



# Green Environmental Sustainability Progress Report

**July 2020 to December 2020**

A detailed bi-annual overview of the City of Sydney's progress against our environmental sustainability targets for both the Local Government Area (LGA) and the City's own operations.

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Cover Image: Sapphire Windfarm, NSW

## Since 2008, Sustainable Sydney 2030 has articulated the collective vision of residents and visitors, workers and businesses. The City then committed to ambitious targets and strong actions across six key environmental focus areas, set out in the Environmental Action 2016-2021 Strategy and Action Plan

The Green Report outlines the progress of our environmental program. The Green Report is the City's state of the environment report and fulfils the reporting requirements of the NSW Local Government Act 1993 No. 30 Section 428A and the Integrated Planning and Reporting guidelines.

The City's Environment Policy<sup>1</sup> applies to all City of Sydney's operations, assets, activities and staff.

An Environmental Management System (EMS) supports the City's commitment to sustainable asset management and operations.

### Message from the CEO

The United Nations Environment Program (UNEP) Emissions Gap Report 2020<sup>2</sup> outlines that the COVID-19 pandemic offers only a short-term reduction in global emissions and will not contribute significantly to emissions reduction by 2030 unless countries pursue an economic recovery that incorporates strong decarbonisation.

The United Nations calls on governments to use their COVID-19 recovery as an opportunity to create more sustainable, resilient and inclusive societies, including commitment to net-zero goals before 2050.

From July 2020, the City's operations have been 100 per cent powered by renewables, using electricity generated from wind and solar farms in regional NSW. This is a significant step for the City's operations to achieve its 2030 carbon reduction target.

The pandemic has presented challenges for City operations with heightened demand for cleansing and waste services due to increased generation of residential waste. There has been a decrease in electricity and water use in City operations, primarily due to reduced services in City operational areas like community and aquatic centres.

Rainfall events increased along the east coast of Australia and resulted in reduced demand on potable water use for operational areas, particularly parks. In 2020, Australia recorded the fourth-hottest year on record. This reinforces UNEP's message that short-term reduction in emissions due to COVID-19 should not cause the City, or any level of government, to lose focus on significant and increasing risk that climate change presents.

This Green Report provides an update for the most recent period, July to December 2020, on our programs, initiatives, achievements and latest climate science.

I encourage everyone to read and distribute this report widely to share ideas and inspire environmental leadership everywhere.



Monica Barone, Chief Executive Officer

<sup>1</sup> City of Sydney Environment Policy can be seen in Appendix 2.

<sup>2</sup> [United Nations Environment Programme Emission Gap Report 2020](#)

# 1. Our environmental targets

**Sustainable Sydney 2030 outlines the aspiration of our community and businesses for our local government area to be an environmental leader on a global scale.**

The following are environmental targets outlined in the Environmental Action 2016 - 2021 Strategy and Action Plan.

## City of Sydney Operations



### Low-carbon city

- **44** per cent reduction in greenhouse gas emissions by end June 2021 based on 2006 levels
- **70** per cent reduction in emissions by 2030 based on 2006 levels
- **50** per cent of electricity from renewable sources by end June 2021



### Water sensitive city

- Annual potable water use of **180** L/m<sup>2</sup> of irrigated open space by end June 2021
- **Zero** increase in potable water use by end June 2021 from 2006 baseline, achieved through water efficiency and recycled water
- **Zero** increase in potable water use by 2030 from 2006 baseline, achieved through water efficiency and recycled water



### Zero waste city

- **70** per cent resource recovery of waste from City-managed properties by end June 2021
- **80** per cent resource recovery of construction and demolition waste generated and managed by City operations by end June 2021
- **50** per cent resource recovery of waste from City parks, streets and public places by end June 2021



### Active and connected city

- **Zero** increase in fleet emissions from 2014 baseline by end June 2021



### Green and cool city

- The average total canopy cover is increased by **50** per cent by 2030 (from 15 to 23 per cent), and increased by **75** per cent by 2050 (to 27 per cent), from a 2008 baseline
- Plant **700** new street trees each year until 2021
- Plant **50,000** new trees and shrubs in City parks and street gardens each year until 2021
- Tree species diversity will not consist of more than **40** per cent for any particular plant family, **30** per cent for any genus or **10** per cent for any one species by 2021
- Habitat sites in the city are protected and the area of bush restoration sites is increased by **100** per cent by 2023 from a 2012 baseline of 4.2 hectares
- Indigenous fauna species diversity, abundance and distribution is **maintained or increased** by 2023 based on a 2012 baseline
- A progressive **increase** in the number of habitat features for priority fauna species is established along potential habitat linkages by 2023



## Local Government Area

Since the targets for Sustainable Sydney 2030 were set, the City of Sydney local government area (LGA) has undergone significant growth and is expected to continue to grow.

Regardless of future growth, the 2030 targets set by the City of Sydney are absolute.



### Low-carbon city

- **70** per cent reduction in greenhouse gas emissions by 2030 based on 2006 levels
- Net **zero** emissions by 2050<sup>3</sup>

- **50** per cent of electricity demand met by renewable sources by 2030



### Water sensitive city

- **Zero** increase in potable water use by 2030 from 2006 baseline, achieved through water efficiency and recycled water
- **50** per cent reduction in the annual solid pollution load discharged to waterways via stormwater by 2030
- **15** per cent reduction in annual nutrient load discharged to waterways via stormwater by 2030



### Zero waste city

- **70** per cent recycling and recovery of residential waste from the local government area by end June 2021
- **70** per cent recycling and recovery of commercial and industrial waste from the local government area by end June 2021
- **80** per cent recycling and recovery of construction and demolition waste from the city by end June 2021
- **15** per cent reduction in per capita municipal solid waste generation by 2030 compared to 2015



### Active and connected city

- **33** per cent of trips to work during the AM peak undertaken by walking by 2030, by city residents
- **10** per cent of total trips made in the city are undertaken by bicycle by 2030
- **80** per cent of trips to work during the AM peak are undertaken by public transport by 2030, by city residents and those travelling to Central Sydney from elsewhere
- **30** per cent of city residents who drive (with an unrestricted drivers licence) are members of a car sharing scheme by 2030



### Green and cool city

- The average total canopy cover is increased by **50** per cent by 2030 (from 15 to 23 per cent), and increased by **75** per cent by 2050 (to 27 per cent), from a 2008 baseline

<sup>3</sup> Accelerated target of net zero by 2040 proposed February 2020 by the Lord Mayor Clover Moore will form part of the City's new long-term strategic plan, Sustainable Sydney 2050



## 2. Low carbon city



Bomen Solar Farm near Wagga Wagga, NSW

### **What our cities do to address climate change sets the agenda everywhere for communities and governments to promote innovation and solutions to achieve a net zero future.**

In *Sustainable Sydney 2030*, we set a 2030 target to reduce emissions both across the city and in our operations by 70 per cent below 2006 levels. In our Environmental Action 2016-2021 Strategy and Action Plan, we have strengthened our renewable energy targets for both our own operations and in our local government area and extended our emissions target to net zero emissions by 2050.

In light of the climate emergency, we realise that even more urgent action is required, and in early 2020 proposed a target for the local government area of net zero emissions by 2040 to be included in the City's new long-term strategic plan, *Sustainable Sydney 2050*.

The City's 'Asset Environmental Budget' (AEB) translates operational carbon emissions targets into a detailed plan and is published in the [Resourcing Strategy](#) to promote transparency in monitoring of our emissions performance.

### **City of Sydney goes 100 per cent renewable**

The City of Sydney has commenced using 100 per cent renewables to meet its grid electricity needs, from July 2020. The renewables commitment will see the City's operations cut emissions by around 18,000 tonnes a year – equivalent to the power consumption of around 4,000 City households. The City's 2019/20 emissions were 31 per cent below our 2006 baseline. Our 2020/21 emissions are expected to be around 66 per cent below 2006 levels as a result of using 100 per cent renewable electricity (see Chart 1).

The City purchases renewable power from Sapphire Wind Farm in the New England area, Bomen Solar Farm near Wagga Wagga and the community owned Repower Shoalhaven solar farm.

Using 100 per cent renewable electricity is essential to achieve our commitment to reduce organisational emissions by 70 per cent.

More broadly, the shift to renewable energy in the electricity sector is happening much faster than anyone imagined as the cost of new renewable energy continues to fall. The NSW Government Electricity Infrastructure Investment Act 2020 now also provides significant support and investment signals to assist with the renewable energy transition. The City estimates it may save up to \$500,000 a year (compared to previous electricity bills) by sourcing its grid electricity from renewable energy.



## City of Sydney is a founding member of BRC-A



Business Renewables Centre Australia (BRC-A) provides a membership platform to simplify, streamline and

accelerate corporate purchasing of large-scale wind and solar energy and storage. The City of Sydney is one of the founding members of this important organisation, along with over 60 other organisations, including councils, project developers and some of Australia's best known and biggest companies.

Working with its partners, the BRC-A will drive best practice principles for negotiating and delivering, and eventually standardising corporate renewable power purchase agreements (PPAs) that reduce costs for purchasers, deliver fair returns for developers and financiers, and contribute to local and regional economies.

"It just goes to show that switching to renewable energy is a sound business decision, and one that is being considered in boardrooms and planning meetings all around Australia," said Monica Richter, Project Director for BRC-A.

## Net zero and 100 per cent renewable energy commitments



The City has set targets in line with what is necessary at the global scale to avoid the worst impacts of climate change. We all need to contribute to this outcome and the large and increasing number of organisations

making these commitments is testament to the new opportunities from a clean economy.

ClimateWorks Australia has identified that 25 per cent of Australia's largest banks are working towards setting emissions targets which are consistent with a net zero pathway for both their operations and their investment and lending activities and almost half of Australia's largest listed property companies have made commitments to reduce greenhouse gas emissions that closely align with the Paris Climate Agreement.

After only 1-year having an Australian presence, many prominent Australian companies - including all of the big-four banks - have signed up to the [RE100](#) program to use 100 per cent renewable energy, many by 2025 or sooner.

The City acknowledges leading organisations operating in our area who are using renewable energy and committing to net zero emissions targets. (Please let us know if your organisation is not shown here.)

Timeframe	Organisation	Commitment
Now	GPT	Signs Net Zero Carbon Buildings Commitment
	Bank Australia	100 per cent renewable
	Frasers Property Australia	First carbon neutral certified building. All base buildings certified by 2020
	Allens, ANZ, APN Outdoor, CBRE, Dexus, Frasers Property Australia, GPT, JCDcaux, NAB, Pangolin, PWC, Sydney Opera House, Westpac, WWF	Certified carbon neutral
	UNSW	100 per cent renewable
	City of Sydney	100 per cent renewable
	City of Melbourne, City of Adelaide	100 per cent renewable
2025	GPT	Wholesale Office Fund net zero by 2021
	ANZ, Atlassian, Macquarie Group, NAB, QBE, Westpac	100 per cent renewable by 2025
	Lendlease	Australian Prime Property Fund Commercial (APPFC) net zero by 2025 and Carbon Positive Barangaroo
2030	AMP Capital	Wholesale Office Fund net-zero property portfolio by 2030.
	Dexus	Net zero property portfolio by 2030
	Frasers Property	Company-wide carbon zero target by 2028
	GPT	Entire property portfolio to be zero carbon by 2030
	Mirvac	Net zero positive by 2030 and 100 per cent renewable energy buildings
2040	Commonwealth Bank	100 per cent renewable by 2030
	Investa	Net zero organisation by 2040 with science-based targets
	JLL	Reduce emissions from its own offices 80 per cent by 2040



### Advocacy

The City has numerous successful partnerships and programs to deliver on our targets, and we are committed to leading by example in our own operations. However, the Australian government needs set a net zero target in line with Australia’s commitment to the Paris Agreement to keep global heating below 1.5 degrees, and to develop programs and support for communities affected in the transition. All state and territory governments in Australia have established zero targets.

During the past six months the City prepared a submission in support of the Climate Change Bill 2020, calling for a net zero target for Australia before 2050 and guidance around the accounting and fair apportionment of voluntary actions. We continue to work with a range of strategic partners including the Green Building Council of Australia and the Property Council of Australia to demonstrate the benefits of expanding the Commercial Buildings Disclosure scheme. Shared industry recommendations include reducing the threshold of disclosing energy performance; and expanding the scope of disclosure to include office tenancies and other building sectors.

## City of Sydney Operations

### Carbon neutral program

The City has been measuring, reducing and offsetting all of its operational greenhouse gas emissions since 2006/07. In 2011, the City of Sydney became the first of any level of Government in Australia to be certified as Carbon Neutral under the Australian Government Climate Active program (previously called the National Carbon Offset Standard).

The City remains carbon neutral by continuing to implement emissions saving projects, developing a greenhouse gas emissions inventory with independent verification each year, and through the provision of accredited offsets equivalent to 100 per cent of the organisation’s emissions.

#### How we do it

##### Measure

We prepare a detailed emissions inventory each year and have it verified independently to ensure it is accurate.

##### Avoid and reduce

The City has been achieving energy and emissions savings in our buildings, street lighting, and fleet operations through energy efficiency upgrades, monitoring and management.

### Renewable energy

The City is rolling out solar PV to many sites and from July 2020 began purchasing 100 per cent renewable electricity. This will make a significant reduction in the City’s emissions as depicted in Chart 1 below.

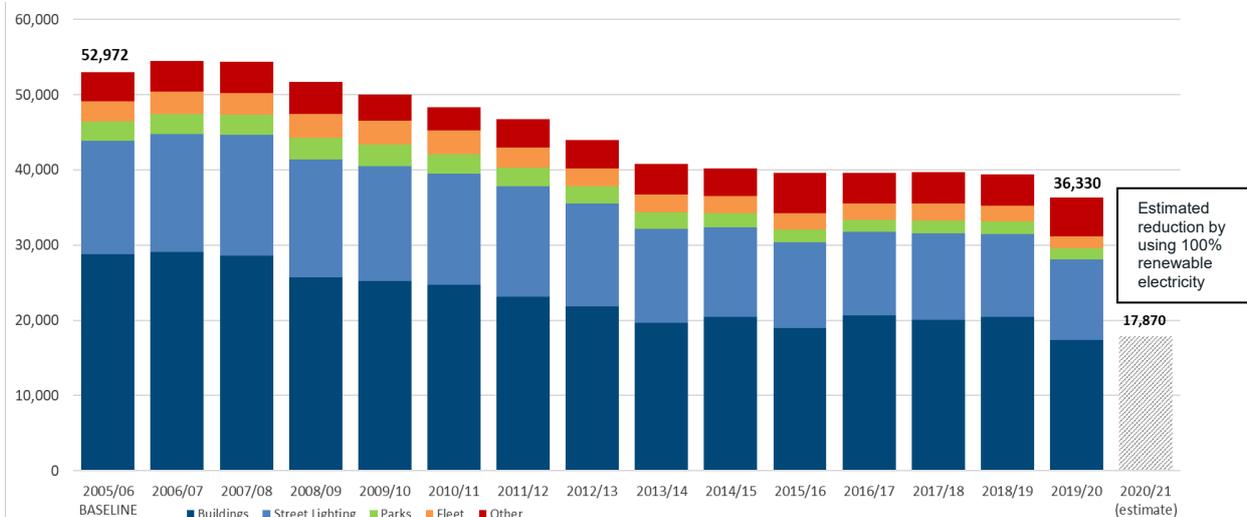
### Offset

The City reduces its carbon liability by avoiding and reducing emissions and using offsets for emissions that cannot be avoided. Each year the number of offsets has reduced as we continue to implement energy efficiency, renewable energy and fuel switching programs despite providing a greater level of service to our community. The City has also started to purchase higher quality offsets to support regional areas to develop projects that absorb carbon back out of the atmosphere. In 2020 offsets purchased supported forest regeneration in NSW. In 2021 we are purchasing a share of offsets from Indigenous savannah fire and land management in northern Australia.



### Relevant links - [Climate Active](#)

Chart 1: City of Sydney operations greenhouse gas emissions



Note: Greenhouse gas emissions for 2019/20 are an estimate and are currently being verified



## Our operational targets



### Greenhouse gas emissions

- 44 per cent reduction in greenhouse gas emissions by end June 2021, based on 2006 levels
- 70 per cent reduction in greenhouse gas emissions by 2030 based on 2006 levels



### Renewable energy

- 50 per cent of electricity demand met by renewable sources by end June 2021

## How we are tracking

### Annual greenhouse gas emissions

Chart 1 tracks our annual operational emissions by category to the Sustainable Sydney 2030 target of a 70 per cent emission reduction against the 2005/06 baseline.

Greenhouse gas emissions from grid electricity for year 2019/20 are calculated using market-based accounting. For forthcoming years, the grid electricity emissions will be calculated in two ways, using location-based emissions factors for NSW from the National Greenhouse Factors, and market-based accounting using the national renewable power percentage. The difference between these methods is how the emissions avoided by renewable energy are apportioned to the end user. Using market-based accounting, the City can claim 100% emissions free electricity since it purchases 100% from renewable sources (by purchasing and surrendering LGCs - renewable energy certificates).

The reduced emissions in 2019/20 are due to ongoing improvements in energy efficiency, onsite solar, switch to market-based accounting and the impacts of COVID-19 to business operations.

### Energy consumption data

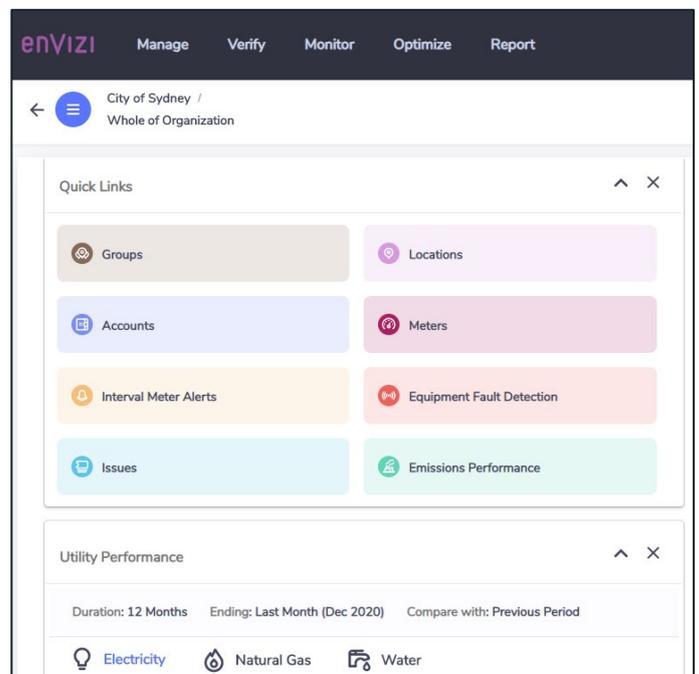
The table below shows energy consumption data for the organisation. Whilst the use of gas has been increasing, total energy has reduced slightly. Gas represents 15% of the City's emissions. The City's use of gas has increased since the base year primarily due to the installation of gas-fired co and trigeneration which produces fewer emissions than the electricity grid. However, emissions from the City's use of electricity have now been negated since it began to use 100% renewable electricity.

Organisation	Electricity (MWh)	Natural gas (GJ)	Total energy (GJ)
Baseline	42,427	21,894	174,631
Last Year (Jun 2019)	31,250	75,853	188,353
Most recent (Jun 2020)	28,594	84,811	187,749
Difference (baseline)	-13,833 (-33%)	+62,917 (+287%)	-13,118 (-8%)
Difference (previous year)	-2,265 (-9%)	+8,958 (+12%)	-604 (0%)

Procurement of a renewable gas supply will be one way to reduce the emissions from the City's existing gas using equipment until it reaches end of life and is able to be replaced with zero emissions alternatives.

The table below describes the sources for the annual operations greenhouse gas emissions data. For more information, see [Appendix 1: Data management plan](#).

Title	Source
Buildings, parks and street lighting	SMART (Sustainability Management and Reporting Tool)
Fleet	Fleet services fuel consumption data.
Other GHG	Various systems are used to collect emissions from other business activities such as contractor fuel, waste, flights, taxi journeys and refrigerants.



SMART: Sustainability Management and Reporting Tool



## Environmental Management System (EMS)

The City continues to improve its environmental management processes, in line with the ISO14001 standard and to ensure all City staff are aware of their environmental management responsibilities. During the period the following was undertaken:

- The City is in the process of developing a suite of procurement documentation that will embed social and sustainable procurement practices as the norm. The Procurement Returnable Schedules have been developed for prospective suppliers to assess and provide assurance and/or commitment to the City's legal and strategic objectives in relation to climate change, Local Buy Corporate Social Responsibilities, Chain of Responsibility, Modern Slavery Act, environmental impacts, recycling content and other elements to develop towards a Circular Economy. Other documents include a Supplier Code of Conduct for Suppliers
- Council owned land that have an associated Contaminated Land Environment Management Plan (CLEMP) were loaded on the Dial Before You Dig (DBYD) platform. Ongoing construction works projects on the associated land will now have direct access to the CLEMPs through the DBYD request system.
- The City has developed Sustainable Event Management Guidelines to support the delivery of major events and activations. The sustainable event guidelines are available [online](#)
- All staff sustainability training has been rolled out to over 620 staff from all areas of the City. The training is an interactive course focussing on the foundations of environmental sustainability and embedding outcomes into work processes and behaviour.

## SMART - Sustainability Management and Reporting Tool

SMART is the City's system to manage, monitor and report on utilities and other sustainability metrics for all assets owned or managed by City of Sydney. It provides City asset managers and staff with improved visibility on electricity, gas, water consumption, and waste generation.

The platform has been implemented and is now in an operational phase with a process set up for regular utility monitoring, reporting and continual improvement.

For the 2019/20, SMART identified utility variances within City's portfolio in tune of 321-megawatt hour of electricity, 19 terajoules of natural gas, 29 mega litres of water. The electricity and natural gas variances equate to 1,285 tonnes of greenhouse gas emissions.

## Building upgrades

The City has continued to improve on the energy efficiency of its property portfolio through building upgrades projects such as:

- LED lighting replacements across key City properties including within its aquatic centres and community centres which has not only achieved energy efficiency, but also improved light levels, occupant safety, maintenance requirements and aesthetics.
- Aquatic centre improvements including heat recovery from backwashing, new efficient heat pumps, UV modulation units and high efficiency motors for pumps.
- Heating, Ventilation and Air-Conditioning (HVAC) improvements through better controls and sensors, installation of variable speed drives (VSDs), refrigerant management and targeted maintenance.
- Proactive building management through Building Analytics (building management systems) where optimisation, fault detection and efficiency measures are identified and actioned.
- Regular site inspections by City staff helps identify assets or systems for potential improvement as well as safety concerns.

A key program for delivering energy and water efficiency within City buildings is the Major Properties Efficiency Project (MPEP). The program targets fourteen of the City's highest energy and water consuming sites and is a four-year program running from 2016/17 to 2020/21. The program is in its final year of delivery and to date has delivered approximately 1,597 tonnes of CO2 emissions savings through the above projects.

## Fleet

Fleet emissions continue to contribute approximately 7 per cent of the City's total emissions and continuing efforts at emissions reductions focus on low-risk and eco-driving strategies. Low risk driving practices almost always contribute to lower fuel or battery use and fewer emissions.

The City of Sydney has embraced electric vehicles, with 19 Nissan Leaf vehicles in its fleet, as well as 40 hybrid cars and 70 hybrid trucks. Earlier this year, the City also trialled its first electric garbage truck, with the hope that soon its garbage truck fleet can also be emissions free.



City of Sydney Electric Fleet Vehicle



## Project updates

### Solar PV and energy storage

To date, the City has installed 43 solar PV systems at multiple Council sites including office buildings, childcare centres, libraries, works depots, community centres, sporting fields and other venues.

Two solar PV systems, totalling up to 250 kW, were added on City buildings between July-December 2020.

The City also hosts the first major customer-based battery storage facility in Sydney. In collaboration with TransGrid, a 500-kWh lithium ion battery system has been installed at the new Alexandra Canal depot. The battery facility allows the depot to use more of the renewable energy generated via the massive on-site solar PV installation (if there were no batteries, more on-site generated energy would be exported to the grid).



*New Solar PV System at State Emergency Services Building, Erskineville*

### Ian Thorpe Aquatic Centre Heat pump replacement

The City has also completed the replacement of all aged and end of life heat pumps at the centre. The new, highly energy efficient heat pumps were installed in December 2020. The City is also looking to install a separate energy monitoring and power monitoring system for the heat pumps to track and manage the energy consumption and the overall performance of the new heat pumps.

### Cogeneration at Cook + Phillip Park Aquatic Centre

The City has signed a contract to install a new 250 kW cogeneration unit, a new chiller with heat pump, new heat pumps and new boiler at Cook and Phillip Park Aquatic Centre. The installation and commissioning of the heating and cooling equipment along with the cogeneration plant was completed in November 2020. The cogeneration system will go in routine operation by March 2021. The energy services upgrade project will deliver up to 700 tonnes CO<sub>2</sub>e a year of emissions reduction in total.



*New cogeneration unit at Ian Thorpe Aquatic Centre, Ultimo*

## Advocacy

### LED streetlights

The City aims to be the first council in Australia to replace all public lighting in its area with energy-efficient LEDs. Having completed the roll-out on City-owned lighting poles, the City is now partnering with Ausgrid (our local electricity utility) to upgrade utility-owned streetlights.

The Ausgrid upgrade involves replacement of conventional streetlight fittings (e.g. mercury vapour, compact fluorescent) with more energy-efficient LED streetlights.

Stage one of the program is now largely complete with 95 per cent of residential lights changed over at December 2020. Ausgrid is now accelerating stage two of the changeover of other streetlights (typically on major roads and in commercial areas).

Ausgrid recommenced works in June 2020 to replace Ausgrid owned conventional streetlights in the City with energy efficient LED's. In November, Ausgrid reported that 3,018 out of a total of 3,073 fittings were upgraded to LED on residential streets. Ausgrid are planning to upgrade the remainder of the fittings by March 2021.

When both stages are complete by mid-2022, emissions will have been reduced by about 3,400 tonnes a year (based on standard grid emission factors).

More information is on the [Ausgrid website](#)



## The local government area

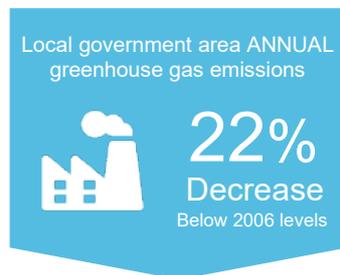
### Local government area targets

 <b>Greenhouse gas emissions</b>	- 70 per cent reduction in greenhouse gas emissions by 2030 based on 2006 levels - Net zero emissions by 2050
 <b>Renewable energy</b>	- 50 per cent of electricity demand met by renewable sources by 2030 <sup>4</sup>

### How the local government area is tracking

#### Annual greenhouse gas emissions

Chart 3 tracks actual emissions from the local government area. Note that as at 2018-19 emissions have reduced by 22 per cent since the 2006 baseline. Prior to the Covid-19 pandemic there have been 45 per cent more residents<sup>5</sup>, 22 per cent more jobs and more than 50 per cent growth in the economy. This clearly shows that energy and emissions have been decoupled from growth. The City reports emissions based on the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC)<sup>6</sup> – the international benchmark for reporting city emissions.

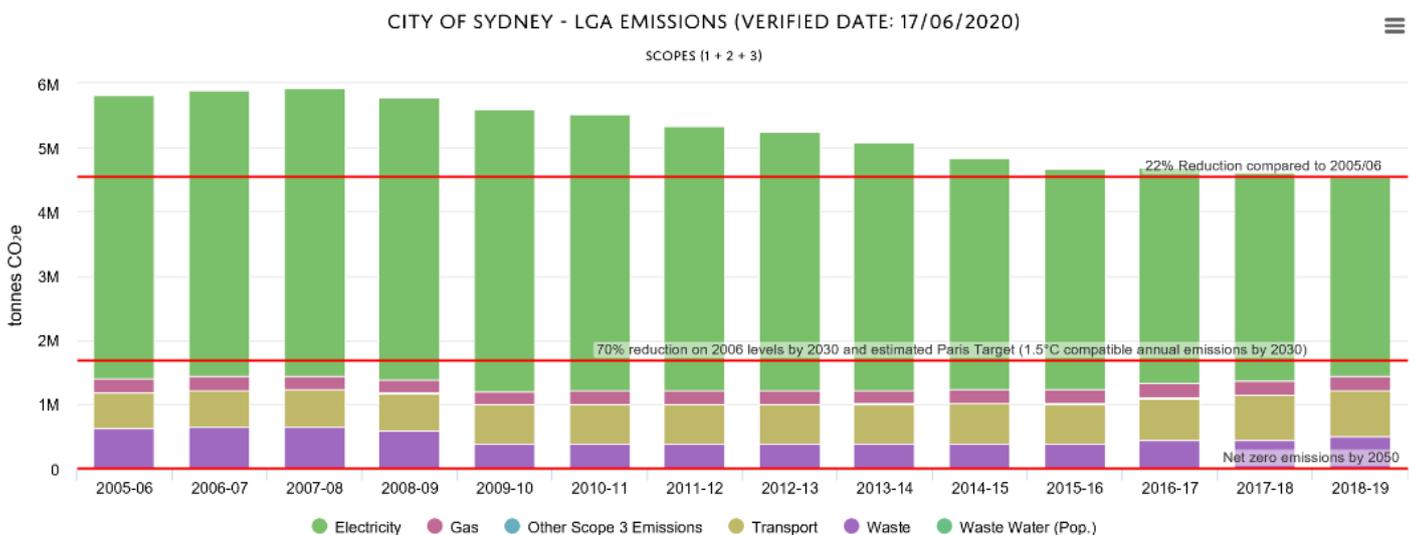


The table below shows energy consumption data for the LGA. Please note, LGA data is shown to June 2019, as Ausgrid have not provided June 2020 data at the time of publication.

LGA	Electricity (MWh)	Natural gas (GJ)	Total energy (GJ)
Baseline	4,159,436	3,038,529	18,012,502
Most recent (to June 2019)	3,369,046	3,572,753	15,701,322
Difference	-790,389	+534,224	-2,311,177
Difference (per cent)	-19%	+18%	-13%

For more information see [Appendix 1: Data management plan](#).

### Energy consumption data



**Chart 3: Local government area greenhouse gas emissions**

<sup>4</sup> The renewable electricity target incorporates renewable electricity both within the grid and classified as additional to the grid.

<sup>5</sup> Based on 2017/18 LGA population data for residents/workers/visitors compared to 2005/2006 baseline.

<sup>6</sup> <http://www.ghgprotocol.org/city-accounting>



## How we will get there

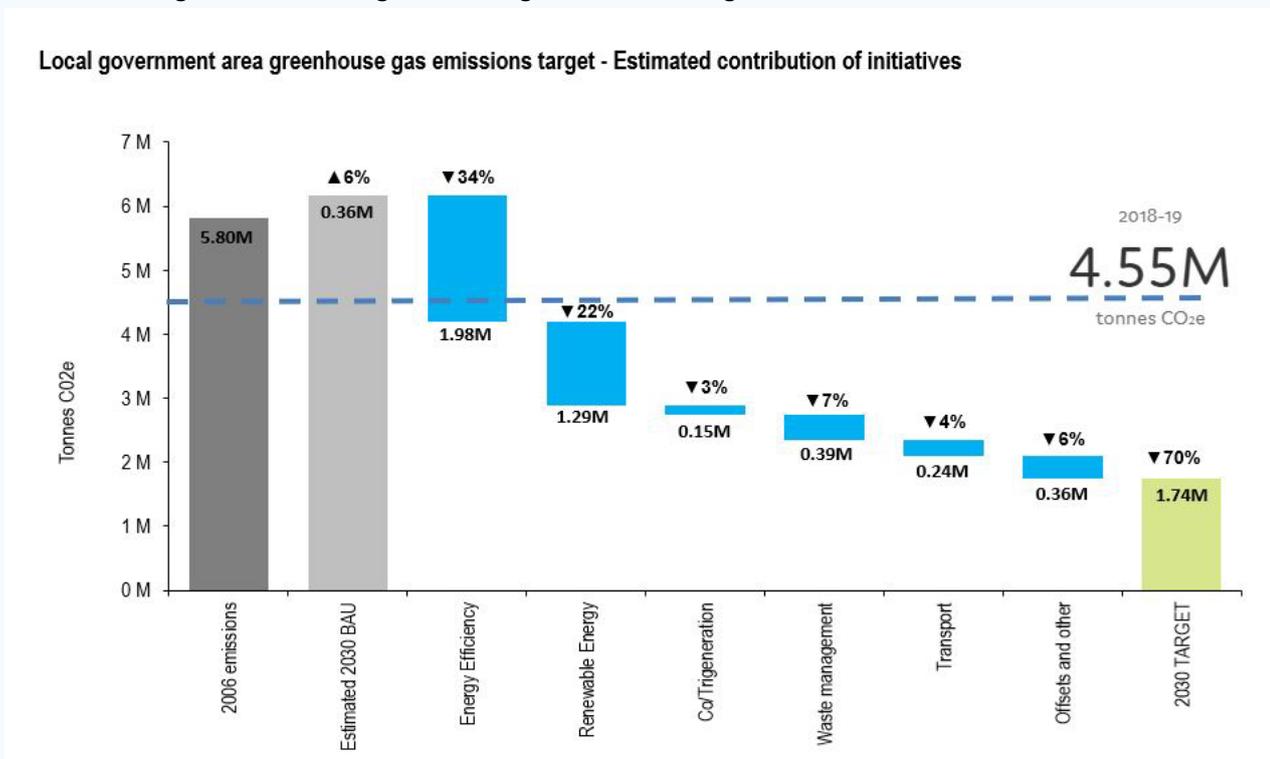
Chart 4 shows the estimated contributions of the initiatives we expect could lead to reduction of the city’s emissions by 70 per cent by 2030.

Since 2007 total greenhouse gas emissions across the local government area have continued to fall.

Most greenhouse gas emissions in the City of Sydney local government area are due to buildings. Emissions are falling due to improved energy efficiency awareness and practices, and the increase of renewable energy in the grid and locally. However, as buildings become more efficient, and as more people live and work in the area, emissions from transport are growing as a proportion of the total.

Achieving the target will require a major increase in focus on improving the energy efficiency of new and existing buildings and increasing the amount of renewable energy locally and in the grid, especially as Australia’s aging coal generation fleet reaches end of life. The electrification of transport powered by an increasingly renewable grid will make a notable contribution to reducing emissions from transport.

**Chart 4: Local government area greenhouse gas emissions target. Estimated contribution of initiatives.**



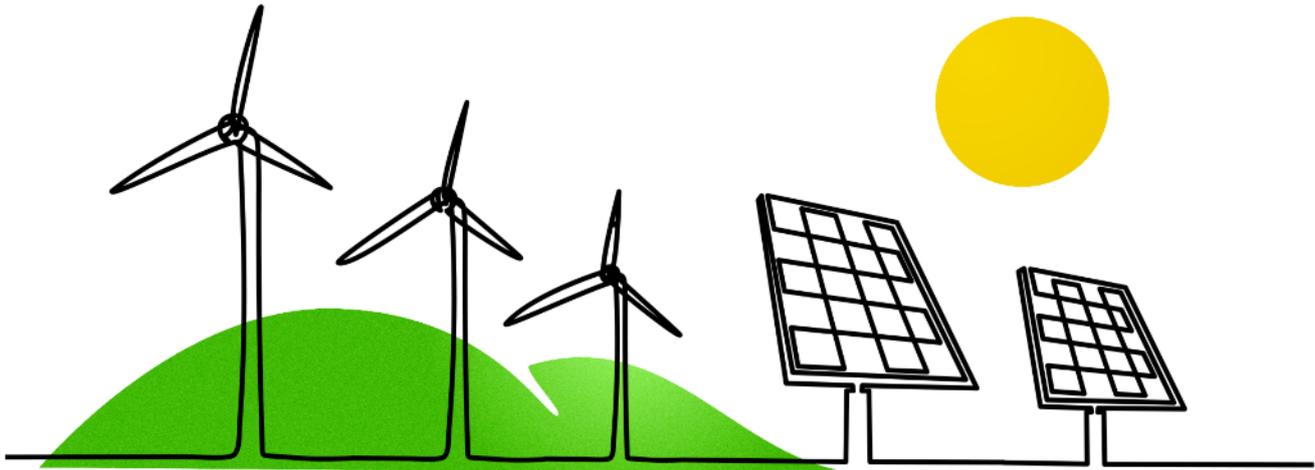
- Energy efficiency (-34 per cent) calculated on the basis of existing and new state and federal government policies and programs
- Renewable energy (-22 per cent) reflects 50 per cent of electricity being provided by renewable sources
- Co/trigeneration (-3 per cent) is based on historic average installation rates
- Waste diversion/advanced waste treatment (-7 per cent) reflects savings from avoided landfill emissions
- Transport (-4 per cent) emissions reductions would be realised by use of vehicles with lower emissions intensity, and by changing the mode split to move away from car travel and towards public transport and walking and cycling
- Offsets and future opportunities (-6 per cent) include savings that could be made from transport, waste, renewable energy, energy efficiency, regulatory and/or technological improvements, or other opportunities. Offsets could be purchased by those entities generating emission

*Note: Updated emissions forecasts are currently being developed and will be released with the City’s new Environmental Action Strategy later in 2021*

### High voltage electricity data

The electricity distributor has provided community-wide high-voltage (HV) electricity data for City of Sydney local government area. HV electricity is now around 14 per cent of total LGA electricity however we do not include this in the City’s official GPC community inventory as it is unclear how reliable or replicable this data is due to confidentiality reasons.

While electricity usage is generally declining as buildings and equipment become more efficient, HV electricity is on the increase, most likely due to increasing demand for rail public transport and data centres. More renewable energy supply will be key to reducing emissions from these sectors on a trajectory to net zero.



## Take action

Sydney needs to accelerate its transition from a city powered by coal, to an efficient low-carbon city, and ultimately to a net zero city by 2040 or sooner..

The 2020 Climate of the Nation Report, by the Australian Institute, reports that the majority of Australians are concerned about climate change and that Australia should be a world leader in finding solutions. This sentiment was echoed at a local level through the City's Sustainable Sydney 2050 engagement report. Our community express a desire to be part of the solution, but they are looking for more information from trusted sources on the practical actions they can take.

One way that we have been addressing this community need, and to achieve 50 per cent of electricity demand from renewable sources by 2030 through voluntary action, is through broad scale marketing.

Here are some examples of the materials the City has produced to educate our community about renewable energy:

- Development of the [Renewable Energy Help Centre](#) – an online knowledge base covering everything from solar panels to power purchase agreements.
- A short [video](#) (Facebook login required) and article educating students about climate action.
- An illustrated [video explaining how GreenPower](#) works and why it's the quickest and easiest way to switch to renewables at home and work.

## Relevant links

- [Sustainable Sydney 2030](#)

## Advocacy

### Standards for urban renewal precincts

Upcoming urban renewal precincts in our local area – such as Waterloo Estate, Central Station precinct and the Bays Precinct – present the opportunity to deliver world-leading environmental sustainability outcomes. The NSW state government will be redeveloping these sites, and the City will advocate for high environmental standards for these areas as they will be bringing tens of thousands of new residents into our LGA – and we want their environmental footprint to be as small as possible. This is a keyway for the State Government to apply its own target for net zero emissions across the state by 2050.

## Advocacy

### Increase the building code targets

BASIX and the National Construction Code are the mandatory planning instruments that set the minimum standard for energy and water efficiency of new buildings. The BASIX standard was set 12 years ago and has not kept pace with new technology and falls short of current best-practice. Standards must be raised now to ensure we don't build more new poor-performing buildings that will lock-in carbon emissions for decades to come. The NSW government needs to increase BASIX targets for minimum environmental performance in residential buildings. The National Construction Code also needs to develop a net zero trajectory with clear review and update milestones. The City is a member of the Australian Sustainable Built Environment Council (ASBEC) which has prepared a major report on building performance called *Built to Perform: An Industry Led Pathway to a Zero Carbon Ready Building Code* [www.asbec.asn.au/publications/](http://www.asbec.asn.au/publications/) - this will provide a good basis for City advocacy.



# 3. Water sensitive city



**Water is crucial to the social, economic and environmental wellbeing of our city. Sydney is under pressure from rapid population growth and urban densification. Water sensitive approaches helps deliver a more sustainable and liveable city with green public spaces and healthy waterways.**

## Our operational targets



### Water consumption

- Zero increase in potable water use by end June 2021 from 2006 baseline, achieved through water efficiency and recycled water
- Annual potable water use of 180L/m<sup>2</sup> of irrigated open space by end June 2021



## City of Sydney operations

### Why reduce our potable water use?

The predicted impacts of climate change and population growth will strain our potable water supplies, with potable water demand in the local government area estimated to be 30 per cent higher in 2030 than in 2006.

To respond to this, the City is transforming to be a water sensitive city that is resilient, cool, green and productive. We aim to drought-proof our operations, so we can use water when it is hot and dry to help keep the City green and cool. The City's non-potable water supplies will safeguard our water supplies so even in times of drought, we can help for use in the next century and beyond.

#### What is potable water?

Potable water, also called drinking water, is water suitable for drinking, cooking and personal bathing.

#### What is non-potable water?

Non-potable water is not the same quality as drinking water and can be used for purposes such as irrigation, toilet flushing and dust suppression.

### What makes up City operational water use?

Type	Includes
Parks and Public Domain	Parks, open spaces, sports fields, street gardens and playgrounds. Also included are water features that are in the public domain.
Commercial buildings	Income producing buildings, such as Customs House, parking stations and retail shops. It also includes properties acquired for strategic purposes that do not fall into other categories
Community buildings	Includes childcare centres, libraries, community centres and town halls.
Aquatic facilities	Includes Victoria Park Pool, Andrew (Boy) Charlton Pool, Cook and Phillip Park Aquatic Centre, Ian Thorpe Aquatic Centre and Prince Alfred Park Pool.
Operations	Depots and workshops



## The City of Sydney’s approach

Our approach to meeting our water targets and becoming a water sensitive city involves:

- Using less water through changes in behaviour and using water efficient fixtures and fittings
- Capturing alternative water sources to recycle and use for non-potable purposes
- Connecting our parks and buildings to non-potable water supplies, such as harvested stormwater and rainwater
- Reducing stormwater pollution, minimising local flood risk, enhancing greening and urban cooling through retrofitting the stormwater management network with raingardens, wetlands, swales and gross pollutant traps
- Regularly auditing and, where necessary, upgrading irrigation systems to be more efficient
- Improved data management and monitoring to identify, investigate and rectify anomalies in water consumption.

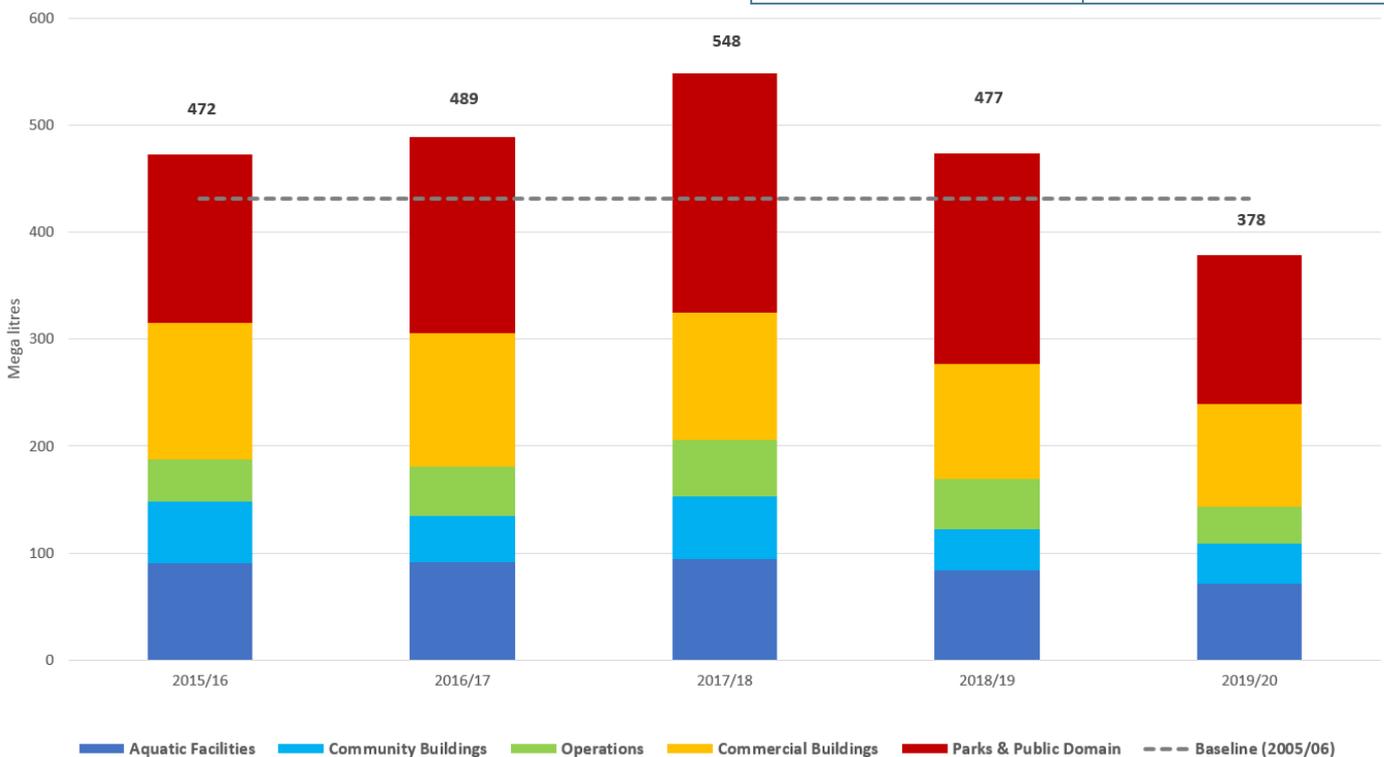
## How we are tracking

### Annual water consumption

As at June 2020, it is estimated that the City operations potable water use has decreased by 12 per cent from the 2006 baseline, from 431 to 378 ML per annum.

The below table summarises the difference between our current and 2006 baseline water use. The data for 2019/20 has been updated in December 2020 which include 3 per cent estimated accruals.

City of Sydney operations – water use comparison	
Baseline (FY 2006)	431 ML
Current (FY 2020)	378 ML
Difference (ML)	-53 ML
Difference (%)	-12%



**Chart 5: City of Sydney operations potable water use**

Chart 5 shows our organisation wide water use over the past 5 financial years.

Water savings for FY 2019/20 are due to identification and rectification of leaks, results from our tenancy on-charging program, improvements in water data management and water efficiency projects.

A large portion of savings are also attributed to increased rainfall and COVID-19 related closures of water intensive City sites such as Aquatic centres and public buildings.

Notes for Chart 5:

- The 2019/20 figure of 378 ML includes 3% accrued data.
- All data sourced directly from Sydney Water and stored within the City’s SMART data management system.
- Exceptions - Only sites where the City has ‘operational control’ are included. Properties where a whole building is leased and the tenant has full building operations and maintenance obligations, such as the Queen Victoria Building and the Capitol Theatre, are excluded.
- Categorisation method – When allocating multi-purpose City buildings to one of the above categories, the dominant water use type for the reporting period is the determining factor for the reporting period. For example, Customs House has office, retail, library and exhibition uses, and is allocated to Commercial Buildings. Over time the categorisation of a property may change depending on the use.

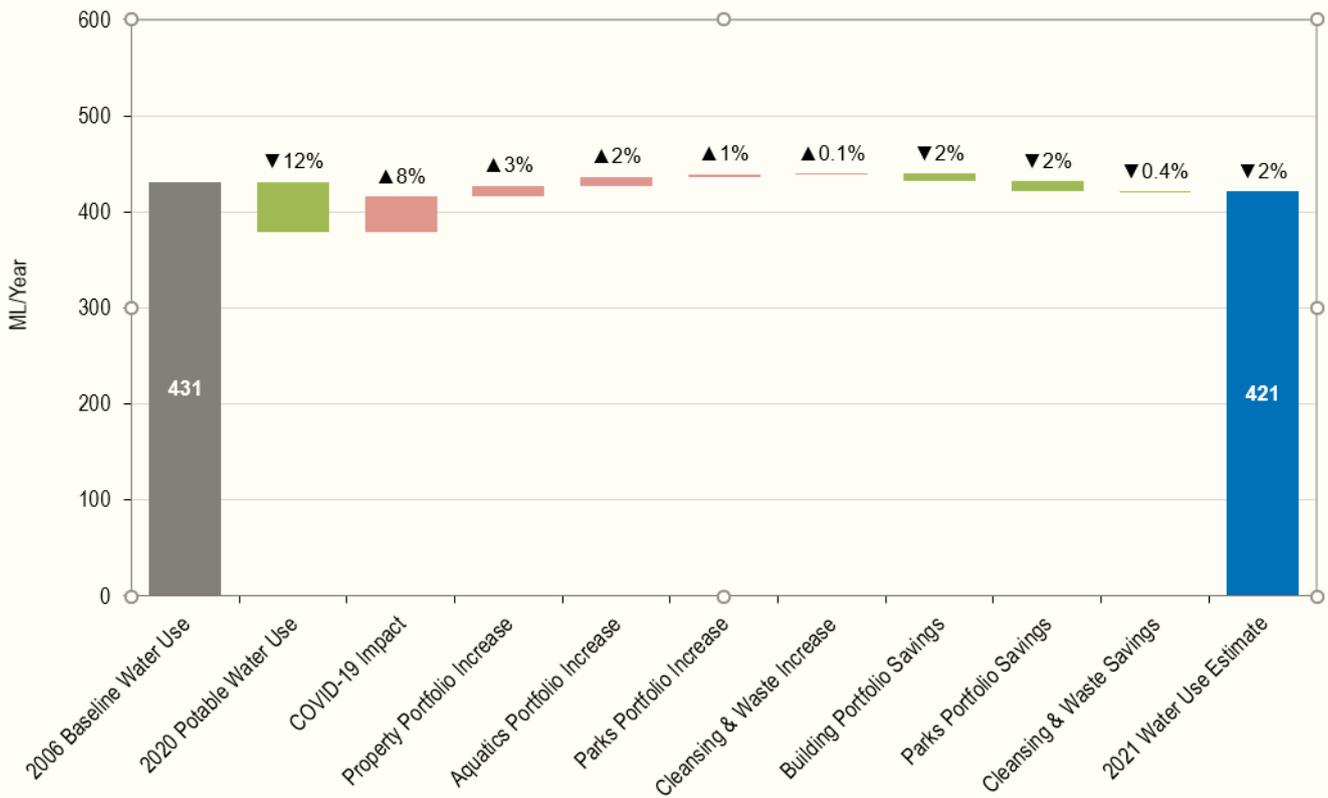


### How we will get there

Chart 6 shows the forecast change in the City’s operational water use in FY2021. Estimated increases in water use are due to the City’s growing portfolio of buildings, aquatic centres and parks. Estimated reductions in potable water use is associated with projects we plan to implement across our operational portfolio to meet our 2021 water target of maintaining our potable water use at 2006 levels.

Chart 6: City of Sydney operations potable water use – How we are tracking against our target to 2021

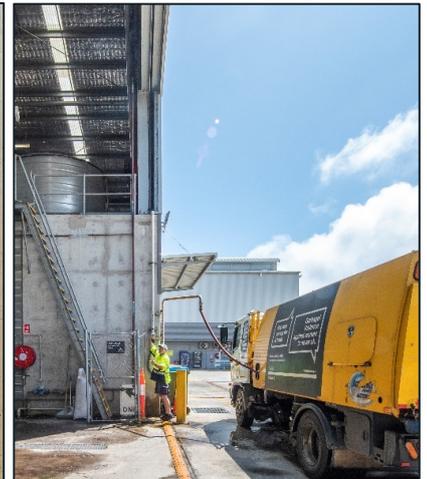
### City Operations Water Budget to 2021



#### Projects and initiatives

The City has a suite of projects underway to reduce potable water through efficiency measures and recycled water. These include:

- FY2020 Potable Water Use - Based on actual consumption data from SMART with 3% accruals
- COVID-19 impact – Estimated increase for FY2021 based on reopening of community facilities and buildings after initial closure of services due to the pandemic
- Property Portfolio Increase - Key building portfolio changes are new investments and VPA handovers
- Aquatics Portfolio Increase - Gunyama Park Aquatic and Recreation Centre
- Parks Portfolio Increase - Handover and upgrade completion of small parks
- Cleansing & Waste Increase - Increased public domain cleansing and street litter bin cleaning due to COVID-19
- Building Portfolio Savings - Building water fixture upgrades, tenancy water allocation and rainwater system upgrades, Also Oxford St Holdings (1,2,3) being removed from portfolio
- Parks Portfolio Savings - Key savings due to Sydney Park water reuse scheme back online and increased recycled water use in City operations for tree and garden verge watering
- Cleansing & Waste Savings - Upgrade of depot vehicle washing hose equipment at Bay St
- The current outlook estimates that the City is on track to meet the operational potable water consumption target by 2 percent.



Rainwater harvesting and reuse at Alexandra Canal Depot

## Project updates

### Water consumption in parks

Since 2006, the area of parks and open spaces requiring irrigation in the LGA has increased by over 50 per cent. This includes Harold Park, Wentworth Park, Redfern Park, Redfern Oval, Pirrama Park, Harmony Park, Prince Alfred Park, Paddington Reservoir Gardens, Peace Park, Lillian Fowler Reserve, Mary O'Brien Reserve and Coulson Street Reserve.

Despite these increases in green spaces, parks staff and our service providers have worked to reduce water use over the last two years through irrigation efficiency programs, prompt rectification of leaks and water losses and ensuring recycled water is used where possible

The City's target for water use in our parks is 180L per square metre of irrigated space by the end of 2021. Improved water data is being collected in SMART and more accurate asset area data in the City's Corporate Asset Management System (CAMS). The accuracy of irrigation rates will be reviewed and revised if necessary, and when complete reported through future Green Reports.

The table below provides estimated potable water usage in City Parks and Public Domain (as shown in Chart 5).

City Parks and Public Domain	
Financial Year	Potable water use (ML)
2006	133
2015	194
2016	157
2017	183
2018	224
2019	197
2020	139

### Smart watering project

The Smart watering project is focused on delivering automated, digital, close-to-real-time view of water usage needs in the City's parks to inform water management decisions impacting the City's potable water consumption targets. A proof of concept for Alexandria Park Oval is currently in implementation phase. Soil moisture sensors have been installed in Alexandria Oval and data from the sensors is being collected. Work to develop data visualisation of the captured and live data is underway. These visualisations will be provided to support operational staff and management to make better decisions about water use.

### Improving our data

The organisation wide metering project commenced implementation in early 2020 and is delivering important benefits for the management of water in Parks, including:

- Sub meters and data logging on our large irrigation systems. This data, combined with more accurate asset areas from CAMS, will be used to more accurately report on irrigation efficiency and fine tune irrigation practices.
- Automated collection of water consumption data at major parks will give better visibility of how water is being used. At least 90 per cent of water consumption in parks and open spaces will be monitored daily, or even more frequently. This will help improve the City's system for monitoring and controlling park irrigation, to further drive water efficiency and reduce water consumption.



## Projects updates

### Sydney Park water reuse scheme upgrade

The Sydney Park water reuse project was originally completed in 2015 and enables around 850 million litres of stormwater each year to be harvested from our urban stormwater network and captured in a series of wetlands within Sydney Park.

These wetlands provide several benefits to our community. They provide habitat for wildlife, enhance the park's visual amenity, and naturally clean the stormwater before being discharged into the Cooks River via Alexandria Canal.

The capture of stormwater in Sydney Park's wetlands also provided the opportunity to treat and re-use this stormwater for non-potable water uses such as: irrigation of Sydney Park, growing plants at our nursery depot, and watering street trees and street gardens. There is also opportunity to improve the treated water quality better for ablution use.

In 2017, the original water treatment plant at Sydney Park was removed to accommodate changing land use resulting from the NSW State Government's WestConnex road project. This required the City to build a new fit-for purpose stormwater recycling treatment plant, so we could continue to utilise recycled water in and around Sydney Park.

Installation of the new water recycling plant is now complete and is supplying recycled water for irrigation in Sydney Park, the nursery and for watering using tanker trucks.

The new treatment plant even has the capability to expand in the future and increase the supply of recycled water to meet other demands in the area.



*New Water Treatment Plant at Sydney Park Nursery Depot, Alexandria*

### Green Square water reuse

The best opportunity to develop water recycling schemes is within urban renewal areas because they provide the density and scale required for efficient investment in recycled water infrastructure and can be planned and installed at the time of development, which is cheaper and more efficient than retrofitting.

It also allows private water utilities to offer water services across an entire precinct, improving commercial viability. The City is investigating the use of planning controls to encourage the delivery of recycled water services.

The City has successfully delivered Green Square Stage 1: In 2018, we switched on one of Australia's first decentralised stormwater recycling schemes in an urban environment. The scheme currently provides recycled water to parks, community facilities and more than 3,000 apartments in the Green Square Town Centre for garden and turf irrigation, toilet flushing and clothes washing.

The City supports efforts to expand water recycling in the Green Square area. It would like to see a Stage 2 project achieved, namely a utility-led water reuse scheme in the Greater Green Square area outside of the town centre. Unlike Green Square Water Reuse Stage 1 which captures stormwater for reuse, Stage 2 would collect locally generated wastewater for treatment and reuse. Further development of a Stage 2 scheme is currently hampered by 2016 changes to water pricing. Current pricing and regulatory barriers in the water sector continue to challenge the development of recycled water schemes like the one envisioned for Stage 2.

### CBD Water recycling scheme

As part of the construction of the Sydney Light Rail project, at the request of the City, recycled water pipelines were installed along George Street between Circular Quay and Prince Alfred Park next to Central Station. Along with the recycled water pipeline installed along Wynyard Walk, the City has an invaluable opportunity to develop a recycled water scheme in Sydney's centre.

It is envisaged that selected City of Sydney assets and interested customers (such as building owners and developers) could connect to a recycled water pipe network and be provided with recycled water for non-potable (non-drinking water) uses such as park irrigation, garden watering, toilet flushing and cooling tower use.

A successful CBD water recycling scheme will require diligent planning and delivery, as well as approval and a license under the NSW Water Industry Competition Act. The City is currently working to understand how best to develop the recycled water pipelines into a successful water recycling scheme for our city centre.

By replacing potable water with recycled water, this project has the potential to provide a valuable contribution to the City's LGA target of zero increase in potable water use by 2030 from 2006 baseline.



## Local government area targets



### Water consumption

- Zero increase in potable water use by 2030 from 2006 baseline, achieved through water efficiency and recycled water



### Stormwater quality

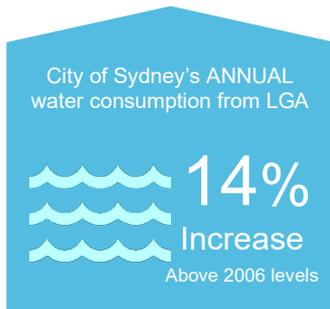
- 50 per cent reduction in the annual solid pollution load discharged to waterways via stormwater by 2030
- 15 per cent reduction in annual nutrient load discharged to waterways via stormwater by 2030



## The local government area

### How are we tracking?

Chart 6<sup>7</sup> shows annual potable water usage across the city has grown 14% against our 2006 baseline, during which time the city's population has grown at least 50 per cent.<sup>8</sup> This is an increase of one per cent on 2017/18 consumption data, which was impacted by a dry, hot year.



Water efficiency programs, environmental performance grants and recycled water schemes will continue to relieve pressure on our potable water supplies.

Our policies to incorporate recycled water on a precinct scale will assist in keeping our city green and cool and use less potable water for non-potable uses.

Increased growth in the local area and the removal of state government-imposed water restrictions after the previous drought have led to annual consumption rising above the baseline in recent years.

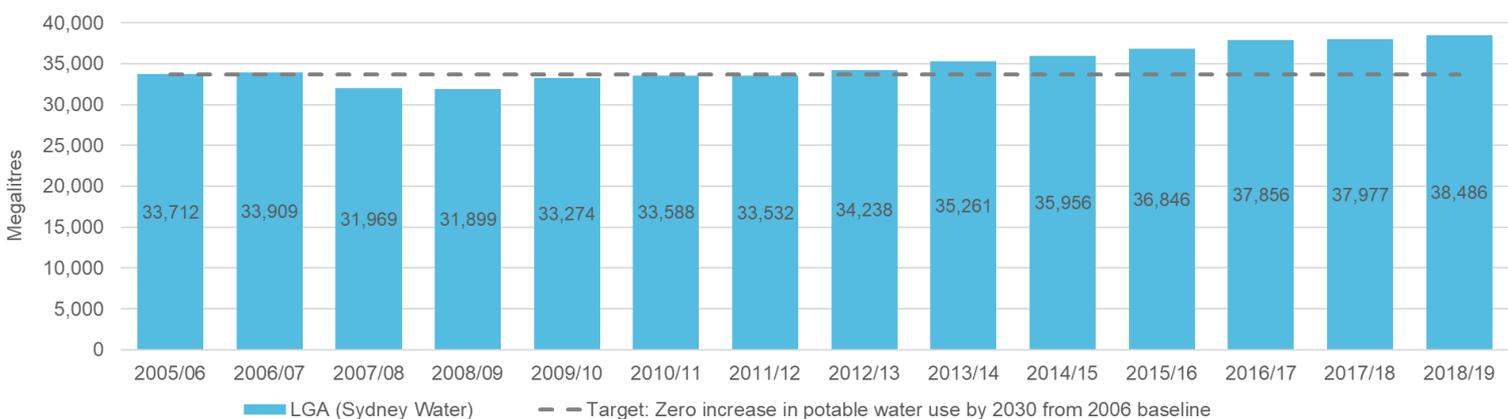
### Water consumption data

This table shows water consumption data for the local government area. Data for the local government (LGA) is based on actual data received from Sydney Water for consumption to end 2018/19. Data for 2019/20 will be available from Sydney Water by early 2021 and will be included in the next report.

	Baseline (ML)	Current (end 18/19) (ML)	Difference (ML)	Difference (%)
LGA	33,712	38,486	4,774	14

For more information, see [Appendix 1: Data management plan](#)

**Chart 6 City of Sydney's local government area potable water use**



<sup>7</sup> All data sourced directly from Sydney Water

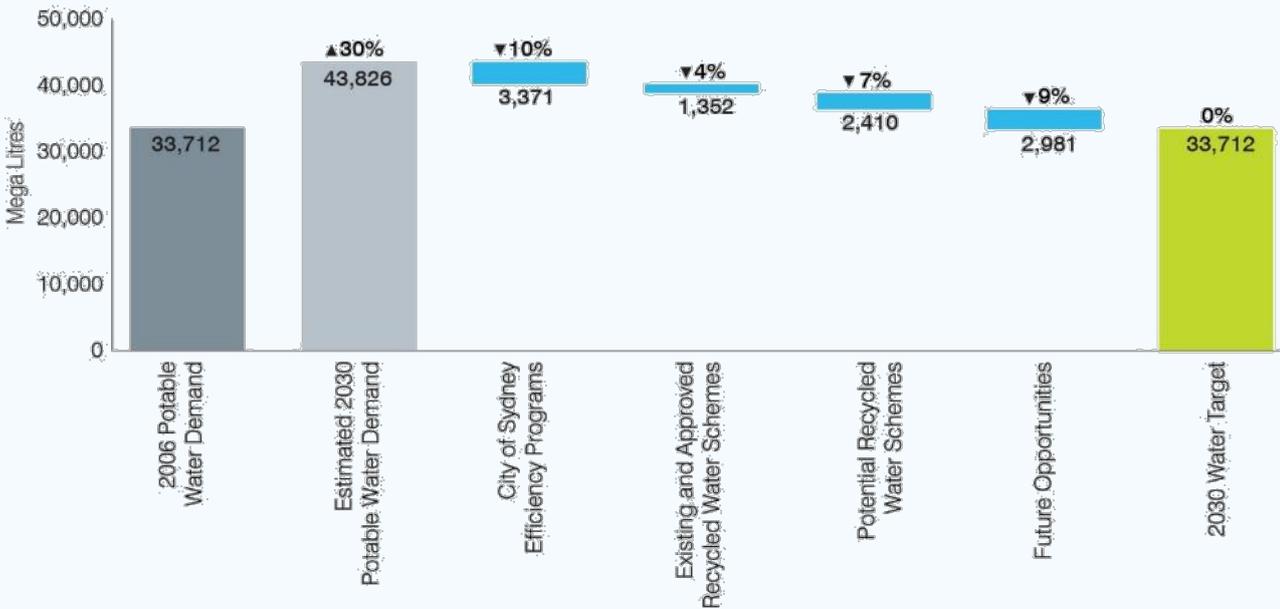
<sup>8</sup> Based on 2018/19 LGA residential population compared to 2005/2006 baseline



### Estimated contribution of initiatives

Chart 7 shows the estimated contributions of the initiatives we believe could minimise the amount of potable water consumed in the local government area by 2030, despite the growth that the area will see in that time. The City of Sydney will take a range of actions to achieve its target of zero increase in potable water use by 2030 from the 2006 baseline, however city-wide water consumption is influenced by several factors outside the City’s control.

**Chart 7 Local government area potable water use target. Estimated contribution of initiatives.**



Key points are highlighted below:

- City of Sydney efficiency programs (-10 per cent) help residents and business to reduce water consumption
- Existing and approved recycled water schemes (-4 per cent) include the City’s stormwater harvesting schemes, and private water recycling schemes, based on operations at full capacity
- Potential recycled water schemes (-7 per cent) reflects opportunities for additional recycled water infrastructure; for example, the potential to include recycled water schemes in urban renewal areas that are redeveloped by the NSW state government
- Even if all identified opportunities for recycled water infrastructure are implemented, 2030 potable water use across the city will likely exceed 2006 levels by around nine per cent. We will need to work with Sydney Water, other government entities and private sector to identify water conservation opportunities, recycling and alternative water supply, to safeguard potable water supply and meet the predicted increased demand on water supplies



## Stormwater quality improvements

The City has some of the oldest stormwater drainage infrastructure in Australia. With the continued urbanisation and densification of Sydney, our natural landscape continues to be altered leading to increased stormwater run-off (with increased impervious surfaces) and declining waterway health due to high concentrations of nutrients, sediments and other pollutants such as litter entering our stormwater network and ultimately the Cooks River and Sydney Harbour.

The City is committed to improving waterway health by reducing stormwater pollution entering downstream waterways. We're achieving this by installing and maintaining stormwater treatment systems (such as raingardens, wetlands and swales) in our stormwater network, and using water sensitive urban design (WSUD) and management approaches, including:

- Mandating WSUD in new developments
- Installing gross pollutant traps (GPTs) in the stormwater network to remove litter and large solids from stormwater
- Installing raingardens and wetlands in public open spaces to slow down and filter pollution from stormwater flows.
- Incorporating raingardens into road renewal and streetscape upgrade projects.

## What we've already done

We've installed 249 raingardens in the City of Sydney local area since 2005. These gardens treat stormwater, protect local waterways and green our streets. There are also 48 council owned gross pollutant traps (GPTs) in the stormwater network that, together with 26 GPTs within our LGA owned by others, collect up to 700 tonnes of litter each year when fully operational.

The City has begun a program of repair and upgrade to the City's GPTs with an aim to restore and maintain peak performance. This program will take place over several years. The City has also reviewed the maintenance schedules of its GPTs, to optimise their cleaning regime, and established a program for regular inspection to maintain optimal performance.

## MUSIC model

MUSIC<sup>9</sup> is a water quality decision support tool that helps the City estimate stormwater pollutant generation and simulate the performance of our stormwater treatment systems (such as our stormwater harvesting schemes, GPTs, and raingardens) within our stormwater catchments.

This water quality tool allows the City to make catchment management decisions that balance cost, runoff frequency and water quality improvements. So the City can, for example, select the optimal locations for new stormwater treatment systems that best contribute to our Sustainable Sydney 2030 water quality targets.

The City now has MUSIC Link that improves efficiency for both developers and the City in meeting water quality targets. It allows for quicker confirmation that water quality infrastructure, installed as part of a development application, meets the City's MUSIC modelling settings and pollutant removal targets.

## Award nominations

### Green Square Stormwater Drain

The City of Sydney was nominated as a finalist in the Local Government New South Wales (LGNSW) Excellence in the Environment Awards 2020 in the Water Management category for Green Square Stormwater Drain: Enabling urban renewal through effective flood risk management.



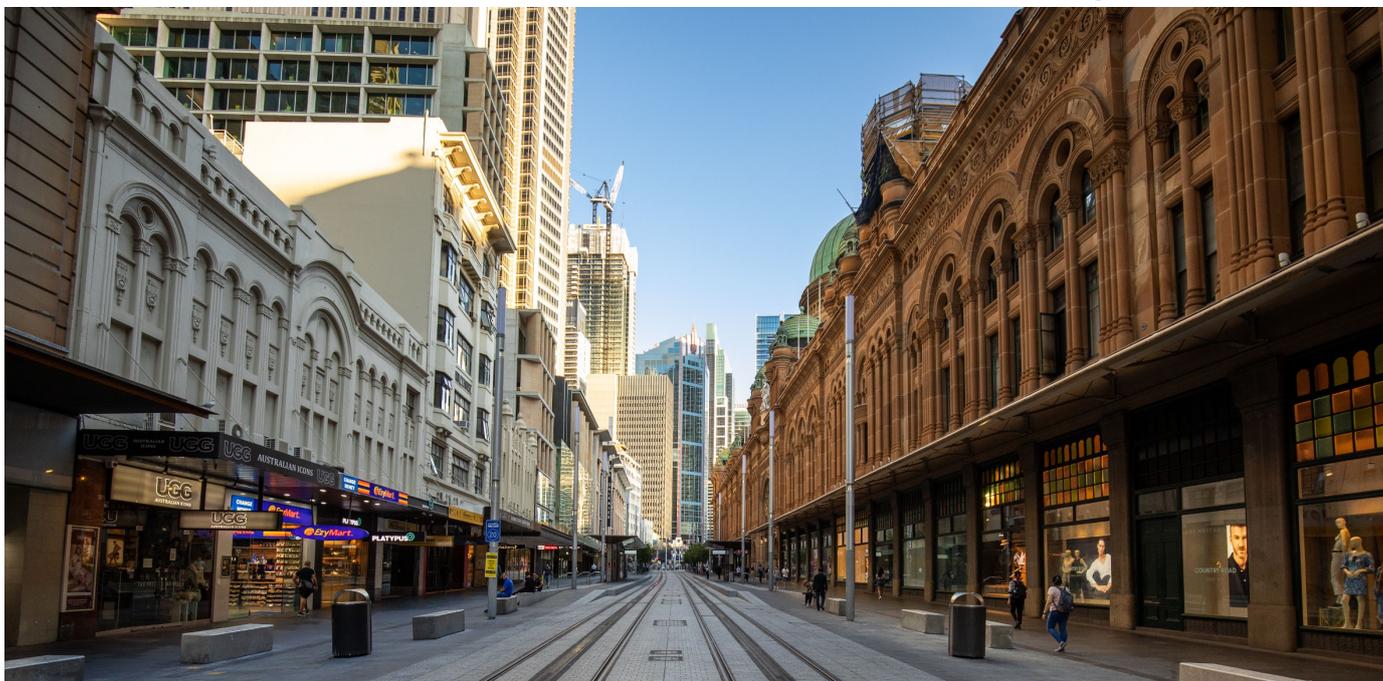
The Green Square Stormwater Drain project was also a finalist at Australian Engineering Excellence Award (AEEA) 2020.



<sup>9</sup> MUSIC stands for Model for Urban Stormwater Improvement Conceptualisation.



## 4. Climate resilient city



### Climate Emergency Response

**In an emergency, we must all act. Our leaders must rise to unite the community and drive the vision of a zero-carbon economy. We must speed up our responses in areas where we can have positive impacts on reducing the detrimental effects of climate change.**

In 2019 we joined 85 other councils to declare a climate emergency. Our [Climate Emergency Response](#), endorsed by Council in February 2020, outlines how we will take swift and meaningful action on climate change, to ensure the future sustainability of the City of Sydney, its communities, economy and environment. In this Green Report, we summarise the actions we have taken in the last six months in each of the four focus areas of the Climate Emergency Response.

#### Lead by example

Action in this area is about ensuring consideration of the climate emergency is incorporated into the City's decision-making processes and operational activities. Recent work has included developing increased requirements for environmental and social performance in tender documentation to ensure that the City's purchasing decisions have the best possible environmental outcomes. We have also been communicating more frequently with our staff about the climate emergency and encouraging them to identify ways their area of the organisation can respond.

#### Support climate emergency priorities through planning

The City is currently reviewing its key planning controls – the Local Environmental Plan and the Development Control Plan. As part of this review, we are looking at how we can use planning controls to increase tree canopy and vegetation on private property, protect bushland, maximise opportunities on onsite renewable energy generation and increase resilience to flooding. We're also developing a performance standards pathway for net zero energy buildings.

#### Work with and prepare our communities

As part of our switchover to using 100% renewable electricity for our operations from 1 July 2020 (see the project updated in Low Carbon City) we have been sharing information with our residents and business to assist them to make the switch too. Our [renewable energy help centre](#) has tools and information to assist all members of the community, from large business to renters in apartment buildings.

#### Build momentum and advocate

We know we need to work together with other councils to take climate action at scale. The City is a founding member of Climate Emergency Australia – a national network of governments and section partners, to provide the climate leadership Australia needs. In its first year the network will focus on shared advocacy priorities and developing climate action tools for councils.



## Resilient Sydney

The Resilient Sydney strategy (2018) continues in active implementation through key actions with the 33 metropolitan councils of Sydney and key partners.

A summary of a few key actions includes:

- Action 1: The Resilient Sydney Office has provided coaching and support to a growing number of Resilience Officers in metropolitan Sydney councils to develop local resilience plans.
- Action 9: Cool Suburbs – Policy and action to cool homes and streets. Contractors working on this collaboration project have commenced development of a new rating tool to measure and encourage actions to reduce urban heat in the suburbs of Sydney.
- Action 13: The Resilient Sydney Platform Phase 2 beta phase was launched in December 2020 with six years of data now available to local governments. There are now over 200 Platform users from councils across Sydney. New datasets are being added for use as evidence bases for action planning.
- Action 16: Resilient Sydney continue to work with four NSW Government agencies to source social cohesion and wellbeing data to monitor social resilience for every LGA in Sydney.
- Action 23: Resilient Sydney liaised with Resilience NSW to promote several Get Ready campaigns to residents and businesses through councils in the lead up to summer emergency season. 30 Councils took part in Resilient Sydney campaign to promote the Get Prepared app during Emergency Preparedness Week in September 2020. Over 24,000 Sydney residents have now created a household emergency plan.

## Responding to COVID-19

During the COVID-19 disruption in 2020, the Resilient Sydney Office hosted regular Resilience Ambassadors meetings to connect all councils of Sydney. Councils have shared good practice community recovery and economic investment programs and approaches for a COVID-safe summer in Sydney. Discussions continue with NSW Government to share the learning of five years of the Resilient Sydney program in the future direction of Resilience NSW.

**Resilient Cities Network:** The global Resilient Cities Network remains active during the ongoing pandemic crisis, rapidly exchanging lifesaving emergency planning insights from cities on the front line of responding to COVID-19. Insights from global cities are being shared across metropolitan Sydney councils and the NSW government. Resilient Sydney continues to participate in a working group of cities sharing expertise on managing the impacts of extreme heat in the context of COVID-19 and social distancing measures.

## Climate Adaptation Strategy

The Council endorsed the Climate Adaptation Strategy in 2015 to help us prioritise and plan actions to prepare the city for the environmental, social, cultural and economic impacts of climate change.

The following provides an update of the trends and climate observations as at December 2020.

- Under the Paris Agreement, most countries agreed to halt warming at well below 1.5°C in view of the predicted risks to the environment, our societies and our economies. The UNEP Emissions Gap Report 2020<sup>10</sup> states that current levels of commitment are insufficient to meet this target.
- The report outlines that the COVID-19 pandemic offers only a short-term reduction in global emissions and will not contribute significantly to emissions reduction by 2030 unless countries pursue an economic recovery that incorporates strong decarbonisation. The report estimates that CO2 emissions could decrease by about 7 per cent in 2020, however atmospheric concentration of GHGs continue to rise, with the immediate reduction in emissions expected to have a negligible long-term impact on climate change.
- Historic and ever-increasing burden of human activity on the Earth's climate is observable in the continuing rise in extreme weather events. Including wildfires and hurricanes, and in the melting of glaciers and ice at both poles. The United Nations Secretary-General is calling on governments to use COVID-19 recovery as an opportunity to create more sustainable, resilient and inclusive societies, including commitment to net-zero goals before 2050.
- There is an urgent need for us to act globally now to reduce emissions, to avoid the devastating impacts of global warming that are forecast. Inaction comes with economic and social costs; disproportionately shouldered by those who can least afford it.
- The City is fast-tracking priority actions of the Climate Adaptation Strategy to reduce the impacts of urban heat island effects through the urban canopy planting program and intense storm impacts through floodplain and stormwater management, along with myriad social and economic plans.
- The strategy, titled "[Adaption for Climate Change: A long term strategy for the City of Sydney](#)" can be downloaded from our website. The strategy will next be updated in 2022 when the IPCC release updated climate reports.

<sup>10</sup> United Nations Environment Programme Emission Gap Report 2020



## Impacts for Sydney

Human activities are estimated to have already caused 1°C<sup>11</sup> of global warming above pre-industrial levels. In 2020, Australia's climate has warmed on average by 1.44 ± 0.24 °C<sup>12</sup> since national records began in 1910, leading to an increase in the frequency of extreme heat events. Across Australia we are witnessing this as alarming episodes of extreme heat, water shortage, flooding and bushfires, all of which impact our vulnerable populations, livestock, food production and of course, our native flora and fauna.

In Sydney, our major climate hazards include extreme heat, drought and bushfire impacts

### Extreme heat

2020 was Australia's fourth-hottest year on record. The most extreme heat occurred in western Sydney, with Penrith experiencing 48.9 C on 4 January 2020. Penrith's temperature was a new record high value for any metropolitan area in Australia. Such temperatures are dangerously hot, and place extreme thermal stress on humans and the environment.

The overall climate of the City of Sydney local government area is considerably influenced by its coastal position and proximity to the ocean, despite the cooling sea breeze the city still suffers from Urban Heat Island impacts.

The City commissioned the Cooling Sydney Strategy to provide urban overheating mitigation recommendations to support the strategic planning of Sydney. Appropriate design features include cool roof, cool facades, green roofs, vertical greenery, tree canopies, cool building materials, natural ventilation and smart use of water are some of the ways to mitigate urban heat island impacts.

### Rainfall

Australian rainfall is highly variable and is strongly influenced by drivers such as El Niño, La Niña, the Indian Ocean Dipole and the Southern Annular Mode. Despite this natural variability, long-term trends are evident in Australia's rainfall record. There has been a shift towards drier conditions across the southwest and southeast, with more frequent years of below average rainfall, especially for the cool season months of April to October. In 17 of the last 20 years, rainfall in southern Australia in these months has been below average. This is due to a combination of natural variability on decadal timescales and changes in large-scale circulation caused by increased greenhouse gas emissions.

Rainfall in 2020 was above average for NSW.<sup>13</sup>

Average rainfall for 2019, was extremely low - 40 per cent below the national average - comparable to the other driest periods in Australia's recorded history including during the Federation Drought and the Millennium Drought.

Since 2017, much of NSW rainfall has been close to or below previous record low reading and the impacts of low rainfall in this multi-year period have been intensified by record high temperatures.

In this setting, available water evaporates more quickly, and low soil moisture is experienced. This in turn adversely affects the filling of water catchments when it does rain.

The City has committed to be a water sensitive city where we continue to identify opportunities for operational improvements in the use of water, to develop alternative water supplies and to advocate to the NSW Government to promote investment in recycled water schemes. The availability and smart use of water is just one way of making our city resilient when it is hot and dry.

### Bushfire

The 2019–20 bushfires in New South Wales (NSW) have been unprecedented in their extent and intensity across multiple Australian states. A 60-kilometre long "mega fire" around Sydney was larger in size than the Sydney metropolitan area and the resulting air quality, even in the centre of Sydney, was deemed hazardous – the worst on record.

In May 2020, the NSW Fire and the Environment 2019–20 Summary was published by the NSW Department of Industry and Environment, which details the first assessment of the effects of the fires on NSW biodiversity and landscape values.

## Why it is so important to act now

Mitigating climate change is a fundamental challenge facing cities, governments and communities. On a city, state and national level we have made global commitments for action that will contribute to managing and mitigating extreme weather in Sydney.

It is important to also keep in sight that action on climate change not only averts natural disasters. It brings social and economic benefits. Energy prices could be lower and more secure, cities cleaner, more people employed, and human health improved through better diet and cleaner air.

The scale of the challenge outlined by the IPCC is that global emissions need to be half by 2030, and net zero by 2050 – to have a 50 per cent chance to limit global warming to 1.5°C.

The City of Sydney responds to this climate emergency by using all levers available to local government. However, the transformative change required cannot be delivered by local government alone. State and Federal government policy, legislation and funding need major changes to reduce greenhouse gas emissions, manage the transition and adapt to climate impacts.

<sup>11</sup> IPCC Special Report on the impacts of Global Warming

<sup>12</sup> Bureau of Meteorology State of Climate 2020

<sup>13</sup> <http://www.bom.gov.au/climate/current/annual/aus/>



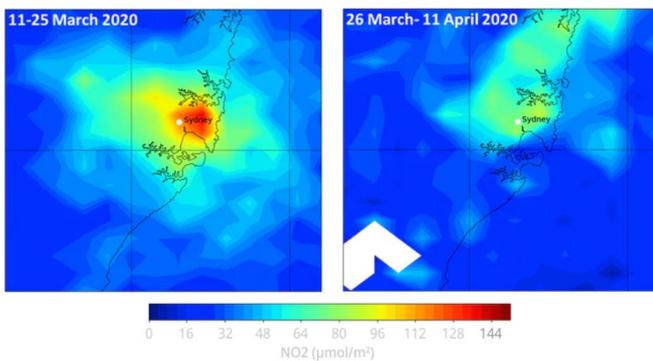
## Sydney's Air Quality Monitoring

Researchers from the Land and Atmosphere Remote Sensing group at the Physical Technology Center in the Polytechnic University of Valencia in Spain<sup>14</sup> analysed satellite data to assess air quality changes that may be attributable to changes in human activity during the COVID-19 pandemic.

Preliminary results show varied outcomes, with Sydney and Brisbane pollution falling by 30% on average (using nitrogen dioxide as an indicator) after COVID-19 containment measures such as lockdowns came into effect. Nitrogen dioxide levels in the atmosphere are especially associated with motor vehicles and coal fired power generation.

### Sydney

Nitrogen dioxide emissions during COVID-19 pandemic in Sydney



Source: Elena Sánchez-García / UPV-CTF Sentinel 5P (Copernicus, ESA)  
CC BY-ND

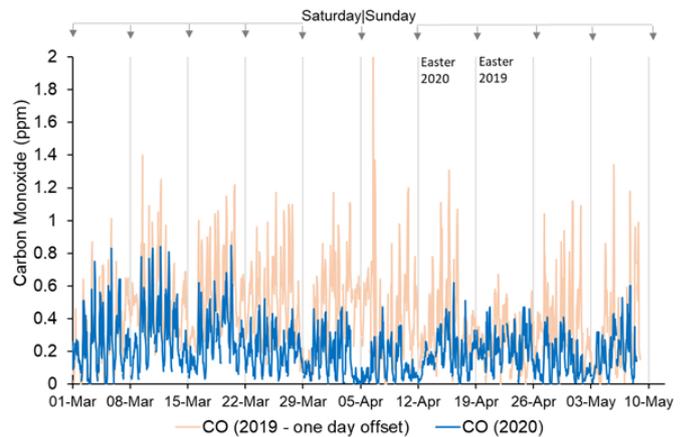
*"COVID-19 has given us the rare opportunity to empirically observe the positive effects of changing our behaviours and slowing down industry and transport.*

*But to make it last, we need permanent changes. We can do this by improving public transport to reduce the number of cars on the road; electrifying mass transit; and, most importantly, replacing fossil fuel generation with renewable energy and other low-carbon sources. These changes would bring us immediate health benefits."*<sup>15</sup>

Many factors influence air quality in Sydney including weather, especially wind and rain events, and uncontrolled bushfires and back-burning activities.

The Climate and Atmospheric Science branch of the NSW Department of Planning, Industry and Environment publishes seasonal analyses of factors affecting major air pollution episodes in New South Wales. The reports may be viewed online or [downloaded](#).

As an example, the graph below shows hourly CO levels monitored at Bradfield Highway roadside monitoring station from 1 March to 11 May 2020, compared to the same period in 2019.



In September 2019 the NSW Government installed an air quality monitoring station at Cook and Phillip Park in the Sydney CBD. This was a welcomed initiative which provided city residents and workers with real time air quality information, measuring:

- Ozone (O<sub>3</sub>)
- Oxides of nitrogen (NO, NO<sub>2</sub> and NO<sub>x</sub>)
- Sulfur dioxide (SO<sub>2</sub>)
- Carbon monoxide (CO)
- Visibility using nephelometry
- Fine particles – PM<sub>2.5</sub> and PM<sub>10</sub>
- Wind speed, wind direction and sigma theta
- Ambient temperature
- Relative humidity

Results can be viewed at

<https://www.dpie.nsw.gov.au/air-quality/air-quality-concentration-data-updated-hourly>

The City is also trialling the deployment of low-cost air quality sensors with UTS. In 2021 we are installing more sensors and developing a platform for public access to the data.

<sup>14</sup> Research from Polytechnic University of Valencia in Spain

<sup>15</sup> [The Conversation article](#)



## What are we doing to adapt to impacts of climate change?

### Urban Canopy

The City planted 15,052 new street trees since 2005 and installed 7.902 square metres of landscaping throughout the city's streets this reporting period.

### Floodplain management

In NSW, local councils are generally responsible for managing flood prone land. The [NSW Floodplain Development Manual](#) and the [Flood Prone Land Policy](#) recognises the benefits that occupation and development of flood-prone land can have on improving the quality of life for current and future generations. With the establishment of Floodplain Risk Management Committee, ad hoc decision making has been eliminated which is the primary cause of many present-day flooding problems.

The City has adopted detailed [floodplain management plans](#) and studies for all eight catchments within the LGA covering 2,666 hectares. These include catchments Alexandra Canal, Blackwattle Bay, Centennial Park, Darling Harbour, Johnstons Creek, Rushcutters Bay, Sydney City and Woolloomooloo.

The flood studies including the implementation plan require periodic review to maintain up to date flood information based on the changes in the catchments; and newly available information and guidelines to estimate flood information. Accordingly, the Alexandra Canal and Blackwattle Bay flood studies are being reviewed to include the new rainfall revision by Australian Rainfall and Runoff (ARR) 2019 guidelines.

### Stormwater management

The City has made significant investments to manage stormwater infrastructure in order to alleviate localised flooding and to improve the health of receiving waterbodies. The City's stormwater network consists of 12084 pits, 174km pipes, 249 raingardens and 74 gross pollutant traps.

Climate change continues to place strain on the City's drainage infrastructure. That is why the City places importance on condition and performance monitoring of stormwater assets through regular drain cleaning and by conducting stormwater CCTV inspections. Currently the condition-based assessment of the City's stormwater network is approximately 54 per cent complete and is being used to guide capital works programs and overall strategic planning of the City's stormwater network.

The City's stormwater asset management process includes the prioritisation and implementation of drainage improvement works based on community benefit and affordability. Stormwater flows are being reduced through the siting of more raingardens to convert hard impervious surfaces to pervious surfaces, providing natural infiltration of stormwater runoff through water sensitive urban design practices. This reduces sediment build-up and maintenance costs to clean stormwater drains and increases nutrient uptake by plants.

Other opportunities include extension, diversion or replacement of stormwater pipes with larger pipes for stormwater assets which have reached the end of their useful service life. This is done to adapt to more intense rainfall conditions due to climate change while minimising the risk to the community. Finally, stormwater pollution is being treated through the maintenance and siting of gross pollutant traps. These devices act as the last line of defence for stormwater pollutants and improves the health of the city's receiving waterbodies.

Accordingly, the City recognises effective management of stormwater assets is key to maintain optimum performance of the stormwater network.

### Relevant links

- [Climate Emergency Response](#)
- [Community Recovery Plan](#)
- [Adapting for climate change – a long term strategy for the City of Sydney: 2015-2070](#)
- [Resilient Sydney Strategy](#)



# 5. Zero waste city

***Leave Nothing to Waste is our strategy for managing Sydney's resources to 2030. The City is working to achieve its zero waste target by 2030, with a focus on waste avoidance, reuse and better recycling.***

The City of Sydney area produces more than 5,500 tonnes of waste every day from homes, offices, at the city's many venues and events and during construction of buildings and transport infrastructure. Approximately 69 per cent of all waste is recycled but there are still opportunities to divert and exploit more than 2,000 tonnes which currently goes to landfill each day.

To assist with achieving our zero waste targets the City has identified six priority areas:

- promote innovation to avoid waste
- improve recycling outcomes
- sustainable design
- clean and clear streets
- better data management
- future treatment solutions



## **City of Sydney Operations Resource recovery from City owned buildings**

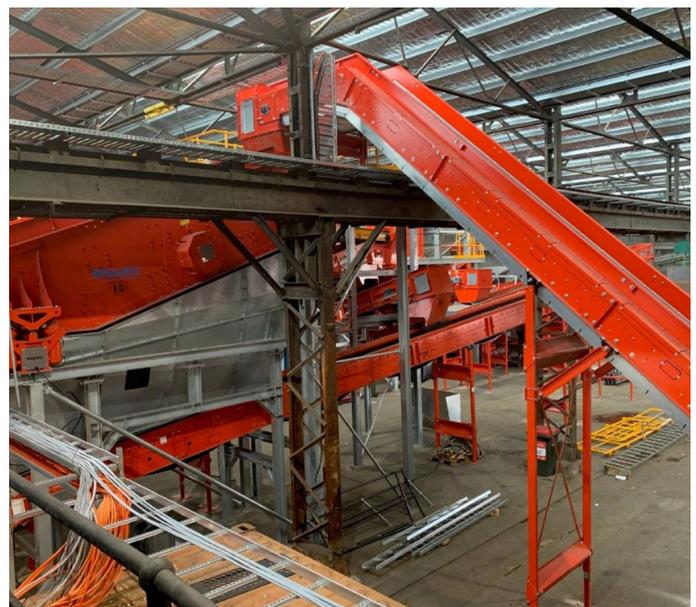
Waste and resource recovery management for the City's property portfolio has improved over the past six months. Across the portfolio, an average of 92% resource recovery from our waste is achieved, meaning 92% is not sent to landfill. This is a significant increase on the previous resource recovery average of 44%.

Much of this has been achieved through recycling paper and cardboard, other mixed recyclable items such as drink and take away containers and recycling food scraps.

Additionally, in separating and recycling food scraps from the general waste stream the general waste stream is kept 'drier'. This in turn allows for a significant increase in resource recovery from the general waste that is usually sent to landfill.

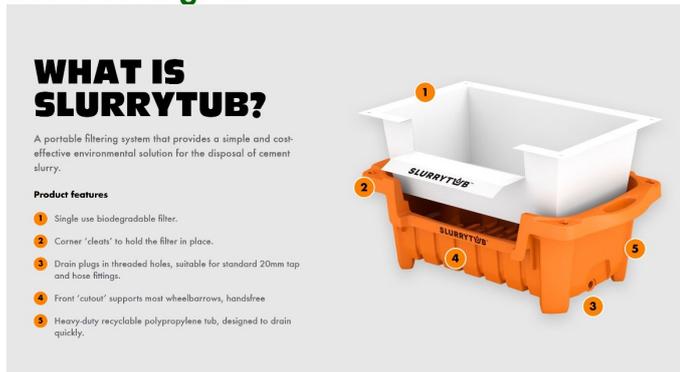
This has been achieved through the City's new waste collection contractors who own and operate their own resource recovery facility, a facility that can process our 'dry general' waste into a Resource Derived Fuel (RDF) that can be used in cement kilns. This displaces the use of traditional fossil fuels normally used in cement production.

Higher recycling rates and resource recovery from our general dry waste supports the reduction of carbon emissions associated with waste disposal from the City's buildings.





## Innovation grants



### DISPOSAL OF CONSTRUCTION SLURRY

In 2020, one of the recipients of the 2019-20 round of the City's Environmental Innovation Grants completed their demonstration project featuring a novel solution to reduce concrete slurry wash water from building sites entering street gutters and contaminating waterways.

The slurry tub is a portable filtering system that provides a simple and cost-effective environmental solution for the disposal of cement slurry wash water on construction sites. The tub reduces the risk of builders tipping slurry water into garden beds which can negatively affect soils and vegetation.

Thirty-four small to medium sized building site operators agreed to participate in the trial of the slurry tub. Building site managers received an explanation as to how the product worked and were advised that the trial was support by a City of Sydney Innovation grant.

The slurry tub enables tools and equipment to be cleaned on a building site with reduced risk of environmental harm. The system captures and filters cement slurry, leaving visibly clear water to drain within designated washout areas. When dry enough the hardened waste contained within the tub's biodegradable filter can be safely disposed of in the work site skip.





## Our operational targets



### Recycling and resource recovery

- 50 per cent resource recovery of waste from City parks, streets and public places by end June 2021
- 70 per cent resource recovery of waste from City managed properties by end June 2021
- 80 per cent resource recovery of construction and demolition waste generated and managed by City operations by end June 2021

## How we are tracking

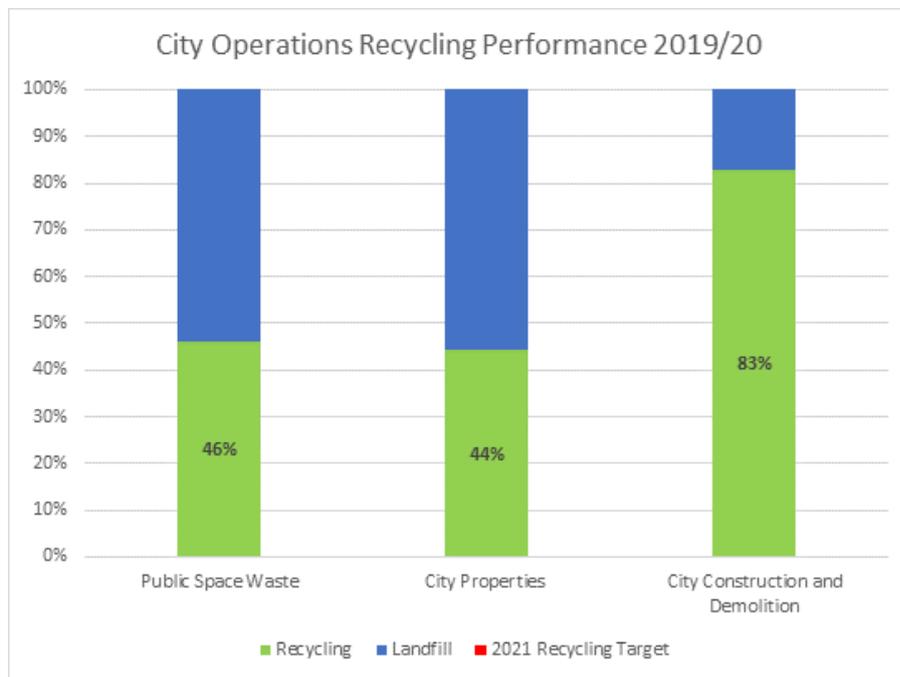
Recycling of waste from City parks, streets and public places has increased from 42 per cent to 46 per cent between 2018/19 and 2019/20, closing the gap on our 2021 target of 50 per cent diversion from landfill. The City is continuing to look at additional changes to our operations to reach the 2021 target and beyond.

City properties waste has achieved an increase in the resource recovery rate from 44 per cent in 2019/20 to 92% in Q1 and Q2 for 20/21. The increase in recovery is largely due to the increased recovery achieved from the general 'dry' waste stream, via a process that turns this waste stream into a Resource Derived Fuel that can be used in cement production, rather than being sent to landfill. Additionally, the food waste collection service continues to contribute to an increased recycling rate.

Construction and demolition waste produced by the City continues to achieve high diversion rates and through increased validation of performance the City's confidence in our reporting for this sector is improving. As a result of increased auditing we have adjusted the overall diversion rate down from 100 per cent to 83 per cent, this figure is based on the waste facility rate. We will continue to work closely with our contractors to improve diversion and the quality of waste data reporting.

The Chart below provide details of recycling performance at June 2020

**Chart 8. City of Sydney operations waste disposal and resource recovery in tonnes (totals Jul-19 to Jun-20)**



- City streets, public place and stormwater waste is not separated for disposal. Separate tonnages are based on waste audit estimates. Waste data includes Q4 estimated accrual data.
- City managed properties waste includes City of Sydney owned and managed buildings where the City has responsibility for the collection and management of the waste generated (approximately 65 buildings and five aquatic centres). Waste data includes June 2020 estimated accrual data.
- City Construction and Demolition includes estimates based on data provided by City managed works



### Local government area targets



#### Recycling and Resource recovery

- 70 per cent waste diversion from operating businesses in the local government area away from landfill by end June 2021
- 70 per cent waste diversion (with a minimum of 35% as source-separated recycling) away from landfill by end June 2021
- 80 per cent waste diversion from construction and demolition activities in the local government area away from landfill by end June 2021



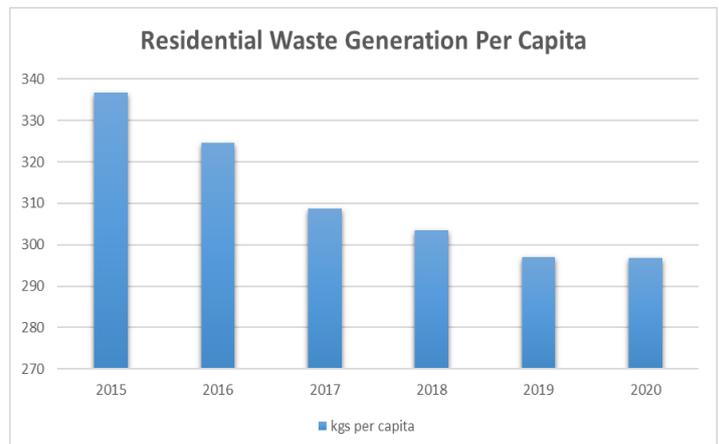
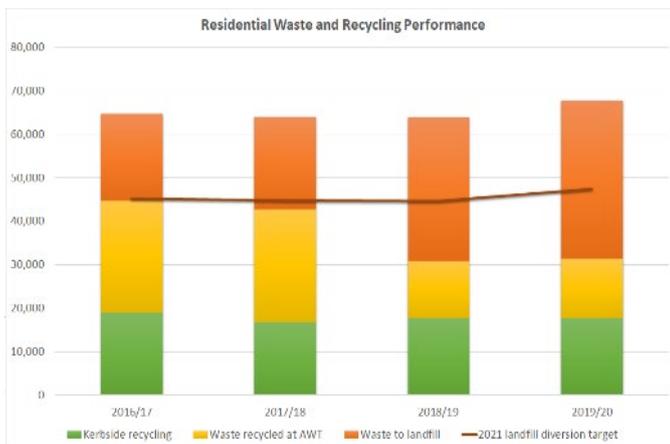
#### The local government area

##### How we are tracking

**Waste minimisation** – since 2015 the per capita annual waste generation rate of our residents has reduced by more than 12 per cent per resident. This means that each of our residents is producing less waste (by weight) each year. The cause of this reduction is likely to be a combination of factors including; light weighting of products through the manufacturing process, home composting, the introduction of the container deposit scheme and more residents taking up waste avoidance initiatives. In the last 24 months the rate of reduction has slowed.

**Recycling** – as a result of recent EPA regulation changes the residential waste diversion from landfill has fallen to 48 per cent from July to December, and the source separated kerbside recycling rate is 28 per cent, the same as this time last year.

The City is working on delivering enhanced community engagement programs to further increase recycling rates and reduce contamination.





## Residential Resource Recovery Updates



### New 'Recycle It Saturday' Drop-Off events

Over 1600 attendees (including pedestrians, cyclists and vehicles) visited the City's first expanded quarterly event in September this year, recycling over 44 tonnes.

For the first time, in addition to electronic waste, residents could recycle soft plastics, used textiles and shoes, expanded polystyrene, large cardboard, garden organics, paint and gas bottles at the new 'Recycle It Saturday' drop-off event.



The turnout exceeded expectations, demonstrating enormous demand from residents for drop-off recycling opportunities. The most popular items recycled were e-waste, textiles, paint and cardboard as shown in the table below:

Material	Weight (tonnes)
Textiles	11.4
Soft plastics	0.408
Electronic waste	27.93
Expanded polystyrene	0.147
Cardboard	1.66
Paint	1.59
Gas bottles	1.1
<b>TOTAL</b>	<b>44.23</b>

The City's annual Household Chemical Cleanout Drop-Off event was held shortly after on 17 October collecting 17.8 tonnes of household hazardous waste from 492 attendees. Paint, water and oil based, remain the top two items dropped off, followed by hydrocarbons and fuels, lead acid batteries, inert solids and gas cylinders.

The second 'Recycle It Saturday' event was held on 5 December with the event promotion rescaled to ensure shorter wait times for attendees. This event, which occurred shortly after the recent Chemical Cleanout event, resulted in 384 attendees recycling approximately 7 tonnes.

### Recycling Helper Service for apartments kicks-off



From September 2020 to August 2021, the City is piloting a recycling support service to 40 x apartment buildings across the City to make it easier for buildings to recycle. City staff will engage apartment communities through a range of engagement methods including educational site visits, bin audits, tailored info sessions for residents and providing education materials for the building (signage, posters, stickers, guides etc).

The first phase was completed from September to December 2020 with 14 buildings. There were:

- 32 site visits conducted
- 28 bin audits completed
- 2 x 2hr pop-up info sessions delivered
- 1773 residents engaged through pop-up stalls, letters, guides & posters.

Initial results show a clear reduction in contamination levels in the yellow bin and a reduction in recycling being placed in the red lid bin.



## Home Recycling Service now available for tricky items



To expand the items our residents can recycle easily, the City is trialling an on-demand recycling pickup service for tricky items including clothes, soft plastics, small electronics and expanded polystyrene for 12 months.

From November 2020, City residents can choose to book a recycling pickup directly with RecycleSmart, through their app or by phoning RecycleSmart. RecycleSmart will provide contactless collection of these bagged items directly from the resident's door for a nominal fee of \$2 per bag. The items will be sorted, contaminants removed, recorded and delivered to the City's Alexandria Canal Depot by RecycleSmart, where the materials will be aggregated and collected by processors for recycling.

The aim of this service model is to make it more convenient for residents to recycle common items the City currently doesn't collect from the kerbside for recycling and to cater to those residents who can't wait or travel to the City's next quarterly recycling drop-off event.



## Talking rubbish to shoppers

For National Recycling Week, the City's Waste Avoidance staff delivered pop-up stalls in shopping centres to educate shoppers on recycling tips and tricks. These events are part of the City's Waste Avoidance Action Plan and over the last six months City staff have delivered 17 face to face recycling education events reaching 667 residents where residents could chat face to face with our educators, play recycling games and recycle their mobiles, light bulbs and batteries

Events included:

- 7 x pop-up recycling stalls in Broadway and Tramsheds shopping centres and Newtown
- 10 x info sessions for the food scraps recycling trial (and 3 x virtual info sessions attended by 56 residents)



## Moving into the second year of the food scraps recycling trial



The City's food scraps recycling trial progressed to Phase 2 in September 2020 which means the food scraps recycling service will be provided to an additional 700 houses and 150 apartment buildings over the next 12 months. At full roll out of Phase 2, the service will be available to more than 21,000 households across the City.



Results so far	Current	By Sept 2021
Apartments	117 buildings (8,492 households)	250 (> 20,000 households)
Houses	1,025	1,000
Food recycled	374t	~715t
Contamination	1.0%	N/A

### Waste audit results

Results of the second waste audit conducted on sample bins from properties participating in the food scraps recycling trial indicated that:

- Houses are recycling 88% of all their food in their food scraps recycling bin.
- Small apartment buildings are recycling 63% of their food; medium sized-buildings 40%; and large apartment buildings 27%.  
(Note that not all households within apartments are participating in the trial and it's likely that individual participating households within apartment buildings would be achieving considerably higher recycling rates.)
- Contamination of the food scraps recycling bin is very low at 0.7% for houses and 1.1% for apartment buildings.

### Relevant links

- [Leave Nothing to Waste, City of Sydney Waste Strategy](#)
- [Waste Management Local Approvals Policy](#)

## Advocacy

### NSW 20 Year Waste Strategy

The anticipated NSW Government 20-Year Waste Strategy is designed to be a whole-of-government initiative to provide a long-term strategic direction for communities, industry and all levels of government to work together to build resilient services and markets for waste resources. The strategy is not expected to be finalised until 2021.

The City is advocating that the Draft 20 Year Waste Strategy provides the regulatory and investment certainty to support the delivery of a comprehensive plan that delivers long term environmental benefits and is underpinned by a strong economic foundation.

The City believes regulatory action and investment is most required in the following ways:

- Invest in commercialising innovation that will deliver alternatives that are better from a resource management perspective
- Create clear procurement pathways for business and governments to stimulate demand for sustainable goods and services
- Create a regulatory framework that shares the responsibility for end of life materials across manufacturers, retailers and consumers
- Mandate data transparency supports industry to improve existing service levels, innovate for better environmental outcomes and provide consumers with confidence in their procurement decisions
- Balance the cost of using sustainable materials by imposing tariffs on those products and services that have not been designed to adhere to circular economy principles and have a high environmental cost at end of life
- Develop and implement a strategic plan for waste and recycling at a metropolitan level that identifies and secures land for existing and future waste treatment capacity requirements



# 6. Active and connected city



Artist impression of George Street, pedestrianised at Campbell Street  
Image: Virtual Ideas

**We are committed to promoting the most sustainable modes of transport for residents, workers and visitors.**

## City of Sydney Operations

### Fleet emissions

The City's motor vehicle fleet has continued to address greenhouse gas emissions through its Sustainable Fleet Management Program. The Program is focussed on maintaining emissions at 2013/14 levels by further reducing fuel use until new low-emission products and technologies become available in Australia.

The City's fleet has continued to reduce its size, balancing vehicle numbers with the demands placed on providing essential services to residents, workers and visitors.

### Our Operational Targets



**Fleet emissions**

- Zero increase in emissions from the City's fleet of vehicles by 2021, from 2014 levels

The combined fleet emissions for Q1 and Q2 2020/21 are on track to be 38 tCO<sub>2</sub>-e less than the same period last year, and the annual total remains below the target level.

Blended biodiesel continues to be the prime fuel type used by the City's diesel and diesel hybrid motor vehicle fleet. Petrol hybrids use Shell Unleaded E10 exclusively.

### Fuel efficient heavy vehicles

Fleet Services has recently hard-coded some industry best practice standards into all heavy vehicle and major plant procurement documents, ensuring vehicles are procured with the following major criteria:

Wherever possible, Fleet Services will procure vehicles and plant with international best practice emission standards to ensure the City's impact on climate change is reduced.

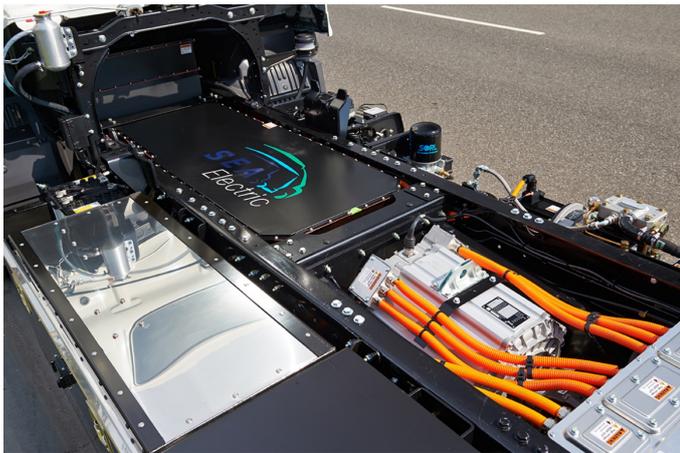
Fleet Services are also seeking the safest available vehicles, with particular regard to pedestrians, bike riders and other vulnerable road users.



**Telematics**

The City has finalised installing telematics technology across the City’s fleet and the project is now in trial phase. On completion of the trial the City will begin gathering crucial data which will assist with driver safety, environmental efficiencies and legal compliance.

Gaining quality data through telematics will assist the Fleet team and its internal customers to make more informed decisions on efficiencies, strategy, and workflow planning which will help to further reduce overall emissions.



**Electric vehicle news**

The City is awaiting delivery of its first ever fully electric commercial vehicle – an electric Tipper Truck, which is due to arrive in the third quarter of 2021/22 and will be utilised by key business units in order to gain feedback on the viability of utilising electric technology in commercial vehicle applications across the City, including range, suitability, safety and user acceptance.

This project was developed on the back of the City recently integrating 19 new fully electric Nissan Leafs into the Fleet and upgrading charge points to align with new industry type 2 charging points. The Leaf has an average range of 270kms, which can increase with urban driving thanks to regenerative power through city driving, and the e-pedal.

Additionally, the Electric vehicle charge points for the City’s electric fleet have now been upgraded from type 1 to type 2. The upgrade has aligned the City with the electric vehicle industry, which is now producing all new vehicles with type 2 connectivity as standard, bringing better reliability and faster charging capabilities. The upgrades are completed and are now available for use across multiple depots and Town Hall House Car Park.

**Active transport**

City staff continue to embrace greener transport options and are increasingly choosing to walk, cycle or use public transport to commute to work and travel within their working day.

City staff plan their travel using a simple transport hierarchy:

- Active Transport (walking or cycling using the City’s own bike fleet)
- Public Transport (buses and trains)
- Drive Green (the City’s own fleet of low emissions vehicles)

To support the use of active transport, staff are encouraged to use City’s bicycle fleet in preference to fleet cars and taxis. The bike fleet includes a range of bikes suited to various operational requirements, including a cargo bike, some electric assist bikes and bikes with additional carrying capacity. Before using the fleet, staff members take part in a cycling confidence course and are provided with personal protective equipment and are encouraged to build their cycling skills with regular group rides.

Most of the City’s bike fleet is housed in our end-of-trip facility provided for staff who walk or ride to work or exercising during work hours. The Pitstop includes 150 bike parking spaces, 150 lockers, ensuite and accessible bathrooms, showers, change rooms and a water station.

Since opening on 13 October 2014 an average of 94 people have accessed the Pitstop daily. There are a total of 26 fleet bikes located at a variety of Council facilities including King George Recreational Centre, Epsom Rd and Bay St Depots. The fleet has travelled more than 52,000 kilometres since 2011.

The following table shows the kilometres travelled by staff using the City Bike Fleet since its introduction in January 2012 and the number of staff members who have completed training to enable them to use the bike fleet. Distances travelled are measured using odometers mounted on each bike.

Bike Fleet	20/21 Q1	20/21 Q2	Year to date	Program to date
Staff trained #	12	7	19	826
Distance (km)	2,897	2,116	5,013	62,051



## The local government area

### Local government area targets

 <b>Walking</b>	– 33 per cent of trips to work during the AM peak undertaken by walking by 2030, by city residents
 <b>Cycling</b>	– 10 per cent of total trips made in the city are undertaken by bicycle by 2030
 <b>Public transport</b>	– 80 per cent of trips to work during the AM peak are undertaken by public transport by 2030, by city residents and those travelling to Central Sydney from elsewhere
 <b>Car sharing</b>	<ul style="list-style-type: none"> <li>– 30 per cent of city residents who drive with an unrestricted drivers licence are members of a car sharing scheme by 2030</li> <li>– Increase the number of car share bookings</li> <li>– Increase the number of on-street car share parking spaces</li> </ul>

### Walking

Walking is a low cost, reliable, healthy and environmentally friendly transport option. Research confirms that walking accounts for around 90 per cent of trips in the city centre and plays a major role in the local transport hierarchy.

The City recognises the importance of a safe walking environment, so we are continuously working to improve pedestrian safety throughout the city, including advocating to the NSW Government.

We have worked with the State Government on the 5 Year City Centre Action Plan which includes a focus on pedestrian and cycling plans and actions in the city centre and Green Square. We have also worked with the State Government on the development of a business case for walking.

The City has investigated how to increase space for people walking to access essential services, high streets and public transport as a response to COVID-19. This helped to inform the development of the City's *Al Fresco* City Program (in partnership with the State Government), notably the road reallocation program related to outdoor dining.

In collaboration with Transport for NSW, the City is undertaking the update of the City Centre Access Strategy with a focus on people and place.

We are continuing to quantify the volume of walking in our area through counting and trialling new methods of gathering this data. We have undertaken walking counts at more than 100 locations and made this data available online. In addition, there is an ongoing trial of new counting technology in the city centre and walking counts and place observations were undertaken in conjunction with the roll-out of pop-up cycleways

### Proposed Pedestrian Boulevard - George St South

More people-friendly streets are being created, with wider footpaths and new spaces for businesses to operate, while attracting people back to the city centre. The proposal is supported by the NSW Government and will ensure everyone can move around comfortably while maintaining physical distancing.



George Street, between Hunter and Bathurst streets, has been upgraded to a pedestrian boulevard following the construction of the light rail. To build on this success, we proposed to extend the pedestrian boulevard to Railway Square by restricting through traffic and widening the footpaths to install more trees and street furniture.

The proposal also includes creating a pedestrian boulevard on Devonshire Street between Chalmers and Elizabeth streets, in Surry Hills.

The project is currently completing the consultation phase and site surveys are in progress.



## Cycling

The City's Cycling Strategy and Action Plan (2018-2030) sets ambitious targets for the City to substantially complete 11 regional routes to link the inner city, homes, schools, businesses and other destinations. The Strategy guides projects and programs to help more people ride bikes in Sydney. It prioritises connecting the bike network, supporting business and people to ride and lead by example.

The City has worked closely with Transport for New South Wales to construct 7km of pop-up cycleways in our area in response to the COVID-19 pandemic. These pop-up cycleways have encouraged people to travel by bike, offering an alternative to public transport and driving.

The number of trips has increased along the pop-up cycleways since the completion of construction. For example, trips have increased 500% on Pitt St, 60% on Dunning Ave and 50% on Pyrmont Bridge Rd. One third of riders have been riding for less than six months, and more than 90% of people feel that the pop-up cycleways are safer than the previous road conditions.

We continue to offer cycling courses and guided rides to increase the capability of riders, including courses for first time riders, 1-on-1 tuition, bike maintenance sessions and guided rides along pop-up cycleways.

### Project updates

- Construction completed on Lawson Street cycleway in Redfern.
- Construction underway on Miller and Saunders Streets in Pyrmont

	Q1	Q2	Year to date
Share the Path sessions	35	28	63
STP Tune Ups (#)	299	254	553
STP maps issued (#)	1126	1054	2,180
STP bells issued (#)	212	206	418
Cycling courses (# participants)	100	89	189
Maintenance courses (# participants)	28	28	56



## Public transport

The City continued to work with Transport for NSW to improve transport infrastructure and services across the City of Sydney, with particular emphasis on the City Centre and Green Square.

The City is collaborating with Transport for NSW to improve transport to Green Square. We are jointly investigating a trackless tram system, and the City is encouraging Transport for NSW to accelerate the introduction of electric buses in this area.

Metro West stations are now confirmed, with a new station for Pyrmont by 2030-31. The City strongly pushed for this station. The Metro will connect Westmead and the City Centre via Parramatta, Olympic Park and the Bays Precinct. The City is calling for the line to extend as far as Zetland and Randwick, via Central and Sydney University/RPA Hospital, by 2031 as well.

The City has supported the NSW Government in seeking ongoing recognition by the Australian Government (Infrastructure Australia) of the national importance of improved connections between the City Centre, Green Square and Southern Sydney.

City Access and Transport addresses transport and land use integration by providing strategic transport advice and advocacy on major developments in the city.

## Car sharing

Almost 70,000 City of Sydney residents and businesses are members of a car share organisation. Around 45 per cent of city residents who drive (with an unrestricted drivers' licence) are members.

The City supports car sharing as part of Council's strategy to make the City of Sydney sustainable.

Car sharing enables multiple households and businesses to share the use of a vehicle. This reduces the number of cars parked on the street, as well as reducing overhead costs for those who rarely need a car (or a second car). As each journey is paid for at the time it is taken, drivers have an incentive to consider cheaper ways of travelling, which results in less car trips. This in turn reduces congestion, greenhouse gas emissions and air pollution. The key support provided by the City is the installation of clearly marked on-street parking spaces in strategic locations dedicated to specific car sharing vehicles. These enable residents to quickly find a vehicle and return it after use. The City installed its first car sharing parking space in 2008. Since then more than 850 dedicated on-street car share parking spaces have been added to the network.

A new car sharing operator commenced operations at the beginning of this year, bringing the total to four operators in the City.

While the pandemic reduced car sharing during the more stringent lockdown measures in March and April, usage is increasing again.

### Relevant links

- [Connecting our city: 2012](#)
- [Walking Strategy and Action Plan: 2014](#)
- [Cycle Strategy and Action Plan: 2007-2017](#)
- [Liveable Green Network](#)



# 7. Green and cool city

**Dealing with heat is identified as a priority for reducing shocks and stresses on our city and its community. Greening our city is an important component of the Sustainable Sydney 2030 vision to be green, global and connected.**

Reducing the effects of urban heat through measures such as increasing shading and canopy, water misting, and careful selection of building and road materials are increasingly important to reduce the overall heat impacts for our communities. We are also focussed on increasing and preserving local indigenous plant and animal populations in our city, through parks and streets verges.

The City maintains sensors in City locations that measure temperature and humidity to collect locally specific background data to monitor and evaluate the effectiveness of urban heat treatments.

A collaborative effort between the City, the community and other land managers is needed to improve our city's urban canopy and ecological value. We will continue to work with our community and others in the city to deliver this commitment.



**City of Sydney Operations**

## What we are doing

The City is currently reviewing the Greening Sydney Strategy. A draft Strategy is being prepared and includes strategic directions to deliver a cool, calm and resilient city.

## How we are tracking

The City's canopy cover was 15.5 per cent in 2008, 17.1 per cent in 2013, and 18.1 per cent in 2019 and 19.1% in 2020. Whilst the City is one of the few councils in Sydney that has managed to increase canopy cover over this time, we need the rate of canopy cover growth to increase more quickly to meet the urban canopy target of 23 per cent by 2030.

Progress against our fauna targets will be measured formally every five years through a comprehensive survey. Bush restoration sites in the city have increased to 12.3ha, from the baseline of 4.6ha in 2012.

*Photo: Living Colour display*





## Our operational targets

 <b>Urban canopy</b>	<ul style="list-style-type: none"> <li>- The average total canopy cover is increased by 50 per cent by 2030 (from 15 to 23 per cent), and increased by 75 per cent by 2050 (to 27 per cent), from a 2008 baseline</li> <li>- Plant 700 street trees each year until 2021</li> <li>- Tree species diversity will not consist of more than 40 per cent for any particular plant family, 30 per cent for any genus or 10 per cent for any one species by 2021</li> </ul>
 <b>Urban ecology</b>	<ul style="list-style-type: none"> <li>- Habitat sites in the city are protected and the area of bush restoration sites is increased by 100 per cent by 2023 from a 2012 baseline of 4.6 hectares</li> <li>- Indigenous fauna species diversity, abundance and distribution is maintained or increased by 2023 based on a 2012 baseline</li> <li>- A progressive increase in the number of habitat features for priority fauna species is established along potential habitat linkages by 2023</li> </ul>
 <b>Urban greening</b>	<ul style="list-style-type: none"> <li>- Plant 50,000 new trees and shrubs in City parks and street gardens each year until 2021</li> </ul>

## Local government area target

 <b>Urban canopy</b>	<ul style="list-style-type: none"> <li>- The average total canopy cover is increased by 50 per cent by 2030 (from 15 to 23 per cent), and increased by 75 per cent by 2050 (to 27 per cent), from a 2008 baseline</li> </ul>
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## The local government area

The City of Sydney recognises the importance of trees and other plants in providing significant environmental, social and economic benefits for the community. There is growing international recognition of the role of cities and local governments in supporting and promoting biodiversity.

The City is committed to increasing tree coverage, improving urban ecology and biodiversity and supporting community greening to make Sydney one of the world's leading green cities. To achieve this, the City has developed the Greening Sydney Plan.

The Plan acknowledges the importance of ecology and biodiversity to city living and supports the development of the Urban Ecology Strategic Action Plan.

Three strategic focus areas have been identified informing the objectives and targets of the Plan:

- **Urban Canopy** - developing and protecting the city's urban forest
- **Urban Ecology** - greening to improve habitat for biodiversity
- **Community Empowerment** - to green and care for our urban landscape

### Relevant Links

- [Greening Sydney Plan: 2012](#)



## Urban canopy

The City of Sydney recognises that trees and green spaces are one of a city's most important natural assets. They are crucial to maintaining the high quality of our public realm and achieving Sustainable Sydney 2030, by assisting the creation of green corridors and increased canopy cover.

In-road tree planting projects were completed within Reserve Street, Beaconsfield. Works are also 90% complete at Boyce Street Glebe and Jones Bay Road Pyrmont, with tree planting to occur in March 2021. Design and consultation work continue for streets in Camperdown and Redfern.

A wider greening precinct approach has been completed in the eastern area around Danks Street Waterloo, with over 90 street trees planted and extensive street gardens installed. Work to increase greening in the Crystal St plaza will be completed in autumn 2021.

This planting is undertaken as part of the City's Street Tree Master Plan 2011<sup>16</sup>, which is a blueprint for street tree plantings across the City of Sydney.

The City is continuing to deliver a number of parks upgrades within the LGA to renew parks in poor asset condition and to improve community amenity. Under the renewal program, projects have been completed at Shannon Reserve, Fig Park Playground, Womerah Gardens, Kings Lane and Cardigan Reserve during Q1 and Q2 fitness stations have also been completed at Pirrama Park. Planning and design for over 20 park renewal projects are currently underway. Under the Greening Sydney program various areas have been

converted to increase the vegetated space within the City. During Q1 and Q2 in 2020-21 7,902m<sup>2</sup> of landscaping (grass and planting installation) was completed. In Q1 and Q2, 56,001 new plants were installed at parks and streetscapes across the local government area including Forbes St, Danks St,

Raingardens are one of the simplest forms of Water Sensitive Urban Design (WSUD), improving water quality and managing runoff to improve biodiversity and the liveability of urban environments.

Description	Q1 20/21	Q2 20/21	20/21 target	Year to date	Total to date
Park upgrades (#)	4	1		5	85 since 2008
Landscaping (grass/planting) (m <sup>2</sup> )	4,343	3,566	8,000	7,909	115,137 since 2009
New shrubs and grasses planted in parks and streets	36,018	19,983	50,000	56,001	8,16,363 since 2009
Raingardens (#)	N/A	N/A	trend	N/A	249
Street trees planted since 2005 (#)	360	0	700	360	15,052
Canopy cover (on current) (%) *	N/A	N/A	23.5	N/A	19.1

Please note numbers on the table above are compiled from various sources and may include adjusted totals as more accurate data is received.

\* Canopy cover is measured every two to five years. 2013 data was made available in 2016, with new measurement undertaken in early 2020, and the data shown in the table above.

## Relevant links

- [City of Sydney Street Trees](#)
- [Sydney's Green Streets](#)
- [Urban Forest Strategy 2013](#)

<sup>16</sup> <http://www.cityofsydney.nsw.gov.au/live/trees/tree-policies>



Photo: Ibis nesting in the palms at Redfern Park, a key site being monitored in the City's Ibis Management Plan

## Urban ecology

The ecological health of urban areas influences not only the diversity and abundance of plant and animal species, but also the quality of life of urban residents. Improved urban ecosystems can consequently have both environmental and social benefits.

The City's Urban Ecology Strategic Action Plan (UESAP) was adopted by Council in March 2014. The Plan outlines the City's approach to identify, protect and rebuild locally indigenous plant and animal populations.

During Covid-19 in 2020, the Urban Ecology Workshop Series was put on hold and hopes to resume in 2021.

Bush restoration works continue to be implemented under the new bush regeneration contract. The City has targeted efforts at several bush restoration areas across the City. A total of 6954 native tubestock were planted across a number of sites in the north and south of the LGA from July – Dec 2020 to improve the structure and diversity of the bush restoration sites. Efforts in 2020 have been largely focused on renewing the Prince Alfred Park pool roof, with a program of improvements being carried out across 2020. The final stage for the PAP pool roof will commence in February 2021.

A total of 78m of habitat fencing has also been installed at Blackwattle Bay to enable plants to establish.

Programs to commence in early 2021 include the nest box and hollow implementation program, and the continuation of the ibis monitoring surveys to manage key sites across the LGA. The City's Australian White Ibis Management Plan was finalised in 2020 and is used to guide decisions on how to sustainably manage the ibis populations found within the City.

The urban biodiversity corridor project is also near completion as part of the Local Strategic Planning Statement review work. It has assessed the current linkages identified in the UESAP to determine their feasibility and identified possible future opportunities for enhancing connectivity across the LGA. A number of recommendations have been made to update the existing controls and provisions in the LEP and DCP.

Focal Group	Total species recorded
Butterflies	14
Bees	14
Spiders	12
Cicadas	5

## Relevant links

- [Urban Ecology Strategic Action Plan 2014](#)

## Sydney Park Architizer A+ Awards

Sydney Park, on the site of a former brick pit and rubbish tip, has taken out the Jury Award in the [Architecture + Water category of the 2020 Architizer A+ Awards](#), in New York. The 44-hectare park harvests 850 million litres of stormwater a year from the surrounding suburbs of Newtown, Erskineville, Redfern and Alexandria, cleans and recycles the water as part of its water features throughout the park, and then re-uses it to top up wetlands, for irrigation and to supply the City of Sydney depot nearby.



The park recycles water from surrounding suburbs, some of which is reused in a nearby council depot. Photo: Ethan Rohloff Photography



## Community empowerment

### Community gardens and community planting

The City of Sydney supports community gardens, verge gardens, community composting and urban Landcare groups within our City. Community gardens have provided an important role for City residents during Covid-19 with increased interest in membership and the acknowledgement of the important role gardening plays in physical and mental health, social connection and the provision of fresh organic produce.

The City continues to support and implement community gardens in the local government area, with 23 gardens in total, including two community footpath verge gardens.

In addition to the new garden in Elger Street Glebe, work on Stage 2 of the Kings Cross Community Garden in Lawrence Hargrave Reserve will commence in 2021 and a new garden is proposed for the Western Block in Camperdown. Wicking beds, that work like a big self-watering pot, are water efficient and are now widely adopted within the City’s community gardens with three new wicking garden beds constructed in Frances Newton Reserve, Darlinghurst and conversion of existing garden beds to wicking beds at several other gardens.

Our volunteer urban Landcare groups have continued to provide an invaluable role in restoring native vegetation, weeding and litter removal which in turn supports the development of nature corridors and improved biodiversity within the city. Whilst Covid-19 has restricted the ability to hold community planting events this year, the Pyrmont Ultimo Landcare group held a successful community planting of native plants at Maybanke Reserve, Ultimo. The City is looking forward to being able to offer community planting opportunities to schools and community groups next year.

Performance	Year to date	Total to date
Community Gardens (#)	No new	21
Landcare groups (#)	No new	5
Community footpath verge gardens (#)	No new	2
Community composting groups (#)	No new	0

### Sydney City Farm



Photo: Sydney City Farm

Sydney City Farm in Sydney Park, St Peters is a place to learn about urban agriculture and sustainable food production. From July – December 2020, 340 volunteer shifts were worked at the Farm. 130kgs of fresh food was communally grown by volunteers and donated to the Asylum Seekers Centre.

Sydney City Farm education programs provide sustainable living content and practical solutions for organic waste management at home. From July to December 2020, four Compost Basics and Worm Farm Basics workshops were held online via zoom and one via face-to-face workshop was held at Sydney Park Pavilion.

Sydney City Farm held 8 other education programs on urban farming topics from July to December 2020, involving 68 participants.

	2020/21 Q1	2020/21 Q2
Food grown at Sydney City Farm	87kgs	62kg
Number worm farm and composting education programs	2	3
Participants	42	45

### Relevant links

- [City of Sydney Community Garden](#)
- [City of Sydney Bushcare](#)



### Green roofs and walls

Green roofs and walls make an important contribution to the urban environment. They help mitigate the impacts of the urban heat island effect, slow and clean stormwater, improve air quality, increase habitat for biodiversity and create additional space for urban food production and recreation. The Green Roofs and Walls Policy – the first of its kind in Australia, was formally adopted by the Council in 2014.

The City has developed resources to inform, inspire and encourage building owners to include green roofs and walls in their developments. These include a guide to waterproofing for green roofs and walls, a green roofs and walls inspiration guide and case studies showcasing two of the City’s own green roof projects, Surry Hills Library and Beare Park amenities block. The City’s work on green roofs and walls, including the policy, guidelines and its own green roofs and walls, was ‘highly commended’ in the NSW Government’s Green Globe Awards in October 2015.

The guides, case studies and more can be downloaded from [www.cityofsydney.nsw.gov.au/green-roofs-and-walls](http://www.cityofsydney.nsw.gov.au/green-roofs-and-walls)

Green roofs and walls are becoming a standard feature in new developments, as developers seek to make the most of rooftop spaces and provide attractive offerings for residents and workers. In 2020 the City approved 19 developments featuring green roofs or green walls.

Performance	2018 new sites	2019 new sites	2020 new sites	Total to date <sup>[1]</sup>
Green roofs in the LGA (#)	11	5	15	171
Green walls in the LGA (#)	1	3	8	54
Total green roofs and walls (#)	12	8	19	221

### Relevant links

- [Green Roofs and Walls](#)

<sup>[1]</sup> 2012/13 was the first year of measurement.



# 8. Delivering to the Community

In March 2019, our community ranked concern for climate change as the fourth most important issue facing Sydney. The importance of environmental action to our community was further emphasised in May 2020 consultation where the community ranked climate change as their second greatest concern.

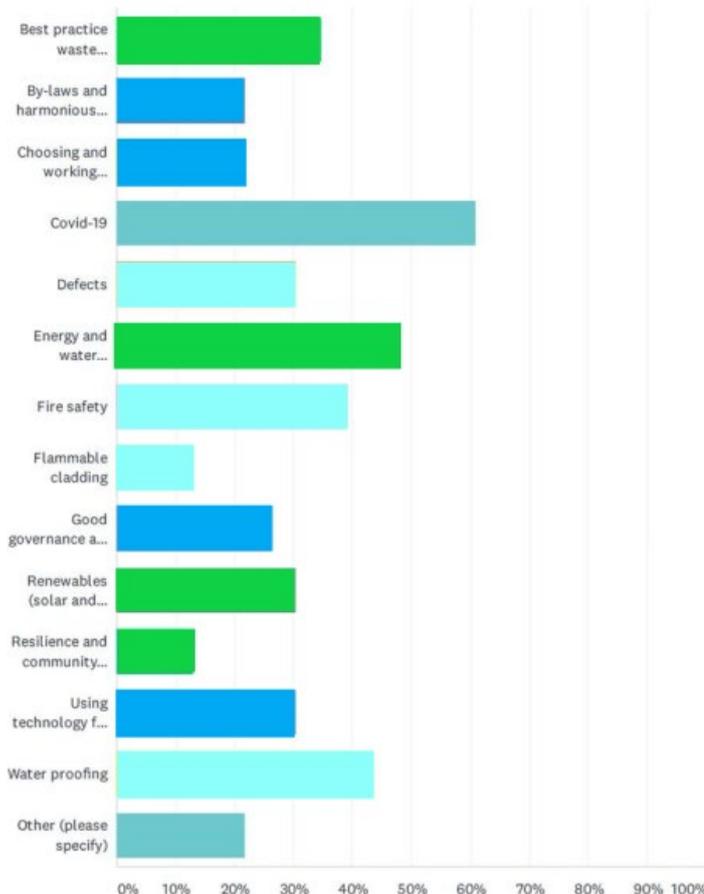
Throughout 2020 we have worked to support our communities as they seek to improve environmental performance while responding to the impacts of the Covid-19 pandemic; aiming to ensure 'Recovery is a catalyst for a green and sustainable future'.

Sustainability and improving environmental performance remain core objectives for our community and program partners, many of whom have spent the last months developing strategy and planning projects which will underpin their continued achievements in resource efficiency and subsequent cost savings.

Throughout the period the City has continued to support our residents and business community to improve environmental performance, including:

- Forty-one buildings assessed for water saving opportunities that once implemented will save owners over 200 megalitres of drinking water each year through the Water Partnership Program,
- Better Buildings Partnership has achieved in FY2020 a more than 60% reduction in carbon emissions (from their 2005-06 baseline)
- Release of a key research paper by the Better Buildings Partnership demonstrating practical solutions for industry adoption of a Circular Economy.
- 89 residential strata apartment buildings have now been rated using the NABERS tool. Most supported by the City's Environmental grants. Two buildings are now at the outstanding rating of 6-star performance.
- Funding seven environmental innovation projects including two to help demonstrate circular economy solutions and one to demonstrate to the wider sector how a large office building owner can capture and reuse rainwater for use in their cooling towers and hence significantly ease the City's water supply and stormwater system.
- Assisting 167 food businesses to target food waste with training and an industry specific toolkit, through the Love Food program.

**Proportion of residential stakeholders concerned with emerging environmental, governance and building safety issues**



**Relevant links**

- [Support offered to our residents and businesses to improve their sustainability](#)

*The City's survey of residential apartment stakeholders highlighted ongoing concern with environmental performance with energy, water and waste management, and uptake of renewable energy all ranking as important priorities.*



## Business sectors – Program update

### Sustainable Office Sector Plan

Sydney’s Sustainable Office Buildings Plan was adopted by Council in 2018 and highlights 35 actions to achieving more sustainable buildings across the office sector. These actions are largely delivered through the flagship programs of the Better Buildings Partnership and CitySwitch Green Office.

In 2020, The City built capacity in the office sector by presenting at the Good Environmental Choice circular economy conference; The Energy Efficiency Council annual conference; and the World Energy Forum where the Better Buildings Partnership presented a safety study on installation of batteries.

The Better Buildings Partnership continued to lead industry innovation with the release of research pieces on circular economy, energy demand, and battery safety. CitySwitch delivered a tool for better tracking of occupancy numbers and energy performance in response to the Covid-19 pandemic.

The City continues to champion the expansion of the federal Commercial Building Disclosure program to include smaller buildings and office tenants, and The City continues to encourage Sydney LGA businesses to set net zero targets and commitments.



*Better Buildings Partnership socially distanced annual results communication in November 2020.*

### Better Buildings Partnership

The Better Buildings Partnership released preliminary results for FY 2019-20, showing that the partnership had achieved an overall carbon emission reduction of 61 percent from the FY 2006 baseline year and a 39 percent reduction in potable water consumption. It must be noted that the impact of people working from home from March 2020 due to the Covid-19 pandemic has resulted in exceptional results for FY 2020, with a year on year reduction of 29% in carbon emissions and 17% reduction in water consumption compared to FY 2019. This year’s annual results must be considered as outliers to the overall progress that the Partnership is making in reducing its environmental impact.

Performance	2005 - 2006 baseline	2019-20 results	FY20 % saving achieved (from baseline)
Carbon emissions (t CO <sub>2</sub> e)	399,181	152,848	61% reduction
Potable water kL	3,160,760	1,922,916	39% reduction

The Partnership continued to facilitate the uptake of renewable energy by members and their tenants; defined pathways to achieve a circular economy; and accelerated targets for net zero emissions. Highlights in 2020 include:

- The CEOs of GPT, Dexu and Mirvac shared their achievements in these areas via video at the November Partnership annual event, to inspire others in the industry to follow their lead.
- Four waste organisations (ORG, Haulaway Services, Cleanaway and iTreat) have now been certified by the Good Environmental Choice Australia’s waste services standard. This standard was developed in conjunction with the Partnership to help increase the capability and quality of services provided by the waste industry.
- The Partnership delivered a research paper that defining practical solutions for industry adoption of a Circular Economy.
- The partnership updated its National Construction Code (NCC) Section J Compliance checklist, a tool designed to help building owners comply with the NCC energy efficiency requirements.
- The partnership identified barriers to increase energy demand flexibility and developed an energy demand management protocol which supports building owners to curtail energy demand during peak times.

#### Relevant links

- [Better Buildings Partnership](#)



**CitySwitch Green Office NATIONAL**

The CitySwitch Green Office program now represents over 1,500 offices and over 20 per cent of the office floor space across Australia.

In this period, CitySwitch signatories completed reporting and submitted projects for the CitySwitch annual awards, to be announced early in 2021.

Preliminary results for 2020 indicate that signatories across Australia have achieved a reduction of approximately 130,318 tonnes of carbon emissions from energy efficiency improvements, and further abatement of approximately 826,008 tonnes of carbon emissions through the purchase of carbon offsets.

The CitySwitch National program worked with the Energy Efficiency Council to deliver the Office Sector Spotlight report, as well as research into energy efficiency opportunities in commonly used office tenancy plant and equipment. The program also partnered with NABERS to explore the use of the Sustainable Portfolio Index to office tenants and Good Environmental Choice Australia to deliver an information session on the circular economy.

Performance - Cumulative	Q1 20/21	Q2 20/21
Signatories (#)	623	634
Tenancies (#)	1,534	1,547
Office floor Space - NLA (m2)	5,080,763	5,096,585
Percentage of all Australian office space <sup>1</sup>	20.3	20.3
Average NABERS Energy rating (stars)	-	4.5

**Relevant links**

- [CitySwitch Green Office](#)

**CitySwitch Green Office SYDNEY**

In 2020 the CitySwitch Green Office Sydney program continued to drive sustainability in commercial offices, including:

- Collaborating with NABERS to develop expansion of their Sustainable Portfolio Index into office tenancies,
- Presenting at the GECA circular economy conference in October to encourage businesses to measure and manage and set ambitious targets for waste improvement and supply chain strategy.
- Sydney signatory EML participated in the Energy Efficiency Council and CitySwitch launch of the Sector Spotlight Report on office efficiency in November.
- Sydney signatories were supported with their annual reporting, NABERS ratings and award submissions, with full results to be announced at the national awards scheduled for February 2021.

Performance - Cumulative	Q1 20/21	Q2 20/21
Signatories (#)	140	140
Tenancies (#)	227	221
Office floor space NLA (m2)	1,370,063	1,375,252
Office floor space as proportion of Sydney (%) <sup>2</sup>	27.2	27.2
Average NABERS energy rating (stars)	-	4.6



The Office Sector Spotlight Report was launched in December 2020 - A collaboration between the Energy Efficiency Council and CitySwitch



## Making Sydney a Sustainable Destination Plan

The Making Sydney a Sustainable Destination Plan was adopted by Council in 2018 and highlights 28 actions to achieving more sustainable buildings across the accommodation and entertainment sector. Many of the actions are delivered through the flagship program, the Sustainable Destination Partnership, which continued to deliver on the program workplan through 2020.

Though the sector has been significantly impacted due to the health and economic impacts of the Covid-19 pandemic, the City continued to promote and offer subsidised building ratings to the sector through the provision of grants. The City did not participate in the Global Destination Sustainability Index this year but is working with the Sustainable Destination Partnership to promote Sydney as a safe and sustainable destination.

## Sustainable Destination Partnership

The Sustainable Destination Partnership released preliminary results for the 2019-20 financial year showing reductions of 15 per cent carbon emissions and 20 percent water consumption from the previous year - though these reductions are largely attributed to building shut-downs due to the Covid-19 pandemic. Many partners used this quiet period to continue sustainability action, including the State Library and Museum of Contemporary Art who developed sustainability strategies. The Crown Plaza also joined the partnership in 2020.

The City facilitated two leadership panel meetings and one to one consultation to support partners in planning for a sustainable recovery. An event on Power Purchase Agreements (PPAs) was also convened to share expertise from the City's own recently implemented PPA and encourage members of the partnership to increase their uptake of renewable energy.

Some partners also accessed the online training available through Love Food Sydney to maintain their commitment to halving food waste.

Performance	2017-18 Baseline	2019-20 Preliminary results	2020-21 Target
Carbon emissions (tCO <sub>2</sub> e)	287,334	232,706 15% reduction	10% reduction
Potable water kL	2,570,437	2,025,331 20% reduction	Zero increase

### Relevant links

- [Sustainable Destination Partnership](#)

*Sustainable Destinations Partnership member Sydney Opera House is powered by 100% renewable energy through a power purchase agreement (PPA)*





## Community and Business – Program update

### Guides

# Climate action for residents

There are things residents can do to fight climate change and help take care of Sydney. Here are four of the best.

 Last updated: 27 November 2020

## Climate action for residents



*In November 2020, the City published guides to assist our communities take action on climate change.*

### Renewable Energy Program

To address increasing community concern around the impacts of climate change, and deliver on Goal 8 in the City's Climate Emergency Response – "Help the community access onsite and offsite renewables, including 100 per cent Greenpower", the City has continued efforts to engage the community on their procurement of renewable electricity.

Highlights from the past 6 months include:

- Promotion of GreenPower through advertising and news articles published via City of Sydney channels. Two of these articles were used as part of online campaigns run by the NSW Government on GreenPower.
- Continued promotion of the City of Sydney's renewables leadership and information on the City's Power Purchase Agreement, which came into operation on 1 July 2020.
- In November, the City published a set of tailored guides focussed on assisting Residents, Workers, Students and Business to take climate action.

### Relevant links

- [Switching to renewable energy](#)
- [Climate action for business](#), [Climate action for residents](#), [Climate action for students](#), [Climate action for workers](#)

### Building Tune-up Program

The tune-up program seeks to support building owners improve their energy efficiency and reduce utility costs through low cost upgrades and tuning of their energy systems. The program delivered integrated environmental performance rating and implementation support to 4 commercial buildings in 2020.

The City is working with a further 26 Environmental Performance Grant Program recipients to ensure implementation of energy and water savings projects identified by energy audits and NABERS environmental performance ratings.

### Relevant links

- [Building Tune Up](#)



### Water Savings Partnership

The Water Savings Partnership program, in collaboration with Sydney Water, commenced in June 2019 and aims to engage with residents and businesses to improve water use efficiency and deliver water saving opportunities over the next two years.

Despite building access restrictions due to the Covid-19 pandemic, program performance is delivering well against targets, demonstrating the demand and opportunities for water savings in the business sector.

Example work include a water efficiency assessment that for a major shopping centre that identified opportunities to save 63 kL/day. The centre has already implemented changes to achieve an estimated 22 kL/day.

Performance	Results to date	Program Target
Non-residential participants (#)	41	50
Savings identified (kL per day)	551	-
Savings achieved (kL per day)	88	150

### Love Food Sydney



Restaurant manager Rebecca Shave, at Rising Sun Workshop in Newtown, one of the Sydney businesses tackling food waste through the Love Food program.

Love Food Sydney, funded by the NSW EPA, will build the capacity of residents, businesses and tertiary institutions to avoid food waste. The program launched in February 2020; however, a reassessment of engagement methods was required due to restrictions in response to the Covid-19 pandemic.–Face to face business support for the project was put on hold for several months and two e-learning modules were developed to upskill and engage staff on food waste avoidance interventions.

Businesses from the Sustainable Destination Partnership and wider community registered to provide the training to their staff; and over 90 staff from 11 businesses, including the Opera House, The Langham Hotel and Sheraton Grand Hotel have completed the training.

As Covid-19 restrictions eased, face to face consultant support to businesses was re-established to measure waste baseline volumes and implement a food waste action plan, and two businesses have undertaken the first phase. Engagement with the residential sector has been via the Smart Green Apartment program, the City's organics waste trial and City Spaces teams, and has resulted in 364 resident registrations. Engagement with partner tertiary institutions will resume in 2021.

Performance	Program Targets	Performance to Jun-20
Residential participants (#)	3,434	364
Business participants (#)	167	141
Businesses in tertiary institutions	20	-

**Relevant links**

- [Love Food Sydney](#)



City of Sydney's Ishita Singh has assisted 41 buildings to identify opportunities to reduce water consumption through the Water Savings Partnership with Sydney Water.



## Environmental Grants

In the second half of 2020 the City awarded 69 Environmental Performance and Knowledge Exchange Grants to facilitate action and catalyse solutions required to achieve the targets set by Sustainable Sydney 2030.

Fifty nine Ratings and Assessments projects were funded that will assist building owners and managers better understand their environmental impact and identify opportunities for improvement

Seven Environmental Innovation projects were also funded:

1. Demonstration project aiming to salvage and transform plastic containers from businesses and homes into usable products. (Defy By Design Ltd).
2. A demonstration project that aims to capture and reuse rainwater in cooling towers, easing the City's water supply and stormwater system. (ISPT Pty Ltd)
3. A feasibility study exploring the benefits of a fixed, low-cost air sensor network, generating localised air quality data across the city producing a road map for quality air monitoring. (University of Technology Sydney).
4. A feasibility study into a CO<sub>2</sub> transcritical refrigeration system within the hotel industry, where the system has the potential to provide refrigeration and heating hot water simultaneously. (Enman Pty. Ltd.).
5. A feasibility study on diverting organic waste away from landfill into compost, with data informing restaurants, cafes and businesses of their waste produced, reducing overhead costs. (Localcyle Pty Ltd).
6. A demonstration project that aims to develop a resources life-cycle engine for recycled and reused commercial fit outs, building a sophisticated tracking and industry awareness resource. (Profile Of Design Pty Ltd).
7. A demonstration project that aims to lower an individual's carbon footprint via a mobile application by providing tools, programs and features to change behaviour. (The Neighbourhood Effect Pty Ltd).

The City awarded three Knowledge Exchange grants for environmental outcomes, to:

1. The development of best practice criteria for sustainable waste to help businesses reduce waste and enhance waste data management. (Good Environmental Choice - Australia Limited).
2. The production of educational short videos providing the fundamentals for understanding strata living for new and existing residents and encouraging participation in strata communities, including social media platforms for interactive discussion. (Strata Answers Pty Ltd)
3. The development of a series of e-learning modules that will be supported by short-form educational video demonstrations on best practice waste and recycling. (Edge Environment Pty Ltd).

In this period the City also assisted four environmental projects through the Matching Grants program; helping to improve the sustainability of our LGA by supporting 2 community gardens, a community compost trial and development of a community mural to raise awareness of urban biodiversity.

### Relevant links

- [Environmental Performance Grants](#)
- [Knowledge exchange sponsorships](#)
- [Matching grants](#)
- [Environmental grants interactive map](#)



## Residential Sector – Program update

### Residential Apartment Sustainability Plan

The Residential Apartment Sustainability Plan (RASP) adopted by Council in August 2015 contains 30 actions to drive demand for better performing buildings over a ten-year period.

The City has continued to collaborate with 18 stakeholders from the NSW State Government, industry and community organisations to reduce the environmental impact of apartment buildings through our Residential Apartments Sustainability Reference Group. This group met in August and November to discuss opportunities for improving sustainability in the strata sector. Particular focus was given to upcoming legislative changes to the Strata Schemes Management Act (NSW) and ongoing collaboration on flammable cladding and development in façade PV.

The City continues to support the take-up of the NABERS tool for residential apartments, launched in June 2018, through Smart Green Apartments and the Environmental Performance Grants program. The City has directly supported 89 ratings (either individual strata buildings or layered schemes in precincts). The ratings are on a scale from 0 stars (poor) to 6 stars (market leading).

The City sponsored the Environment Award at the 2020 Strata Community Association Awards and supported a four-day online summit for apartment owners hosted by Your Strata Property. The City is collaborating with NSW Government to ensure energy efficiency stimulus, incentives and support include strata communities and also low-income communities.

The City promoted the value of improved environmental performance and sustainability upgrades in residential strata through presentations at the following:

- Owners Corporation Network's electric vehicle charging webinar in December 2020
- NABERS National Steering Committee

#### Relevant links

- [Residential Apartment Sustainability Plan 2015](#)

## Smart Green Apartments



*Fleetview, in Pyrmont, won the Strata Community Association Environment Award this year. The building plans to install rooftop solar this year, which will be the largest solar PV system on a residential apartment building in the southern hemisphere.*

Smart Green Apartments is the City's flagship retrofit program for apartment communities. To date, direct engagement has occurred with 141 strata plans, 172 buildings and 27,182 residents in 13,876 apartments.

Program participants from the 2016, 2017, 2018 and 2019 intake years have implemented energy efficiency projects to save a total of 20,324 tonnes CO<sub>2e</sub> per year and saving participating owners corporations a total of \$2.89 million per year. This includes 652kW of solar which saves 756 tonnes CO<sub>2e</sub> a year, \$109,000 in reduced energy bills and represents \$717,871 in community investment.

Through the City's Waterfix partnership with Sydney Water; 3,026 individual apartments have been retrofitted within 14 buildings. These upgrades will achieve water savings of 697 ml per annum in reduced water bills.

Owners' corporations from all intakes have continued to implement waste improvement initiatives in their buildings, including nine Smart green Apartments buildings which are participating in the City's food waste collection trial.

# 9. Glossary

**Active transport:** Involves any physical activity that gets you from one place to another, such as walking and cycling.

**Annual Carbon Inventory:** Internal database developed by the Sustainability Unit summarising annual greenhouse gas emissions from all City of Sydney assets and activities (buildings, street lighting, parks & other) resulting from consumption of electricity, gas and fuel and other sources.

**Arterial transport:** A high-capacity urban road or route.

**BASIX or Building Sustainability Index:** A NSW government index, to rate energy and water efficiency performance of residential buildings, that aims to reduce water consumption and greenhouse gas emissions by 40 per cent compared to pre-BASIX (2004) buildings.

**Biodiversity:** Biological diversity including species richness, ecosystem complexity and genetic variation.

**Business-as-usual:** A projection (e.g. greenhouse gas emission levels) based on the assumption that all existing policy measures remain in place with no new measures introduced.

**Canopy cover:** The proportion of land area occupied by the tree's crown or canopy, or combined canopies, when visualised from directly above. It is often expressed as a percentage of the total area covered.

**Carbon intensity:** Electricity that has a high emissions concentration, or energy intensity, for example coal-fired electricity has a high emissions concentration, or carbon intensity.

**Carbon neutral or net zero emissions:** Balancing the amount of carbon released with an equivalent amount offset by purchasing carbon credits to make up the difference.

**COP21:** The 2015 United Nations Climate Change Conference held in Paris, December 2015 that negotiated the Paris Agreement - a global agreement on the reduction limiting global warming to less than 2°C compared to pre-industrial levels and to drive efforts to limit the temperature increase even further to 1.5°C.

**C40 Cities:** is a network of the world's megacities committed to addressing climate change.

**Dual plumbing:** A plumbing system with two separate pipes supplying potable and reclaimed water to a building or precinct.

**Ecosystem:** Animals, plants and microorganisms that live in one place, as well as the environmental conditions that support them.

**Energy efficiency:** Using less energy to achieve the same output.

**Energy storage:** The capture of energy produced at one time for use at a later time.

**Environmental Action 2016 – 2021 Strategy and Action Plan** The strategy and action plan combines the insights and data from environmental master plans and strategies that the City developed between 2008 and 2015. The plan outlines our progress to date, and approach to achieving our bold Sustainable Sydney 2030 targets.

**Environmental Management System (EMS):** is a structured system designed to help manage environmental impacts and improve the environmental performance of the City's operations.

**Greenhouse gas emissions:** Gases that trap heat in the atmosphere. Greenhouse gases from human activities are the most significant driver of observed climate change since the mid-20th century.

**Locally indigenous:** A native plant that is limited to a particular geographic area and often confined to a specific habitat.

**Low-carbon energy:** Electricity produced with lower amounts of carbon dioxide emissions than conventional fossil fuel power generation, such as wind, solar and hydro power.

**Mitigate:** Taking action to reduce impact on the environment, as well as contributions to climate change (in this context).

**National Australian Built Environment Rating System or NABERS:** An Australian government initiative that measures and rates the environmental performance of Australian buildings and tenancies.

**National Greenhouse Accounts (NGA) Factors:** Published by the Department of Climate Change "The National Greenhouse Accounts (NGA) Factors" has been prepared by the Australian Government and is designed for use by companies and individuals to estimate greenhouse gas emissions for reporting under various government programs and for their own purpose.

**Net zero emissions:** Balancing the amount of carbon released with an equivalent amount offset. Usually offsets are through purchasing carbon credits to make up the difference. The best practice approach is to reduce, or avoid, carbon emissions first, then offset any unavoidable emissions.

**Non-potable water:** Water that is not of a quality for drinking and cooking purposes, used for purposes such as laundry, gardening, car washing and cooling towers.

**Paris Pledge for Action:** At COP21 in Paris (December 2015), a group of global cities, regions, companies and investors committed achieve climate stability, limiting global temperature rise to less than 2°C.

**Performance Planning:** Performance Planning (PP) is a TechnologyOne product that stores measures, projects and targets. Data can be imported or manually entered depending on the source. Managers are responsible for ensuring accuracy of the data. PP also contains Corporate Plan KPI's and projects.

**Potable water:** Treated water that is safe enough for consumption, use in kitchens and bathrooms. Water that is of drinking water quality for use in bathrooms, kitchens and for consumption.

**Raingardens:** Gardens that allow rainwater runoff to be absorbed, providing rainwater for plants and improving water quality in waterways by up to 30 per cent.

**Recycled water:** Former wastewater (sewage) is treated to remove solids and impurities and used for non-potable water needs, rather than discharged into waterways.

**Renewable energy:** Energy from resources which are naturally replenished on a human timescale, such as sunlight, wind, rain, tides, waves, and geothermal heat.

**Resilience:** The capacity to survive, adapt and grow no matter what kinds of chronic stresses and acute shocks are experienced.

**100 Resilient Cities:** Pioneered by the Rockefeller Foundation (100RC) is dedicated to helping cities around the world become more resilient to the physical, social and economic challenges that are a growing part of the 21st century.

**Scope 1 GREENHOUSE GAS emissions:** Emissions directly occurring "from sources that are owned or controlled by the institution, including: on-campus stationary combustion of fossil fuels; mobile combustion of fossil fuels by institution owned/controlled vehicles; and "fugitive" emissions. Fugitive emissions result from intentional or unintentional releases of greenhouse gases, including the leakage of hydro fluorocarbons from refrigeration and air conditioning equipment".

**Scope 2 GREENHOUSE GAS emissions:** Indirect emissions generated in the production of electricity consumed by the institution. Scope 2 emissions physically occur at the facility where electricity is generated.

**Scope 3 GREENHOUSE GAS emissions:** All the other indirect emissions that are "a consequence of the activities of the institution, but occur from sources not owned or controlled by the institution" such as commuting, air travel for university activities, waste disposal; embodied emissions

from extraction, production, and transportation of purchased goods; outsourced activities; contractor owned- vehicles; and line loss from electricity transmission and distribution".

**Sea level rise:** Long-term increases in the mean sea level due to global warming.

**Sustainability Management and Reporting Tool (SMART):** SMART is a new utilities management system that will manage and record energy and water usage by directly extracting consumption data from relevant authorities.

**Stormwater harvesting:** Water from intense rainfall events (stormwater) is captured, cleaned and typically re-used for non-potable purposes.

**Sustainable Sydney 2030:** City of Sydney publication that sets the 2030 vision for the city aligned to the strategic priorities of Green, Global & Connected. Sets the direction, defines at the road map and articulates the step changes required to achieving a more sustainable future.

**Swales:** Low, moist or marshy land, naturally landscaped feature or a human-created one, that manages water runoff, filters pollutants and increases rainwater permeation.

The best practice approach is to reduce or avoid carbon emissions first, then offset any unavoidable emissions.

**Trigeneration:** A system providing cooling, power and heating. Electricity is produced locally, the waste heat is used to supply heating and hot water and converted into cooling via a heat-driven chiller system.

**Urban heat island effect:** Cities are often warmer than rural areas because vegetation is replaced with hard structures, such as pavements and buildings, which absorb and release more heat than the natural landscape.

**Urban renewal areas:** A program of land redevelopment in areas of moderate to high density urban land use.

**Utility corridors:** A passage built underground or aboveground to carry utility lines such as electricity, water and sewerpipes.

**Water efficiency:** Using less water to achieve the same output.

**Water sensitive urban design:** A design approach which integrates the urban water cycle into urban design to reduce environmental degradation and improve aesthetic appeal.

**Wetlands:** A land area saturated with water that forms a distinct ecosystem of aquatic plants that manage water runoff, filter pollutants and increase rainwater permeation.

# 10. Appendix 1: Data management plan



Low-carbon city

City of Sydney (Operations)		
Data type	Current Status	Forward Plan
Electricity	<p>Reporting underway from SMART.</p> <p>Electricity currently is reported quarterly in arrears. Data provided by electricity retailers.</p> <p>Daily monitoring occurring at all large electricity using sites (over 100,000 kWh per annum).</p>	Continue to implement and monitor data through Sustainability Management and Reporting Tool (SMART)
Natural gas	Gas data is reported quarterly in arrears. Additionally, gas account data (usage) may be estimated in cases where the gas retailer cannot read meters.	Continue to implement and monitor data through Sustainability Management and Reporting Tool (SMART)
Other sources	<p>Emissions sources including flights, taxis, contractor fuel, onsite fuel usage, and refrigerants are added to SMART quarterly.</p> <p>Events data is estimated on previous years' performance.</p>	Improvement plan priorities include improving contractor reporting templates and consistency in recording staff travel data.
Co/Tri generation and renewable energy	The City is working to improve the measurement and reporting of, trigeneration and solar power generation. Data is estimated based on system size.	Improvement plan being developed to improve metering and incorporate data into SMART.
Asset Environmental Budget (Emissions)	<p>Asset Environmental Budget (emissions) has been developed based using baseline data from the NCOS report.</p> <p>Estimations for portfolio increases has been based on existing portfolio performance, Project projects for co/trigeneration, MPEP, Solar Photovoltaics program programs have been based on estimations for each program. In addition, Ausgrid lighting roll out program has been estimated based on the anticipated delivery program.</p>	The Asset Environmental Budget will be reviewed annually.

Local Government Area (LGA)		
Data type	Current Status	Forward Plan
Electricity	<p>CCAP City - reported through the Environmental Sustainability Platform.</p> <p>The electricity distributor has provided community-wide high-voltage electricity data for City of Sydney local government area at a high level. Due to confidentiality clauses, a breakdown of the high-voltage data by source has not been provided and hence is not included in the City's community inventory.</p>	Continue to monitor and report electricity data.
Natural gas	CCAP City reported through the Environmental Sustainability Platform	Continue to monitor and report

Other sources	CCAP 2.0 reported through the Environmental Sustainability Platform	Continue to monitor and report
Co/tri generation and renewable energy	Information about renewable energy installations is available through the Clean Energy Regulator. The Australian PV Institute have developed a solar map with funding through ARENA at <a href="http://pv-map.apvi.org.au/">http://pv-map.apvi.org.au/</a>  Currently there is no formal mechanism in place for tracking installed co and trigeneration systems.	Continue to monitor and report



## Water sensitive city

City of Sydney (Operations)		
Data type	Current Status	Forward Plan
Water	The transition of water data to SMART, the new utility data management system is almost complete. First water utility data set has been released in this report and will be verified in future reports.  Data is collated from water utility bills. Accruals for June have been calculated based on estimates from previous periods.	The organisation-wide sustainable metering program will address key priorities to improve metering and monitoring of water, energy and other sustainability components including recycled water consumption.
Annual potable water use by irrigated open space	The irrigated areas are being reviewed and will be updated in the next report.	Irrigated areas are being verified so the irrigation intensity can be accurately determined.

Local Government Area (LGA)		
Data type	Current Status	Forward Plan
Water	Reporting mains water consumption annually only. No existing process for accurately capturing and reporting non-mains water consumption except manually via IPART for WICA licensees only (annually in arrears).  Data for LGA potable water usage available annually only.	Continue to monitor and report



## Zero waste city

City of Sydney (Operations)		
Data type	Current Status	Forward Plan
Waste	Commercial waste and recycling from 65 City of Sydney properties is reported quarterly.  Construction and demolition waste reporting is limited.	The City has recently completed an organisation wide review into the way in which it collects, reports and verifies recycling and landfill diversion performance data, to significantly improve the accuracy and transparency of our reporting. The City is committed to improved reporting processes and implementing solutions for increased recycling performance of the waste it manages.
City managed property waste	All City managed property waste reported from SMART with the exception of aquatic centres.	Aquatic centres waste data to be incorporated into SMART

Local Government Area (LGA)		
Data type	Current Status	Forward Plan
Waste	Construction and demolition waste from the city reporting is limited.	LGA commercial waste data capture to be improved and verified.
Residential waste	LGA residential waste data available and reported in the Corporate Plan. Residential and city streets waste tonnages are reported from processor reports and invoices that are extrapolated into local master spreadsheets.	
City parks, streets and public place waste	City parks waste tonnages are reported directly from processor reports and invoices. City streets, public place and stormwater waste is not separated for disposal. Separate tonnages are based on estimates from the <i>Operations Waste Databases Audit July 2017</i> .	City parks, streets, public place and stormwater waste tonnages to be reviewed for incorporation into SMART.
e-waste	City runs e-waste drop off events tonnage collected is included in the report and also included in the corporate report.	

## Active and connected city

City of Sydney (Operations)		
Data type	Current Status	Forward Plan
Fleet	Provided from the City's data management system Ausfleet.	Improvement plan to be developed and data to be incorporated into SMART.
Cycling	Event data, attendance at training sessions and monitoring is collated by City staff and maintained in registers.	Improvement plan to be developed to assess management of data.

Local Government Area (LGA)		
Data type	Current Status	Forward Plan
Car sharing	Car share operators provide monthly usage and membership data to the City. Issues with reviewing data due to operator's capacity to plots suburb boundaries, parking areas. Operators do not have common membership categories. Peer to Peer car share membership is not collected by the City. RMS publishes licensing data each quarter. City maintains database of on-street and off-street car share parking using Traffic Committee data and operator reports.	Improvement plan to be developed to assess management of data.



## Green and cool city

City of Sydney (Operations)		
Data type	Current Status	Forward Plan
Green and cool city	Organisational reporting currently not centralised.	Improvement plan to be developed to assess management of data

Local Government Area (LGA)		
Data type	Current Status	Forward Plan
Urban canopy	Urban canopy measurement is currently undertaken every five years, through the use of Lidar or other high-resolution aerial imagery. Tree planting figures are provided through the Corporate Asset Management System (CAMS)	A review of the canopy cover timing will occur as part of the Urban Forest Strategy review. Improvement plan to be developed to assess management of data
Urban ecology	Event data and attendance data is collated by City staff and maintained in registers. Survey data collates as described in the City's Urban Ecology Strategic Action Plan	Improvement plan to be developed to assess management of data.
Community Empowerment	Event data and attendance data is collated by City staff and maintained in registers	Improvement plan to be developed to assess management of data.
Green roofs and walls	Green roofs and walls data is collated by City staff and maintained in registers	Improvement plan to be developed to assess management of data.

## Delivering to the Community

Local Government Area (LGA)		
PROGRAM NAME	Current Status	Forward Plan
Better Buildings Partnership	Program data collated from participants in spreadsheets and uploaded to CCAP 2.0 Environmental Sustainability Platform for archiving and analysis. Details of participants (individual buildings and floor space), energy use and energy savings implemented reported annually in arrears.	Continue to monitor and report
CitySwitch	Program data collated in national CitySwitch CRM database for archiving and analysis. Sydney data entered to CCAP 2.0 Environmental Sustainability Platform. Details of participants (individual tenancies and floor space), energy use and NABERS ratings reported annually in arrears.	Continue to monitor and report
Sustainable Destination Partnership	Program data collated from participants in spreadsheets and uploaded to CCAP 2.0 Environmental Sustainability Platform for archiving and analysis.	Continue to monitor and report
Smart Green Apartments	Program data collated in SUMS data platform. Details of participants recorded annually, energy and water use data uploaded monthly and details from assessment reports recorded through phases of assessment process. NABERS ratings numbers provided by NSW Government Household and Small Business Program	Archiving and analysis to be improved through inclusion in CCAP 2.0 Environmental Sustainability Platform
Environmental Grants	Program data collated in SmartyGrants platform and in program manager spreadsheets. Information recorded as prompted by phases of grant process (application to acquittal).	Ease of analysis to be improved through inclusion in Programs CRM database

# 11. Appendix 2: Environment Policy

## environment policy

The City of Sydney is the local government authority responsible for the central business district and more than 30 suburbs over 26.15 square kilometres. The City provides services for more than 180,000 residents and 20,000 businesses. On any given day, the local population swells to more than 1 million. Sydney is a vibrant, cosmopolitan city with a diverse population, with people from 186 nations, including one of Australia's largest Aboriginal communities.

The City of Sydney has adopted ambitious greenhouse gas emission reduction targets in response to mounting evidence of a warmer, more unstable climate. These targets can be found at [www.cityofsydney.nsw.gov.au/greenreport](http://www.cityofsydney.nsw.gov.au/greenreport).

All levels of government, the private sector and the community have a vital role to play to ensure that we: stabilise emissions to maintain an acceptable global climate, ensure the city can cope with the impacts of rising sea levels and increased heat and flooding, reduce the unsustainable growth in energy, water and resource demands, prevent pollution and waste to landfill, ensure energy security and minimise impacts of climate threats and pressures from population increase, including on green space and urban ecology objectives.

The City is committed to protecting the environment through: complying with relevant legislation and regulation, complying with relevant government policy commitments and continuous improvement of environmental management processes.

We are prioritising and planning actions needed to prepare the city for the environmental, social, cultural and economic impacts of climate change. These include; a Resilience Strategy for Sydney being developed with the support of the Rockefeller Foundation's 100 Resilient Cities initiative and a Climate Adaptation Strategy to assess and mitigate risks from climate change for the local government area and our own operations.

The objectives shown below are taken from the City of Sydney's *Sustainable Sydney 2030 Community Strategic Plan (2014)*, Direction 2: A Leading Environmental Performer. The Plan is reviewed every four years.

### our commitments

#### Objective 2.1

Energy consumption and greenhouse gas emissions are reduced across the local government area.

##### City now

- Reliance on centrally provided energy infrastructure outside the city.
- Legacy in existing buildings, lifestyle and work practices of a high energy consumption era.
- Reasonable level of engagement in property industry regarding the importance of efficient buildings.

##### City in 2030

- Continuous improvement in energy efficiency, energy productivity and greenhouse gas emissions.
- Ultra efficient buildings.
- A growing number of regenerative buildings or precincts that help to improve the carbon footprint of their surrounds.
- Networks of low and zero carbon local energy production and sharing.

#### Objective 2.2

Waste from the city is managed as a valuable resource and the environmental impacts of its generation and disposal are minimised.

##### City now

- City focused on diverting residential waste from landfill.

##### City in 2030

- A city that sees waste from all sectors as a valuable resource.
- Waste management practice of all sectors are coordinated to minimise environmental impacts.

#### Objective 2.3

Potable water consumption and gross pollutant loads to the catchment are reduced across the local government area.

##### City now

- Water is seen as a cheap, renewable resource.
- Invisible drains that quickly remove water which is treated like waste.

##### City in 2030

- The value of water is properly recognised.
- Potable water use is rationalised and opportunities to replace demand with recycled water are realised.
- The quality of city waterways meet the needs of the community while minimising impact on the environment.

#### Objective 2.4

City residents, businesses, building owners, workers and visitors improve their environmental performance.

##### City now

- An urban management practice that focuses on what is easier - new development.
- Leading environmental practice in silos not enabling transformative change.

##### City in 2030

- A community that understands the environmental impact and one that collaborates in the development and implementation of initiatives that improve the environmental performance of the city.
- An urban development norm that means that all new and redeveloped buildings operate with high environmental performance - supported by robust State and local planning policy and standards.

#### Objective 2.5

The City of Sydney's operations and activities demonstrate leadership in environmental performance.

##### City now

- A commitment to strategic environmental initiatives

##### City in 2030

- International recognition for environmental leadership across all areas of the City of Sydney activities.

#### Objective 2.6

The extent and quality of urban canopy cover, landscaping and city greening is improved.

##### City now

- The city has some tree lined streets and great urban parks.
- Urban canopy is 15.5 per cent of the city area and there is very little remnant vegetation or landscape.
- The City is working with the community to green local streets and spaces.

##### City in 2030

- The City is planting trees into every available road and footpath, and residents and developers are planting large canopy trees on private property.
- The urban canopy has increased and the community are enjoying the financial, social and environmental benefits of their trees.
- The urban heat effect has reduced and there are wildlife corridors linking the city's major parks.
- The city has the highest quality parks and open spaces maintained to best practice standards.
- The community are active participants in protecting and enhancing the city's trees, parks, flora and fauna.



Monica Barone  
Chief Executive Officer April 2015





## LEGEND

<b>CO<sub>2</sub></b>	Carbon dioxide
<b>GWh</b>	Gigawatt hours
<b>Kg</b>	Kilogram
<b>kL</b>	Kilolitres
<b>kWp</b>	Kilowatt peak
<b>LED</b>	Light Emitting Diode
<b>LGA</b>	Local Government Area
<b>m<sup>2</sup></b>	Square meters
<b>ML</b>	Megalitres
<b>MWh</b>	Megawatt hour
<b>MWe</b>	Megawatt equivalent
<b>t</b>	Tonne
<b>tCO<sub>2</sub>-e</b>	Tonnes of carbon dioxide equivalent

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<http://www.cityofsydney.nsw.gov.au/council/forms-and-publications/environmental-plans-reports>

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