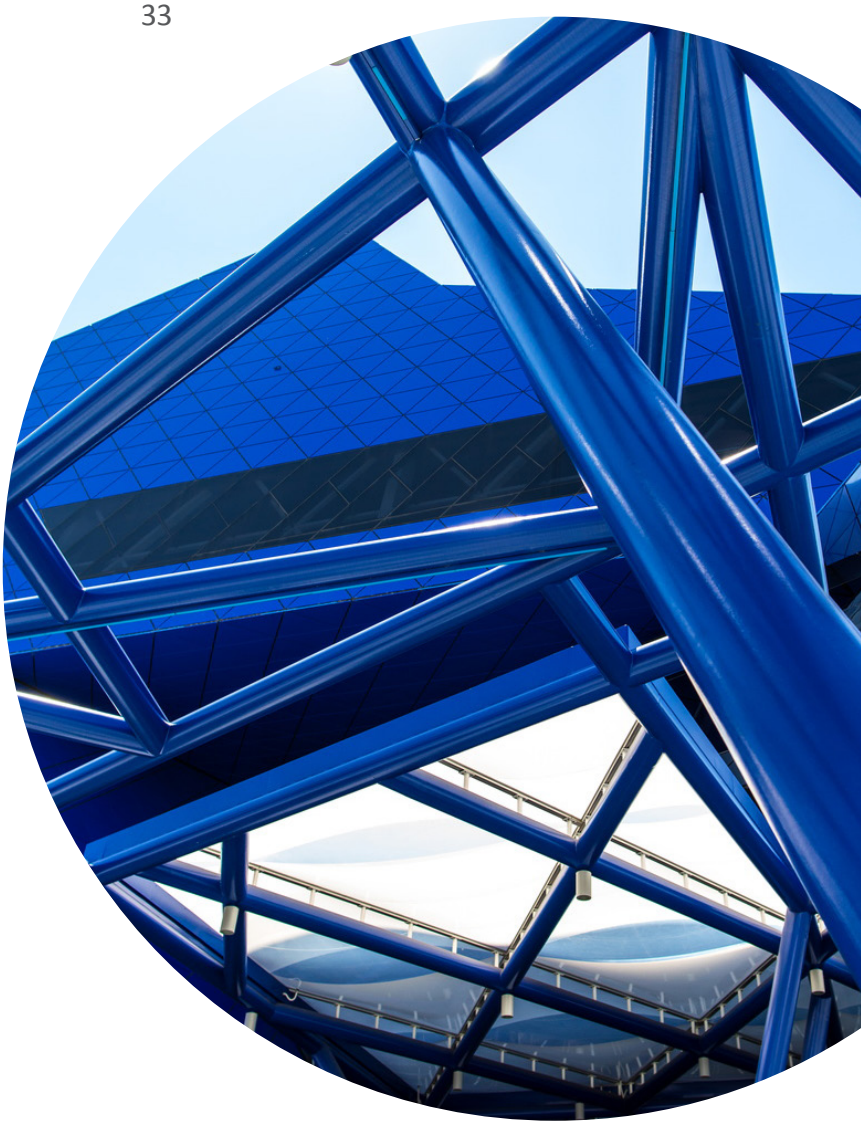
# ENVIRONMENT STRATEGY

CITY *of* PERTH

**City of Perth has an ambitious aim to lead our journey towards a sustainable future.**

# Contents





# Lord Mayor's Foreword

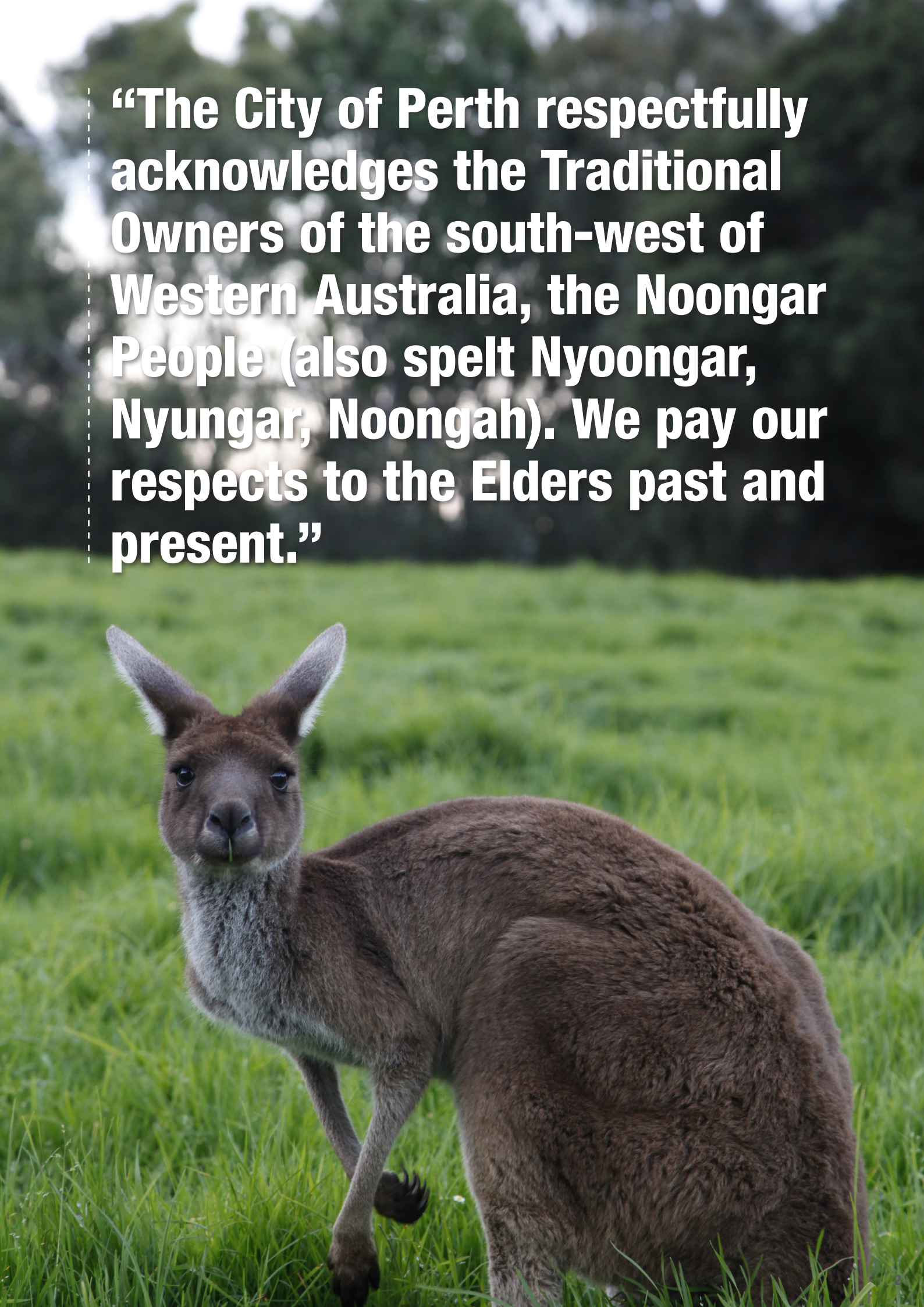
It pleases me to present the Environment Strategy for the City of Perth. This Strategy strengthens the City's aspirations for an environmentally sustainable future. Over the next fifteen years, the City will strive as an environmental leader by, fostering innovation and continuing the transformation into a truly global city. Never before has the role of cities been more apparent in shaping the world's environment.

Unsurprisingly visitors and locals alike appreciate that the City is unique and picturesque. We have one of the world's largest inner city parks to the west, whilst the shimmering waters of the Swan River frame the east and south. Having these iconic and much loved assets so close to the CBD has made it even more pertinent that the City continues to create an environmentally friendly, accessible, and vibrant city that is attractive to everyone who lives, works and visits. There is a renewed sense of connection between the City and the River as major development projects such as Elizabeth Quay and Waterbank near completion and bring the River back to the City once more.

As an organisation, the City of Perth continues on its sustainability journey with pride and commitment. We have and will continue to invest in renewable energy. We gain precious insights in our understanding of the City's urban forest and the elements that support it. Moreover, with the enthusiasm from the community and business sectors working collaboratively, we can collectively ensure that the City of Perth is resilient, vibrant, and responsive to environmental change.

Managing the human impacts on the environment is a complex task and the interchange of natural and human elements can be challenging. Through the Environment Strategy, the City of Perth will endeavour to meet this challenge and ensure that the City's built and natural environment are supportive of all who live, work and play within it, now and in the future.

*The Right Honourable the Lord Mayor*
**Lisa-M. Scaffidi**



**“The City of Perth respectfully acknowledges the Traditional Owners of the south-west of Western Australia, the Noongar People (also spelt Nyoongar, Nyungar, Noongah). We pay our respects to the Elders past and present.”**


Environmental Sustainability and Health
Climate Response
Energy Resilience
Water Sensitive City
Waste Conscious City

# Introduction

The Environment Strategy has been developed to enable the City of Perth to achieve excellence in environmental management by delivering on our responsibilities and to harness opportunities to improve. Environmental excellence will require everyone to work together, this Strategy positions the City of Perth to work with community to lead towards a sustainable future for the city as a whole. The environment, in the City of Perth, comprises the integration of natural and built structures, resource efficiency and how people interact with the city.

The Environment Strategy has been informed by the 2029+ Vision, community consultation, and the City of Perth's Integrated Planning Framework. The City of Perth has taken an evidence based approach to understand local, state, and global environmental challenges. The broad environmental goals and regulations of the State and Federal Governments guide current environmental performance and offer best practice improvement opportunities.

The City of Perth's commitment to an environmentally sustainable future has been reflected in its long term commitment to global initiatives such as the International Council for Local Environmental Initiatives (ICLEI) and World Energy Cities Partnership. The City has achieved improvements in its own operations, from building and street lighting efficiency upgrades to water recycling infrastructure and investing in solar energy. City projects like the constructed stormwater treatment wetland at Point Fraser have fostered innovation in environmental management, and the City has built strong partnerships to facilitate community action through environment grants and awareness programs.

The Environment Strategy sets out the City's action priorities for the next 15 years to work towards its commitment to be an environmentally sustainable city. It identifies objectives and strategies for delivery over five focus areas.

The Environment Strategy addresses environmental improvements in the City of Perth's own operations and how it can collaborate with stakeholders to facilitate community action. The City of Perth community comprises residents, workers, businesses, visitors, land and property owners, state and federal government agencies, and industry bodies and stakeholders.

The Environment Strategy is supported by an Implementation Plan containing detailed actions, priorities, partnerships and responsibilities. The Implementation Plan will be reviewed annually.

# Background

Coordinated global environmental stewardship began with the establishment of the United Nations Environment Programme in the 1970s to establish a 'voice for the environment'. The 1987 Brundtland Report was the first formal introduction to the concept of sustainability as a way to integrate economic, social and environmental considerations for present and future generations.

Shortly following the Brundtland Report, the Intergovernmental Panel on Climate Change (IPCC) was established to provide concise and scientific information on climate change and its potential environmental and socio-economic impacts. In 1992, with the IPCC as a foundation, the *UN Conference on Environment and Development 1992* set in place international agreements which have led global progress towards environmental sustainability. Over the decades, environmental sustainability has been a growing forefront in overcoming shared challenges. With an increasingly urbanised world, cities are becoming showcases for effective sustainable action.

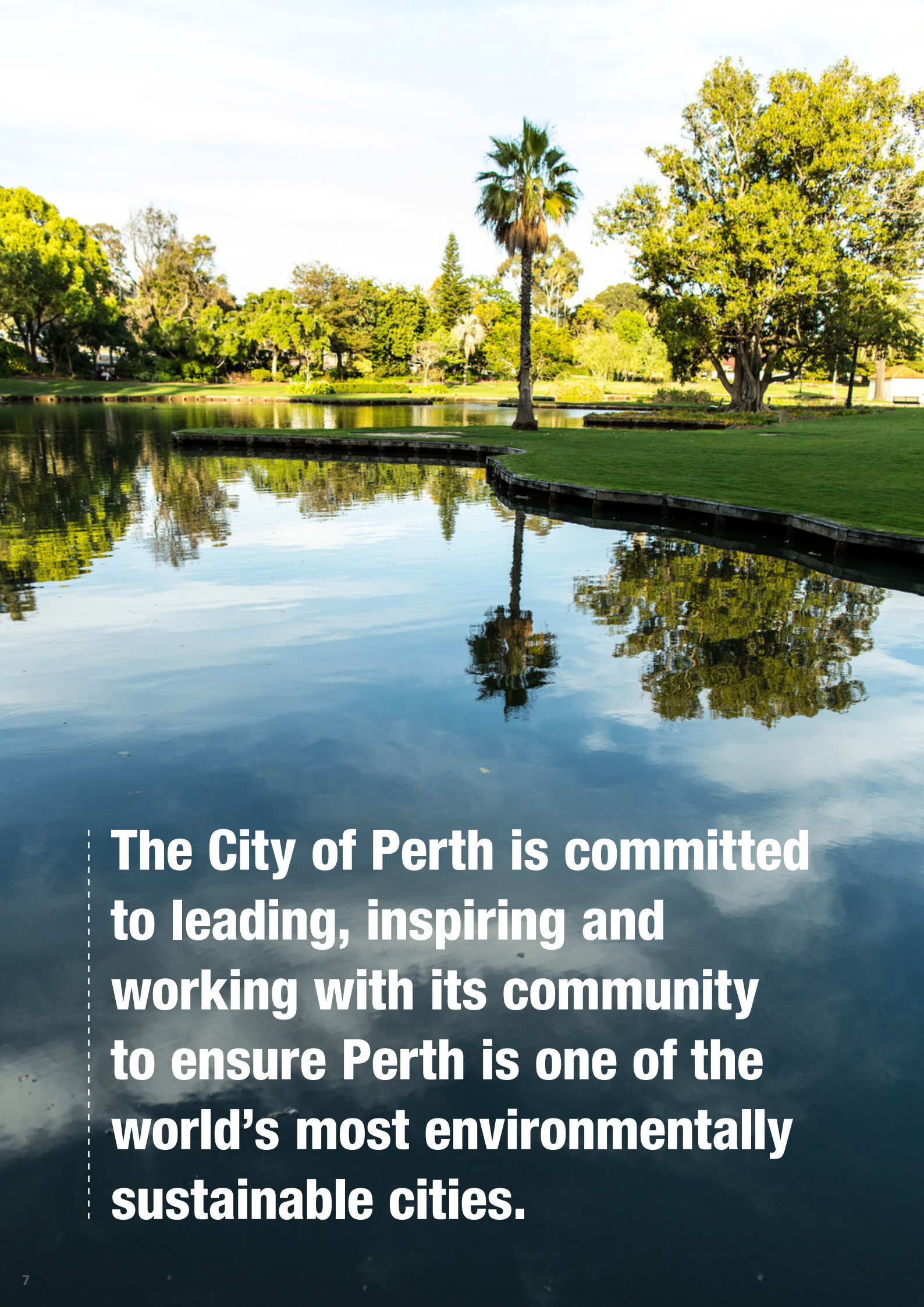
Cities play a key role in preserving the future of the environment. In dense population centres energy and water consumption per capita is often lower than suburban or regional areas, making cities key to a sustainable future for generations to come[1].

As dense urban centres, cities are a major contributor to climate change through intensity of resource use. They produce around 70% of greenhouse gas emissions whilst occupying just 2 percent of land. However, cities experiencing growth and development, like Perth, also provide opportunity to trial new technologies and innovations.

The City of Perth is the capital city of Western Australia, covering an area of 8.1 $km^2$. It has many unique characteristics such as being the largest employment hub in Perth and home to international, national and local business head offices. By 2031, Perth is forecast to have an additional 14,452 (based on 2006 figures) new residential dwellings and 1.2 million m2 of non-residential space, with almost a 60% population growth by 2036[2].

The City of Perth is bordered on two sides by the Swan River (Derbal Yerrigan) and on a third by Kings Park and Botanic Gardens. Environmental consideration in this context must also therefore acknowledge and understand the regional and global context of many environmental issues, as well as the inter-relationships and linkages that exist between elements of the natural and built environments.

# Cities play a key role in preserving the future of our environment.



**The City of Perth is committed to leading, inspiring and working with its community to ensure Perth is one of the world's most environmentally sustainable cities.**

# A Commitment to an Environmentally Sustainable City

The City of Perth acknowledges that environmental considerations must be balanced with economic and social considerations for a triple bottom line approach to sustainable development.

City of Perth has reduced the environmental impact of its commercial car parking business through initiatives such as a $536,000 carbon offset tree planting program that has seen 380,000 trees planted to offset 64,200 tonnes of greenhouse gas emissions.

Other initiatives include: water and energy efficiency improvements to car park infrastructure including induction and LED lighting, solar panels on parking equipment, renewable energy at Elder Street car park, rainwater harvesting and recycling of cleaning water, and renewable energy generation.

## The City of Perth is committed to leading, inspiring and working with its community to ensure Perth is one of the world's most environmentally sustainable cities.

Perth will become a climate resilient city in which energy, water, and other natural resources are conserved and ecological systems and habitats thrive and enrich the city. The community value their environment and actively contribute towards its improvement.

The City of Perth will continually improve environmental performance in our own operations and capital investments through efficient resource use, effective management and optimising procurement.

The City of Perth will enrich natural areas with added biodiversity value and strengthen the relationship between environment and community health and wellbeing.

The City will foster innovation. It will encourage and enhance the community's and stakeholders' capacity to reduce Perth city's ecological footprint. We will create a resilient, diverse and attractive environment that evokes pride, passion and a unique sense of place.

The City of Perth will implement the Environment Strategy in line with the principles of an informed, collaborative, accountable and responsive city.

**380,000**
**Trees**

**planted in the City's carbon offset tree planting program**

**Equivalent to**

**8,831**

**homes' electricity use offset for one year**

# Measuring Progress

With the City's commitment to an evidence based approach to environmental management, targets for 2030 have been identified within each of five focus areas. As further evidence and new initiatives emerge and are developed, the City of Perth can emphasise more ambitious targets as part of the four year review process detailed in Integration and Implementation. The City of Perth also acknowledges that there are qualitative elements to this Strategy that can also be monitored.

| Focus area | City of Perth Operational Targets | Community Targets |
|---|---|---|
| **Environmental Sustainability and Health** | • Reach 50,000 community members per year to raise awareness of environmental sustainability by 2030[3] | • 30% of net lettable area of existing office space participates in environmental programs, such as CitySwitch Green Office and Water Wise Office by 2030[5] |
| **Climate Response** | • All City of Perth Asset Management Plans incorporate climate response considerations by 2030 | • The city scores 50% or above in disaster resilience as assessed by the United Nations Office for Disaster Risk Reduction by 2030 |

| Focus area | City of Perth Operational Targets | Community Targets |
|---|---|---|
| **Energy Resilience** | • Reduce City of Perth operational emissions by 30% (BAU baseline by 2030)[7]<br>• Source 25% of the City's operational energy from renewable or low carbon sources by 2030[7] | • Work with the community to achieve 30% reduction in city-wide greenhouse gas emissions (BAU baseline by 2030)[7]<br>• Work with the community to achieve 20% of citywide energy use from renewable or low carbon sources by 2030[7] |
| **Water Sensitive City** | • Reduce scheme water use in City of Perth operations by 25%[8] and increase use of alternative water sources by 2030 | • Work with the community to achieve residential water use below 78kL per person per year by 2030[9] |
| **Waste Conscious City** | • Achieve 65% recovery of municipal solid waste, 70% recovery of commercial and industrial waste, and 75% recover of construction and demolition waste by 2020[10] and develop new targets set for 2030. | |

## Focus areas and objectives for delivery

# An environmentally sustainable City of Perth

### Environmental Sustainability and Health

Be a leader in environmental sustainability

Be a driver of environmentally sustainable design and development

Air, land, biodiversity, and water quality is protected and natural spaces are enhanced

### Climate Response

Have an advanced understanding of climate change risks

Be prepared for, and ready to respond to climate change risks

## Energy Resilience

Improved energy efficiency and reduced greenhouse gas emissions

High emissions energy sources replaced with low emissions and renewable energy sources

## Water Sensitive City

Improved efficiency in water use and quality of water

Maximum retention, re-use, and fit-for-purpose use of water

## Waste Conscious City

Waste is avoided and waste recovery is maximised through reuse & recycling

The environmental impacts of waste generated in the city are minimised

# The case for action

Strong city governance and leadership is important to set best practice standards and provide a coordinated response to environmental challenges. Encouraging and enabling the community towards action can be done through a mix of voluntary and mandatory mechanisms governed at local, state and federal levels. Through international joint initiatives such as the Carbon Disclosure Project, cities can set targets, benchmark, and measure and report on environmental performance.

Directions 2031 provides a long term planning framework released by the Western Australian Department of Planning. The framework aims to assist in preparing the state for future population growth and changes to urban form. A move towards more transit oriented development, as advocated in the State Government's *Capital City Planning Framework (2013)* and the City of Perth's Urban Design Framework, can help to sustainably cope with increasing density and manage air quality.

These planning and design frameworks also guide the preservation of the natural environment. The City of Perth sits within a global biodiversity hotspot where our unique environment faces a multitude of threats from human activity. There are almost 360,000 hectares of reserved parks and forested areas across the region. The City of Perth is fortunate to sit along the Swan River and have close proximity to the biodiversity offered at Kings Park and Heirrison Island. It is important that the City of Perth plays its role in regional efforts to prevent water, land, noise, and light pollution and care for its urban ecosystems.

The City of Perth Environment Policy (CP 8.0) sets the environmental position of the City of Perth and its desire to act as a leader in urban environmental sustainability.

The environment is integral to community health and wellbeing. The strategic objectives will guide the City and community to place greater value on the environment within the city.

## City of Perth Operational Target 2030

Reach 50,000 community members per year to raise awareness of environmental sustainability by 2030[3]

## Community Targets 2030

30% of net lettable area of existing office space participates in environmental programs, such as CitySwitch Green Office and Water Wise Office by 2030[5]

# Aspiration

The City of Perth and the community has an appreciation for the environment and are actively improving performance. Development in the city is driven by environmentally sustainable design and the City of Perth's and the community's environmental initiatives are enhanced through local, national, and international collaboration.


# Measures

The City of Perth can measure progress towards this aspiration through regular reporting on environmental performance including surveyed understanding of environmental issues, vegetation/ tree canopy, biodiversity, building sustainability ratings, and water and air quality.

# Environmental Sustainability and Health

## Objective 1:

### Be a leader in environmental sustainability

- Monitor, understand and report environmental performance, aiming for continual improvement in balance with the City's social and economic priorities
- Increase understanding of environmental sustainability within the City of Perth and the community to build capacity to improve environmental performance
- Integrate the principles of environmental sustainability into City of Perth decision-making processes and activities

## Objective 2:

### Be a driver of environmentally sustainable design and development

- Review and improve design guidelines, approval processes, incentives and compliance mechanisms to facilitate environmentally sustainable design and improve environmental performance of new buildings
- Collaborate with stakeholders to improve environmental performance and adopt environmental best practice in current and new development
- Integrate the principles of environmentally sustainable design and value the environment into the City of Perth's public realm and asset design and development, ensuring these principles are embraced by third parties

## Objective 3:

### Air, land, biodiversity, and water quality is protected and natural spaces are enhanced

- Enhance the environmental quality, biodiversity, and connectivity of the City's ecosystems and natural spaces
- Strengthen community connection and increase community access to the natural environment
- Collaborate with stakeholders to improve the quality of inflows into the Swan River and manage and maintain groundwater quality and riparian areas
- Investigate and implement strategies to measure and manage air, noise, and light pollution across the city in collaboration with stakeholders

# The case for action

The Intergovernmental Panel on Climate Change (IPCC) predicts that changes to the climate are significant and have the potential to greatly impact life and society. *Climate Change in Australia* (CSIRO, 2015) projects more hot days and warm spells for Perth as average temperatures continue to increase in all seasons coupled with a continuing trend of decreasing winter rainfall. Mean sea level will continue to rise and the number of extreme sea-level events will also increase, with a harsher fire-weather climate also projected in the future.

Adapting to climate change is a shared responsibility. Governments at all levels, businesses and households have complementary roles to play. Countries, states and cities around the world are adopting plans of action to prepare for the future based on their own local conditions.

The State Government's *Capital City Planning Framework* (2013) identifies that climate change impacts have the potential to cause serious economic, social, and environmental costs. However these costs can be avoided and minimised through well-designed early adaptation that builds robustness against climate risks. The Western Australian Government's *Adapting to our changing climate* (2012) focuses on climate change responses appropriate for Western Australia and outlines key policies the State Government will adopt to tackle this important issue.

Climate change poses a number of threats to community wellbeing, natural resources, and our built environment. Threats to Perth are :

- Greater influence of urban heat on community and assets
- Increase in hot days over 35°C from 28 days to 67 days by 2070
- Increased disruption from climate related events, such as heatwaves and flooding
- Decrease in mean annual rain fall and water runoff

Achieving a climate responsive city is about developing a city robust and resilient to future changes. Preserving natural and man-made assets can reduce physical vulnerability of city systems ahead of these changes, and ensure infrastructure is prepared to withstand climatic events. This includes the identification of risks and development and implementation of responses to increases in temperature, changes in air quality reduced rainfall, sea level rise, flooding, and bushfires.

## City of Perth Operational Targets 2030

All City of Perth Asset Management Plans incorporate climate response considerations by 2030.

## Community Targets 2030

The city scores 50% or above in disaster resilience assessed by the Unitied Nations Office for Disaster Risk Reduction by 2030.

## Aspiration

Climate resilience is understood and prioritised in the City of Perth. As a whole, the City has climate responsive built form, healthy natural spaces, and a safe and thriving community.

## Measures

The City of Perth can measure progress towards this aspiration through community awareness about climate change impacts on the city and their lives, and through completing international standardised reporting on disaster resilience through the Disaster Resilience Scorecard for Cities.

## What is the UN Disaster Resilience Scorecard For Cities?

*The scorecard* provides a set of self-assessments to enable cities around the world to understand how resilient they are to natural disasters. It consists of 85 disaster resilience evaluation criteria to enable cities to establish a baseline measurement of their current level of disaster resilience, to identify priorities for investment and action, and to track their progress in improving their disaster resilience over time. The Scorecard was compiled by members of the United Nations International Strategy for Disaster Risk Reduction (UNISDR) Private Sector Advisory Group.

## Objective 4:

### Have an advanced understanding of climate change risks

- Investigate and improve organisational understanding of climate change risks for City of Perth assets including public spaces and environmental assets such as street trees
- Work with stakeholders to investigate, understand and communicate the risks from climate change to city infrastructure, buildings, and community wellbeing.
- Understand that climate change will influence a multitude of environmental, social and economical considerations

## Objective 5:

### Be prepared for, and ready to respond to climate change risks

- Address risks to City assets and operations from natural hazards and climate change to improve performance and resilience
- Work with stakeholders to prepare for and positively adapt to climate change risks through creation of natural spaces, facilitating climate responsive built form, and risk mitigation strategies
- Work with stakeholders for a regional approach to climate change adaptation
- Address risks to community and assets from seasonal hazards heightened by climate change

# The case for action

Generating energy from fossil fuels produces greenhouse gas emissions which are resulting in changes to the climate. Transitioning towards energy resilience is a way to future proof against climate change through reducing energy use, diversifying energy sources and using renewable energy.

In December 2015, 195 nations including Australia signed the Paris Climate Change Agreement and adopted the first-ever universal, legally binding global climate deal. This agreement will enter into force in 2020 and once it is ratified elements will need to be reflected within Australian domestic climate change policy.

Although sub national authorities have no direct obligations under the Paris Agreement; local and sub national governments were recognised as essential actors in fast tracking transformative action in the urban world. The Paris Agreement also reflected the success of local government advocacy, enshrining local and sub national actors within an international climate agreement for the first time.

In signing the Kyoto Protocol, an international treaty on emissions reduction, the Australian Government made a commitment to monitor and reduce greenhouse gas emissions. This commitment is reflected in State Government planning policies such as the *Capital City Planning Framework 2013* which sets a vision for reducing the city's resource footprint, including, greenhouse gas emissions.

Cities are a key opportunity for these reductions due to their dense built environment, and that buildings are responsible for around 40% of global energy use and one third of total emissions with an annual growth rate of around 2.5%[12]. The IPCC has found that emissions from commercial and residential activity can be cost-effectively reduced by almost 30%, bringing financial and environmental savings.

The City of Perth analysed energy use across the City to identify opportunities that could deliver energy resilience for the future and help to achieve more than 30% reduction in business as usual (BAU) greenhouse gas emissions across the City by 2030. This study found buildings are the largest contributor to emissions (65%) and transport the second largest at 29%. Energy efficiency, renewable and low carbon energy generation and sustainable transport strategies can lead us towards an energy resilient city. Figure 1 on page 24 summarises the findings of this study.

The City of Perth has reflected its commitment to act on reducing carbon emissions by signing the World Energy Cities Partnership *Calgary Climate Change Accord*. As a member of the World Energy Cities Partnership, the City of Perth has recognised its unique position to support and lead on reducing greenhouse gas emissions.

Additionally, the City of Perth has become a signatory to both the Compact of Mayors and Western Australian Local Government Association Declaration on Climate Change, which aligns with the City's current leadership and commitment to mitigation and adaptation activities that assist in responding to climate change.

## City of Perth Operational Targets 2030

Reduce City of Perth operational emissions by 30% (BAU baseline by 2030)[7]

Source 25% of the City's operational energy from renewable or low carbon sources by 2030[7]

## Community Targets 2030

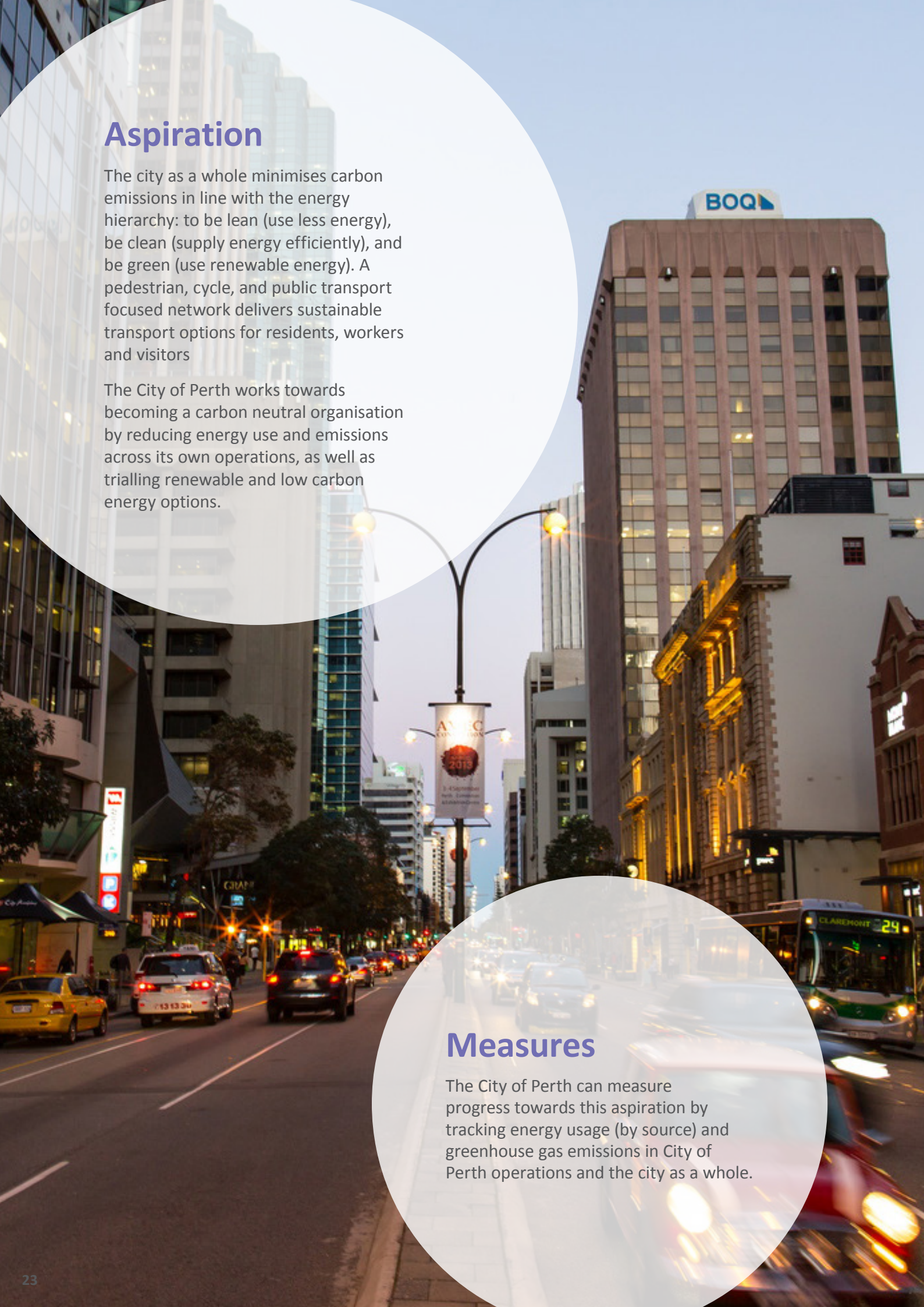
Work with the community to achieve 30% reduction in city-wide greenhouse gas emissions (BAU baseline) by 2030[7]

Work with the community to achieve 20% of citywide energy use from renewable or low carbon sources by 2030[7]

# Aspiration

The city as a whole minimises carbon emissions in line with the energy hierarchy: to be lean (use less energy), be clean (supply energy efficiently), and be green (use renewable energy). A pedestrian, cycle, and public transport focused network delivers sustainable transport options for residents, workers and visitors

The City of Perth works towards becoming a carbon neutral organisation by reducing energy use and emissions across its own operations, as well as trialling renewable and low carbon energy options.




# Measures

The City of Perth can measure progress towards this aspiration by tracking energy usage (by source) and greenhouse gas emissions in City of Perth operations and the city as a whole.

# Energy Resilience

## Objective 6:

### Improved energy efficiency with reduced greenhouse gas emissions

- Minimise energy use and emissions from City operations, fleet, and public spaces
- Support retrofitting and improved energy performance initiatives in existing buildings
- Implement transport initiatives that reduce energy use and emissions, and improve environmental performance
- Work with community to increase the use of public transport and facilitate walking and cycling within the city

## Objective 7:

### High emissions energy sources replaced with low emissions and renewable energy sources

- Generate renewable energy from City of Perth properties
- Promote and support renewable and low carbon energy sources within new and existing developments, precincts, and buildings in the city
- Explore and trial local and precinct scale energy generation and retail opportunities

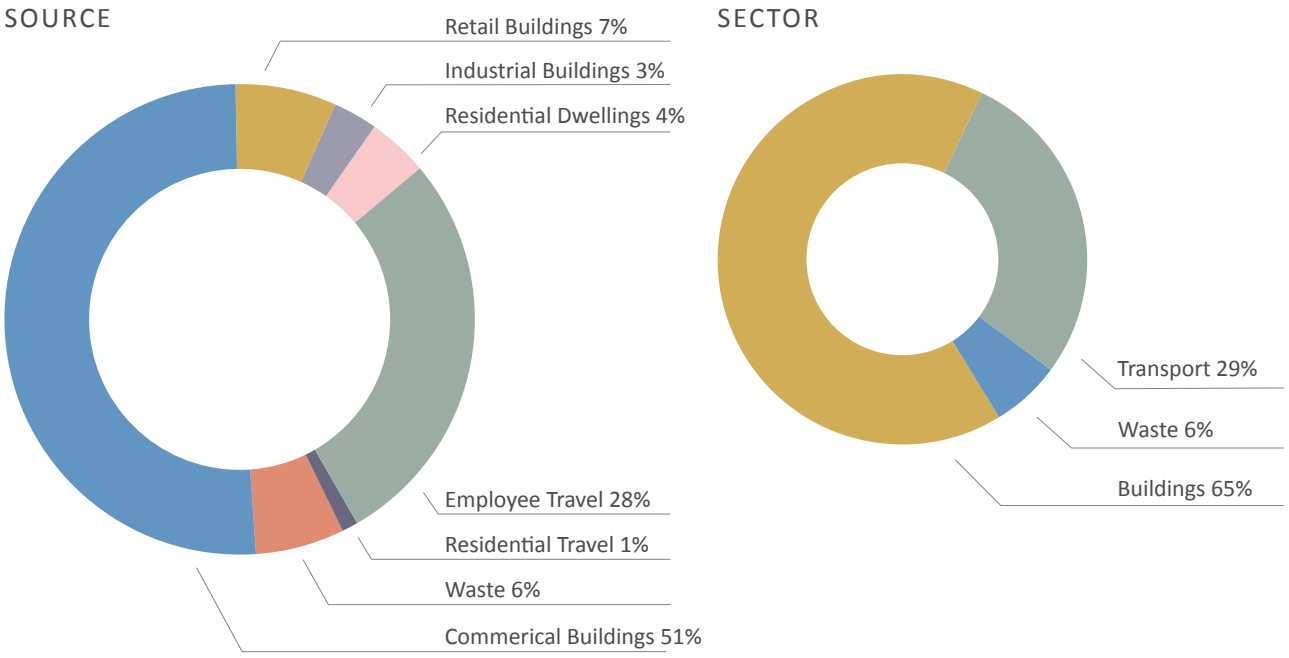



Figure 1. 2006 Greenhouse gas emissions by source and sector

# The case for action

Urban growth puts pressure on supply of natural resources. Cities require a large input of freshwater to supply the community, and in turn need adequate capture, drainage and treatment of water. OECD predicts that urban water demand will increase by 55% by 2050[13]. Australia is the driest continent on Earth and it is important systems and infrastructure are in place and maintained to cope with future growth demand.

Perth's declining water availability from both surface and groundwater sources is well recognised. The Water Corporation predict a 40% decline in rainfall by 2060, and with the need for an additional 365 Gigalitres of reticulated drinking water for Perth and surrounding towns. Despite a 20% reduction in water use since 2001, metropolitan Perth still remains one of the highest water using cities in Australia.

Water supplies can be supported through the reuse of water. Sources of water for reuse include stormwater, greywater, blackwater (sewerage) and industrial (operational) water such as process water or water from cooling towers.

In order to transition to a water sensitive city, the City's operations, businesses and the community need to optimise their use of water, reduce consumption where possible and increase the use of non-drinking water sources for appropriate uses.

The City has demonstrated its commitment to water conservation and efficiency through its achievement, the final milestone, in the ICLEI Water Campaign Program back in 2010.

The City of Perth is a founding partner in the Waterwise office Program aimed at reducing water use in commercial properties in the CBD. Figures 2-4 on page 31 show water use in residential and commercial buildings in the city.

## City of Perth Operational Target 2030

Reduce scheme water use in City of Perth operations by 25%[8] and increase use of alternative water sources by 2030.

## Community Targets 2030

Work with the community to achieve residential water use below 78kL per person per year by 2030[9]

## Aspiration

Perth highly values its water resources. The City of Perth leads by example in conserving and efficiently using water, replacing scheme water with groundwater or recycled water to optimise fit-for-purpose use of water wherever possible. The City invests in water saving technologies and practices, actively managing irrigation and other operational systems to respond to climatic and soil conditions.

## Measures

The City of Perth can measure progress towards this aspiration by tracking the annual volumes of scheme water, groundwater and recycled water used by Council facilities and operations, and tracking community water use.

# Water Sensitive City

## Objective 8:

### Improved efficiency in water use and quality of water runoff

- Minimise use of ground and scheme water from City operations and public spaces
- Support retrofitting and improved water performance initiatives in existing buildings
- Implement and promote water sensitive urban design
- Monitor and improve water quality discharging into the river and wetlands

## Objective 9:

### Maximum retention, re-use, and fit-for-purpose use of water

- Increase water reuse and use of non-scheme water sources in City properties and operations including for irrigation
- Promote and support increased retention, reuse and use of non-scheme water sources within new and existing developments, precincts, and buildings in the city

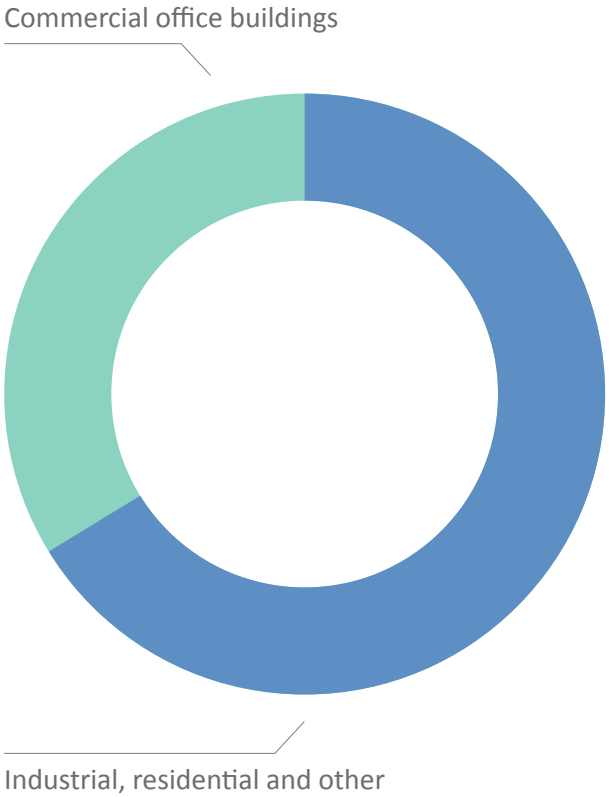



Figure 2. Water use of the City of Perth local government area, 2010/11.

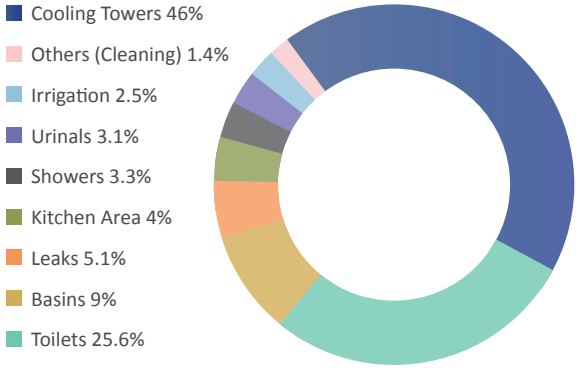



Figure 3. Water balance of water cooled commercial office buildings

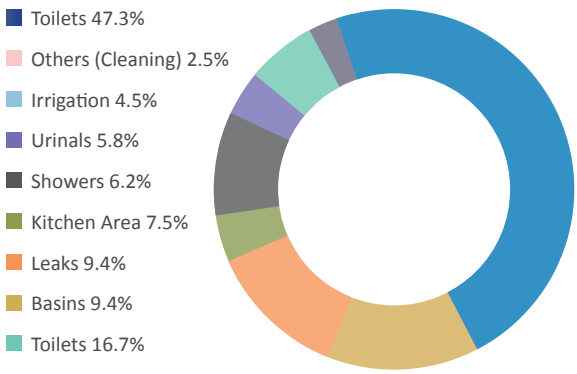



Figure 4. Water balance of air cooled commercial office buildings

# The case for action

Australians generate around 43.8 million tonnes of waste per year, and Western Australia has the highest per capita waste generation[14]. Waste generation and management have a number of environmental impacts, these can include contamination of land and water, methane generation from landfills and the energy and resources required to develop the infrastructure and systems required for collection, processing or disposal.

The *Western Australian Waste Strategy: Creating the right environment* (2012) is the blueprint for the way in which waste issues are managed in WA. The Strategy employs best practice and continuous improvement, along with target setting, as primary approaches to drive this change through strategic objectives relating to knowledge, infrastructure and incentives.

There are three main sources of waste: municipal, commercial and industrial (C&I) and construction and demolition (C&D). Each sector provides opportunities for diversion from landfill and reuse. City of Perth *Waste Strategy 2014-2024+* assists in the improvement of waste management, thereby reducing the potential for waste to impact on the environment across the City.

*"The Western Australian Waste Strategy 'Creating the Right Environment' calls for best practice and continual improvement. It sets targets of diverting 50% of municipal solid waste from landfill by 2015, and 65% by 2020. For the commercial and industrial sector, targets are 55% landfill diversion by 2015 and 70% by 2020. The construction and demolition waste targets are 60% diversion by 2014 and 75% by 2020. The actions in this strategy will assist in delivering these targets."*

- City of Perth Waste Strategy 2014-2024+

Figures 5 and 6 on Page 35 show the waste composition of commercial and residential waste in the city.

## City of Perth Operational Targets & Community Targets 2030

Achieve 65% recovery of municipal solid waste, 70% recovery of commercial and industrial waste, and 75% recover of construction and demolition waste by 2020 and develop new targets set for 2030[10]


## Aspiration

The City of Perth leads the community in the overall reduction of waste per capita and in significantly increasing recycling and recovery of resources towards the targets set in the State Government Waste Strategy.

## Measures

The City of Perth can measure progress towards this aspiration by tracking the weight of municipal and commercial waste generated, collected and recycled per worker, resident, and visitor.

# Objective 10:

## Waste is avoided and resource recovery is maximised by encouraging reuse, recycling and recovery of waste

- Build the capacity of the community to practise waste minimisation and recycling
- Reduce waste volumes and increase resource recovery through improved residential and commercial waste, recycling and green waste services
- Current and new development practice waste minimisation and maximise resource recovery through reuse, recycling and recovery

# Objective 11:

## The environmental impacts of waste generated in the city are minimised

- Ensure City of Perth procurement and purchasing systems minimise environmental impacts and prioritise the use of recycled products and sustainable materials in procurement
- Apply relevant processes to ensure that local businesses and the community manage their waste in an environmentally responsible manner
- Manage City of Perth waste operations to reduce the amount of waste generated to ensure waste does not escape into the natural or urban environmental systems

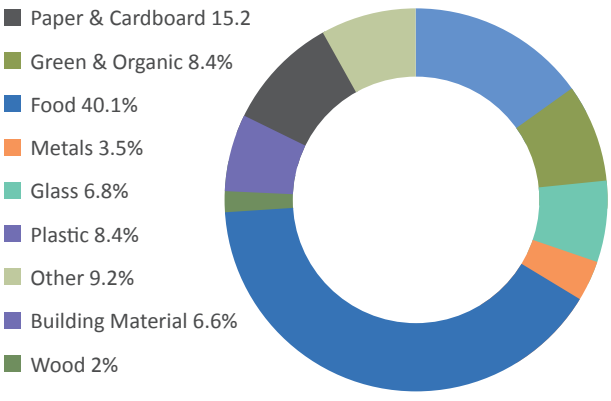



Figure 5. The City of Perth average household general waste composition

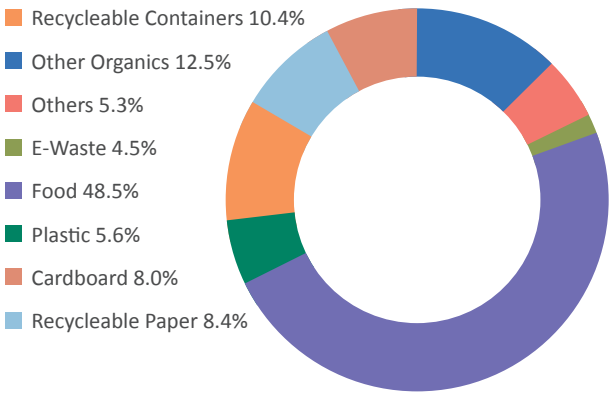



Figure 6. Commercial General Waste Composition

# Integration and Implementation

**The City of Perth's Environment Strategy works in conjunction with a suite of strategic and operational documents that guide the integration of environmental consideration with social advancement and economic prosperity within all city activities.**

The City of Perth adopts an Integrated Planning Approach. The City of Perth's Integrated Planning and Reporting Framework (IPRF) is outlined in the diagram below, showing the interaction between the plans and the influence of the informing strategies. The intent of the IPRF is to ensure the priorities and services provided by the City of Perth are aligned with our community's needs and aspirations.

The Strategic Community Plan, Vision 2029+, is the City's long term strategic direction that expresses the community's vision for the future together with the strategies to address strategic community outcomes.

This drives the City of Perth's Corporate Business Plan, which is the detailed implementation plan for services, key projects and capital investments over the next four years. The actions to activate the City's Informing Strategies are key components of the City's Corporate Business Plan.

The Environment Strategy is one of these Informing Strategies, identifying and shaping environmental priorities, projects, programs and service delivery to meet the outcomes of the Strategic Community Plan (Figure 7). The City's key strategic enablers show how we are equipped to deliver on the commitments made in the Corporate Business Plan.


Figure 7. The City of Perth Intergrated Planning and Reporting Framework

These strategic enablers are:

- **Long Term Financial Plan**
  This plan allows for appropriate decision making with emphasis on financial sustainability.
- **Workforce Plan**
  This plan identifies the workforce requirements needed for current and future operations.
- **Corporate Asset Management Plan**
  This plan provides guidance on service provision to inform the City's financial and key service needs.

The City's Annual Budget is based on the projected costing of year one of the Corporate Business Plan, with opportunity to review during the mid-year budget review processes.

The aspirations, objectives, and strategies for delivery detailed in this Environment Strategy will guide a four year implementation plan in which the City's commitments are prioritised, resources allocated, and partnerships and responsibilities identified. The implementation plan will be reviewed annually in line with the City's Annual Budget.

The Environment Strategy will be reviewed in alignment with developments in the Strategic Community Plan. It will be reviewed every two years, alternating between a minor review (updating as needed) and a major review (seeking community input and retesting the aspriations).

Figure 8 below outlines the interface of the Environment Strategy with other City of Perth strategic and operational documents with special relevance for the environment.

## Strategic direction


Figure 8. Interface of the draft City of Perth Environment Strategy

## Key Operational Documents

- City of Perth Environment Policy CP8.0
- Towards an Energy Resilient City Policy CP8.5
- Influencing policies:
  - Asset Management Policy CP9.12
  - Purchasing Policy CP9.7
  - Disposal of Property Policy CP9.14
  - Contributed Asset Policy CP9.15

## Related Plans and Strategies:

- Urban Design Framework (2010)
- Energy resilient City Strategic Directions Paper (2014)
- Lighting Strategy (2014)
- Waste Strategy 2014-2024+
- Economic Development Strategy (2014)
- Urban Forest Plan (in development
- Integrated Transport Plan (in development)
- City Planning Strategy (in development)

[1] United Nations (2011) *Hot Cities: Battle Ground for Climate Change*. From http://mirror.unhabitat.org/downloads/docs/E_Hot_Cities.pdf accessed on 5 June 2015.

[2] Forecast ID (2015). *City of Perth population forecasts*. From http://forecast.id.com.au/perth accessed 5 June 2015

[3] In 2014 the City of Perth reached at least 2000 community members to raise awareness about environmental sustainability

[4] In 2014 the City of Perth did not require an environmental sustainability statement on new development applications

[5] In 2014 14% of NLA participated in the CitySwitch Green Office Program and 4% in the Waterwise Office Program

[6] Most cities achieve less than 50% of the aspirational definition of disaster resilience

[7] These targets were informed by the City's Energy Resilient City Strategic Directions Paper and Study. Emissions in 2013/14 the City of Perth's operational emissions from buildings was 10,479 tonnes $CO^2$-e. Citywide business as usual emissions were estimated to reach 1,196,000 tonnes $CO^2$-e by 2031.

[8] This target is informed by the WA Water Corporation aim to reduce per person scheme water use by 15% by 2030. In 2014 City of Perth's scheme water use was just over 740,000 kL

[9] This target is informed by the WA Water Corporation aim to lead households towards reducing per person water use to 85 kL per year by 2030.

[10] This target is informed by the WA Waste Authority targets outlined in the *Western Australian Waste Strategy: Creating the Right Environment*

[11] United Nations Office for Disaster Risk Reduction (2014) *Disaster Resilience Scorecard for Cities*. From http://www.unisdr.org/2014/campaign-cities/Resilience%20Scorecard%20V1.5.pdf accessed on 5 June 2015.

[12] Precentage UNEP 2009 Buildings and Climate Change, Summary for decision makers.

[13] http://www.oecd.org/environment/resources/Policy-Perspectives-Managing-Water-For-Future-Cities.pdf

[14] (http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4613.0Chapter40Jan+2010).

A pdf version of this document can be viewed and is available for download from the City of Perth website (www.cityofperth.wa.gov.au). The document can also be made available in alternate formats by calling +618 9461 3333 or emailing info.city@cityofperth.wa.gov.au.


CITY *of* PERTH

Council House, 27 St Georges Terrace, Perth
Visit us @ www.perth.wa.gov.au