeholders
- Integrated Development Planning.

HEALTH AND WELLBEING

- Minimal human vulnerability
- Diverse livelihoods and employment
- Effective safeguards to human health and life.

INFRASTRUCTURE AND ECOSYSTEMS

- Reduced exposure and fragility
- Effective provision of critical services
- Reliable mobility and communications

ECONOMY AND SOCIETY

- Collective identity and mutual support
- Comprehensive security and rule of law
- Sustainable economy

Figure 10: Key dimensions within a systems-led resilience framework. Source: Adapted from the Rockefeller Foundation & Arup City Resilience Index (2014).

HOW WE WILL ACHIEVE THIS PRIORITY

Empowering our community to respond to a range of challenges rather than just single events or risks requires strong partnerships, government co-ordination, research, and communication.

We will continue to collaborate with partners to share knowledge, research, and support innovation in built environment planning.

We will continually improve community engagement and communications to support social cohesion, awareness, and preparedness.

We will respond to evolving technologies, for example smart grids, recycled water networks, community batteries and smart meters to improve our ability to emerge stronger after tough times and function better in good times.

DATA SNAPSHOT

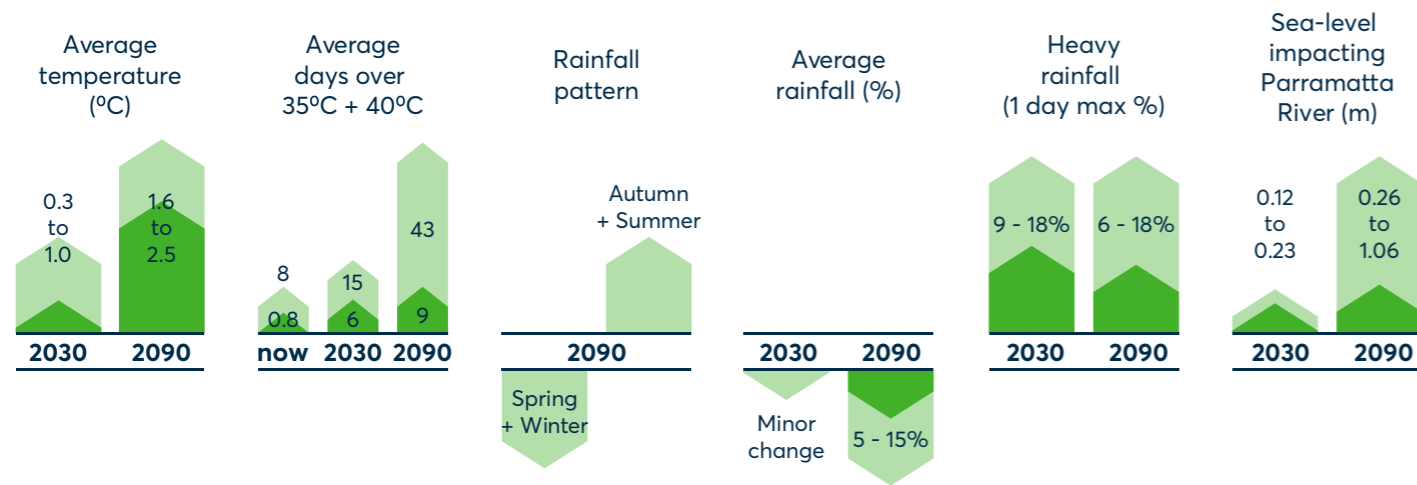


Figure 11: Climate change projections for the City of Parramatta. Source: Adapted from various sources.¹³

WHAT WE WILL DO

These are Council's Objectives and expected outcomes relating to Future Ready Community. Further detail can be found in the action table at Section 04.

OBJECTIVES

2.1 Our city is resilient to a changing climate and leads on sustainability

OUTPUTS

Shape our built environment to be sustainable and to support resilience

Work with academic and regional partners to plan for climate hazards, green technology transitions and new population densities

2.2 Our community is prepared and has the information they need during key city shocks and stresses

Prepare community for environmental emergencies

2.3 Council is ready and plans for resilience, climate change adaption, and mitigation

Improve emergency response, recovery, and reconstruction efforts to strengthen resilience

Embed climate change mitigation and resilience into Council decision-making and operations

Ensure all Council assets, operations and services are prepared and can respond to key city shocks and stresses

OBJECTIVES

2.1 + 2.2

INDICATORS

Community living in disaster prone areas that feel prepared for a disaster (%)

TARGETS

Continual improvement in community preparedness for a disaster

2.3

Council public assets supported by climate resilience planning (%)

100% of Council public assets supported by climate resilience planning by 2026

COUNCIL SNAPSHOT PARTNERSHIPS

We have developed long-term, trusted, evidence-based and collaborative partnerships that strengthen the resilience of our community and prepare our natural and built environment for changing climates. Through these partnerships, we:

- advocate on shared issues
- share knowledge, data, research, and insights
- leverage strategic direction at a scale and reach beyond what an individual local government could normally achieve.

One example is FloodSmart Parramatta. The City of Parramatta is prone to flash floods and the FloodSmart Parramatta service was developed in 2018 and incorporates water level gauges located within our waterways and real-time weather data to provide vital updates and warnings to support residents and businesses to be prepared during flood events.

Another example is mapping tree canopy and urban heat hot spot to guide public tree planting programs and action on canopy cover (Figure 12). Council has invested \$4.5million to plant 15,788 trees within our urban public domain, to mitigate urban heat.

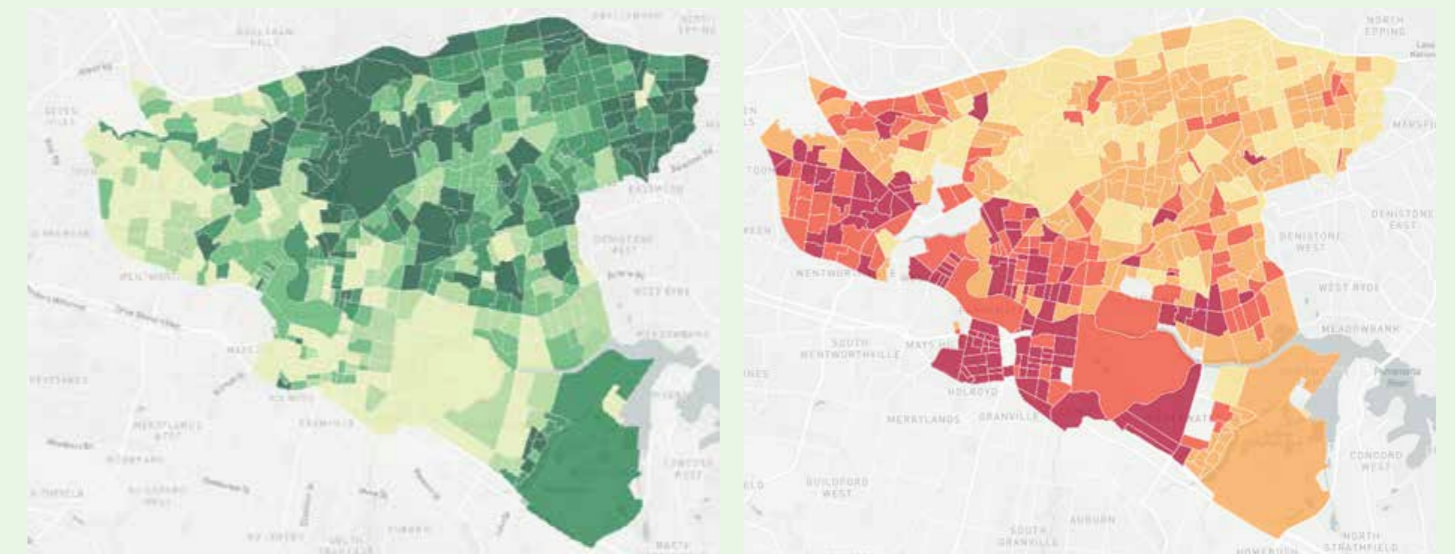


Figure 12: Tree canopy cover (left) is integral in reducing urban heat (right). Locations with high tree canopy cover (dark green) align to lower temperatures (yellow and orange). Source: Adapted from Department of Planning and Environment (2016).

PRIORITY 03

BLUE GREEN CITY

We will ensure our blue networks, including water and green space, are central to planning.

WHY IS IT IMPORTANT?

Water is a critical resource for the resilience and survival of both our City and nature. To create a water sensitive and resilient city, both the built and natural environments must work together as systems.

We recognise the importance of providing space for water in the landscape and embedding waterway health as a central part of planning our City and our communities. We also recognise the First Nations cultural connection to water as life and the broader role that healthy waterways play in shaping the identity and liveability of our City.

We will champion an integrated water management approach through our green and our blue infrastructure networks. We will create a water sensitive Parramatta through a collaborative approach to planning and managing all elements of the water cycle including water supply, drainage, sewers and waterways (Figure 13).

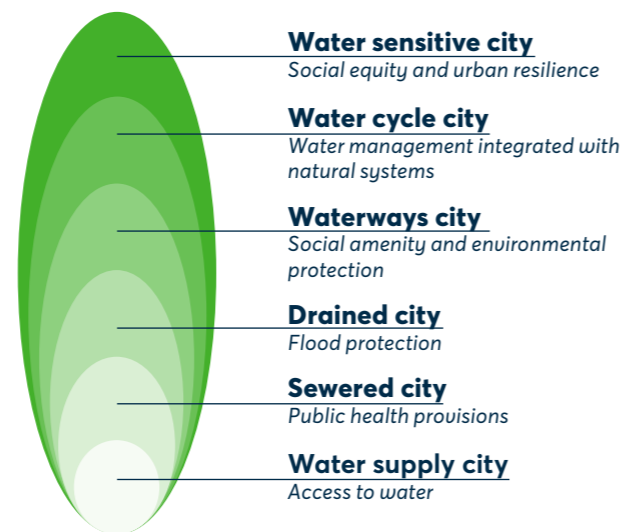
A blue green Parramatta requires thinking beyond traditional water infrastructure delivery to plan

“Water is integral to almost every feature of an urban landscape.”

Corporate Research Centre for Water Sensitive Cities

for greater retention, infiltration, and use of water across our street, building, yard, open space, and reserve networks. This approach includes thinking about the design and function of our open space and green infrastructure networks to ensure they are connected and can best support outcomes like greater permeability or water retention and treatment.

A water sensitive or blue green Parramatta is an aspirational concept to deliver integrated water management outcomes aligned with leading research and benchmarks.



GREEN INFRASTRUCTURE

Green infrastructure is a network of naturally occurring or built living assets that incorporate both the natural environment and engineering systems to:

- provide clean water and urban cooling
- conserve ecosystem values and functions
- provide a wide array of benefits to people and wildlife (Figure 14).

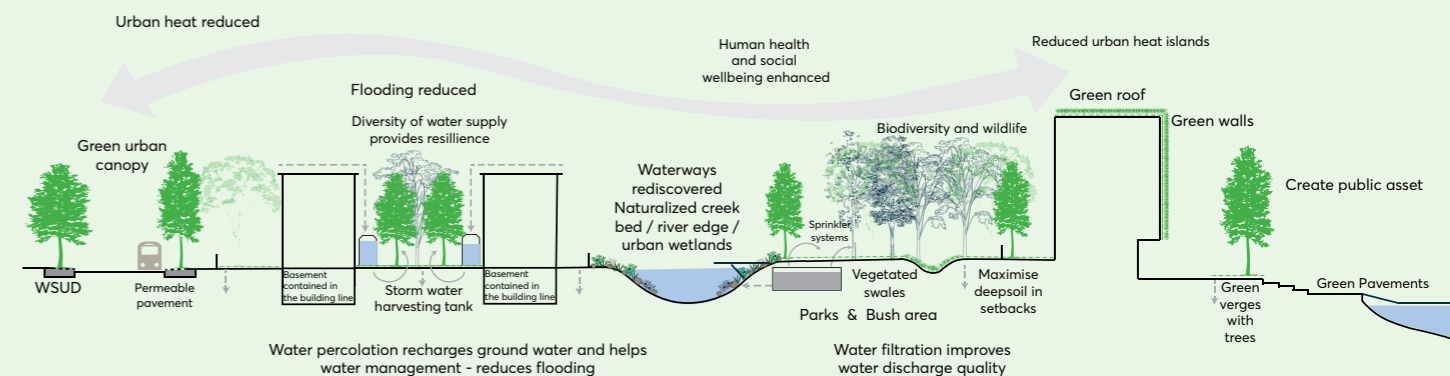


Figure 14: Green infrastructure supporting a water sensitive city. Source: Adapted from CRC for Water Sensitive Cities (2016).

HOW WE WILL ACHIEVE THIS PRIORITY

To ensure a catchment-scale approach to re-valuing Parramatta River and provide space in our landscape and urban areas for blue and green assets, we will deliver a range of measures, including:

- flood zone planning and flood detention
- wetlands for stormwater
- biofiltration and water retention
- green space and street tree water management
- water-based recreation
- innovative cooling and irrigation
- water collection approaches across our street, building, yard, open space, waterway and reserve networks.

Council must play a leading role and we will continue to work with partners to share knowledge and advocate for water sensitive urban design, particularly within our growth precincts and major projects.

We will also advocate for ambitious and tangible community aspirations including bringing back swimming in Parramatta River. We will support and advocate for our community to be water smart, facilitate a water sensitive city, and demonstrate integrated water leadership within Council assets, operations, and services.

COUNCIL SNAPSHOT

PARRAMATTA RIVER VISION

In 2023 Council adopted the Parramatta River Vision to re-establish the Parramatta River as central to the identity and value of Parramatta by improving access and providing space for water, nature, human health, wellbeing, and recreation (Figure 15).

With 75% of Parramatta's future growth to occur within a 10min walk or cycle of Parramatta River, the Vision identifies an additional 181 hectares of new public space to complement the existing 685ha managed by state and local government.

LIFE-GIVING AND LIVING ENTITY

The Dharug people regard Parramatta River as life-giving and a living entity both in spirit and body.

In recognition of Parramatta River's cultural significance, the PRCG is involved in Dharug-led conversations to investigate the idea of legal personhood protection for the Parramatta River. The Whanganui River (New Zealand), Ganges and Yamuna Rivers (India) have established legal personhood protection to recognise a River's shared economic and cultural values and contributions to local and cultural identity.

PARRAMATTA RIVER CATCHMENT GROUP (PRCG)

The PRCG was established in response to state government changing the approach to catchment management, requiring local governments to proactively facilitate catchment management and on-ground integrated water management.

Council was a key driver in establishing the PRCG, creating an alliance of Councils, government agencies and community groups working together to make Parramatta River swimmable by 2025. We were involved in the development of the PRCG's Duba, Buda, Barra: Ten steps to a Living River – The Parramatta Masterplan (2018).

WHAT WE WILL DO

These are Council's Objectives and expected outcomes relating to Blue Green City. Further detail can be found in the action table at Section 04.

OBJECTIVES

OUTPUTS

3.1 We are leaders in blue and green infrastructure network planning and delivery	Implement regional-scale integrated water systems and green space networks planning
	Deliver green infrastructure and retain water in the landscape through planning and development
	Make Parramatta River and its tributaries central to the identity of Parramatta as a place
3.2 Water is a visible and valued resource central to our City and community	Increase outdoor water-focused recreation across the City
	Support community engagement and partnerships that champion and support healthy waterways
3.3 We embed integrated water management and green infrastructure practices within Council	Deliver integrated water management and green infrastructure through our public domain and Council's operations

OBJECTIVES

INDICATORS

TARGETS

3.1 + 3.2	Improvement in Water Sensitive City Index indicators: 5.2 Surface water quality and flows 6.3 Vegetation cover (including tree cover)	Improvement in surface water quality and flows score Increase our vegetation (33%) and tree canopy (23%) cover beyond our 2016/17 baseline
3.3	Non-potable and potable water use and consumption (ML)	All Council non-potable water demand to be serviced using recycled water by 2038 No net increase in potable water use by 2038 (baseline 2016/17)



Figure 15: Parramatta River Vision with Parramatta River central to the identity and value of Parramatta.

PRIORITY 04

NATURE POSITIVE

We will safeguard our natural spaces, waterways, and wildlife.

“Australia’s natural environment is not resilient enough to withstand current or emerging threats.”

The Hon. Tanya Plibersek MP

WHY IS IT IMPORTANT?

Parramatta is a City for nature, unrivalled by any other Sydney CBD. We must ensure we protect and enhance nature for nature’s sake, through First Nations’ perspectives and nature positive design.

A nature positive approach moves beyond conserving remaining biodiversity just for human benefit, to planning and implementing the repair and regeneration of nature, species, and ecosystems for nature’s sake.¹⁴ Partnering with nature and co-designing with First Nations people represents an investment opportunity allowing Parramatta to support the federal government’s Pledge for Nature,¹⁵ while also addressing our urban development priorities and conservation goals concurrently.

At the global level, over 1 million species are threatened with extinction and the populations of many vertebrate animals have declined by two-thirds since 1970. As urban populations increase (3% in 1800, 55% in 2021 and 76% projected by 2050)¹⁶ so too will their impacts on biodiversity.

Current demands on our 389 hectares of native bush and riparian reserves, 12 endangered ecological communities, 32 threatened fauna species, 600 plant species and 230 animal species are exceeding nature’s capacity to survive and thrive.¹⁴

Cities place demands on our natural systems through the supply of resources, products (including food), and services (including utilities, telecommunications), and waste processing. These demands are contributing to species extinctions and deteriorating ecosystem conditions through habitat loss, changing climates, invasive species, pollution, and resource extraction.¹⁷



NATURE POSITIVE

To transition to a nature positive City, the City of Parramatta is focusing on three systemic shifts in urban governance, spatial (re)integration and investment mobilisation, including rewilding, habitecture and biophilic designs (Figure 16).

URBAN GOVERNANCE

Adopting a systems approach for a nature-based urban transformation.

- > Steering direction from the top
- > Coordinating across stakeholders
- > Fostering policy innovation.

SPATIAL (RE)INTEGRATION

Spatially integrating the natural layer in city master planning and projects.

- > Conserving existing natural habitats
- > Re-naturing degraded or suboptimised land
- > Growing smart with infrastructure.

INVESTMENT MOBILISATION

Valuing biodiversity outcomes to mobilise capital towards project financing.

- > Mainstreaming biodiversity data
- > Creating, supporting and scaling an inclusive market
- > Utilising novel investment models.

Figure 16: Achieving nature positive requires three systemic shifts in Parramatta’s urban development approach. Source: Adapted from World Economic Forum (2022).

HOW WE WILL ACHIEVE THIS PRIORITY

We can safeguard our natural spaces, waterways, and wildlife through proactively adopting a systems approach for nature-based urban transformation, spatially integrating Parramatta's natural layer into strategic planning and projects, and valuing biodiversity outcomes to mobilise capital towards project planning.

We play a key role in strategic land use planning and urban transformation and can demonstrate leadership as land managers of bushland and riparian reserves. We will continue to work with government, land managers, residents, developers, and partners to coordinate and enhance urban governance, spatial (re) integration and investment mobilisation to embed nature positive and habitat connections across the local government area.

For nature to recover, our City governance systems need to embed:

- **Habitecture planning:** ensuring biodiversity requirements and connections are considered and enhanced within our built environment.
- **Nature and climate change together:** delivering natural mitigation (planting trees) and adaptation (reducing flood risk) solutions.
- **Financing nature's recovery:** investing in natural solutions that also provide better business outcomes.
- **Procurement transparency:** incorporating nature's value into purchasing processes, to allow consumers and investors to understand how their choices are supporting or impacting nature.
- **Decision-making:** taking account of nature's values to provide better and more holistic outcomes (investing in natural drainage systems for water quality outcomes).

WHAT WE WILL DO

These are Council's Objectives and expected outcomes relating to Nature Positive. Further detail can be found in the action table at Section 04.

OBJECTIVES

OUTPUTS

4.1 We actively manage and regenerate nature for both its own benefit and the identity of our City	Embed nature sensitive planning and design standards supporting biodiversity across our City Partner with the community and stakeholders to strengthen habitat values, connectivity and land regeneration
4.2 Our community are custodians supporting nature in our City	Support community engagement and partnerships that enable our community to become nature custodians
4.3 Council leads biodiversity enhancement and habitat restoration practices, research and communication	Support biodiversity regeneration through our community volunteers, partners and Council action

OBJECTIVES

INDICATORS

TARGETS

4.1 + 4.2	Improvement in the City Biodiversity Index indicators: 2 Structural habitat connectivity 4-6 Functional habitat connectivity of key indicator species	Improve structural habitat connectivity score. Improve functional habitat connectivity key indicator species score.
4.3	Council bushland reserves under active primary area restoration	Target to be determined

COUNCIL SNAPSHOT

Within our LGA, the City of Parramatta, Sydney Olympic Park Authority, Parramatta Park Trust and other public land managers have established biodiversity base lines, developed research programs, delivered community projects and implemented on-ground threat-abatement and restoration initiatives to enhance native bush and riparian reserves.

Nature partnerships provide opportunities for leadership through collaboration and joint learning with neighbours, residents, government agencies and other land managers.

BUSHCARE

Our nature partnership with Bushcare volunteers, staff and contractors delivers on-ground biodiversity improvements together on council-managed reserves. Between 2017 – 2021 Bushcare contributed \$1.3 million investment in natural areas through 25,117 volunteer hours.



Photo 19

NATURE FOR NATURE'S SAKE

Our local brush-tailed and ring-tailed possums, short-finned eels, fish, and tiny insect-eating bats all form a critical part of a balanced and healthy ecosystem including eating mosquitoes, seed dispersal and being important food for our threatened local powerful owls and sea eagles.

Urbanisation has reduced the number of our local mature mangroves and eucalypt trees, and created barriers in our waterways, which impact the lifecycle and survival of these species.⁹

We have taken the following nature positive approaches to support these species to survive and their ecosystems to function:

- On-ground restoration and expansion of endangered mangroves and annually planting 100,000 indigenous trees and shrubs to provide food, shelter and branches for perching.
- Installing over 450 different nest boxes and carving hollows in stag trees, sized for different wildlife to use as shelter, nesting sites, rearing of young and keeping cool on hot days and warm on cold days.
- Installing fish ladders and elevators along our waterways allowing fish and eels to navigate obstructions such as weirs.

PRIORITY 05

CIRCULAR ECONOMY

We will champion the circular economy and whole-of-waste system transition.

WHY IS IT IMPORTANT?

Circular economy concepts represent new economic opportunities and benefits for industry, society, and the environment. Parramatta's central location and ongoing transformation provide a unique opportunity for applying these opportunities, both at a local and regional scale.

Current linear take, make and then discard approaches produces environmental, social and cultural impacts during resource extraction, manufacturing and consumption. Examples of current City governance linear systems that produce carbon emissions, pollution and waste include electricity, gas, water and resource consumption.

"Circular economy gives us the tools to tackle climate change and biodiversity loss together, while addressing important social needs."

Ellen MacArthur Foundation

A circular economy is an innovative model that designs out waste and pollution while delivering wide-ranging environmental and societal benefits. It is underpinned by the circular processing ladder (Figure 17) and encourages products and materials to circulate in use, at their highest value while eliminating undesirable outputs and regenerating natural systems (Figure 18).¹⁸

The City of Parramatta is the third largest source of waste generation in metropolitan Sydney (Figure 19). With Sydney's limited landfill space and recycling system challenges, there is an urgency for circularity transition, with food organics and garden organics (FOGO), soft plastics, and avoiding products are all areas with room for improvement.

Our commercial, retail, and industrial businesses combined with our health and education precincts are well placed to embrace circular economy opportunities and improve City governance systems.

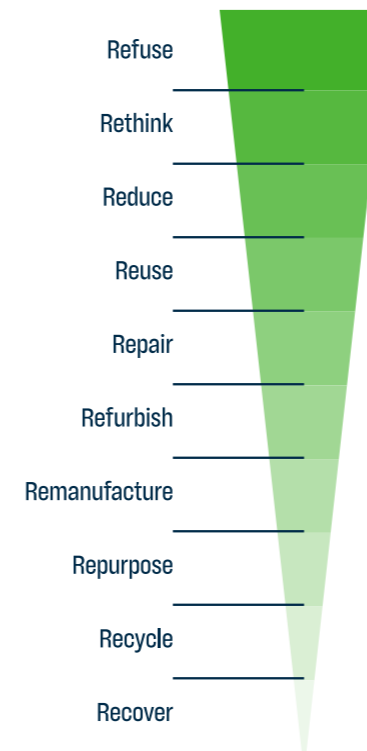


Figure 17: Circular processing ladder, with priority at top and bottom is least preferred. Source: Adapted from Lansink's Ladder and waste hierarchy (1979).

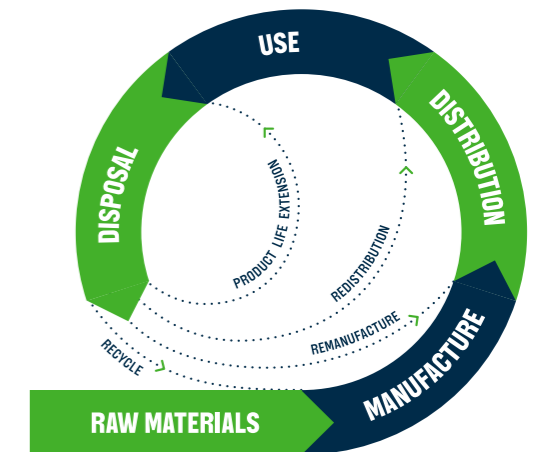


Figure 18: Circular economy concept. Source: Adapted from Innovate UK (2017)

HOW WE WILL ACHIEVE THIS PRIORITY

Achieving a circular economy is a far reaching concept that requires cooperation across all levels of government, all scales of business and organisations, and support from communities right down to the level of the individual.

We will focus on facilitating a circular economy transition by ensuring our community is supported through the whole-of-waste system transformation. We will also advocate for innovation across practice in industry, utilities, government, and within our growth precincts.

We will demonstrate leadership through our community waste management services and embedding circular economy principles within Council's operations.

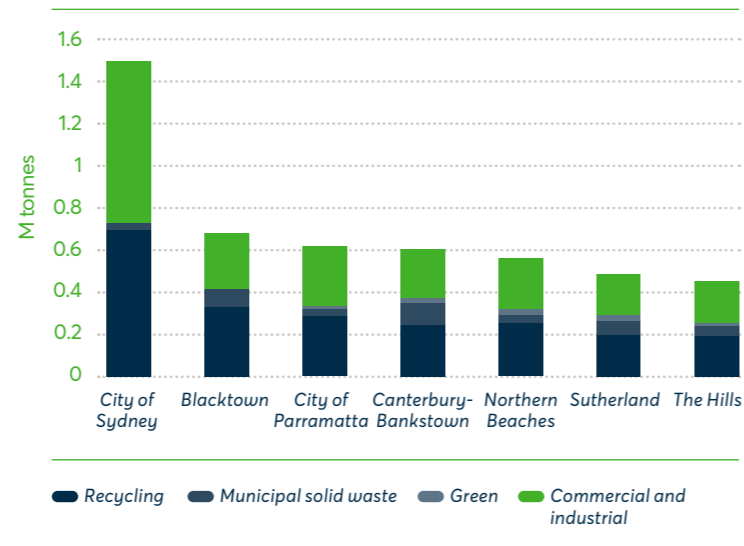


Figure 19: Metropolitan Sydney waste production by LGA. City of Parramatta LGA is third largest waste producer in metropolitan Sydney, after City of Sydney and Blacktown for FY 2021/22. Source: Resilient Sydney (2023).

WHAT WE WILL DO

These are Council's Objectives and expected outcomes relating to Circular Economy. Further detail can be found in the action table at Section 04.

OBJECTIVES

5.1 We seek opportunities for circular economy development across business and industry at the centre of Sydney

OUTPUTS

Identify opportunities for Parramatta as a metropolitan leader in resource recovery and circular economy industry

Leverage partnerships and stakeholder relationships to enable Parramatta to play a key role as Sydney's resource recovery and circular economy hub

5.2 Council empowers the community to support waste avoidance, recovery and reuse

Work with our community to implement effective circular waste management practices

5.3 Council leads circular economy practices, research, and communication

Embed circular economy leadership in Council decision-making

OBJECTIVES

5.1 + 5.2

INDICATORS

Community waste diverted from landfill

TARGETS

85% diversion rate for community waste by 2038

5.3

% of green investment

A continual increase in percentage of green investment in Council's investment portfolio from 22% baseline (2020)

COUNCIL SNAPSHOT

REGIONAL PARTNERSHIP APPROACH

Since 2017, the City of Parramatta has been part of the Western Sydney Regional Waste Avoidance and Resource Recovery Strategy, coordinated by WSROC. Achievements include:

- improved waste avoidance
- coordinated regional governance
- increased recycling and diversion from landfill.

SUPPORTING COMMUNITY CHAMPIONS

Council's 2023 Citizen of the Year, Julz Strykowski is a passionate environmental educator empowering local communities to tackle plastic pollution at its source. She coordinates volunteers to transform post-consumer material, normally sent to landfill, into reusable cloth bags to replace plastic bags, and to start conversations.

She also delivers circular economy principles through her award winning PluckFastic waste-to-art program, Plastic Free Parramatta, Greener Gatherings, Friends of Toongabbie Creek and Plastic Free Parramatta initiatives.

RETHINKING AND REDUCING

In 2022, Council provided residents with rebates of up to \$150 for the purchase of reusable nappies and sanitary products, to support them to save money and reduce waste to landfill. An estimated 776,000 single-use items (564,000 nappies and 212,000 sanitary items) were avoided and diverted from landfill. The success of the pilot will see the rebate program continue and has inspired interest from other Councils to implement similar programs.

Council will be commencing a food organic and garden organic (FOGO) residential collection service at the end of 2024. Implementing circular

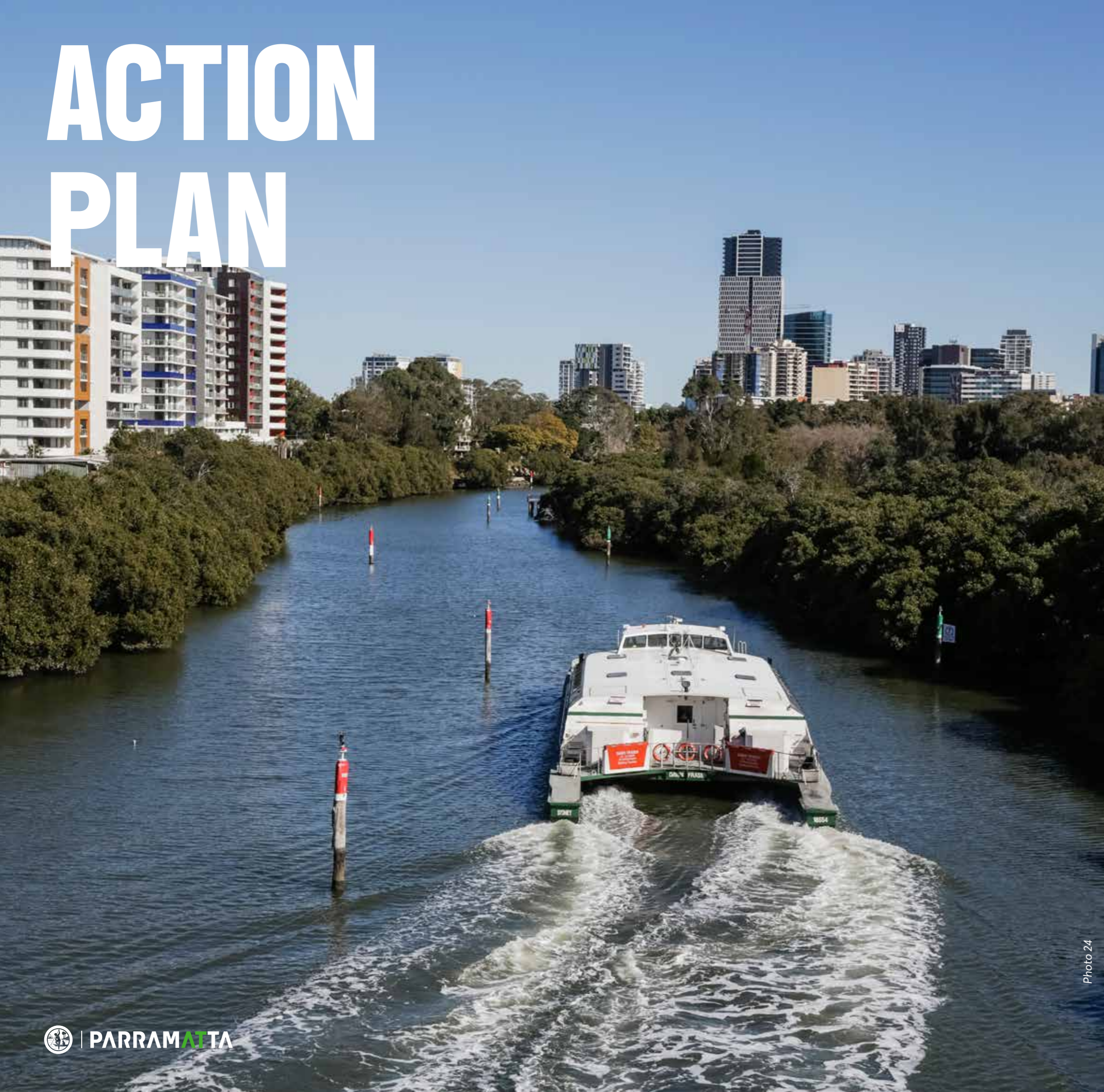
economy principles, FOGO collection will divert waste from landfill, reduce emissions and the organic material will be used in Council's parks and open space.



Photo 23

ACTION PLAN

04



This plan details the actions that will drive progress towards Strategy objectives over the next four years and beyond.



Photo 24

PRIORITY 01
CLIMATE POSITIVE

NO.	ACTION	HORIZON	RESPONSE TO CSP	COUNCIL'S ROLE
1.1	We champion equitable decarbonisation across our City through action and advocacy			
1.1.1	Resource key regional partnerships and research opportunities to support decarbonisation across our local area and communities	H1	Green	D P
1.1.2	Work with researchers and government partners to develop and pilot net zero approaches through precinct planning, policy, development controls and design standards	H1	Green Accessible	D P
1.1.3	Promote low-carbon transportation through Council's integrated transport planning and advocacy	H1	Green Fair	P A
1.2	Our community is empowered to make equitable net zero decisions			
1.2.1	Undertake a climate positive and sustainability focused education and behaviour change program, incentivising environmental custodianship and culture change	H1	Green	D P
1.3	Council leads carbon positive practices, research, and communication			
1.3.1	Elevate and prioritise delivery of Council's Net Zero Emissions Reduction Plan across all of Council's business operations, services and procurement activities	H1	Green	D
1.3.2	Undertake a research paper to identify Council's climate positive leadership opportunities	H1	Green	D
1.3.3	Develop decarbonisation funding prospectus and business cases to apply for funding	H2	Green	D
1.3.4	Identify and implement opportunities for improving Council's public reporting and communication on carbon emissions	H1	Green Innovative	D

HOW TO READ THE ACTION PLAN

Horizons will be used to identify the timeframe in which the action will be implemented:

- > Horizon 1 (H1): 1 - 2 years
- > Horizon 2 (H2) : 2 - 4 years
- > Horizon 3 (H3) : 4 - 10 years

Response to CSP reflects the relevant CSP goal that this work will contribute to (Fair, Accessible, Welcoming, Green, Thriving, and Innovative).

Council's role refers to the Deliver (D), Partner (P), Advocate (A) model of work adopted in the CSP.

PRIORITY 02
FUTURE READY COMMUNITY

NO.	ACTION	HORIZON	RESPONSE TO CSP	COUNCIL'S ROLE
2.1	Our city is resilient to a changing climate and leads on sustainability			
2.1.1	Utilise Council's Enterprise Risk Management Framework to review and embed key environmental risk reduction and resilience measures across Council's core areas of responsibility and influence	H1	Green Innovative	D
2.1.2	Develop and resource a Resilience and Climate Adaptation Plan to strengthen climate resilience, and disaster preparedness	H1	Green	D P
2.1.3	Establish an Environmental Sustainability Strategy research program to influence built environment, planning and policy through evidence-based reporting	H1	Green	D P
2.1.4	Research options to promote and incentivise sustainability focused retrofits and building upgrades	H1	Green	D A
2.2	Our community is prepared and has the information they need during key city shocks and stresses			
2.2.1	Support greater community preparedness for heatwave, bushfire, flood and storm events through specific community engagement on resilience planning	H1	Green Fair	D P
2.3	Council is ready and plans for resilience, climate change adaption, and mitigation			
2.3.1	Benchmark Council's organisational performance against leading resilience frameworks and establish areas for improvement	H1	Green	D
2.3.2	Review and update Council's policy framework to accommodate a clear position on management of climate change related risk	H2	Green Fair	D
2.3.3	Embed life-cycle analysis, environmentally sustainable design (ESD), and resilience considerations into internal business practices, asset management and project decision making	H2	Green	D

PRIORITY 03
BLUE GREEN CITY

NO.	ACTION	HORIZON	RESPONSE TO CSP	COUNCIL'S ROLE
3.1	We are leaders in blue and green infrastructure network planning and delivery			
3.1.1	Benchmark progress in developing Parramatta as a water sensitive city against a global framework and establish areas for improvement	H1	Green	D
3.1.2	Partner with key stakeholders to develop opportunities to position Parramatta as a water sensitive city and a leader in green infrastructure	H1	Green	P A
3.1.3	Develop and resource a Water Sensitive City Plan that embeds integrated water management ambitions across planning for our local government area	H2	Green	D P
3.1.4	Review local open space spatial requirements and identify opportunities for increasing environmental services, ecological functions and remediation as part of asset management and planning	H2	Green	D
3.1.5	Review and identify opportunities for large-scale Council water sensitive urban design (WSUD) asset delivery	H2	Green	D P
3.1.6	Prepare and implement a Tree Canopy Plan that protects, diversifies and enhances tree canopy across the local government area	H1	Green	D
3.1.7	Advocate and seek partnership for the delivery of Council's vision for Parramatta River and its tributaries as living waterways with high cultural value	H1	Green Welcoming	P A
3.1.8	Work with First Nations community to identify key cultural values that can support Council in caring for Country	H1	Green Fair Welcoming	P
3.1.9	Undertake a Parramatta River corridor study to establish land-use planning and project guidelines supporting Councils Parramatta River Vision	H2	Green	D P
3.2	Water is a visible and valued resource central to our City and community			
3.2.1	Review opportunities for increasing and promoting Council's network of water-focused recreation destinations	H2	Green	D P
3.2.2	Plan and deliver community engagement and partnership opportunities to drive waterway health behaviour change programs and litter reduction	H1	Green Fair	D P
3.2.3	Review Council policy, funding and data collection options to ensure private water management systems are operational and effective	H1	Green Fair	D
3.3	We embed integrated water management and green infrastructure practices within Council			
3.3.1	Embed water sensitive urban design (WSUD) standards and green infrastructure into Council's asset management, public domain, and major project processes	H2	Green Innovative Fair	D
3.3.2	Establish, monitor and regularly review an ongoing program of water sensitive technology and green infrastructure delivery through technical support	H3	Green Thriving Welcoming	D

PRIORITY 04
NATURE POSITIVE

NO.	ACTION	HORIZON	RESPONSE TO CSP	COUNCIL'S ROLE
4.1	We actively manage and regenerate nature for both its own benefit and the identity of our City			
4.1.1	Develop a nature positive research paper to benchmark Parramatta's biodiversity planning standards and opportunities for improvement	H1	Green Innovative	D P
4.1.2	Document local biodiversity and habitat connectivity spatial requirements in urban areas to better support land-use planning	H1	Green	D P
4.1.3	Prepare and implement a Nature Positive Plan that protects, connects and enhances habitat across the local government area	H2	Green	D P
4.1.4	Work with key partners, researchers and community to test innovative approaches that strengthen habitat values, connectivity and land regeneration	H1	Green	P
4.1.5	Identify and prioritise habitat corridor connectivity projects and partnerships across and beyond our local government area	H1	Green	D P
4.2	Our community are custodians supporting nature in our City			
4.2.1	Expand biodiversity and waterway regeneration on private and public land through Council leadership, partnerships and communications	H2	Fair	D P A
4.2.2	Research and identify nature positive behaviour change and community empowerment opportunities	H1	Green Fair	D P
4.2.3	Lead nature positive community research and citizen science programs by working with partners	H3	Green	D
4.3	Council leads biodiversity enhancement and habitat restoration practices, research, and communication			
4.3.1	Assess how Council can minimise global environmental impacts through procurement, investment and business activities	H1	Green	D

PRIORITY 05
CIRCULAR ECONOMY

NO.	ACTION	HORIZON	RESPONSE TO CSP	COUNCIL'S ROLE
5.1	We seek opportunities for circular economy development across business and industry at the centre of Sydney			
5.1.1	Identify circular economy leadership and partnership opportunities through commissioning a research paper and benchmarking against best practice frameworks	H1	Green Innovative	D P
5.1.2	Review waste and resource recovery planning controls, policy and design standards that address current and future waste management requirements	H1	Green	D P
5.1.9	Develop a Central City circular economy advocacy and investment prospectus	H2	Green	D P A
5.2	Council empowers the community to support waste avoidance, recovery, and reuse			
5.2.1	Transition and expand waste and resource recovery services for residents, businesses and public places in-line with new industry directions and higher standards	H1	Green	D
5.2.2	Update Council's Waste and Resource Recovery (WARR) Strategy to provide a circular economy policy and implementation roadmap for community, business and Council	H2	Green	D
5.2.3	Scope opportunities to deliver community engagement programs on circular waste management, including at Council's new Community Recycling and Resource Recovery Centre	H2	Green Fair	D P
5.2.4	Develop a business case for the expansion of services and space associated with Community Recycling and Resource Recovery Centre	H2	Green	D P
5.2.5	Pilot a behaviour change program to reduce litter and illegal dumping across the local government area	H1	Green	D
5.3	Council leads circular economy practices, research, and communication			
5.3.1	Research and identify opportunities for embedding sustainability priorities and circular economy principles into Council operations, procurement, investment and business decision-making processes	H1	Green	D P
5.3.2	Investigate and implement, if viable, a self-sustaining fund that harnesses financial returns of sustainability initiatives to finance future project investment	H1	Green	D
5.3.3	Embed waste avoidance, minimisation, resource recovery and reuse into Council policy, events, projects and operations	H1	Green	D



SUPPORTING INFORMATION

05

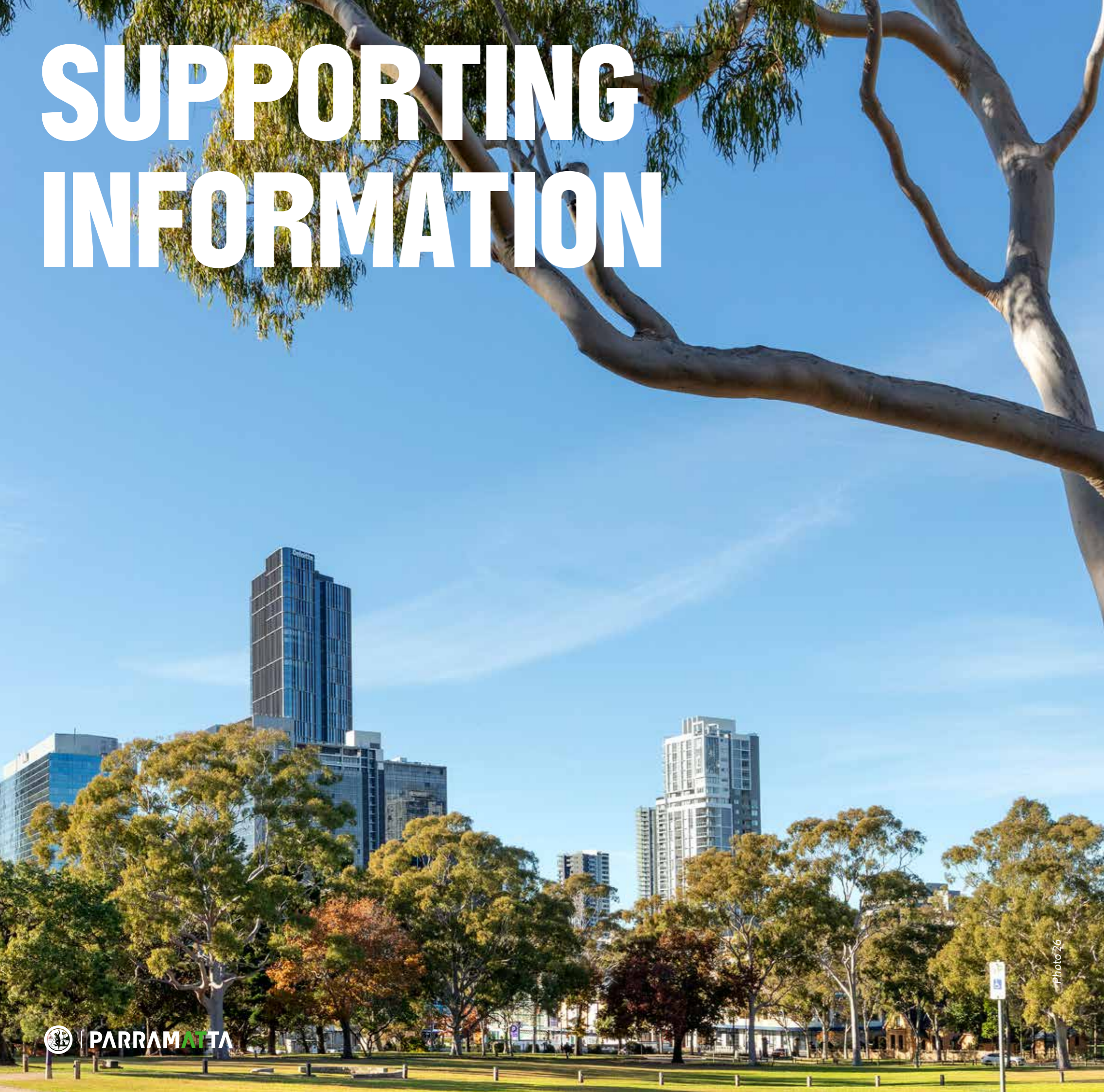


Photo 26

GLOSSARY

TERM	DEFINITION
Active primary area restoration (bushland)	Bushland under Council management that staff, volunteers and contractors actively restore to primary or best practice status
Acute shocks	Sudden, short-term events that threaten the city, including major storms, heatwaves, floods, bushfires, disease outbreaks, terrorism, and cyber-attacks. These can amplify chronic stresses
Atmospheric CO₂	Carbon dioxide that exists within the atmosphere of Earth can occur naturally or be produced by human activities. Of most concern is excessive atmospheric CO ₂ that comes from human activities
Biodiversity	Or 'biological diversity'. The variety of life within an ecosystem, relating to the number of different micro-organism, plant and animal species. It also considers how genetically different individuals of the same species are, and how variable different ecosystems are
Biodiversity enhancement	Improving the variety of life within Parramatta's ecosystems
Biophilic design	Design of buildings and spaces that fosters connection between buildings, humans and the natural world. Elements of biophilic design are sensory and look to nature for inspiration and solutions to modern architectural problems
Blue green infrastructure network	Web of natural and human-made features within our City that include water and vegetated spaces
Bushcare	Volunteers delivering biodiversity improvements and bush regeneration and in partnership with City of Parramatta
Carbon budget	Like a household budget, a carbon budget is the amount of carbon emissions that have been 'purchased' (already emitted emissions) and what is available to be 'spent' (emitted). If we exceed or 'overshoot' this budget (emit more emissions than budgeted) then climate change will continue
Carbon emissions	Production of gases by natural processes and, of most concern, human activities, including burning of fossil fuels and using combustion engines. These processes release carbon dioxide, methane and other greenhouse gases into the atmosphere

TERM	DEFINITION
Carbon neutral	Carbon emissions are balanced to zero. A carbon neutral company balances its carbon emissions by removing an equivalent amount of carbon from the atmosphere. Overall emissions can be neutralised by either funding carbon emission reduction initiatives elsewhere or by purchasing offsets or credits
Carbon offsets	Purchases that compensate for carbon emissions that remain after pursuing measures to stop or reduce emitting
Central City District Plan	A 20-year plan to implement The Greater Sydney Region Plan – A Metropolis of Three Cities, that includes the Parramatta LGA as part of the Central River City within its vision
Chronic stresses	Incidents that weaken the fabric of a city on a day-to-day or cyclical basis, including climate change, homelessness and housing affordability, lack of access to public transport, family violence, structural inequity, and chronic food or water shortages
Circular economy	A whole-of-systems approach that replaces end-of-life concepts of waste and obsolescence with restoration and renewal, creating new opportunities for businesses and communities to survive and thrive while eliminating pollution and regenerating our environment
Climate Active	Commonwealth Standard to achieve carbon neutrality
Climate change	Is a change in the pattern of weather, and related changes in oceans, land surfaces and ice sheets, occurring over time scales of decades or longer
Climate change adaptation	Taking action to change the environment, society and/or economy to better cope with and thrive under future conditions that are altered by climate change
Climate change mitigation	Taking action to reduce climate change by decreasing human contributions to climate change
Climate hazards	Possible events that may cause harm to a city and are related to the weather and climate change, including heatwaves, bushfires, and floods
Climate negative	Carbon negative companies remove more carbon from the atmosphere than they emit
Climate positive	Carbon positive companies go further than carbon negative. They remove more carbon than they emit and deliver environmental benefit to other companies or localities. A carbon positive business might, for instance, generate more renewable energy than it needs and feed the surplus back to the grid

TERM	DEFINITION
Climate resilience plan	A framework for managing the ability of the City, community and environment to survive, adapt and thrive under future climate conditions determined by climate change
Community	Relating to the people that regularly interact with Parramatta, including residents, businesses, workers and students
Community preparedness	A community's ability to prepare for, endure, respond to and recover from an adverse event that may occur. This requires communities and governments to be proactive and informed
Corporate	Actions, activities and emissions relating to City of Parramatta Council operations and services
Cultural practice	The various interlinked customs, traditions, rituals, behaviours, activities and knowledge that are collectively shared. They are passed down within a specific cultural group and serve as a means of expressing identity, values, beliefs, and social cohesion, that guide and enhance connection to Country. Adapted from the Connecting with Country Framework, Government Architect NSW
Custodianship	Accepting responsibility for caring for or protecting the environment through individual and collective actions and behaviours
Decarbonisation	Is about reducing carbon emissions resulting from human activity, with eventual goal of eliminating them
Dharug Nation	Language group of the Australian First Nations people that are the traditional custodians of most of modern Greater and Western Sydney land, including Parramatta. The traditional lands of the Dharug Nation span from the Blue Mountains (west) to the coast (east), and between the Hawkesbury River's mouth (north) and Appin (south)
Disaster prone area	Extent of land that is more likely to be exposed to particular natural disaster events, including floods and bushfires. These areas differ depending on the characteristics of the disaster, such as flood level, with scenario modelling informing what space is disaster prone
Ecological Integrity	Actions will maintain biological diversity, essential ecological processes, and life-support systems. We must not produce more waste than the natural environment is able to assimilate without damage. When we take resources from the environment, we must not take them any faster than the rate at which they are replaced
Emissions	Scientists have developed methodology that allows all greenhouse gases (including carbon dioxide, methane, nitrous oxide) to be calculated as carbon equivalent (CO ₂ e)
Environmental emergency	Natural, technological or human-caused event that occurs suddenly and threatens or damages the environment, with subsequent risks to human health

TERM	DEFINITION
Environmentally sustainable design (ESD)	Ensures development achieves both compliance with standards of environmental design, and environmental sustainability
First Nations custodianship	The important responsibilities of caring for and protecting the Country/ Place on which First Nations peoples live, ensuring the landscape is preserved and healthy. This custodianship includes maintaining and passing on culturally significant elements, including knowledge, song and dance
First Nations Ownership	Land and water under First Nations ownership
FloodSmart Parramatta	A service that provides vital information about flood risk to the City of Parramatta community. This ensures the community is prepared to stay safe and protect homes and businesses during flood events
Functional habitat connectivity	Ability of a species to move between habitat patches across a landscape, using other patches (e.g., parkland) or disconnected habitat features (e.g., street trees)
Green infrastructure	Network of naturally occurring or built living assets that incorporate the natural environment and engineering systems to provide an array of vital services for all species
Green investment	Putting money in stocks, bonds or funds of companies who avoid fossil fuels, coal and gas with the expectation of achieving a profit
GreenStar	Internationally recognised rating for buildings and places that are healthy and resilient, specifically for the Australian environment, developed by Green Building Council Australia
Grid decarbonisation	Reducing the carbon emissions associated with the electrical grid and generation of electricity, to eventually eliminate them. This includes moving away from coal-fired power stations and towards renewable sources of energy
Habitecture	Incorporates spaces for habitats into the design of the City's architecture
Healthy waterways	Flowing bodies of water that have acceptable levels of physical, chemical, microbial and metal pollution, have high biological integrity, and do not compromise environmental or human health
Integrated water	Recognises that all parts of the water cycle are linked, including water security (for now and the future), stormwater pollution, flooding, groundwater impacts and waterway health
Invasive species	Organisms that have been introduced to a region and threaten the integrity and biodiversity of their environments. These organisms often out-compete native species, threatening populations of native plants and animals

TERM	DEFINITION
IPCC Assessment report	The Intergovernmental Panel on Climate Change (IPCC) completes Assessment Reports about every six years, assessing the current knowledge on climate change, its causes and impacts, both in the present and future, and how to respond
ISO20400 Sustainable Procurement	Provides guidance for integrating sustainability into corporate procurement processes, focusing on purchases
Key indicator species	Plant, animal or micro-organism that acts as a measure of the local environmental conditions or the state of an ecosystem
LED	Light emitting diode energy efficient light that reduces carbon emissions and electricity costs
LGA	Local Government Area
Life-cycle analysis	Assessing environmental impacts of each stage in the life cycle of a product, service or process to inform decision making, practices and management
Metropolitan Sydney	Encompasses the 33 LGA's within the urban boundary of Sydney
Nature positive	A halting and reversal of the loss of natural systems, where development and regeneration actively contribute to the increase in natural systems over time
Net zero	Achieving an overall balance between carbon emissions produced or consumed and carbon emissions removed from the atmosphere. Balanced to zero. Purchase of offsets usually required to achieve this
Non-potable water	Water that is unsuitable for consumption, including drinking or cooking. Can still be used for other purposes, such as irrigation
Offsets	Activities or projects that either remove emissions from the atmosphere (e.g. tree planting) or avoid emissions (e.g. a wind farm)
Outdoor water-focused recreation	Activities that allow the community to engage with outdoor blue infrastructure for personal enjoyment, including kayaking, walking alongside waterways
Parramatta River Catchment Group (PRCG)	Alliance of community groups and local and state government agencies working towards making Parramatta River catchment sustainable, healthy and liveable
Parramatta River Vision	Adopted by Council in 2023 to re-establish Parramatta River as central to the identity and value of Parramatta by improving access and providing space for water, nature, human health, wellbeing, and recreation
PHIVE	Six GreenStar public building with library, Council chambers and community spaces, at number 5 Parramatta Square

TERM	DEFINITION
Pledge for Nature	A commitment to curb biodiversity loss, maintaining planetary health and pursuing improved outcomes for nature, climate and sustainable development, endorsed by Australia in 2022
PluckFastic	A local community group dedicated to plucking plastic from our waterways and lands
Potable water	Water that is suitable for consumption, including drinking and cooking
ppm	Parts per million. Measure of concentration of atmospheric gases, including carbon dioxide, identifying how many carbon dioxide particles there are per one million atmospheric particles
Precautionary behaviour	Where evidence indicates the risk of serious or irreversible community, environmental or economic damage, a lack of scientific certainty should not be used as a reason to postpone remedial action
Quadruple bottom-line	Environmental, social, economic and governance considerations should be effectively integrated into planning and decision-making. Continual improvement in performance will be based on accountability, transparency and good governance
Recover	Lansink's Ladder lowest priority: incinerate the materials with energy recovery
Recycle	Lansink's Ladder second lowest priority: reuse the materials of the product for application in new products
Reduce	Lansink's Ladder third highest priority: increase the efficiency of the machines in the production process or use fewer materials for the same product
Refurbish	Lansink's Ladder sixth highest priority: refurbish old products to bring them up to date
Refuse	Lansink's Ladder highest priority: make a product redundant by abandoning its function or by providing the same function in a different way
Regeneration	Renewing or restoring spaces where nature has been damaged or lost by providing the right conditions for ecosystems to recover and thrive. It is inspired by nature and recognises First Nations perspectives, nature-human interconnections, and the United Nations Sustainable Development Goals (SDGs)
Regional scale	Outputs that are scaled up to a geographic area greater than our LGA, including Central City, Dharug Nation, Western Sydney, PRCG or Resilient Sydney
Remanufacture	Lansink's Ladder fourth lowest priority: reuse functioning components of the product to make comparable products

TERM	DEFINITION
Renewable electricity	Electricity sourced from renewable or non-fossil fuel sources including wind, solar, battery and hydro
Repair	Lansink's ladder fifth highest priority: repair defective products so that the original function can be preserved
Repurpose	Lansink's Ladder third lowest priority: reuse the product or components thereof in a new product with a different function
Resilient city	The capacity of individuals, communities, businesses, and systems within a city to survive, adapt and thrive no matter what kinds of chronic stresses and acute shocks they experience
Resilient Sydney	A collaboration of all 33 LGAs of Greater Sydney to develop and implement a city-wide resilience strategy
Resilient Sydney Net Zero app	Resilient Sydney on-line carbon emission data management and calculation tool to assist LGAs map their community emission pathway to net zero
Resource recovery	Separation of materials to prevent them from landfill and keep them in use for longer
Rethink	Lansink's Ladder second highest priority: make product use more intensive by using (sharing) the product with more people or by giving the product more functions
Reuse	Lansink's Ladder fourth highest priority: Reuse of discarded, functioning product in the same function by a different user
Rewilding	Restoring nature's natural processes, including habitats and, where appropriate, reintroducing missing species
Structural habitat connectivity	Physical arrangement of habitat patches (e.g., parkland) and disconnected habitat features (e.g., street trees) within the landscape, and how close these areas are to one another
Systems view	In ecological systems, everything is inter-connected. Present and future generations of all species should have fair and equal access to resources and opportunities especially in a changing climate. The connections are not always obvious to us, but they are there. When we make decisions, we must think beyond local or immediate impacts
tCO_{2e}	Tonnes of carbon dioxide equivalent

TERM	DEFINITION
Topophilia	The affective bond with one's environment – a person's mental, emotional, and cognitive ties to a place (Yi-fu Tuan 1974). A strong sense of place, which often becomes mixed with the sense of cultural identity
Waste diversion	Process of diverting waste from landfill through recycling and source reduction activities
Water sensitive City	Water is managed in a way that meets a city's water needs while also supporting a city's urban liveability, sustainability, resilience, and productivity
Water sensitive urban design (WSUD)	A land planning and engineering design approach which integrates the urban water cycle into urban design to minimise environmental degradation and improve aesthetic and recreational appeal
Western Sydney Energy Program (WSEP)	WSROC project to realise energy, cost and emission savings for Western Sydney LGAs and their communities
Whole-of-waste system	Measures waste through its entire life cycle from generation to disposal or recovery
WSROC	Western Sydney Regional Organisation of Councils

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 **For non-English speakers, phone interpretation services are available via TIS National on 131 450.**

KOREAN

본 소식지와 관련해 통역 지원이 필요하신 경우, TIS (131 450)에 전화하여 Parramatta Customer Service (9806 5050)를 연결해 달라고 요청하시면 됩니다. 업무시간은 월요일에서 금요일, 오전 8시 30분부터 오후 5시까지입니다.

CHINESE

如果你需要翻译协助阅读这份新闻简报, 请联系 TIS, 电话131 450, 要求他们代表你接通巴拉玛打市议会顾客服务处, 电话 9806 5050。顾客服务处的工作时间是每星期一至星期五, 上午8:30至下午5:00。

ARABIC

إذا كنت بحاجة للمساعدة في ترجمة هذه النشرة, اتصل بـ TIS على الرقم 131 450 واطلب منهم الاتصال نيابة عنك بخدمة زبائن باراماتا على الرقم 9806 5050 من الإثنين إلى الجمعة بين الساعة 8:30 صباحاً و 5:00 مساءً.

HINDI

यदि आपको यह सूचना-पत्र समझने में सहायता चाहिए तो कृपया TIS को 131 450 पर फ़ोन करें और उनसे कहें कि आपकी तरफ़ से पैरामाटा कस्टमर सर्विस को 9806 5050 पर फ़ोन करें। यह सेवा सोमवार से शुक्रवार, सुबह 8.30 बजे से शाम 5.00 तक उपलब्ध है।

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ENVIRONMENTAL SUSTAINABILITY STRATEGY



2023 – 2032



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