

# Leave nothing to waste

## Managing resources in the City of Sydney area

### Waste strategy and action plan 2017 – 2030





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# 01 Lord Mayor's Message

**“By sending waste to landfill we lose the opportunity to reuse, repurpose or recover for energy valuable resources.”**

Responsible consumption and production is one of the United Nations Sustainable Development Goals for the next 15 years. Reducing, reusing and recycling resources is vital to achieving this – and we all have a part to play.

The City of Sydney is committed to environmental leadership. Our guiding documents Sustainable Sydney 2030 and Environmental Action 2016–2021 set bold targets, including a long-term goal of zero waste to landfill.

This waste strategy and action plan focuses on how we can achieve these targets in the years to 2030. It sets out priority areas for the City so we can integrate sustainable resource management within a dynamic and developing urban environment.

The City of Sydney area produces more than 5,500 tonnes of waste every day and contributes to approximately 8% of the city's total greenhouse gas emissions. This is made up of waste generated at home, at work, by the city's many venues and events, and during the construction of new buildings and transport infrastructure. Around 69% of this waste is already recycled. But more than 2,000 tonnes still goes to landfill each day with no further opportunity for re-use, recycling or recovery for energy.

When preparing this strategy, we consulted with residents and the business community to help develop our waste and resource recovery priorities for the next decade. You told us you wanted to see greater access to recycling services that are easy to use and offer better value for money. We have these ideas on board and included them in our priorities and actions.

Managing waste and resources from residences, parks, public spaces, neighbourhood centres and our own operations is one of our core services. This strategy includes priority actions to assist us in achieving and exceeding state government landfill diversion targets for our residents and own operations.

The waste managed by the City represents less than 10% of the total waste generated in the local government area. That's why we provide extensive support and advice to city businesses that want to manage waste in a more sustainable way.

But we cannot act alone. We will continue to work with state and federal government on long term planning for waste treatment and transfer facilities as our cities grow.

By creating real targets and seeking alternative solutions, we can improve environmental standards and ensure social and economic benefits for generations to come.



**Clover Moore**  
Lord Mayor



## 02 Executive Summary

**“Effective waste management is a fundamental responsibility for the NSW community as well as the global community. Without it, we risk compromising our environment, our health and our economy”.**

NSW Waste Avoidance and Resource Recovery Strategy 2014 – 2021, 2014<sup>1</sup>

We’re setting a bold ‘zero waste by 2030’ pathway for waste management in the City of Sydney area with our waste strategy and action plan.

The plan has been developed for the medium to long term, in the context of the NSW Government Waste Strategy<sup>1</sup>.

It includes clear targets, priority areas, and actions to reach our zero waste goal. The plan also sets out recommendations to accommodate future legislative requirements and advances in technology.

Our resident, worker, and visitor populations are growing. This strategy means we can respond more effectively to any corresponding demand for resources.

We want to show environmental leadership in waste management, and our ambitious environmental targets reflect this.

The City has already achieved significant milestones in the management of waste and resources:

- a high number of recycling services to our residents
- 69% of residential waste diverted from landfill
- a 24/7 response cleansing and waste team
- sustainable waste management advice to local businesses.

But we can and need to do more to achieve a zero waste outcome. Many international cities have adopted zero waste targets. These are defined as greater than 90% of waste diverted from landfill<sup>2</sup>.

### Objectives and targets for the future

We’ve adopted waste targets for 2021 for our organisation, our parks and public spaces, and our residents and businesses. This is in line with our Environmental Strategy and Action Plan, and the NSW State Government waste targets.

Our long-term waste objectives are:

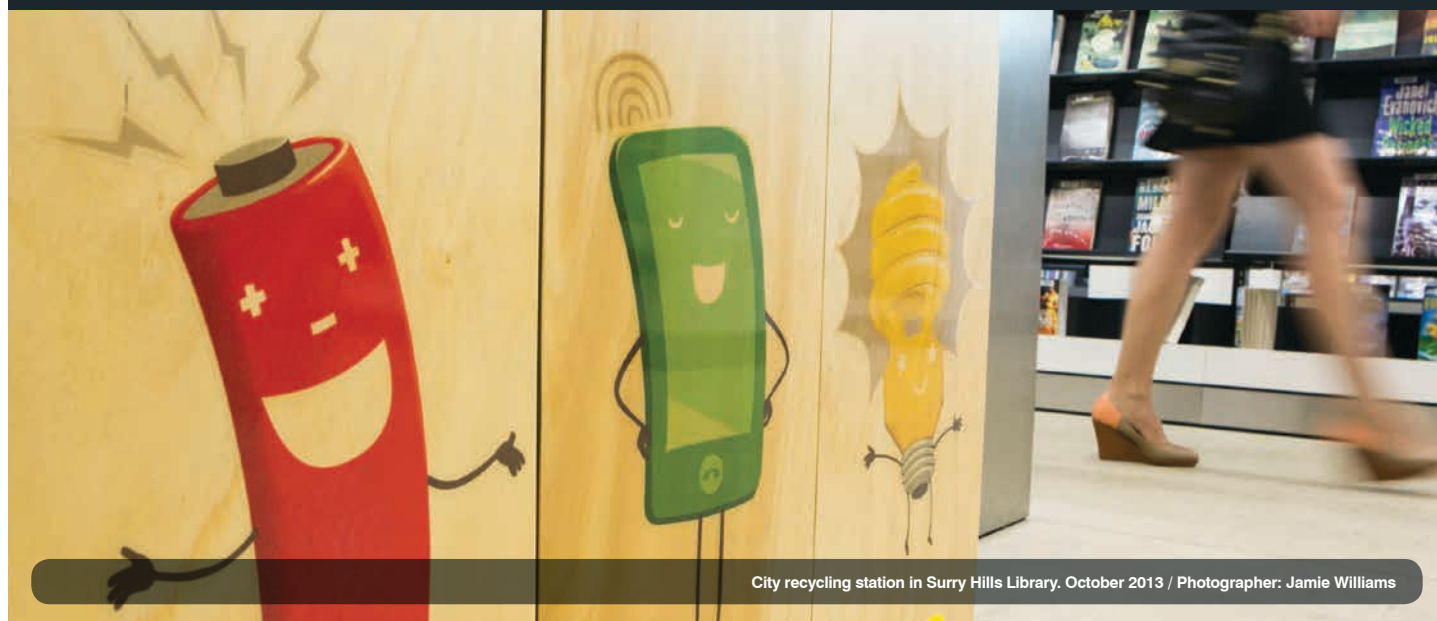
- to reduce the amount of waste produced
- to recycle as much as possible
- to treat what’s left over in the most sustainable way.

In 2012, the City of Sydney was among the first group of councils in Australia to send waste from general garbage bins (red bins) to a resource recovery facility. From there, food waste is separated to produce compost for mine and landfill remediation. This helped us divert 69% of waste from landfill in 2016.

We want to further reduce the amount we send to landfill by expanding our services to include residential collection of e-waste, textiles, and food waste.

We’re doing what we can towards a long-term goal of zero waste, but we need support and action from all of our residents, businesses and the state government.

## Executive Summary



## Our targets

### By June 2021

#### Targets for our operations:

- To divert 50% of waste from City parks, streets, and public places away from landfill
- To divert 70% of waste from City-managed properties away from landfill
- To divert 80% of construction and demolition waste, generated and managed by City operations, away from landfill.

#### Targets for our residents:

- To divert 70% of waste (with a minimum of 35% as source-separated recycling) away from landfill.

#### Targets for our businesses:

- To divert 70% of waste from operating businesses in the local government area away from landfill
- To divert 80% of waste from construction and demolition activities in the local government area away from landfill.

### By June 2030

The long-term goal of the City is to reduce all waste for maximum resource recovery, so materials we use aren't just used once and then disposed of.

Many international cities have adopted zero waste targets. These are defined as greater than 90% of waste diverted from landfill<sup>2</sup>.

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#### Targets for our businesses:

- To divert 90% of waste from operating businesses in the local government area from landfill
- To divert 90% of waste from construction and demolition activities in the local government area from landfill.

Achieving zero waste in Sydney depends on sustained advocacy to reduce the impact of product manufacture. We also need alternative technologies, such as a waste-to-energy, for any remaining waste.

**We will create a digital platform to collect, store, transform, and report waste and recycling data. This will better monitor progress against our environmental targets, so we can react more quickly to changes in waste types or volumes.**

### Priority areas and actions

The City directs the actions in this strategy to our internal operations, our public places, community spaces and parks, our residential waste management contracts, and the business community (where we share ongoing partnerships).

This document also signals to the waste industry, and broader metropolitan Sydney, how we would like to see waste and resources managed in the future. It sets out our priority areas for better management of waste and resources in the city.

#### Priority 1 – Promote innovation to avoid waste

**We will advocate for and help the city's businesses and communities to innovate and reduce the impact of waste management**

We will continue to seek out and identify opportunities to reduce the amount of waste produced within the City of Sydney. We plan to achieve this through ongoing collaboration with members of the community, state government organisations, industry groups, and academia. As part of our continuous improvement measures, we'll also review and update the products and services we purchase for even better environmental outcomes.

#### Priority 2 – Improve recycling outcomes

**We will optimise existing City services, reduce contamination, and explore new services**

Improvements in our buildings and public spaces will increase our overall resource recovery rate. These include more targeted education programs, and new services (like collecting food waste from residents to recycle at a local facility).

When delivering our service to residents, we will provide education materials to improve recycling rates and reduce contamination of recycling bins. We will introduce free weekly booked-in, separate e-waste, metals, and white goods collections from every dwelling. We'll also provide a drop-off service for problem waste streams at a permanent location, investigate giving residents access to regular clothing and textiles collections for recycling. Residents will also have the opportunity to participate in a trial food-waste collection service.

## Executive Summary



Community composting at Ultimo Community Centre. February 2017 / Photographer: Jamie Williams

### Priority 3 – Sustainable design

#### **We will increase our focus on planning for waste in new developments**

For our own projects, we will update our internal guidelines with more consistent and effective guidance for staff and contractors on how to incorporate waste management into design and construction of new buildings and services.

We will incorporate minimum requirements into upcoming revisions of our planning documents for all new residential and commercial developments.

### Priority 4 – Clean and clear streets

#### **We will improve how waste and recycling is managed and transported around the city**

To maintain and improve traffic flow and pedestrian amenity around the city, we will focus on reducing illegal dumping and litter. We will minimise the time bins are left out on footpaths, reduce the number of waste collection vehicles in the CBD during peak hours, and investigate options for recycling in public spaces.

### Priority 5 – Better data management

#### **We will improve how we collect, report and verify waste and recycling data**

Within the organisation we will create a digital platform to collect, store, transform and report the waste and recycling data from our operations. This will help us better monitor against our environmental targets, and react more quickly to changes in waste types or volumes.

We will install appropriate waste-tracking and monitoring equipment on all residential collection vehicles, to improve waste service standards and reduce contamination.

Within our business community, we will continue to support and expand consistent waste reporting across key commercial sectors (through partnership arrangements with industry and state government organisations).

### Priority 6 – Future treatment solutions

#### **We will prioritise a long-term solution for the treatment of non-recyclable waste, to minimise the use of landfill**

Once we've maximised recycling (through the separate collection of materials for re-use, or processing into new materials), we'll need a solution to manage leftover waste. We can only achieve targeted recovery rates of 90% by 2030 if we have alternative technologies, such as a waste-to-energy treatment solution for mixed residual waste.



Recycling at Hilda Booler Kindergarten in Glebe, February 2017 / Photographer: Jamie Williams

### What this strategy means for City operations

Through our own management of waste and resources, we can demonstrate leadership in sustainability. In some areas this has required a review of the way we collect, report and verify recycling and landfill diversion performance data, for improved accuracy and transparency.

To work towards achieving our targets and objectives we will:

- continue to educate our residents, visitors, and business community to refuse, reuse and recycle waste
- include waste targets in future procurement contracts
- procure waste and recycling solutions that can deliver the targets and demonstrate value for money
- improve the way we manage waste within our organisation
- work with other local governments to find solutions to common issues
- monitor and report our progress against the targets
- advocate to state and federal government to safeguard land for future development of waste treatment facilities.

### What this strategy means for residents

Overwhelmingly, our residents supported the City's proposed targets for increased landfill diversion. There was strong support for more recycling services, although there was confusion around what can be recycled.

The City has responded to this request for more education and information as part of its actions for residential services. We're also investigating the expansion of recycling services where we feel there is an appropriate environmental benefit.

We encourage residents to:

- refuse waste where they can
- choose to 'do the right thing' – more recycling, less contamination
- use the City's new recycling services
- notify the City about bulky waste items for collection and not leave waste on the street without booking it in
- provide feedback on future options for the treatment of waste produced in our local government area

If you want to improve the way that you recycle you can find more information [here \(www.cityofsydney.nsw.gov.au/live/waste-and-recycling\)](http://www.cityofsydney.nsw.gov.au/live/waste-and-recycling).

### More transparency around current waste generation and treatment capacity will assist with the development new waste facilities.

#### What this strategy means for businesses

Collectively, the waste produced by businesses in the city represents a strong opportunity to influence industry response to demands for increased recycling and alternatives to landfill. In most cases these alternatives to landfill can be delivered at the same or lower cost as a result of the state government tax on landfill.

We encourage and support businesses to:

- consider options for how they can avoid waste and recycle more
- demand improved services from waste management contractors
- improve how they report waste and recycling performance
- support innovation in waste by procuring services that send less waste to landfill
- participate in new City sustainability programs
- access City support to explore opportunities for better waste solutions.

#### What we need from other agencies and regulators

Right now, there's a gap between the need for future waste treatment facilities to manage population and development growth in the Sydney region and the identification of suitable sites to service this need.

More transparency around current waste generation and treatment capacity will assist with the development new waste facilities.

We call on other government agencies and regulators to:

- do more to prevent waste such as reducing single use disposable items and increase pressure on industry and businesses to take back waste
- allocate appropriate land resources to waste treatment and transfer within the Sydney Metropolitan Area
- provide an independent reference point for general public wishing to understand more about the environmental impacts of waste treatment including waste-to-energy
- improve transparency and integrity of waste data from both residential and commercial producers and waste operators
- expand national product stewardship schemes under the Product Stewardship Act

## Priority actions for the City

The strategy includes a number of actions to achieve the City's targets and objectives. Below are some of the priority actions we will be delivering over the next four years for our residents, businesses and organisation. All of these actions will be complemented by increased education for residents, businesses and within our own organisation to refuse, reduce and recycle waste.

### City buildings and public spaces actions



Food waste collections in our own buildings



Operational changes to improve resource recovery



Investigate options for public place recycling



Trial initiatives to reduce illegal dumping

### Residential community actions



Weekly e-waste collection



Community drop-off recycling centre for problem wastes



Investigate textile collections from multi-unit dwellings



Opt-in food organics recycling trial

### Business community actions



Improved planning guidance for waste management in new developments



Provide grants for innovation in solving problem waste issues



Support businesses to improve waste data collection and resource recovery outcomes

## 03 Waste and resources in the City of Sydney today

**The City of Sydney area generates more than 25% of the NSW's gross domestic product and more than 20% of the state's business waste<sup>3</sup>.**

### Snapshot of waste in City of Sydney area

The city is home to more than 200,000 residents and provides 437,000 jobs. On an average day, it is estimated that there are more than 1.2 million people in the city, including workers, residents, visitors and students. The city's population is expected to grow by a further 60,000 residents and 120,000 workers by 2031.

The City of Sydney area is responsible for generating more than 25% of the NSW's gross domestic product and more than 20% of the state's business waste.

### Residential and City buildings waste

The City collects and manages around 65,000 tonnes of waste each year from more than 115,000 households and around 11,000 tonnes from City-managed assets, parks and public places. By 2030, this waste is forecast to grow to more than 100,000 tonnes a year.

### Commercial and industrial waste

Commercial and industrial waste is the term given to all non-residential waste streams that are produced by businesses or institutions and is largely made up of organic or biodegradable wastes.

Businesses are responsible for collecting their own commercial and industrial waste and produce around 700,000 tonnes of waste annually, or more than 90% of the city's total waste. By 2030, waste from this sector is forecast to grow to more than 800,000 tonnes a year<sup>3</sup>.

The commercial and industrial waste stream represents a significant proportion of the total emissions created by waste going to landfill. We need to identify how we can most effectively influence the way this waste stream is reduced and managed to achieve the most sustainable outcome.



City street maintenance in Newtown. February 2017 / Photographer: Jamie Williams

### Construction and demolition waste

Construction and demolition waste is created during construction and demolition of new buildings and major infrastructure such as roads.

The wastes produced from these activities are largely inorganic or inert which means it does not decompose or generate greenhouse gases. However, the embodied energy of a building is over 30 times the annual operating energy of an office building<sup>4</sup>. Re-use and recovery of the construction and demolition waste stream presents significant opportunities to save greenhouse gas emissions by preventing further extraction of resources.

More than 1.2 million tonnes of construction and demolition waste is produced each year in the city<sup>3</sup>. Of this, the City estimates we are responsible for around 400,000 tonnes, either directly through ongoing maintenance or indirectly through major contracts.

### Purpose of this strategy

Sustainable Sydney 2030 set the objective that waste from the city be managed as a valuable resource and the environmental impacts of its generation and disposal be minimised.

This document provides a framework for making decisions on a sustainable approach to the future management of waste in the City of Sydney area. It helps to co-ordinate and improve existing waste minimisation, recycling and treatment of waste.

The focus of the City's actions presented in this strategy will be directed to our own internal operations, our public places, community spaces and parks, our residential waste management contracts and the business community with which we share ongoing collaborative partnerships.

This document is also intended to provide a signal to the waste industry and broader metropolitan Sydney about how the City would like to see waste and resources managed in the future.



Sustainable Sydney 2030 set the objective that waste from the city be managed as a valuable resource and the environmental impacts of its generation and disposal be minimised.

## 04 Towards zero waste targets

**To limit the impact of Sydney's continued growth and consumption we need to produce less waste, reuse and recycle more and recover energy from what is left over. The City has set targets to increase recycling and resource recovery and dramatically reduce how much waste goes to landfill.**

### Strategic objectives

The long-term strategic objectives of the City are to:

- reduce the amount of waste produced
- recycle as much as practicably possible
- treat what is left over in the most sustainable way.

In line with NSW government and the City's Environmental Strategy and Action Plan<sup>5</sup> we have adopted waste targets for 2021 for our organisation, our parks and public spaces, our residents and our businesses. Where we are already achieving, or close to achieving the targets, we will be looking at opportunities to accelerate towards our longer-term 2030 targets. This will ensure that the City is moving toward a circular economy, where waste materials can be reused rather than being discarded after single use.

### By June 2021

Targets for our operations:

- To divert 50% of waste from City parks, streets, and public places away from landfill
- To divert 70% of waste from City-managed properties away from landfill
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Targets for our residents:

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Targets for our businesses:

- To divert 70% of waste from operating businesses in the local government area away from landfill
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City of Sydney recycling in Town Hall House. February 2017 / Photographer: Jamie Williams

### By 2030

The long-term goal of the City is to reduce all waste for maximum resource recovery, so materials we use aren't just used once and then disposed of.

Many international cities have adopted zero waste targets. These are defined as greater than 90% of waste diverted from landfill<sup>2</sup>.

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- To divert 90% of waste from operating businesses in the local government area from landfill
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Achieving zero waste in Sydney depends on sustained advocacy to reduce the impact of product manufacture. We also need alternative technologies, such as a waste-to-energy, for any remaining waste.

In setting the long-term waste strategy targets we have considered a number of factors:

- Best environmental outcome – the City wants targets that align with the waste hierarchy\* whilst also complementing our existing emissions reduction targets.
- External drivers and influences –the City's policies on waste are impacted by national and state legislation; financial incentives to manage waste more sustainably; and the response of the market in providing solutions that can help achieve goals for recycling and diversion of waste from landfill.
- Affordability – the City must also balance its environmental targets with long-term financially sustainable solutions.

To be better informed of international best practice the City has undertaken comparisons with a number of cities globally. The research was primarily to understand the similarities and differences in political, legislative, environmental and economic drivers. The City also considered how each city recorded waste data and recovery performance.

It is difficult to find cities that are directly comparable due to the variances between legislative and economic drivers, even within Australia. However, the overarching focus of each city was to maximise resource recovery through recycling or re-use and to divert as much waste away from landfill as possible.

\* The waste hierarchy is a set of priorities for the efficient use of resources. Waste prevention, as the preferred option, is followed by reuse, recycling, recovery including energy recovery and as a last option, safe disposal in landfill.

## 05 Issues impacting waste management in the City of Sydney



### Increased housing density

Residential apartments make up more than 75% of households in the city<sup>6</sup>. Many of these households have competing demands for space, particularly storage allocation for waste and recycling, which can contribute to illegal dumping of unwanted items. Where no storage is available, mobile garbage bins are often left on the footpath. These bins, along with illegal dumping, cause obstructions, odour issues and contribute to perceptions of an area as being unclean or unsafe.

Where recycling services are available, contamination of recycling streams is an ongoing problem where waste is placed in the incorrect bin, causing some recyclable materials to end up in landfill.



### Growing worker, visitor and residential populations

More space on streets for people in the city centre is needed to accommodate the daily movements of growing worker, visitor and residential populations.

Residential and commercial bins regularly placed on the street for collection can:

- increase safety risk from waste collection vehicles collecting bins from the street, particularly in narrow streets or high pedestrian traffic areas
- increase risks of litter, pests and odour
- reduce space on the footpath for pedestrians
- block access for vehicles and cyclists entering buildings caused by misplaced bins
- reduce visual amenity.



### Product and material changes

The products we buy and use today have become more complex over the last two to three decades. They are often likely to be made from different composite materials or contain electronic or electrical components. They may include extra packaging to ensure the product arrives in the condition intended by the manufacturer.

Unfortunately, many of these packaging items are often discarded shortly after the consumer receives or purchases the product. Similarly, many electrical or electronic items are not easily repairable if they fail or they become obsolete due to advances in technology.

Coupled with increasing demand for products, changes to packaging are evolving at a pace that is not currently matched by the recycling and reprocessing industry's ability to accept these new materials. As a result, the number and type of discarded materials without a readily available recycling solution is increasing and adding to waste disposal.

A white circle containing the text 'CO<sub>2</sub>' in black, with the '2' in yellow.

### Ongoing environmental impacts of landfill

Landfilled biodegradable or organic waste produces methane many years after the waste has been deposited. Methane is a powerful greenhouse gas with a global warming potential 28 times the effect of the same amount of carbon dioxide<sup>7</sup> and contributes significantly to global atmospheric change. In 2015/16 emissions from waste accounted for 8% of the total emissions from our local government area.

While there is the technology available to capture a proportion of this gas through landfill gas capture, this is not possible for all landfills, particularly for the older legacy landfills. Additionally, the organic material in landfill cannot be reclaimed for future beneficial uses such as composting or anaerobic digestion.



### Limited capacity for treatment of waste close to our city

Although we are recycling more, our growing population will increase the amount of waste we generate, not all of which is currently recyclable.

Residential and commercial development growth also places restrictions on suitable land for new waste infrastructure.

Sydney is rapidly running out of local waste treatment capacity to manage non-recyclable waste. Due to competing land priorities in the metropolitan area, waste treatment infrastructure is built further away from where the waste is produced.



### Inconsistent and unreliable waste data

The City provides recycling services to households, but not commercial and industrial premises, the biggest producers of waste volumes in the city. Tracking of waste quantities and recycling rates from this sector is difficult because it is managed by many independent waste operators.

Accessing better quality waste data, to track and monitor our city's different waste streams to their final destination, presents an opportunity for the City. By understanding the lifecycle of the city's waste, we can better understand behaviours and introduce measures that minimise waste, avoid landfill and recover valuable resources.



### Loss of potential resources

Sending waste to landfill has the least economic and environmental benefit. While waste disposal costs continue to increase, recycling certain materials has a market value.


Separating recyclables for reprocessing into new products presents great opportunities. To maximise total resource recovery, and minimise waste entering landfill, the City needs to investigate alternative solutions for treatment of the remaining items.

These facilities typically capture any missed recyclables for processing and garden and food waste for composting, with the remaining waste sent to landfill. Some of the facilities can also turn the remaining waste into a valuable energy resource.

Such a solution would provide an alternative energy resource and help the City to avoid emissions from waste sent to landfill. At the moment there are no facilities in the state that can deliver energy from mixed waste streams.

## 06 Six priorities for becoming a leading environmental performer





Through extensive internal and external consultation and as a leading environmental performer, the City has identified six priority areas:

- **Promote innovation to avoid waste** – advocate for and assist the city's businesses and community to facilitate innovation and reduce waste management impacts
- **Improve recycling outcomes** – optimise the use of existing City services, reduce contamination and explore new services
- **Sustainable design** – increased focus on planning for waste in new developments
- **Clean and clear streets** – maximise amenity improvements and efficiency of waste and recycling collections around the city
- **Better data management** – improve monitoring, reporting and verification of data
- **Future treatment solutions** – secure long term solution for the treatment of non-recyclable waste using alternative waste treatment technology

Garden waste collection in Sydney Park. February 2017 / Photographer: Jamie Williams

# Priority 1

## Promote innovation to avoid waste



The City's aim is to reduce the amount of waste produced in Sydney and minimise what goes to landfill.

To move towards a higher resource recovery goal more effort is required to find solutions for those waste streams that currently have no local recycling solution, or find alternative and more sustainable replacements for those materials. To create markets for materials, a number of things usually need to happen: materials need to be easily separated for collection, they need to be collected in sufficient volumes and there must be a business need or want for the materials created. Innovation and collaboration in this sector are required from product design through to collection, and management of the item to reintroduce waste into the materials economy and prevent it from being discarded.

### Our organisation

#### Current practices

As an organisation we actively try, where possible, to participate in studies and pilot schemes to assist with the development of sustainable solutions that can avoid how much waste we produce.

Part of our role is to identify those problem items that cause long-term waste management issues and are difficult to recycle, hazardous, or represent a significant proportion of the waste we manage. These items include electronic waste, coffee cups, plastic packaging, unwanted furniture and food. We have initiatives and actions to try to reduce how much of these items we procure and to seek alternatives wherever possible.

The City uses social media and online tools to provide our residents and community members with information about how to live more sustainably. [Green Villages](#) is a website produced by the City that is full of simple, practical tips on how to reduce waste at home and get involved with collaborative sharing in your local community.

We also promote and support the share economy through initiatives such as [Garage Sale Trail](#) and the [Bower Reuse and Repair Centre](#). Both of these projects are examples of where upcycling and reuse can also deliver benefits to local communities through promotion of social cohesion and inclusion.

#### How can we improve

We will continue to identify opportunities to try and reduce the impact of the services we provide to the community. The City regularly meets with members of the community, state government, industry and academia to identify future collaboration opportunities.

As part of continuous improvement measures we will also be reviewing and updating our sustainable procurement guidelines. One example will be to identify further opportunities to incorporate low carbon and recycled content materials into our specifications.

**Want to refill your re-useable water bottle? The City has an interactive map so you can find the nearest drinking fountain [here](http://www.cityofsydney.nsw.gov.au/explore/facilities/public-toilets/water-bubblers)**

## Six priorities for becoming a leading environmental performer



### Actions – what the City will do:

- We will investigate sustainable procurement opportunities for our own developments and projects
- We will consult with event producers about removing plastic waste packaging at all City of Sydney venues, and report to Council.

### City residents and businesses

#### Current practices

The City's role is not as a technology or materials developer. However, we actively encourage and support innovation through our community grants program that can:

- identify solutions for management of materials not currently re-usable or recyclable or that can provide a better environmental outcome
- demonstrate a need and benefit to the residents, workers or visitors in our city
- demonstrate solutions that have the potential to be delivered at scale in our city.

The grants have so far funded research into recycling of used coffee grounds, disposable coffee cups and engineered timber from commercial office refurbishments.

#### How we can assist with future innovation

We will continue to support and promote innovative solutions through our grants programs and assess new products and materials as part of our ongoing sustainable procurement policy for products and services.

**Have an idea about how to deal with problem waste streams or want to run your own share economy initiative? You can apply for a grant [here www.cityofsydney.nsw.gov.au/community/grants-and-sponsorships](http://www.cityofsydney.nsw.gov.au/community/grants-and-sponsorships)**

### Actions – what the City will do:

- We will provide and promote funding opportunities for innovative technologies and processes to address problem waste streams not currently managed in a sustainable way
- We will advocate for the Federal Government to expand national product stewardship schemes
- We will continue with regional partnerships to review and identify opportunities for re-use initiatives.

## Priority 1 | Promote innovation to avoid waste



City of Sydney food waste avoidance campaign. 2016



City of Sydney Swap Party at Martin Place. November 2008 / Photographer: City of Sydney

### Case study 1

#### Food waste avoidance campaign

The latest kerbside residential waste audit for City of Sydney determined that food waste was still the largest contributor to the domestic garbage bin (31-35%).

One of the City's waste objectives is to encourage waste avoidance. In June 2016, the City launched a food waste avoidance campaign to remind residents and workers of the amount of food waste going into the bin and why they should think twice before disposing their food.

The City's campaign included posters in bus shelters with food waste statistics and simple actions to address food waste such as using leftovers. The posters were complemented with further information on our digital sustainability newsletter [Green Villages](#) and through social media on how to take a holistic step-by-step guide to simple ways to prevent food waste. This was done in partnership with Oz Harvest and the Youth Food Movement.

### Case study 2

#### Share economy models that promote waste avoidance and recycling

The share economy includes swapping, collective purchasing, shared ownership, recycling, upcycling, trading used goods, renting, borrowing, lending and more.

Sharing economy initiatives often promote local solutions with reduced environmental impacts such as reduced emissions from avoiding production, transport and disposal. Other benefits include community engagement, the opportunity to re-invest into the local economy, and a fairer distribution of assets.

The City supports businesses, programs and events that are examples of innovative ways to get the most from products we buy, even if we no longer have a use for it. They include:

**Swap parties** – textiles represent around 5 per cent of what we throw out every week in the City of Sydney. In most instances, items discarded items can be re-used, repaired or repurposed. Organising an event can promote awareness about the value of unwanted materials and that disposal should be the last resort.

**Car share** - car sharing is a convenient, affordable and sustainable transport option for City residents and businesses. The City supports [car sharing](#) because it enables more sustainable travel habits - a single car share vehicle can replace up to 12 private vehicles.

Other community-based initiatives include [NABO](#), [Sell Buy Swap](#) and [Open shed](#) where people can use local networks to borrow items, buy second hand or share items rather than having to purchase new.

# Priority 2

## Improve recycling outcomes



**Taking waste materials and recycling them back into the same or similar product has a much greater environmental benefit than using virgin materials to create the same product.**

The cost of treating garbage is increasing every year. But for many materials, recycling can provide a cheaper alternative or in some cases provide a revenue.

### **Our organisation**

#### **Current waste management practices**

##### ***City buildings***

The City controls a number of buildings including heritage town halls, multi-storey commercial buildings, community centres, aquatic centres, libraries and public toilet blocks.

In 2015/16 these buildings generated around 400 tonnes of waste, made up of 14 different waste streams. We are currently diverting around 35% of waste from landfill through separation of recyclables such as paper, cardboard, plastic containers, e-waste and printer cartridges.

##### ***City construction works***

The City builds and maintains community infrastructure such as roads, footways, parks, commercial building, community centres, libraries and aquatic centres.

These activities typically generate construction and demolition waste which is recovered for reuse or recycling as much as possible. Works undertaken by City staff generate just over 4,000 tonnes of this waste and more than 90% of this diverted from landfill.

The City also manages contracts for significant new developments and refurbishment projects where waste management is normally included within the scope of works. We have identified opportunities for improved management and reporting of these waste streams so that they can be included in our targets.



### **City managed public spaces**

The City is also responsible for the management and maintenance of city parks (public place litter bins; green waste), streets (illegally dumped waste on streets; stormwater pits), and waste in public spaces.

These waste streams account for 11,000 tonnes, of which 1,961 tonnes (or 18%), was recycled in 2015/16. The majority of the recycling comes from composting and mulching of organic waste from parks. We have identified a number of opportunities for improved resource recovery outcomes for the other streams.

**Did you know that from 1 December 2017 you will be able to reclaim 10 cents for your empty drinks cans and bottles? Look out for collection stations around the City. Further details are available [here](http://www.epa.nsw.gov.au/waste/cds-intro.htm)**

### **How we can improve recycling**

In City buildings, improvements to increase our overall resource recovery rate can be made by updating internal signs, staff education and introducing separate collection of food waste in appropriate locations for recycling at a local facility.

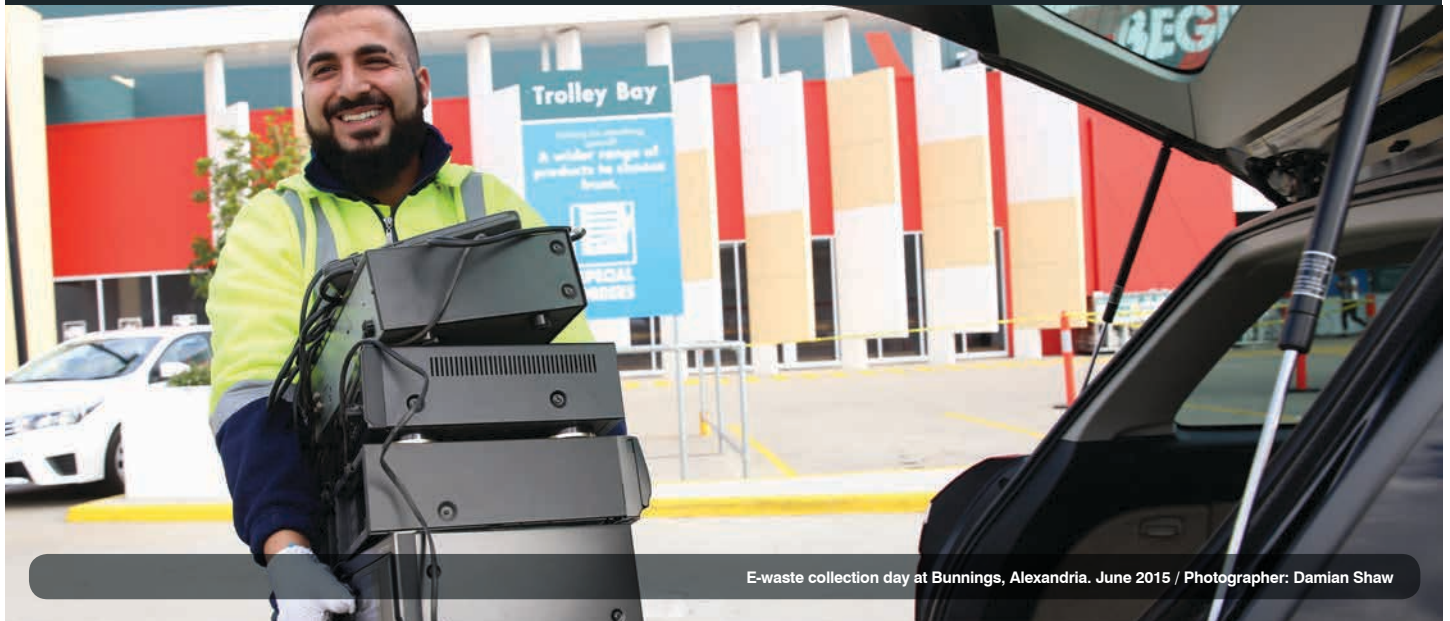
For our construction projects we can undertake more site-based audits to identify new material streams that can be separated for recycling.

In our public spaces we can investigate alternative solutions to landfill for the materials we manage and review our collection practices to improve the separation of materials for recycling and recovery.

### **Actions – what the City will do:**

- We will introduce separate food waste collection infrastructure, where appropriate, to City properties
- We will investigate ways to improve public place recycling
- We will prepare the City's operations depot to collect and store illegally dumped waste separately from other public waste to improve recycling outcomes
- Where waste and recycling management are part of our service, we'll include our targets in all future contracts.

## Six priorities for becoming a leading environmental performer



E-waste collection day at Bunnings, Alexandria. June 2015 / Photographer: Damian Shaw

### City residents

#### Current waste management practices

The city is home to more than 200,000 people living in more than 115,000 homes and more than 75% of our residents live in apartments.

In total, city residents generate close to 65,000 tonnes of waste per year, equal to 313 kilograms per person per year. In 2015 this total amount of waste generated per resident decreased for the first time. We expect this waste figure to stabilise or decrease over the next 10 years due to changes in product manufacturing to produce lighter materials.

Many of our residents are also more aware of the growing issues of waste and are actively trying to reduce waste by increasing re-use of items such as bags and containers, reducing food waste (one of our largest waste streams) and composting at home.

The City's Zero Waste campaign began in 2010 and since that time the City has expanded its recycling services to accept a wide range of materials. These include:

- food and beverage containers, paper and cardboard recycling (weekly collection service)
- garden waste (fortnightly collection service)
- mattress and white goods collection (booked service available free each week)
- e-waste and household chemicals (drop off event held every three months)
- batteries, mobile phones and light bulbs (permanent drop off facilities at the City's libraries, neighbourhood service centres and Sydney Town Hall)
- furniture re-homing service (booked service).

In 2015/16 the City collected just over 18,000 tonnes of recycling through the services listed on the left. This represents around 28% of the total residential waste stream.

**You will soon be able to drop off all of your unwanted bulky and hazardous waste items at our new recycling depot in Alexandria.**

#### How recycling by residents can be improved:

##### *Increase recycling and reduce contamination*

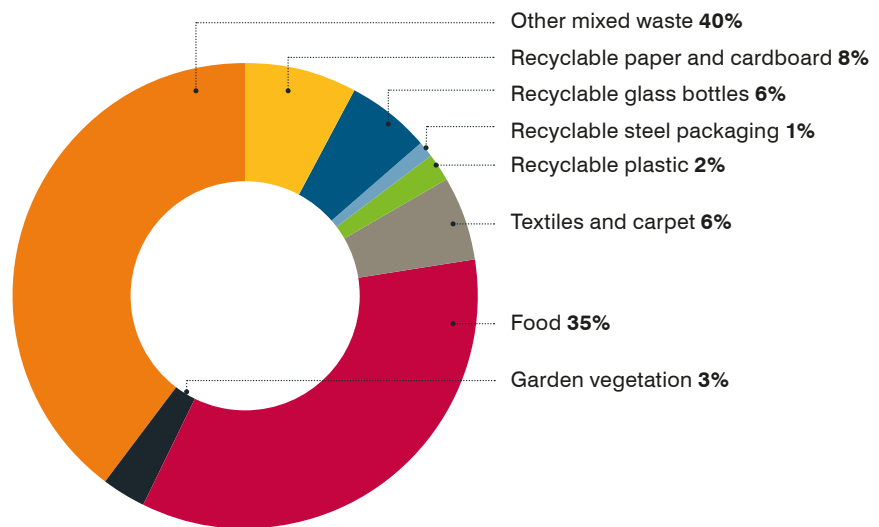
Waste management and especially recycling can be confusing. Many of the City's residents move regularly and have often come from other council areas where recycling practices can be different. Differences in understanding about what can and cannot be recycled can often result in items being placed in the wrong bin.

More than 10% of what is commonly found in the red garbage bin can be recycled, such as glass bottles, cardboard, newspapers and magazines, if these items are placed in the yellow recycling bin. When these items go in the general red bin they are contaminated with food and cannot be separated for recycling.

Conversely, there are many items placed in the yellow bin that are not currently recyclable. Items such as plastic bags and metal coat hangers can get stuck in the recycling machines and cause significant damage.

Contamination of recycling streams is an ongoing problem.

**Figure 1 – What is in the residential general waste bin**



### **Food waste**

The largest single waste stream in our red bin is food waste. This represents up to 35% of the bin contents. This waste is currently sent to a resource recovery facility along with the other non-recyclable items. At this facility, all of the food and organic waste is separated to produce compost suitable for use as mine rehabilitation material.

When we asked residents about food waste and what to do about it the responses varied greatly. Some residents strongly supported a separate food waste collection but others preferred a single bin solution where the waste can be sorted after collection.

The City's solution for managing food waste needs to be flexible enough to accommodate the diverse needs of our community.

### **E-waste**

Many electrical and electronic products contain valuable, recoverable metals such as aluminium, copper, gold and silver. In order to conserve natural resources and the energy needed to produce new electronic equipment from virgin resources, electronic equipment can be refurbished, reused, and recycled instead of being sent to landfills. The City already offers a quarterly drop off of e-waste items at a nominated collection site within our area. By moving to a collection scheme, the City hopes to increase the amount of e-waste diverted from landfill.

### **Problem wastes**

Problem wastes are often defined as wastes that cannot easily be managed by the regular waste and recycling collection services offered to all residents. These items are usually hazardous in nature, such

as paints, chemicals, batteries and gas bottles. Other non-hazardous items that can be difficult to collect with existing weekly collections include motor and cooking oils. The majority of these items can be recycled if separately collected and managed.

### **Textile collections**

Up to 6% of what is thrown in the red garbage bin is textiles. Textiles can be donated or resold by charities or they can be recycled back into fibres for the creation of new materials. Re-using or recycling textiles reduces the amount of water and natural resources required to make new items.

### **Actions – what will the City do:**

- To improve recycling rates and reduce contamination at home, we'll provide more signs and education materials
- We will create community waste drop off points for problem waste streams
- We will introduce free, weekly separate e-waste, metals and white goods collections for all City of Sydney residents
- We will develop and implement a subsidised trial food waste collection scheme for residents
- We will investigate providing all City of Sydney residents with regular clothing and textiles collections for recycling
- We will investigate opportunities for new collection services, such as recycling soft plastics, at the new Alexandra Canal depot.

# FUTURE TREATMENT SOLUTIONS

## RECYCLING - GETTING TO OUR TARGET

2015/16 PERFORMANCE - 28% SOURCE SEPARATED RECYCLING

### MIXED RECYCLING



The City will encourage residents to put more recycling in the right bin.

### GARDEN WASTE



Less than 10% of residents have gardens, but many of those residents use the City's garden waste collection service.

### SEPARATED FOOD WASTE

is 35% of the bin



The City will offer residents the option to participate in separate food waste collection.

### eWASTE, WHITEGOODS & MATTRESSES



The City will introduce a new e-waste collection to all residents.

### HOUSEHOLD CLEAN-UP



The City promotes re-use of furniture waste and recycling of metals from household clean-up.

### TEXTILES

are 5% of the bin

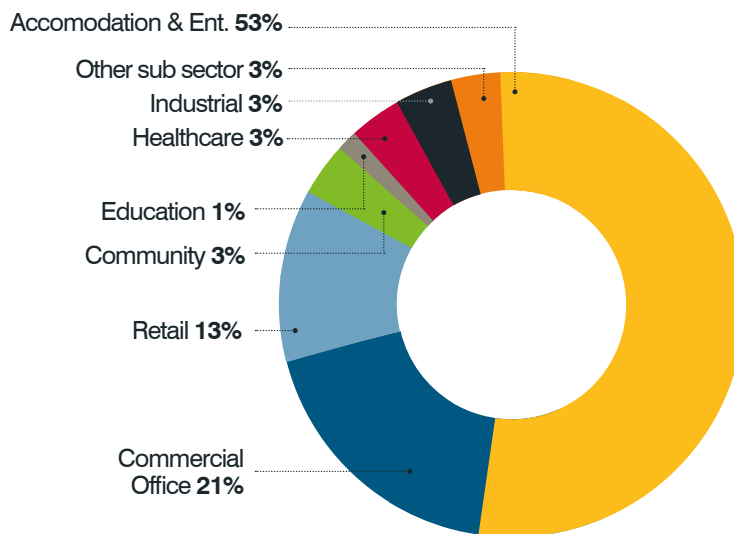


The City will facilitate textile collection for apartment buildings.

2021 TARGET - 35% SOURCE SEPARATED RECYCLING

Separating materials at source offers greater opportunity to recycle and delivers a better environmental outcome. Residential waste actions are estimated to deliver an additional 6% recycling to achieve 35% source-separated recycling by 2021.

**Figure 2 – 2015/16 proportion of waste disposal by weight for City of Sydney businesses or employment types<sup>3</sup>**



### City businesses

#### Current waste management practices

##### Commercial waste

The City does not provide collection or management services for businesses or non-residential institutions in the city (other than our own operations). These waste streams are managed by private commercial waste providers. Regular and reliable waste and recycling data from commercial waste companies is not available to the City.

The City has recently commissioned a study that estimated the total operational waste generation by all business sectors to be nearly 700,000 tonnes per year. Around half of all commercial and industrial waste in the city is recycled. The rest of the waste is disposed of in a landfill facility.

The accommodation and entertainment, commercial office and retail sectors are thought to produce up to 90% of the total waste sent to landfill in this category.

More than three quarters of the waste disposed of in landfills from these businesses and institutions is thought to be food, paper and plastic.

While its control is limited, the City is actively influencing the recycling of business and institutional waste through its sustainability programs such as the [Better Buildings Partnership](#) and [CitySwitch](#).

The Better Buildings Partnership is focussed on providing a new best practice standard and toolset to assist commercial asset owners in the contracting and management of commercial and industrial operational waste in order to improve the quality and flow of information and support decision making (see case study on page 32).

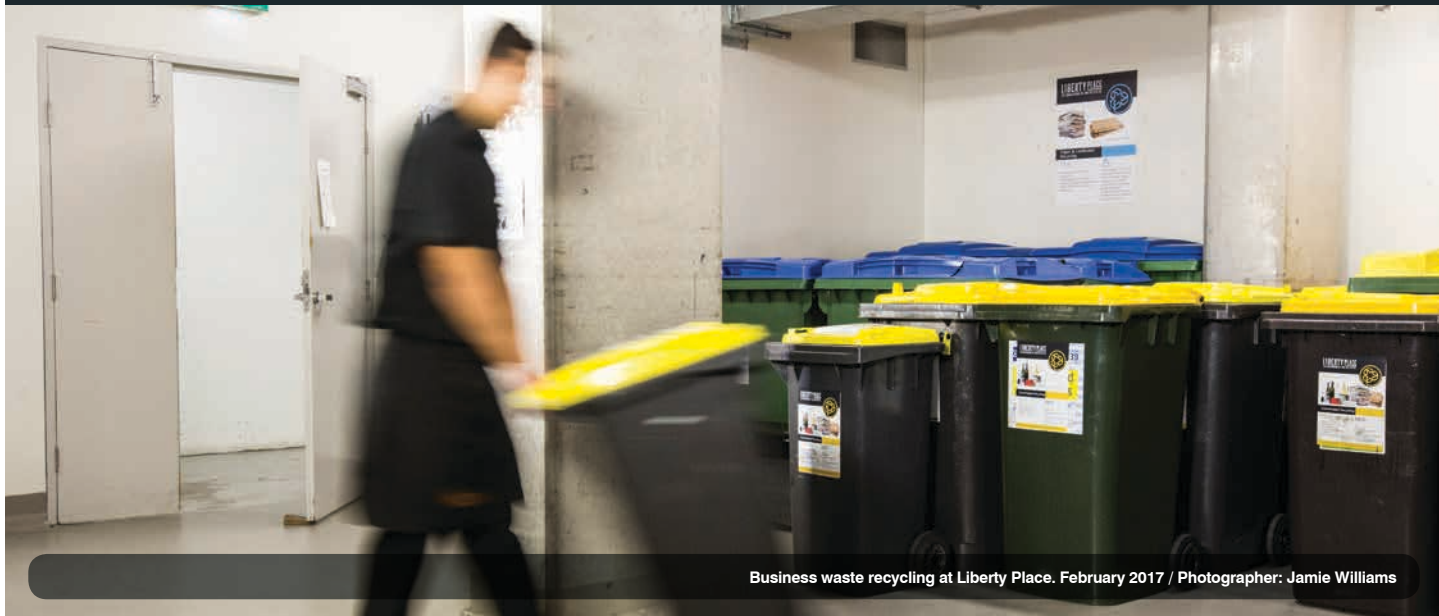
CitySwitch is a high-value no-cost service which supports commercial office tenants to improve office waste efficiency through the provision of advice and training.

##### Construction and demolition waste

The state government estimates that 76% of construction and demolition waste is reused or recycled in NSW<sup>1</sup>. Materials that are easily recycled include masonry materials such as asphalt, bricks and concrete. Excess metals and hardwood timbers are also extracted for recycling during building and demolition activities. Plastics, plasterboard and contaminated or laminated wood materials are less likely to be recycled often due to limited on site recovery practices and a failure to plan for early extraction of these materials before large-scale demolition occurs.

It is estimated that up to 55,000 tonnes of the construction and demolition waste generated each year is made up of materials that are removed from office and retail renovations when buildings are upgraded or there is a change in tenants<sup>3</sup>. Most of these activities are believed to be in our city centre and represent a missed opportunity for additional reuse or recycling within the industry.

## Six priorities for becoming a leading environmental performer



Business waste recycling at Liberty Place. February 2017 / Photographer: Jamie Williams

### How recycling by businesses can be improved

In response to an identified need for focus on improving sustainability within the city's businesses the City is preparing sector specific sustainability plans with the purpose of understanding the impacts, barriers and drivers for sustainability in each sector.

The two sectors identified for immediate action are the accommodation and entertainment sector and the commercial office sector. These two sectors combined represent approximately 60% of the total floor area occupied by businesses in the city and more than 65% of the commercial and industrial waste produced in the city each year.

The City's key role is in activating change from within business and community sectors. The forthcoming plans focus on broader sustainability targets that also include energy and water as well as waste. The plans will focus on waste specific actions including:

- identifying barriers to improvements in business and community waste management practices
- facilitating integration with local and state agencies to advocate for additional support where required
- delivering training and education on specific waste streams or to targeted groups.

To find out more about how to improve waste management practices in your businesses and how we can help go [here](http://www.cityofsydney.nsw.gov.au/business/business-support/greening-your-business) [www.cityofsydney.nsw.gov.au/business/business-support/greening-your-business](http://www.cityofsydney.nsw.gov.au/business/business-support/greening-your-business)

### Actions – what the City will do to support businesses:

- We will encourage and support building owners and tenants within business sectors to improve their waste avoidance, re-use, recycling and recovery performance
- We will help train and identify roles (e.g. cleaners) within commercial, office, accommodation, and entertainment sectors to educate on waste and recycling programs and deliver best practice separation.



### Case study 1

#### Separate collection of disposable coffee cups in Sydney CBD

Takeaway disposable coffee cups are presenting Australians with a major environmental dilemma. There is currently no dedicated recycling facility in Australia that can deal with the disposable coffee cup structure, which are mostly lined with plastic. It is estimated that one billion coffee cups sold every year end up in landfill, with the average cup taking 50 years to decompose.

In a bid to highlight the increasing number of disposable takeaway coffee cups ending up in landfill each year and to assist with the development of a business case for a dedicated coffee cup recycling facility a trial was part funded by City of Sydney and run by Closed Loop Environmental Solutions in 2016.

The four-week trial at Sydney law firm Herbert Smith Freehills resulted in 4,278 coffee cups being placed in dedicated bins, proving that CBD office workers were willing to make sustainable choices when it came to their takeaway coffee cups.

If the recycling habits from Herbert Smith Freehills were replicated at offices across the City of Sydney local government area, we could be diverting more than 25 million coffee cups from landfill every year.

A similar program in the UK collects used coffee cups and takes them to a dedicated facility where they are shredded and made into polymer, which is then used to manufacture reusable coffee cups and carry trays.

The project demonstrated that coffee cups can be collected separately using a clean, simple and efficient system.

All cups collected as part of the trial were displayed at Sydney's Wynyard Park for a day. City commuters were offered free coffee, educated on takeaway coffee cups and surveyed on their drinking habits.

## Six priorities for becoming a leading environmental performer



Recycling depot in Bauhaus Apartments building with Chairman Gordon Streight.  
July 2016 / Photographer: Katherine Griffiths



Office waste recycling. February 2016 / Photographer: Jamie Williams

## Case study 2

### Improving recycling outcomes in residential apartments

More than 75% of the city's residents live in residential apartments. This can often present a number of challenges and opportunities for managing waste and recycling.

Challenges can often include: minimal space for waste and recycling bins, uncertainty about what should go in the bins and lack of appropriate signage on or close to bins.

In response to some of these challenges the City has run or supported a number of programs aimed at creating easier access to recycling opportunities for residents and improving recycling outcomes.

The City's Smart Green Apartments program<sup>8</sup> will work with a group of 20 apartment buildings each year for the next 10 years to reduce greenhouse gas emissions and water consumption and improve waste management. Each apartment building will receive a waste and recycling operational assessment with tailored solutions.

In one of the city's apartment buildings the owners corporation purchased a car space to create a dedicated recycling depot. In addition to the existing recycling and green waste collection services the apartment residents are now able to segregate on site the following items:

- batteries
- light globes
- mobile phones
- e-waste
- clothes, shoes and accessories.

## Case study 3

### Delivering operational waste management guidance to city businesses

#### Better Buildings Partnership operational waste guidelines<sup>9</sup>

The Better Buildings Partnership (BBP)<sup>10</sup> represents a number of Sydney's leading commercial and public sector landlords and is project managed by the City of Sydney. These organisations are already actively working towards a greener city, and together via the partnership they will deliver a range of sustainability projects, demonstrating green leadership and sustainable innovation for Sydney's commercial and public buildings.

As part of its commitment to continuous improvement in the management of waste generated by commercial buildings' operations, the partnership has developed operational waste guidelines to assist building owners and property managers to work more effectively and consistently with their waste and cleaning contractors.

The guidelines include a number of tools to create, procure and implement effective waste management programs. Using these tools will promote comparable data, clearly articulated accountabilities and transparent reporting processes. The BBP hopes that by working together as an industry we can drive better standards, improve industry benchmarking and increase positive outcomes for waste reduction and resource recovery in the sector.

To date all 14 BBP members have adopted the guidelines and will be reporting on progress annually.

# Priority 3

## Sustainable design



When a new building is designed and constructed it is important that waste storage and management issues are not overlooked. Developments should provide safe and convenient facilities for residents to store recyclables and unwanted waste items.

Having enough space and unrestricted or easy access to waste storage areas are the two most important requirements for our tenants and waste collection service providers. A lack of space in bin storage areas can reduce our ability to separate materials for recycling. Access restrictions can mean that bins are required to be placed on the street which can create obstructions for pedestrians, cause odours and detract from local streetscape.

Sometimes these simple, but important requirements can be missed during the design or construction stage. Careful planning and design for waste management at the outset can save time and expense later.

Policies that require careful consideration of layout and design of buildings, external spaces and roads will ensure that waste can be easily and effectively stored and collected when new developments are constructed.

### Our organisation

#### Current practices

The City is responsible for a number of properties and assets that serve the needs of our community and visitors, our internal operations and businesses. Our assets include Sydney Town Hall, community centres, libraries, aquatic centres, parks and public spaces. All new assets incorporate environmental sustainable design principles and more recently the City's Green Square town centre redevelopment includes a number of buildings or public spaces that are, or will be, certified under the Green Building Council Australia's Green Star standard<sup>11</sup>.

The City requires construction and demolition waste management plans as a standard with all new developments, however, we have identified that more can be done to minimise the future impact of waste management when the building is operational.

#### How our organisation can improve design outcomes

As part of our commitment to continuous improvement the City is developing Sustainable Design Technical Guidelines to provide more consistent and effective guidance to the City's staff and contractors on how to incorporate the requirements of environmental sustainability into design, construction and handover of the City's capital works program. The Guidelines are likely to include the following:

- maximising re-use of materials before on site demolition or refurbishment of City assets
- specifying minimum recycled content of new materials
- specifying a minimum recycling of construction and demolition waste produced
- dedicated space and facilities for management of operational waste and recycling that will facilitate achieving our targets.

## Six priorities for becoming a leading environmental performer



Green wall at Ultimo Community Centre. February 2016 / Photographer: Jamie Williams

### Actions – what the City will do:

- We will incorporate best practice waste management for demolition, construction and operation into the City's new Sustainable Design Technical Guidelines
- Where feasible, we'll incorporate and trial the use of re-used and recycled content materials in future projects
- We will assess all City of Sydney office buildings against the National Australian Built Environment Rating System.

### City residents and businesses

#### Current sustainable waste design

In response to the growing need for improved design guidance for developers the City published a [Policy for Waste Minimisation in New Developments in 2005](#)<sup>12</sup>. The policy was developed to ensure that our domestic waste and recycling collection services are available to all residential properties and to assist all stakeholders (including council staff, planners, architects and builders) to design for sustainable, safe and healthy waste management systems.

The policy provides advice on:

- waste and recycling generation rates for residential and commercial premises
- dimensions of waste collection vehicles to inform minimum height clearance and turning circles within buildings and car parks
- standard signs for waste and recycling bins
- dimensions of standard waste bins to assist with appropriate design of bin storage and collection areas.

**Do you live in a residential apartment?  
Are you confused about what to put in which bin? Ask your building manager or caretaker to request our free stickers and posters [here](http://www.cityofsydney.nsw.gov.au/live/waste-and-recycling/collection-days-and-bins/free-stickers-posters)**  
**[www.cityofsydney.nsw.gov.au/live/waste-and-recycling/collection-days-and-bins/free-stickers-posters](http://www.cityofsydney.nsw.gov.au/live/waste-and-recycling/collection-days-and-bins/free-stickers-posters)**

## Developments should provide safe and convenient facilities for residents to store recyclables and unwanted waste items.

The document has been widely used for best practice developments in our city and as a reference document for other cities and state governments in Australia. The Green Building Council of Australia also references the City's policy.

### How can we improve

While we feel that the City's existing policy document represents a clearly presented and relevant tool for planners, architects and builders, it is acknowledged that the document, now ten years old, would benefit from a review. The City has committed to updating the policy to reflect:

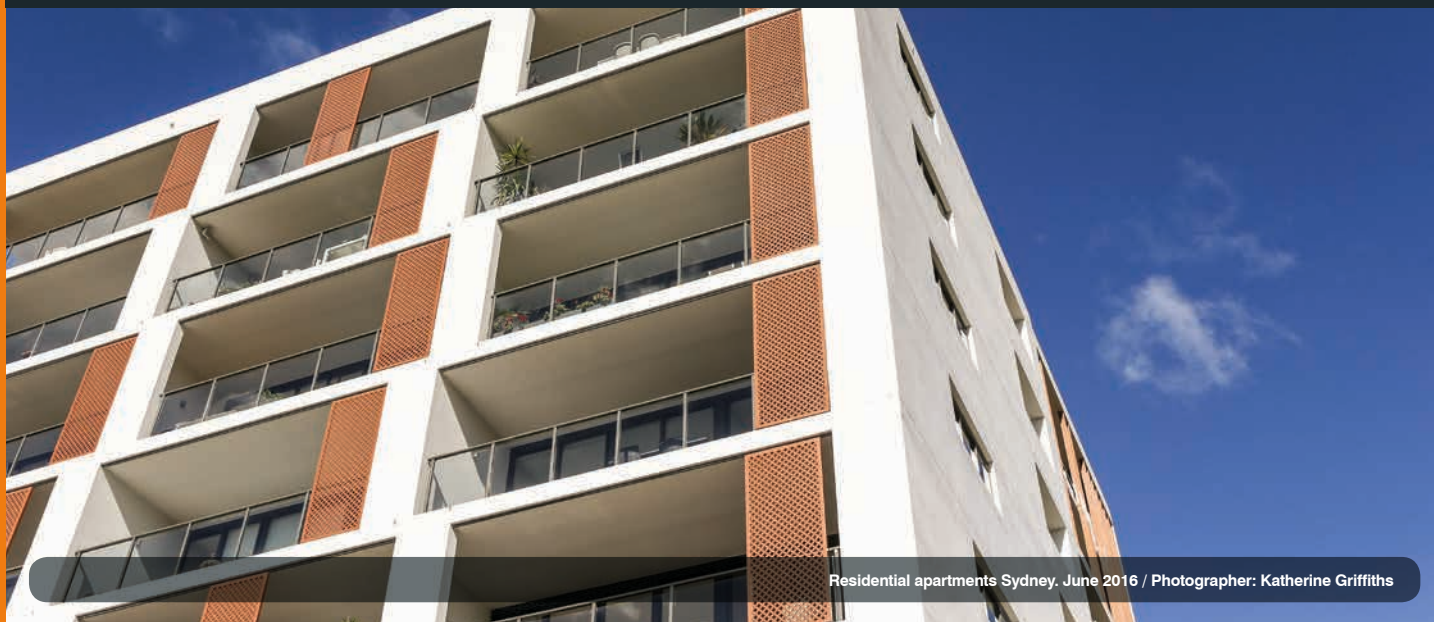
- an increasing number of multiunit residential buildings and mixed use developments
- competing requirements for use of public spaces and to reduce the amenity impacts of bins and bulky waste on streets
- changes to the types and volumes of waste produced (especially for bulky household and electronic waste)
- advances in in-building collection systems
- provision of communal storage spaces to encourage sharing economy within large multiunit residential buildings
- changes to recycling and composting technologies that impact how waste should be collected.

As a signal of the importance of designing accessible waste and recycling storage locations within each new development the City will be incorporating minimum requirements into forthcoming revisions of the Development Control Plan.

The City has also been collaborating with the state government, other councils and industry associations to share data and best practice examples.

### Actions – what the City will do:

- We will update City's Policy for Waste Minimisation in New Developments
- For new developments, we'll incorporate the Development Control Plan for the City of Sydney's minimum waste management requirements for waste storage capacity.



Residential apartments Sydney, June 2016 / Photographer: Katherine Griffiths

## Case study

### Planning for waste management in high density urban areas – London Borough of Camden<sup>13</sup>

With residential apartments making up more than 80% of Camden's housing stock, the council recognised that it was essential to provide improved recycling facilities for apartments if they were to meet their recycling targets. The Council provides a range of different recycling collection services for residents living in apartments. A number of high density apartments are served by mini-recycling centres located across the council area. These mini-recycling centres consist of five separate bins, each collecting different materials.

To maximise involvement of residents and other stakeholders Camden publicised its intention to introduce recycling facilities for apartments and encouraged residents to request the additional facilities. A consultation process ensured that residents were involved from an early stage. The consultation process included presentations at residents' and tenants' association meetings to inform residents about the proposed service and to seek views on options for container locations. Container locations were agreed in consultation with residents, caretakers and strata managers, taking into consideration vehicular access requirements.

Once the service was in place, residents were informed of the location of recycling facilities by leaflets distributed to each household. In addition, a team of recycling advisors carried out a door step campaign to raise awareness. The council also produced a 10-minute general recycling video, available in five languages, which is distributed to schools and is available to community groups on loan from libraries.

Evaluation of the scheme<sup>14</sup> showed an increase of 7.6 kilograms of recycling per dwelling per year. This improvement was only sustained during a period of ongoing communications and participation reduced when the communications ended.

# Priority 4

## Clean and clear streets



As our residential, business and visitor populations continue to grow there will need to be greater consideration given to how people, services and goods will move around the city with ease. The City's vision is for our streets and public spaces to be clean, safe, secure and accessible. To achieve this vision we need to coordinate with many internal and external groups that impact the design and operation of our city.

### Our city

#### Current practices

The City employs staff and contractors to provide a 24/7 cleansing and waste service to maintain clean and clear streets for our residents, businesses and visitors. The cleansing team is responsible for street sweeping and cleaning, emptying street litter bins and collecting garbage bags or unwanted bulky items left illegally on the streets.

**Are you moving soon and want to find a good home for your unwanted furniture? Visit our website [here www.cityofsydney.nsw.gov.au/live/waste-and-recycling/book-a-pick-up](http://www.cityofsydney.nsw.gov.au/live/waste-and-recycling/book-a-pick-up) to find out the best way to rehome, recycle or dispose of your items.**

Despite the significant staff presence and the regularity of the services provided, maintaining clean and clear streets in our city is challenging for several reasons:

- **illegal dumping** – illegal dumping is estimated to represent around 35% (or 4,000 tonnes) of the waste managed by our cleansing team each year. The dumped waste is usually made up of garbage bags not placed in bins for collection, unwanted furniture, garden waste, electronic waste and building materials. The volumes of dumped waste continue to increase despite the City providing a free weekly bulky waste collection for all residents, free fortnightly garden waste collection and four free e-waste drop off events in our local government area. A number of commercial businesses are also thought to be contributing to the illegal dumping problem. Commercial businesses are required to arrange private collections for waste.
- **bins on footpaths** – bins left out all day before or after collection from businesses within our CBD area are causing obstructions on the footpath that minimise the available space for pedestrians, can attract more dumped waste and reduce the overall amenity of our streets.
- **daytime commercial collections** – each day in our CBD there are more than 100 private waste collection vehicles collecting waste from businesses. These collection vehicles are often required to stop on the street to collect waste or recycling from footpaths. An increasing number of these collections are occurring during peak hours which impacts on already congested streets.

## Six priorities for becoming a leading environmental performer



Kent Street City of Sydney, June 2016 / Photographer: Katherine Griffiths

### How can we improve

Making improvements to traffic and pedestrian flows will require an integrated approach within our own service units and also within the community.

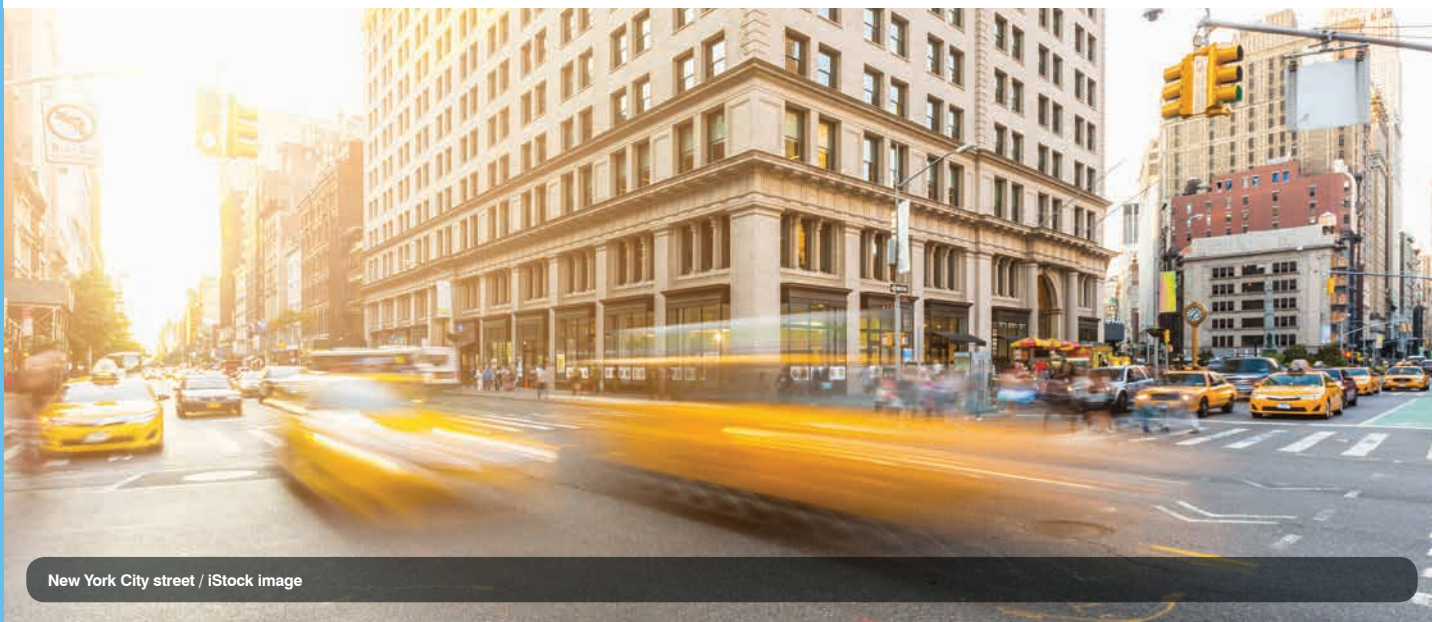
To reduce illegal dumping occurrences we can use planning controls to ensure new developments have appropriate and sufficient off-street storage areas for waste, recycling and unwanted furniture to reduce the need for placement of bulky waste items on the footpath or in laneways. We can also make booking a free council pick up easier by creating access to online booking services for city residents from mobile devices and further promote our free weekly booked collection service.

To reduce the impact of bins on the footpath we can increase engagement with residents and businesses to provide education and, where required, enforcement to reduce the instances of bins left on streets, footpaths and in laneways in accordance with the City's waste policy.

We can engage with industry to reduce the number of waste and recycling collection vehicles in the city's CBD area during peak hours to help reduce congestion and accommodate new transport infrastructure such as light rail. We can consider improving the emissions of our waste fleet vehicles.

### Actions – what the City will do:

- All new Development Application conditions will include requirement for compliance with the City's Waste Local Approvals Policy
- We will update the City's online process for booking bulky waste collection service to be compatible with mobile devices
- We'll address illegal dumping, discarded cigarette butts, and litter with targeted education and patrols by City Rangers
- To develop a program to reduce illegal dumping, we'll engage with university representatives for student accommodation within the city.
- We will investigate the use of low and/or no zero emissions of vehicles that are fit for purpose e.g. hybrids, electric and hydrogen.



### Case study

#### Zoned commercial collection systems approved for US cities

In response to concerns about the impact of multiple waste collection companies servicing the same areas or precincts, landmark decisions have been made in the US cities of New York<sup>16</sup> and Los Angeles<sup>17</sup> to introduce zoned collection systems for commercial waste. Commercial waste collection zones would mean that only one or maybe two waste contractors would service an entire area or 'zone' of the city.

Drivers for change include: reduction in carbon emissions and improved air quality from fewer collection vehicles; reduced traffic congestion; more consistent pricing and customer service levels for customers; and greater transparency in monitoring compliance with health and safety and environmental regulations.

Zoned collections were also thought to allow each city greater influence in driving improved recycling performance.

Both cities undertook extensive consultation and investigation to evaluate the benefits and costs of implementing such a scheme. Despite the estimate that implementation of the scheme in New York City may take more than two years and require legislative changes the new system will assist in delivering the objectives in its One New York Plan<sup>18</sup>.

**“The magnitude of the improvements in air quality and reduction in truck traffic coupled with the projected stable pricing for businesses the study found are compelling reasons for implementation of commercial waste collection zones”**

New York City Sanitation Commissioner  
Kathryn Garcia, 2016<sup>15</sup>

# Priority 5

## Better data management



We need to better understand the waste we produce and how it is currently managed before we can identify the most sustainable solutions.

Waste streams are difficult to monitor when they are transferred between multiple locations and combined with other waste before reaching a final destination. These interim and final destinations are often not within the same local government boundary (or sometimes the same state) as the waste is produced. This makes keeping track of what is happening much more difficult.

In recent years the introduction of accurate weight based reporting from point of collection means that residents and businesses may soon have better information about how much waste and recycling they generate. The use of this technology is not yet consistently applied across all collection services and may take some years to be fully integrated.

Consistent with our digital strategy, the City will look to integrate use of this technology in all future collection contracts and use the data to report against targets and performance indicators.

### Our organisation

#### Current practices

The City regularly reports on performance against our own operational targets, including waste, as part of our ongoing environmental commitment to achieving our Sustainable Sydney 2030 targets<sup>19</sup>.

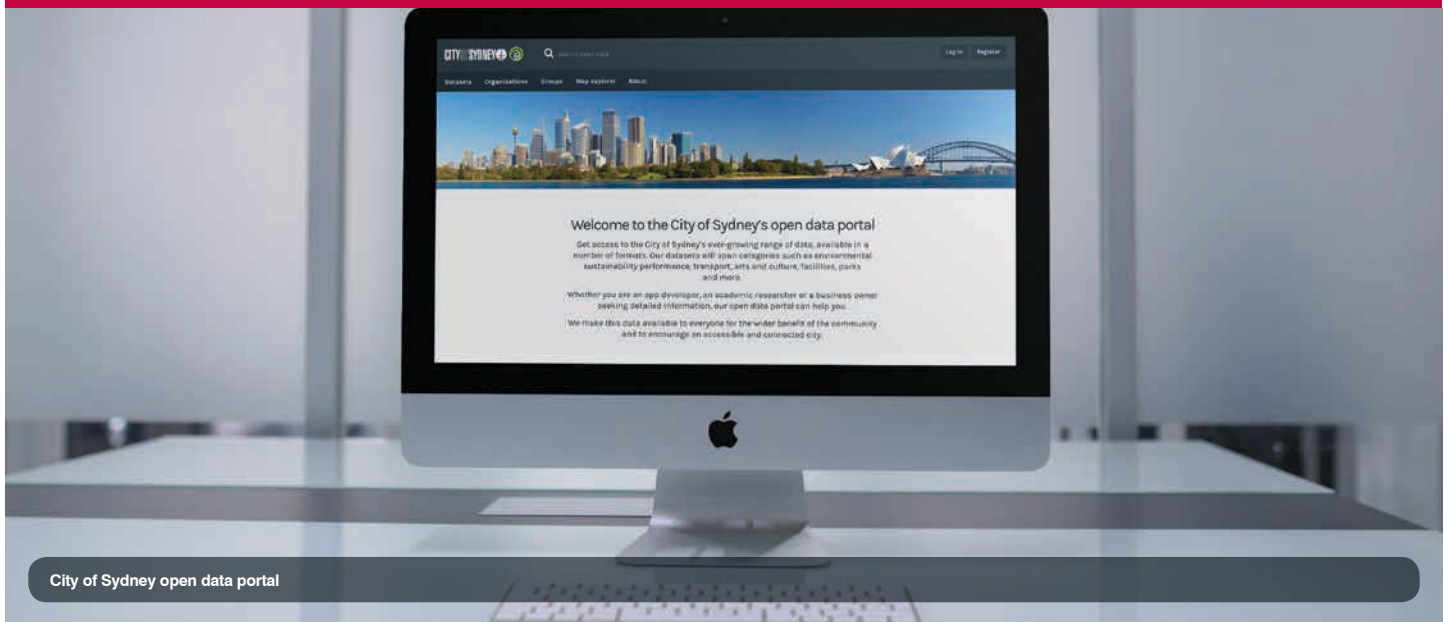
#### How our organisation data management can be improved

The City's digital platform for collecting, storing, transforming and reporting environmental data (including waste) will be upgraded to provide more accurate and timely data about waste from City operations and construction activities. This platform will provide the information required for council staff to more effectively and efficiently manage waste across the organisation. This means we will be able to better monitor against our environmental targets and react more quickly to changes in waste types or volumes.

The City is also committed to releasing public information as part of improving transparency of reporting and governance through an open data platform. The range of waste related data, its frequency and timeliness will continuously be improved over time. The City will be in regular communication with residents and stakeholder to understand current and future data needs and requests. The platform and the data within it should assist with community and business development and innovation in waste management practices.

#### Actions – what the City will do:

- We will upgrade the existing environmental reporting platform for City operations and construction
- We will incorporate organisational and other relevant waste data into the open data environmental platform.



### City residents

#### Current residential data management

The City has been collecting and reporting household waste data for many years so we can track our progress. The type of data we collect includes:

- how much is collected by weight or volume
- where the materials go for treatment or disposal
- how much of what we send is re-used or recycled
- how much of what arrives at the treatment facility has been placed in the incorrect bin
- the types of waste we are putting in each of the bins.

NSW councils are required to provide annual household waste and recycling data to the environmental regulator. When this information is published we are able to see how we are performing in terms of percentage recycling and landfill diversion compared with other councils in the state.

**Did you know you can now access our residential waste data using the City's open data platform [here](https://data.cityofsydney.nsw.gov.au) [data.cityofsydney.nsw.gov.au](https://data.cityofsydney.nsw.gov.au)**

#### How residential data management can be improved

We will advocate to state and national government for:

- clearer waste definitions to assist with more transparent reporting across the state and nationally
- regular monitoring and reporting at council, metro, state and national level

- regular waste generation rate audits for different activity types relevant to cities
- waste generation and management data to be made public for each council area at least annually.

This can assist with:

- monitoring progress towards state targets
- producing reliable statistics on municipal waste
- providing an evidence base to guide government policy.

At a more operational level the City can improve the data it collects at the kerbside through installation of smart systems on collection trucks. This will help to:

- ensure that residents have the correct size bins
- record instances of missing or broken bins at time of collection
- improve communication with residents about what should go in the bins
- achieve real time recording of missed services
- optimise routes for improved efficiency.

#### Actions – what the City will do:

- To improve waste service standards and reduce contamination, we'll install appropriate waste tracking and monitoring equipment on all collection vehicles
- We will advocate for state government agencies to standardise waste data collection definitions and processes, and reinstate annual reporting.

# We need to better understand the waste we produce and how it is currently managed before we can identify the most sustainable solutions.

## City businesses

### Current business data management

Business and construction waste in the city is managed by independent commercial waste operators and is not reported centrally. This means that estimating waste generated by our business community is heavily reliant on published waste data metrics based on outdated assumptions.

The City's Better Buildings Partnership sustainability program has worked with businesses and industry to improve industry benchmarking and increase positive outcomes for waste reduction and resource recovery in the commercial office sector. The Better Buildings Partnership developed a waste data collection tool that assists businesses to:

- create transparency to provide credibility and confidence in waste data
- improve the overall level of accuracy of waste data
- enable meaningful and accurate comparisons and benchmarking to be conducted within portfolios and across the property sector
- achieve greater resource recovery by more accurately measuring current performance.

The protocol has been adopted by signatories to the partnership which represents over 50% of the office floor space across Sydney's CBD.

### How business waste data can be improved

Building on the success of our work with the commercial office sector the City will focus on similar projects with the accommodation and entertainment businesses in the city. This sector represents more than 50% of the waste disposed to landfill by the city's businesses. It therefore offers significant opportunities to improve waste data management and influence more sustainable waste management outcomes.

Further, collaboration with state government on the collection and reporting of waste data from businesses will also help to:

- improve the accuracy of commercial waste data at a state and local level
- show progress against the current state targets
- identify which business sectors and waste streams should be targeted for improvement.

### Actions – what the City will do:

- We will support consistent waste reporting across key commercial sectors by partnering with industry and state government
- We will advocate for state government to improve transparency and integrity of waste data from waste and recycling operators.



City Operations Waste Vehicle. June 2013 / Photographer: Brendan Read

## Case Study

### Using technology on waste trucks to deliver better service outcomes

Advances in on-board vehicle software and hardware for waste collection trucks has provided both councils and businesses with the opportunity to collect and analyse waste collection data and optimise collection routes. Although there are several system types available on the market the following ones have been identified as potentially useful for council and commercial business applications.

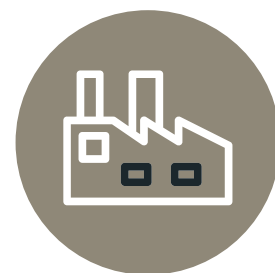
**On-board weighing scales** – allows the customer to collect accurate data about the weight of waste or recycling collected, rather than relying on the use of volume to density conversion factors that can result in significant margins of error for estimating weights.

**On-board global positioning system (GPS) tracking** – allows collection operators to; better plan route optimisation; provide increased flexibility in managing collections; assisting with customer service queries and improved health and safety management.

**On-board cameras** – can assist recycling collection vehicles to identify when non-recyclable items have been incorrectly placed in the recycling bin. If recycling contamination can be identified before it enters the vehicle then it is possible to prevent entire loads from possibly being rejected at the materials recycling facility. Where contamination from houses or apartments is noted on a regular basis a targeted education program can be used to encourage behaviour change.

# Priority 6

## Future treatment solutions



After all re-useable or recyclable materials have been separated for beneficial uses the remaining waste, known as residual, must be managed. Landfill is the most common way to manage this waste, but is also the least sustainable solution.

Alternative waste treatment technologies for waste that cannot be recycled can deliver energy recovery and minimise disposal to landfill.

The City investigated and consulted widely in 2013 on alternative waste treatment solutions for City controlled waste. These solutions are to reduce carbon emissions emitted from landfill and generate energy from materials that would otherwise be discarded<sup>20</sup>.

### Waste management now

#### Our organisation's waste

The City's existing waste management solutions for its own buildings are focused on waste reduction, re-use and recycling and divert around 35% away from landfill. The remaining residual waste is currently sent to a landfill facility.

#### City residents' waste

To further increase recycling outcomes the City has since 2012 sent all waste from our residential community that has not been separated for recycling to a resource recovery facility. At this facility all of the food and organic waste is separated to produce a low-grade compost suitable for mine rehabilitation. This process minimises the amount of greenhouse gases emitted to the earth's atmosphere by not sending the food waste to landfill and can return much needed nutrients to land with poor quality soil. This means that none of the City's residential waste is sent directly to landfill.

The City continues to achieve a consistently high resource recovery rate and achieved 69% diversion from landfill for 2015/16.

### Options for the future

#### Achieving 2021 targets in our organisation

The City's solutions to achieving our 2021 targets in our buildings and operations include a mix of improvements to existing waste and recycling services and introduction of new services. New services include food waste collections from City buildings and recovery of mixed bulky waste as a fuel replacement for cement kilns in NSW and overseas.

Successful introduction of the above solutions would see an increase in landfill diversion of up to 75% and will exceed our 2021 target of 70%.

#### Achieving 2021 targets for residents' waste

This strategy identifies a number of actions that will assist City buildings and residents to achieve better recycling rates from separate collection of materials.

The impact of the proposed residential waste actions are estimated to deliver an additional 6% recycling to achieve 35% source-separated recycling by 2021.

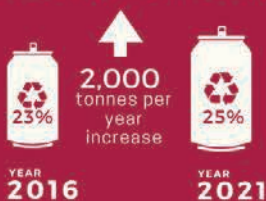
The maximum diversion from landfill achievable using all existing available technologies is 79%. This means that to achieve a landfill diversion rate closer to zero the City will need to consider alternative solutions to managing residual waste.

## FUTURE TREATMENT SOLUTIONS

### RECYCLING - GETTING TO OUR TARGET

2015/16 PERFORMANCE - 28% SOURCE SEPARATED RECYCLING

#### MIXED RECYCLING



The City will encourage residents to put more recycling in the right bin.

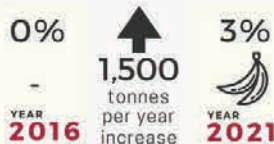
#### GARDEN WASTE



Less than 10% of residents have gardens, but many of those residents use the City's garden waste collection service.

#### SEPARATED FOOD WASTE

is 35% of the bin



The City will offer residents the option to participate in separate food waste collection.

#### eWASTE, WHITEGOODS & MATTRESSES



The City will introduce a new e-waste collection to all residents.

#### HOUSEHOLD CLEAN-UP



The City promotes re-use of furniture waste and recycling of metals from household clean-up.

#### TEXTILES

are 5% of the bin



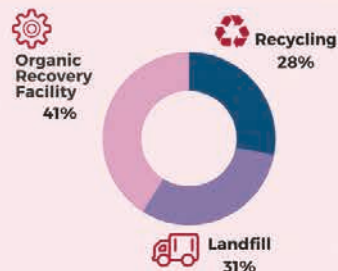
The City will facilitate textile collection for apartment buildings.

2021 TARGET - 35% SOURCE SEPARATED RECYCLING

## FUTURE TREATMENT SOLUTIONS

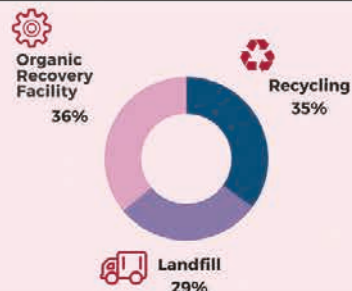
### DIVERSION FROM LANDFILL - GETTING TO OUR TARGET

2015/16 - 69% DIVERSION FROM LANDFILL ACHIEVED



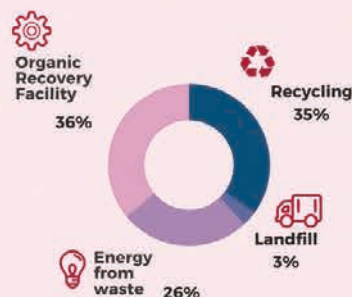
The City currently diverts 69% of residential waste from landfill. This is achieved through source separated recycling at the kerbside and using alternative waste treatment.

2021 - 70% TARGET ON DIVERSION FROM LANDFILL



By 2021 the City wants to increase the total number of items that residents recycle at home and reduce what is sent to landfill.

2030 - 90% TARGET ON DIVERSION FROM LANDFILL



By 2030 the City wants to send as little waste as possible to landfill. We can achieve this by maintaining high recycling, alternative treatment and by recovering energy from the waste that is not recyclable.

## Six priorities for becoming a leading environmental performer



City Operations Cleansing and Waste, Sydney / Photographer: Katherine Griffiths

### Achieving 2030 targets for organisation and residents' waste

Once recycling has been maximised through the separate collection of materials for re-use or processing into new materials, a solution is needed to manage the waste that is left over. The City's 90% target by 2030 can only be achieved with sustained advocacy to reduce the impact of product manufacture and the availability of alternative technologies such as a waste-to-energy treatment solution for the remaining residual waste.

There are currently no waste-to-energy treatment facilities designed to accept mixed residual waste operational in NSW. The City will engage with industry and other organisations to facilitate the development of such a facility.

### Actions – what the City will do:

- We will engage with industry and other stakeholders to create opportunities to develop energy recovery facilities in NSW
- We will identify and secure solutions for easy collection and preparation of waste for onward transportation to final destination treatment or recycling facilities.

### Barriers to treatment of waste in Sydney

#### Creating space to manage waste

The availability of landfill space in the greater Sydney area is reducing. An increasing population are putting pressure on the capacity of existing waste treatment infrastructure.

The growth in residential and commercial development places environmental and economic restrictions on suitable land availability for waste management infrastructure.

As a result, waste treatment infrastructure is being constructed further away from the source of the waste resulting in additional transportation impacts on local areas.

In the short to medium term the City will need to identify and secure solutions for collection and preparation of materials and waste for onward transportation to final destination treatment or recycling facilities.



Brescia waste-to-energy plant, Italy. A2A Group

## Case study

### Future treatment solutions – Getting to zero waste to landfill – City of Milan

The City of Milan and its surrounding 13 municipalities is home to 1.6 million people and produces 780,000 tonnes of waste a year. In the early 2000s the City's kerbside recycling rate was just below 30% and offered collection services for paper, cardboard, glass, cans and plastics. Milan has in recent years expanded its services to include collection of waste electronics and electrical items and other problem wastes. These wastes can be deposited at 11 separate council sites around the city.

In response to statutory European recycling targets and a zero waste to landfill objective Milan decided to introduce food waste collections for residents. The implementation was phased over two years, from 2012 to 2014 and in that time the city's kerbside recycling rate increased from 36% to more than 52%. Residents of Milan generate on average 1.8 kilograms of food waste per week. The food waste collected is sent to an anaerobic digestion facility where it is turned into energy and high quality compost. The process saves more than 8,000 tonnes of carbon per year.

The city is also processing its household bulky wastes, road sweepings and stormwater pit material to extract recyclables.

The remaining waste that is left over is made up of materials that have no existing recycling market. These waste streams are sent to a waste-to-energy facility that uses the left over waste as a fuel that is burned under controlled conditions to generate heat and power. The heat is used in a city district heating scheme and the power is sold to the electricity network. The ash from the facility separated and a large proportion is used as recycled aggregate. The final remaining material is safely disposed of in a landfill, less than five per cent of the total waste stream.

The City of Milan is a member of the C40 network and has been sharing learnings and experiences with waste management with the City of Sydney.

# 07 We all have a part to play

**We are doing what we can to achieve our long-term objectives. But to accomplish our objectives, we need action from all of our residents, businesses and state government.**

## What this strategy means for our organisation

Our vision for the future of waste management is to significantly reduce waste to landfill by minimising waste, and re-using or recycling as much as we can.

Through our own management of waste and resources, we can demonstrate leadership in sustainability. In some areas this has required a review of the way we collect, report and verify recycling and landfill diversion performance data, for improved accuracy and transparency.

The City does not own facilities that process, recycle or dispose of materials. We rely on commercial waste and recycling operators to provide services for the materials and resources we can no longer use. As a purchaser of services, we can drive change by requesting services that promote a higher value use of materials, and avoid disposal wherever possible.

To work towards achieving our targets and objectives we will:

- continue to educate our residents, visitors, and business community to refuse, reuse and recycle waste
- include waste targets in future procurement contracts
- procure waste and recycling solutions that can deliver the targets and demonstrate value for money
- improve the way we manage waste within our organisation
- work with other local governments to find solutions to common issues
- monitor and report our progress against the targets
- advocate to state and federal government to safeguard land for future development of waste treatment facilities.

## What this strategy means for residents

As part of the development of this strategy, we consulted with city residents to better understand the issues that are important to them. The discussion groups also provided an opportunity to explain how we currently manage waste and recycling from the community, and discuss the options for future management of waste and recyclables.

Overwhelmingly, our residents supported the City's proposed targets for increased landfill diversion. There was strong support for more recycling services, although there was some confusion around what can be recycled.

The City has responded to this request for more education and information as part of its actions for residential services. We're also investigating the expansion of recycling services where we feel there is an appropriate environmental benefit.

We encourage residents to:

- refuse waste where they can
- choose to 'do the right thing' – more recycling, less contamination
- use the City's new recycling services
- notify the City about bulky waste items for collection and not leave waste on the street without booking it in
- provide feedback on future options for the treatment of waste produced in our local government area.

## What this strategy means for businesses

Waste from the city's businesses represents around 90% of the waste produced in our local government area. The City is not responsible for collection and management of business waste. However, as part of our broader commitment to reducing emissions and our environmental footprint, we have proposed to extend state government recycling targets across our local government area.

Collectively, the waste produced by businesses in the city represents a strong opportunity to influence industry response to demands for increased recycling and alternatives to landfill. In most cases these alternatives to landfill can be delivered at the same or lower cost as a result of the state government tax on landfill.

As part of our commitment to increased recycling and less waste to landfill, the City will encourage and support changes through sustainability programs, grants, and advocacy initiatives.

We encourage and support businesses to:

- consider options for how they can avoid waste and recycle more
- demand improved services from waste management contractors
- improve how they report waste and recycling performance
- support innovation in waste by procuring services that send less waste to landfill
- participate in new City sustainability programs
- access City support to explore opportunities for better waste solutions.

## What we need from other stakeholders

In recent years, commercial and residential developments have encroached on much of the land surrounding landfills and waste treatment facilities in the Sydney region. This has limited the expansion of existing waste treatment facilities or development of new facilities on land currently approved for waste management development.

The state government has highlighted this constrained capacity for the management of waste<sup>1</sup> as a key issue. Although it recognises the need for increased recycling and recovery of waste to meet growing demands, state government hasn't yet identified a location for these facilities<sup>21</sup>.

Right now, there's a gap between the need for future waste treatment facilities to manage population and development growth in the Sydney region, and the identification of suitable sites to service this need.

As waste is rarely managed within the local government area that it's generated, the City sees the need for a regional planning approach. This would first identify suitable areas for waste management use, and then protect these areas from residential development and other sensitive uses.

More transparency around current waste generation and treatment capacity will assist with the development of these new regional waste facilities.

Where new technologies are being considered, the City believes it's appropriate for the state's environmental regulator to have independent information and guidance on existing and new technologies and their potential environmental and health impacts.



City of Sydney Operations Waste and Cleansing, June 2013 / Photographer: Brendan Read

We call on other government agencies and regulators to:

- do more to prevent waste such as reducing single use disposable items and increase pressure on industry and businesses to take back waste
- allocate appropriate land resources to waste treatment and transfer within the Sydney Metropolitan Area
- provide an independent reference point for general public wishing to understand more about the environmental impacts of waste treatment including waste-to-energy
- improve transparency and integrity of waste data from both residential and commercial producers and waste operators
- expand national product stewardship schemes under the Product Stewardship Act.

# 08 Actions and implementation

Priority 1   Promote innovation to avoid waste		Timeframe		
		Short term (1-2 years)	Medium term (3 – 5 years)	Longer term (6 – 10 years)
<b>Organisation</b>				
1.1	We will investigate sustainable procurement opportunities for our own developments and projects	X	X	X
1.2	We will consult with event producers about removing plastic waste packaging at all City of Sydney venues, and report to Council	X		
<b>Residential and business</b>				
1.3	We will provide and promote funding opportunities for innovative technologies and processes to address problem waste streams not currently managed in a sustainable way	X	X	
1.4	We will advocate for the Federal Government to expand national product stewardship schemes	X	X	
1.5	Continue with regional partnerships to review and identify opportunities for re-use initiatives	X	X	
Priority 2   Improve recycling outcomes		Timeframe		
		Short term (1-2 years)	Medium term (3 – 5 years)	Longer term (6 – 10 years)
<b>Organisation</b>				
2.1	We will introduce separate food waste collection infrastructure, where appropriate, to City properties	X		
2.2	We will investigate ways to improve public place recycling	X		
2.3	We will prepare the City's operations depot to collect and store illegally dumped waste separately from other public waste to improve recycling outcomes	X		
2.4	Where waste and recycling management are part of our service, we'll include our targets in all future contracts	X		

Priority 2   Improve recycling outcomes continued		Timeframe		
		Short term (1-2 years)	Medium term (3 – 5 years)	Longer term (6 – 10 years)
2.5	To improve recycling rates and reduce contamination at home, we'll provide more signs and education materials	X		
2.6	We will create a community waste drop off point for problem waste	X		
2.7	We will introduce free, weekly separate e-waste, metals and white goods collections for all City of Sydney residents	X		
2.8	We will develop and implement a subsidised trial food waste collection scheme for residents	X	X	
2.9	We will investigate providing all City of Sydney residents with regular clothing and textiles collections for recycling		X	
2.10	We will investigate opportunities for new collection services, such as recycling soft plastics, at the new Alexandra Canal depot.		X	
Business				
2.11	We will encourage and support building owners and tenants within business sectors to improve their waste avoidance, re-use, recycling and recovery performance	X	X	X
2.12	We will help train and identify roles within commercial, office, accommodation, and entertainment sectors to educate on waste and recycling programs and deliver best practice separation	X	X	X
Priority 3   Sustainable design		Timeframe		
		Short term (1-2 years)	Medium term (3 – 5 years)	Longer term (6 – 10 years)
Organisation				
3.1	We will incorporate best practice waste management for demolition, construction and operation into the City's new Sustainable Design Technical Guidelines	X		
3.2	Where feasible, we'll incorporate and trial the use of re-used and recycled content materials in future projects	X	X	X
3.3	We will assess all City of Sydney office buildings against the National Australian Built Environment Rating System	X	X	
Residential and business				
3.4	We will update City's Policy for Waste Minimisation in New Developments	X		
3.5	For new developments, we'll incorporate the Development Control Plan for the City of Sydney's minimum waste management requirements for waste storage capacity	X		

Priority 4   Clean and clear streets		Timeframe		
		Short term (1-2 years)	Medium term (3 – 5 years)	Longer term (6 – 10 years)
Residential and business				
4.1	All new Development Application conditions will include a requirement for compliance with the City's Waste Local Approvals Policy	X		
4.2	We will update the City's online process for booking bulky waste collection service to be compatible with mobile devices	X		
4.3	We'll address illegal dumping, discarded cigarette butts, and litter with targeted education and patrols by City Rangers	X	X	
4.4	To develop a program to reduce illegal dumping, we'll engage with university representatives for student accommodation within the city	X		
4.5	We will investigate the use of low and/or no zero emissions of vehicles that are fit for purpose e.g. hybrids, electric and hydrogen.		X	
Priority 5   Better data management		Timeframe		
		Short term (1-2 years)	Medium term (3 – 5 years)	Longer term (6 – 10 years)
Organisation				
5.1	We will upgrade the existing environmental reporting platform for City operations and construction	X	X	
5.2	We will incorporate organisational and other relevant waste data into the open data environmental platform	X		
Residential				
5.3	To improve waste service standards and reduce contamination, we'll install appropriate waste tracking and monitoring equipment on all collection vehicles	X		
5.4	We will advocate for state government agencies to standardise waste data collection definitions and processes, and reinstate annual reporting	X	X	
Business				
5.5	We will support consistent waste reporting across key commercial sectors by partnering with industry and state government	X	X	
5.6	We will advocate for state government to improve transparency and integrity of waste data from waste and recycling operators	X	X	
Priority 6   Future Treatment Solutions		Timeframe		
		Short term (1-2 years)	Medium term (3 – 5 years)	Longer term (6 – 10 years)
Organisation and residential				
6.1	We will engage with industry and other stakeholders to create opportunities to develop energy recovery facilities in NSW	X	X	
6.2	We will identify and secure solutions for easy collection and preparation of waste for onward transportation to final destination treatment or recycling facilities		X	X



Composting at Hilda Booter Kindergarten in Glebe, February 2017 / Photographer: Jamie Williams

### Strategy implementation

The strategy has been developed for the medium to long term target year of 2030 and in accordance with the NSW Government's 2021 targets. It sets out recommendations to accommodate further legislative requirements and advances in technology.

The majority of actions developed for the strategy propose timeframes for implementation between one and five years. Technology, the market and the national and state policy environment are changing rapidly. The City must respond with a change of focus, where necessary.

### Review and monitoring

We will review and report on progress of the actions annually in the corporate plan and the City's Green Report. Specific actions and timings may change.

Priorities will be assessed each year based on the outcomes achieved and as new information on the needs of the sector becomes available.

A major review will be undertaken to coincide with the end of the first five years of the plan.

### A partnership approach

Developing an effective response to the environmental challenges faced by our city requires collaboration from all parts of our community. We look forward to implementing this strategy in partnership with our residents, our business community, the NSW government and the Federal government.

We also expect that industry and government will initiate their own actions. Where they involve the City, they will be presented in future versions of this strategy.

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