

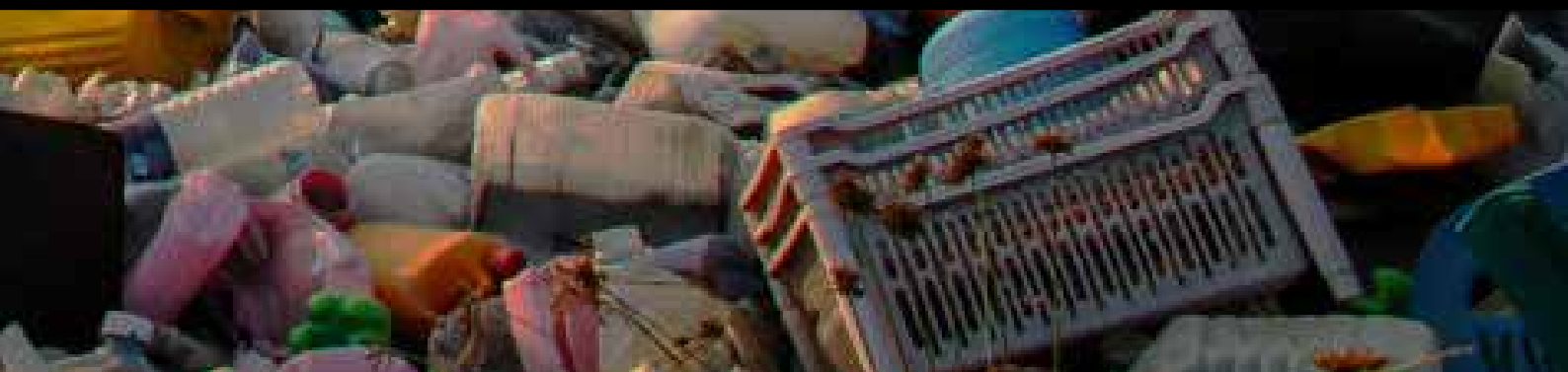


CITY OF  
TEA TREE GULLY  
*Naturally Better*

# WASTE AND RESOURCE RECOVERY STRATEGY 2033

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Towards a circular economy



# Welcome

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This strategy has been prepared by the City of Tea Tree Gully. It was endorsed by Council on 11 July 2023.

The City of Tea Tree Gully would like to thank all the community, industry, government, peak bodies, and Council staff that gave their time to provide input into the development of this strategy.

While every effort has been made to ensure the document is accurate at the time of publication, the City of Tea Tree Gully does not provide any warranty in this regard and does not make any representation as to the accuracy of the information contained within this publication.

For information contact  
the City of Tea Tree Gully at  
[customerservice@cttg.sa.gov.au](mailto:customerservice@cttg.sa.gov.au)  
or 8397 4444



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# A new way forward

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Our Waste and Resource Recovery strategy will see us embark on a 10 year journey towards a sustainable future where waste is avoided to the greatest extent, valuable materials are diverted from landfill and our community and the environment are protected from the negative impacts of waste.

Aligned with our strategic vision for a strong and vibrant city, as well as the state government's commitment to the 'diversion of all waste from landfill where it is technologically, environmentally, and economically practicable to do so'<sup>1</sup>, our waste strategy sets an ambitious vision for our City.

To achieve this, we need to redefine our relationship with waste, explore creative solutions and investigate new systems and technologies. Shifting our mindset away from waste as an inevitable consequence of modern living to an opportunity for innovation and resource conservation is key to realising the kind of change we seek to make.

This strategy is built on the waste management hierarchy, which prioritises initiatives based on their environmental impact, emphasising waste avoidance, reduction, reuse, recycling, and energy recovery before considering disposal. It is also driven by the national commitment to a 'circular economy' and our state's progressive transition towards it. By actively promoting and implementing these high-order outcomes, we can actively minimise waste generation, conserve resources and reduce our ecological footprint.

Collaboration with other tiers of government, our waste collection and processing partners, businesses, schools, research institutions, and the community will help foster an ecosystem of innovation and knowledge sharing.

This collaborative effort will enable us to push the boundary of what is possible and work to create a greener, cleaner and more sustainable future.

However, the success of this strategy will require continued and consistent effort and a significant commitment from all stakeholders to work with Council to improve our overall performance.

We will start by empowering our community with the right tools, implementing educational programs and community initiatives, as we seek to cultivate a culture of waste consciousness, inspiring individuals to make informed consumption and disposal choices and embrace sustainable practices.

We will take a leadership role and we will seek to set a new standard for waste management by embracing sustainable practices, promoting responsible consumption, and designing our operations with circularity in mind.

This strategy will guide the City of Tea Tree Gully and its community through to 2033. It has been developed in the context of state and national strategy, policy and legislation and reflects the input of our community, industry partners, and other stakeholder groups.

# The strategy

This strategy will guide us through to 2033 as we seek to support the progressive development of a circular economy, create a more resilient waste management system, reduce the environmental impacts of waste and improve the livability of our city.

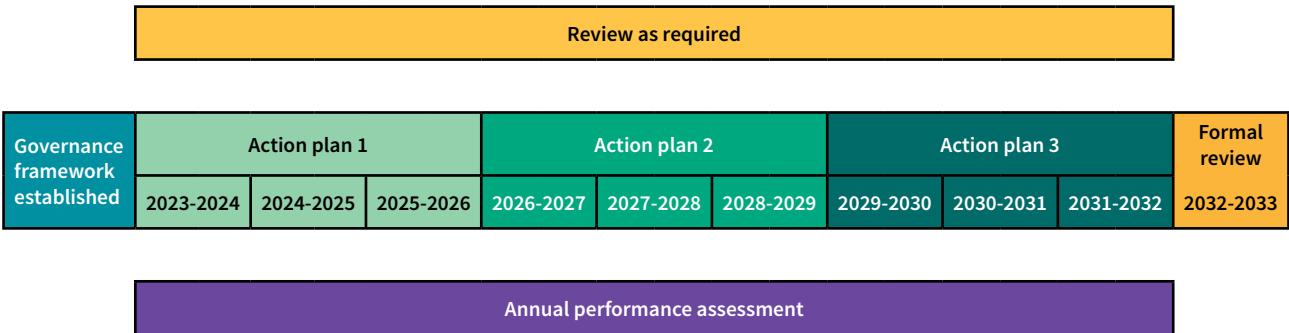
Our Waste and Resource Recovery Strategy consists of a 10-year vision for our city, a set of targets and performance measures to track our impact, focus areas and key directions to guide our actions, and an assessment matrix to identify which actions to pursue.

To ensure we remain flexible and adaptable to the rapid rate of change in the waste sector, the actions that will contribute to achieving our targets will be detailed in a separate rolling three-year action plan. Incremental targets have been developed in line with the individual action plan delivery cycles.

The strategy will be reviewed against any substantial legislative or industry changes as required to ensure its continued effectiveness.

The implementation of this strategy will require a commitment from our entire organisation, our community and business to ensure its success.

Figure 1: Waste and Resource Recovery Strategy delivery plan



## Our vision

A future where waste is viewed as a valuable resource and avoided to the greatest extent; the useful life of materials is maximised through reuse, repair and recovery; and the environment and human health are safeguarded from the negative impacts of waste.

Our vision is to create a future where the concept of waste is redefined, and every material is considered a valuable asset that can be repurposed, recycled, or transformed into new products.

By embracing a circular economy model, we aim to eliminate the linear “take-make-waste” approach and instead develop a system that focuses on designing out waste and pollution and keeping products and material in use at their highest possible value for as long as practicable.

Environmental sustainability and human health form a key part of this strategy, as we strive to safeguard our community from the negative impacts of waste generation and disposal.

We have identified six key focus areas that are critical to achieving our vision. Under each focus area is a set of directions, which will guide our actions.

## Focus areas

### 1. Avoidance, reuse and recovery

Minimise waste generation, keep materials in use for as long as possible, and enhance source separation and resource recovery, ensuring all avoidable waste is removed from the waste stream.

### 2. Engagement, education and activation

Engage residents, schools, businesses and community organisations through education, awareness campaigns and capacity building programs that foster sustainable behaviour change and empower our community to take ownership and make responsible consumption and disposal decisions.

### 3. Service delivery and operations

High order waste hierarchy outcomes are embedded in our decision making, our operations actively support the development of a circular economy, and our waste management services are well governed, accessible and respond to community need.

### 4. Collaboration and innovation

Collaborate with government, industry, business, educational institutions and community to leverage collective knowledge, resources, and expertise to develop innovative solutions.

### 5. Reform, advocacy and alignment

Proactively drive long-term strategy, policy and legislative change that benefits the City of Tea Tree Gully and its community.

### 6. Environmental protection and human health

The adverse effects of waste on the environment and human health are minimised, and our city and our community are protected from environmental health risks.

# Avoidance, reuse and recovery

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Minimise waste generation, keep materials in use for as long as possible, and enhance source separation and resource recovery, ensuring all avoidable waste is removed from the waste stream.

A new approach is required if we are to reduce the growing amount of waste generated in the City of Tea Tree Gully, address the large quantities of recyclable material being sent to landfill and minimise our environmental impact.

To drive the type of transformational change required, we need to prioritise the development of new and creative solutions, which target the high-order outcomes of the waste hierarchy and support the progressive development of a circular economy.

This involves supporting source reduction and sustainable design, prioritising reuse, repair and maintenance as well as providing a more convenient, flexible and effective waste management system, incentives and structures. Whatever the solution, it will need to cater to the different needs of our diverse community.

Minimising our community's waste footprint and our reliance on landfills will reduce our exposure to the increasing financial risk of the solid waste levy and will contribute to a more resilient and sustainable future.

The full cost, benefits and impacts of any changes will be considered prior to the implementation of any changes.

## **Outcome**

Our community has equitable access to efficient and effective systems, processes and facilities that support waste avoidance, source separation and resource recovery.

## **Key directions:**

- 1.1 Provide equitable access to the tools and services required to eliminate avoidable waste and increase diversion from landfill.
- 1.2 Explore, evaluate and Implement innovative approaches to waste separation, storage, collection and recovery.
- 1.3 Design collection, disposal and charging systems for optimal service delivery and source separation.
- 1.4 Standardise waste infrastructure across all Council facilities, high traffic public places and at major events.
- 1.5 Leverage incentives to motivate community and businesses to adopt sustainable waste management practices.
- 1.6 Encourage and support the sharing economy, and promote repair and refurbishment.

# Engagement, education and activation

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Engage residents, schools, businesses and community organisations through education, awareness campaigns and capacity building programs that foster sustainable behaviour change and empower our community to take ownership and make responsible consumption and disposal decisions.

We have a real opportunity to shift societal norms and practices through a long-term commitment to the continuous delivery of education, awareness campaigns and capacity building programs.

To drive behaviour change and the widespread adaption of sustainable practices, we will need to redefine waste, shifting the mindset of our community away from waste as an inevitable consequence of modern living to a valuable resource that can be reused.

Through the use of a variety of different behaviour change techniques and the provision of accessible information, advisory services and tools tailored to the needs of our community, we will build awareness, knowledge and practical skills; change attitudes; provide opportunities for people to share their experiences, exchange ideas and work together; influence the adoption of alternative consumption models; and foster more sustainable behaviours.

While education and awareness serve as important foundations for behaviour change, it is important to recognise that education alone is not sufficient to drive the kind of change we seek to make. However, doing nothing is not an option.

## **Outcome**

Our community is well informed, views waste as a valuable resource, and makes responsible consumption and disposal decisions.

## **Key directions:**

- 2.1 Drive understanding and behaviour change through the provision of tailored education campaigns, capacity building programs, point-of-disposal information, tools and resources.
- 2.2 Work with neighbouring councils and state government agencies to ensure a clear and consistent approach to waste education.
- 2.3 Explore opportunities to integrate waste management and sustainability into the school curriculum, community organisations and sporting clubs.
- 2.4 Provide access to expert waste management and sustainability advice.
- 2.5 Provide greater community visibility of waste performance and cost.

# Service delivery and operations

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High order waste hierarchy outcomes are embedded in our decision making, our operations actively support the development of a circular economy, and our waste management services are well governed, accessible and respond to community need.

The City of Tea Tree Gully has the opportunity to be a leader in waste and resource recovery and advance South Australia's transition towards a circular economy via its operations and purchase decisions.

Through the continued review and optimisation of our own operations and service delivery model, we have the opportunity to demonstrate best practice waste management and resource recovery.

This strategy will see us explore, pilot and implement waste reduction and diversion measures; extend our green procurement policies; support infrastructure, processes and products that are designed to minimise waste, energy and material use; monitor and report on our activities; and provide targeted support and services.

## **Outcome**

The City of Tea Tree Gully improves its operations, transitions toward becoming a low-waste organisation and strengthens its reputation as a leader in waste management and sustainability.

## **Key directions**

- 3.1 Council's waste management services are underpinned by robust governance, data management and planning and all decisions are data driven and evidence based.
- 3.2 Council understands the composition and quantity of the waste it generates and uses this information to set measurable targets, identify opportunities and develop targeted initiatives to improve its own systems and drive operational efficiency.
- 3.3 Sustainable procurement policies and practices prioritise the purchase of products and services with minimal packaging, a higher level of recycled content, longer lifespans, greater recyclability and lower environmental impact.
- 3.4 Maintain and repair Council assets to extend their life and ensure greater long-term use.

- 3.5 Waste management and sustainability targets and guidelines are set, adopted and measured across Council's operations including Asset Management Plans, set recycled content measures for infrastructure projects, and new developments include best practice design for waste storage access and servicing.
- 3.6 Seek improvements, advancements and innovation in Council's waste service contracts, regularly monitor and review them and support the development and expansion of viable and sustainable markets for Council waste materials, including buy-back arrangements.
- 3.7 Council continues to learn at all levels of the organisation and actively engages with stakeholders to gain a comprehensive understanding of their needs, concerns, and aspirations, build support and increase the likelihood of adoption.

# Collaboration and innovation

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Collaborate with government, industry, business, educational institutions and community to leverage collective knowledge, resources and expertise to develop innovative solutions.

A 'business as usual' approach to waste management will not allow us to achieve transformational change.

By embracing innovation and collaboration, we can tap into new ways of thinking and cutting-edge technology, and drive more efficient, cost-effective, and environmentally conscious solutions that support high order waste hierarchy outcomes, address the cycle of consumption and draw us closer to a circular economy.

This will mean building networks and partnerships with a variety of stakeholders to leverage collective knowledge, resources and expertise. Equally, it will mean actively participating in and supporting the exploration, development and implementation of new technologies, processes and approaches. It may also see us pilot new initiatives, offer funding and support mechanisms, establish new industries and create economic opportunities.

## **Outcome**

An innovation pipeline is developed through the establishment of strong partnerships that allows new solutions to be developed, trialled and implemented.

## **Key directions**

- 4.1 Knowledge and expertise are shared and partnerships formed with government bodies and other stakeholders to foster best practice, innovation, reduce duplication, provide cost savings and enhance skills development.
- 4.2 Innovation, research and development and commercialisation initiatives that support design-led solutions are encouraged and supported.
- 4.3 Emerging waste management technologies and innovative approaches are explored, piloted, tested, evaluated and prioritised for broader implementation.
- 4.4 Establishment of a local circular economy is encouraged through circular business attraction, investment, collaboration and incentivisation.
- 4.5 Innovation in waste management is recognised and rewarded.

# Reform, advocacy and alignment

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Proactively drive long-term strategy, policy and legislative change that benefits the City of Tea Tree Gully and its community.

Eradicating avoidable waste and transitioning to a circular economy will require a fundamental shift in regulations and guidelines and greater alignment between all levels of government. We are still talking about what goes in which bin, when we need to start working on designing out waste.

By advocating for reform and alignment among all levels of government and other stakeholders, we can drive systemic change and foster an enabling environment for sustainable waste management.

This may include reviewing and improving existing policies, regulations and systems to align with our waste vision, lobbying for waste reduction targets, advocating for product stewardship schemes and Extended Producer Responsibility schemes, supporting the implementation of landfill bans on recyclable and organic material, strengthening enforcement mechanisms to ensure compliance, and promoting the adoption of circular economy principles and policies.

## **Outcome**

A flexible policy environment that enables a transition to a circular economy.

## **Key directions**

- 5.1 Waste management is embedded in Council policies, strategies and guidelines, which are regularly reviewed for strategic alignment and compliance with state and Australian Government strategy, policy and legislation.
- 5.2 Council leads the development and implementation of more robust waste management strategy, policy and legislation and actively participates in the planning and review of new policies, legislation and services, championing the right policy settings and legislation to redesign for circularity.
- 5.3 Council advocates for state and Australian government regulations, incentives and infrastructure investment to support the establishment of a circular economy.
- 5.4 Best practice advanced waste processing technologies, which reduce waste to landfill, have a net greenhouse gas reduction and are safe for the environment and community are encouraged and supported.

# Environmental protection and human health

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The adverse effects of waste on the environment and human health are minimised, and our City and our community are protected from environmental health risks.

If not properly managed, waste can cause significant long-term damage to our natural environment and threaten the health and well-being of our community.

Pollution, reduced amenity and health risks can be caused by illegal dumping, littering and contamination from hazardous materials and poorly managed waste services.

Our aim is to safeguard our environment and the health of our community from these impacts. This involves implementing measures that prevent the release of hazardous substances into the environment, proper handling and disposal of hazardous waste, and reducing exposure to pollutants and contaminants. To do this requires strong regulation and broad community engagement and education.

## **Outcome**

The environmental impacts of waste are minimised and our community is protected from any associated health risks.

## **Key directions**

- 6.1 The adverse effects of waste related activities on the environment and human health are avoided, remedied or mitigated.
- 6.2 Best-practice hard waste, illegal dumping and litter collection and treatment processes are introduced to minimise risk to public safety and maximise material recovery. Incidents of illegal dumping are investigated and enforcement measures are applied where appropriate.
- 6.3 Infrastructure, processes and services are designed to minimise water, energy and material use and reduce waste generation.
- 6.4 The community has access to mechanisms that allow for the responsible disposal of hazardous waste.
- 6.5 Environmental claims are audited to test the accuracy of any assertions.
- 6.6 The elimination of single-use plastic items and the diversion of organic material from landfill is supported.

# Targets

A series of targets have been established and indicators will be monitored throughout the life of the strategy to assess our progress.

These targets have been developed in line with the state and national waste targets. They will be measured against 2021–2022 performance levels, except in instances where the most recent data pre-dates the financial year or reliable data is not yet available.

Council's performance against these targets will be assessed on an annual basis, as will the effectiveness of each of the implemented actions. Tracking our performance against these targets will help us understand the impact we are having and whether or not we need to adjust course when we review our strategy.

City targets	Baseline	Target			Measurement
		2026	2030	2033	
Reduction in total waste generated per capita	397.6 kg	3%	5%	7%	Weigh bridge data
Diversion of household waste from landfill	50.11%	55%	65%	75%	Weigh bridge data
Reduce the amount of FOGO sent to landfill	56%	15%↓	25%↓	50%↓	Waste audit
Reduce household bin contamination	76%	15%↓	30%↓	45%↓	Waste audit
Reduce park/facility bin contamination	33%	15%↓	30%↓	45%↓	Audit and tracking
Reduce the incidents of illegal dumping	-	15%↓	30%↓	45%↓	Reporting
Satisfaction with Council's waste services	94%	> 90%	> 90%	> 90%	Waste survey

Council targets	Baseline	Target			Measurement
		2026	2030	2033	
Diversion of Council waste from landfill	-	55%	65%	75%	Audit and tracking
Reduce Council waste generation	-	5%↓	10%↓	15%↓	Audit and tracking
Increase the use of recycled and recyclable material in Council's operations	-	5%↑	15%↑	30%↑	Procurement tracking
Waste recovered from Council run events	-	50%	70%	90%	Reporting
Waste recovered from Council sponsored events	-	20%	20%	20%	Reporting

# Action planning

The actions that will drive us towards our vision and the achievement of our targets will be detailed in a separate rolling three-year action plan.

A priority assessment matrix will be used to identify, prioritise and assess the feasibility and potential economic, social and environmental benefits of each initiative.

This assessment process will help us focus our efforts and use our resources effectively to achieve our waste reduction and resource recovery targets.

A likelihood scale will be used to assess each action on a scale of one to five, five being very likely and one being very unlikely.

**Figure 2:** Priority assessment matrix

Feasibility	5	<b>Low impact High feasibility</b> Initiatives in this quadrant are feasible but may have limited impact. While they can still be pursued, they should be lower in priority.		<b>High impact High feasibility</b> Initiatives in this quadrant have the potential for significant positive impact and are feasible to implement.		
	4					
	3					
	2	<b>Low impact Low feasibility</b> Initiatives in this quadrant have limited impact and are also not feasible. They should be considered low priority.		<b>High impact Low feasibility</b> Initiatives in this quadrant have the potential for significant impact but require further evaluation and planning to determine feasibility.		
	1					
		1	2	3	4	5
	Impact					

When assessing **feasibility** we will consider things such as the following:

- Can the initiative be practically implemented given the available infrastructure, equipment, technology and resourcing?
- Does the return on investment for our City and our community justify the cost involved in delivering the initiative? Consideration will include the cost of implementation, ongoing maintenance as well as the availability of funding sources and income streams.
- Legislative, policy or regulatory barriers to implementation?
- Is the initiative achievable within the time frame?

When assessing **impact** we will consider things such as the following:

- Will the initiative contribute to achieving Council's vision?
- Will the initiative improve the accessibility, quality, efficiency or effectiveness of our waste management services?
- Does the initiative positively impact the environment and human health?
- Does the initiative have any positive economic benefits, such as cost savings, increased revenue and opportunities for local businesses and industries?
- Will the initiative be supported by the community?



# Principles

Our Waste and Resource Recovery Strategy is guided by two principles that we believe best capture what our community has told us they want, what our City needs and what the national and state policy framework is driving towards. These principles are the waste hierarchy and circular economy.

## Waste hierarchy

The waste hierarchy serves as an aspirational guideline for efficient and sustainable resource utilisation and underpins waste management policy, decision making and practice in Australia.

It places the highest priority on waste avoidance and reduction, with landfill disposal considered the least preferable option.

While Council plays an important role in waste management, our efforts have mainly focused on the lower portions of the waste hierarchy, which include the collection, processing, and disposal of municipal solid waste. These are the areas over which we have the most control.

We will now focus our efforts on the entire waste hierarchy, implementing strategies that prioritise waste avoidance and reduction, while also effectively managing waste through more effective collection, processing, and disposal services. This renewed focus will ensure a more sustainable and environmentally responsible waste management system.

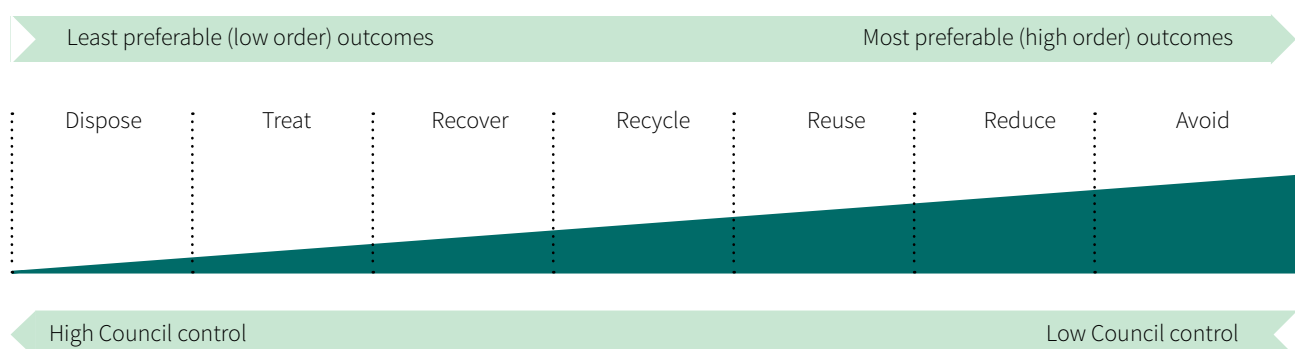
Examples of what we can **control**:

- The bin system, collection frequency and the destination of collected material.
- The procurement of goods and services, including the requirement for goods to contain recycled content.
- The waste generated from its own operations.

Examples of what we can **influence**:

- Behaviour change through education and incentives.
- Policy and legislative change through advocacy.
- Incidents of litter and illegal dumping through education and financial disincentives.

**Figure 3:** Waste hierarchy



## Circular economy

A circular economy aims to maximise resource efficiency and minimise waste by keeping products, materials, and resources in use for as long as possible. In a circular economy, resources are continually recycled, reused, or repurposed instead of being disposed of as waste.

The circular economy is built around three internationally agreed key principles:

- Design out waste and pollution
- Keep products and materials in use at their highest possible value
- Regenerate natural systems.

This regenerative approach contrasts with the traditional linear economy, which is based on a 'take, make, waste' production model.

By closing the loop and maintaining the value of resources, the circular economy seeks to reduce environmental impacts, conserve natural resources, and create a more sustainable and resilient economy, create opportunities for economic growth, job creation, and environmental sustainability.

In June 2023, Australia's environment ministers reiterated their commitment to transition Australia from a 'take, make, waste' economy towards a more resilient and regenerative circular economy that maximises the value of materials and minimises waste and pollution.

A Circular Economy Ministerial Advisory Group has been established to guide Australia's transition to a more circular economy by 2030. This group will look at the biggest opportunities for driving Australia towards a circular economy, with a road map to be developed by August 2024.

While achieving true circularity may take many years, the South Australian government is also advocating for the establishment of a circular economy through strategic planning and policy, legislation, incentives and education. This transition is supported by Green Industries SA (GISA) and the Environmental Protection Agency (EPA).

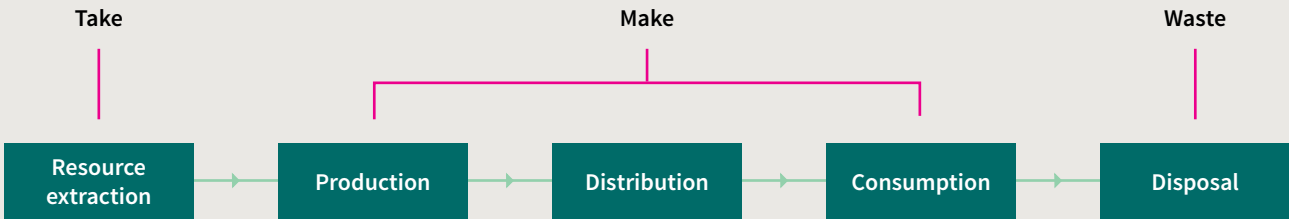
Transitioning to a circular economy involves the following:

- Development and implementation of policies, regulations, and incentives that promote circular practices
- The creation of circular business models and supply chains that optimise resource use, promote transparency, and share best practices
- Using renewable resources and materials that can be easily recycled or repurposed
- Designing products for durability, repairability and recyclability
- Promoting systems of sharing and reusing
- Development of effective recycling systems and technologies to recover valuable materials from waste
- Designing energy efficient processes and systems
- Implementing sustainable production and consumption practices.
- Behaviour change.

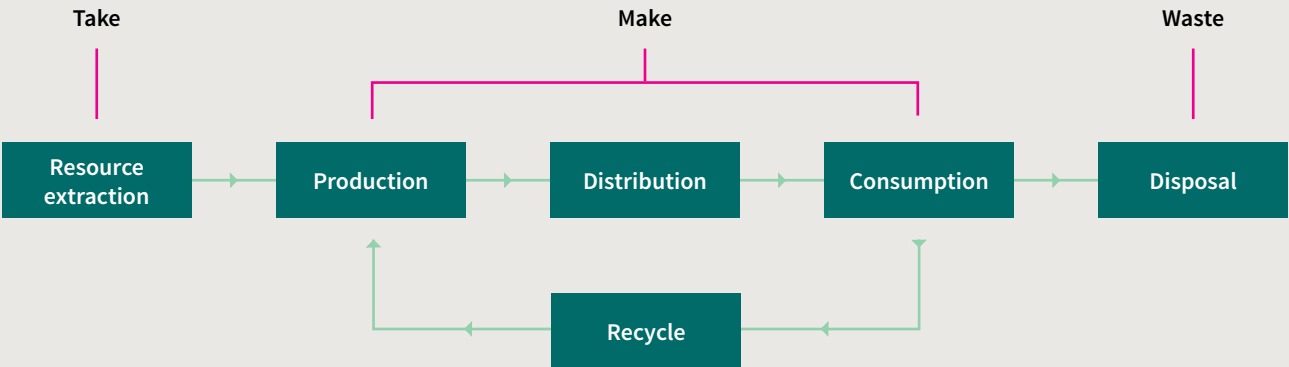
Although the circular economy is closely linked to waste, it is best seen as a broader strategy that looks at all economic activity through a circular lens.

Figure 4: Linear, recycling and circular economy models

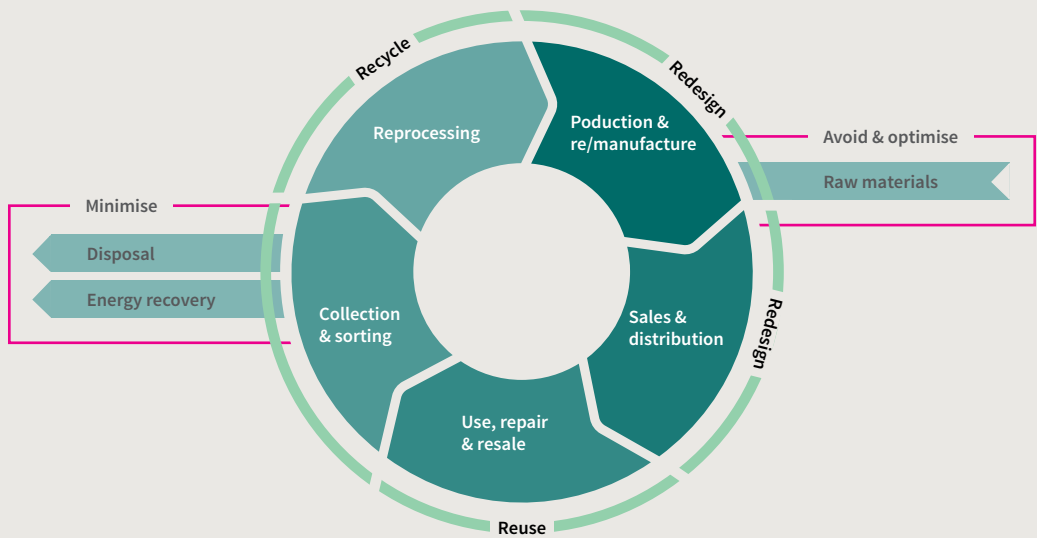
Linear economy



Recycling economy



Circular economy

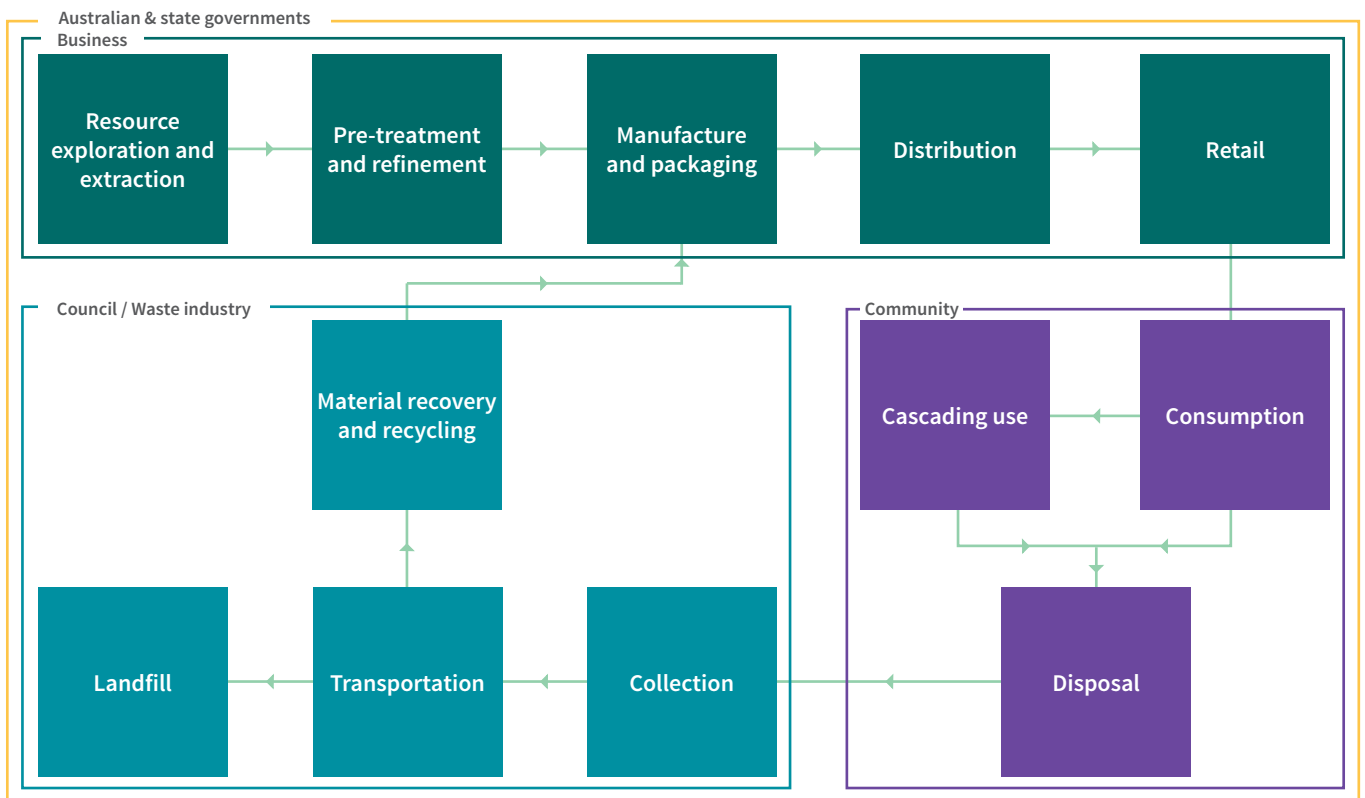


# Roles and responsibilities

Waste management is everyone's responsibility. To achieve success will require the collective efforts of all stakeholders, including the community, government, business and industry, waste management professionals and industry associations.

We are one of many stakeholders in the waste and resource management system and supply chain as demonstrated in figure 5 below. There are some things we can control and others we can only influence.

**Figure 5:** Supply chain map



### **Australian Government**

The Australian Government is responsible for national policies and regulations. They also provide funding for waste management programs and infrastructure, support research and development in waste management technologies and collaborate with other levels of government to ensure a consistent approach.

### **South Australian Government**

The state government is responsible for regulating and administering waste, including planning for waste management and waste avoidance, minimisation and reuse, licensing and regulation of waste transport, storage, treatment, resource recovery and disposal, and managing the impacts of waste management activities. It has enacted legislation and policy to protect the environment and conserve natural resources.

### **City of Tea Tree Gully**

Council is responsible for the provision of waste collection, disposal and recycling services in the City of Tea Tree Gully. These services are provided under the umbrella of state government legislation, including the *Environment Protection Act 1993* and the *Green Industries SA Act 2004*. Council is also responsible for localised education programs as well as its own consumption and the level of waste generated from its operations.

### **Waste and recycling industry**

The waste industry is responsible for waste management services including, collection, transportation, sorting, processing and disposal. They operate recycling facilities and processing plants, manage landfill sites and ensure compliance with environmental regulations. They also collaborate with governments and businesses to improve waste management practices and make important infrastructure and technology decisions.

### **Business and industry**

Business and industry have the ability to influence the amount of waste generated as a result of the consumption of their products and services as well as their own operations. They also play a key role in the development of a sustainable circular economy through the design of their products and services and the use of recycled material in their manufacture. Decisions made at the design phase influence how long something lasts, what it is made of, if it can be repaired, and what happens to it at the end of life. According to the Helen MacArthur Foundation, '80% of a product's environmental impact is influenced by decisions made at the design stage.'

### **Community**

Residents have the ability to avoid and minimise waste generation through their purchase decisions, reuse practices and waste disposal and recycling activities. Their decisions can have a significant influence on the operation of many other entities, including our City's waste management service structure, performance and cost.

#### **What you can do**

Here are a few ways you can reduce the amount of waste you generate:

- Buy only what you need and avoid purchasing single-use items.
- Buy durable, reusable and recyclable products that contain higher levels of recycled content and are recyclable.
- Embrace secondhand and buy, borrow, swap, rent and sell used items.
- Place items in the right bins and ensure hazardous items are disposed of correctly.
- Compost your own food waste using a compost bin or worm farm.

# Legislative framework

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Our Waste and Resource Recovery Strategy is guided by a comprehensive framework of national, state and local policy, legislation and strategy. The directions, targets and objectives outlined in these documents will guide our approach.

## National

- **National Waste Policy: Less waste, more resources 2018 and the National Waste Policy Action Plan 2019**

The *National Waste Policy 2018* and *National Waste Policy Action Plan 2019*, together set a unified direction and framework for collective action on waste management and resource recovery in Australia to 2030.

The policy lists five key principles to achieve sustainable waste management and transition towards a circular economy:

- Avoid waste
- Improve resource recovery
- Increase use of recycled material and build demand and markets for recycled products
- Better manage material flows to benefit human health, the environment and the economy
- Improve information to support innovation, guide investment and enable informed consumer decisions.

- **National Food Waste Strategy**

The *National Food Waste Strategy* provides a framework to support collective action towards halving Australia's food waste by 2030. Many initiatives are already underway to tackle this issue.

- **National Plastics Plan 2021**

The *National Plastics Plan 2021* outlines an approach to address the challenges posed by plastic waste and pollution. The plan aims to increase plastic recycling, find alternatives to unnecessary plastics and reduce the impact of plastics on the environment.

- **Recycling and Waste Reduction Act 2020**

The *Recycling and Waste Reduction Act 2020* provides a new framework for managing Australia's recycling and waste reduction objectives.

A key objective of the Act is to encourage the development of a circular economy, including through product stewardship arrangements, that maximises the continued use of products and waste materials over their life cycle. The Act provides for three levels of product stewardship: voluntary, co-regulatory and mandatory.

The Act also establishes a framework to regulate the export of waste materials, including the export of glass, plastics, tyres, paper and cardboard, and hazardous waste. These bans have accelerated the development of local waste markets.

## National targets

### 2023

- A product stewardship scheme for solar panels to be operational.
- A product stewardship scheme for child car seats to be operational.
- At least 80% of supermarket products to display the Australasian Recycling Label.

### 2024

- Ban export of unprocessed paper and cardboard.

### 2025

- Phase out problematic and unnecessary single-use plastics.
- 100% of all plastics will be reusable, recyclable or compostable.
- 70% of plastic packaging is recycled or composted.
- 50% average recycled content will be included across all packaging (20% for plastic packaging).

### 2030

- 10% per person reduction in total waste generated in Australia.
- 80% average recovery rate from all waste streams.
- Halve the amount of organic waste sent to landfill.
- Halve Australia's food waste.

### Other

- Significantly increase the use of recycled content by governments and industry.
- Make comprehensive, economy-wide and timely data publicly available to support better consumer, investment and policy decisions.

## State

### • **Environmental Protection Act 1993 and associated regulations**

The *Environmental Protection Act 1993* provides a broader framework for the protection of the environment in South Australia which includes, but is not limited to, the management of waste.

### • **Local Government Act 1999**

The *Local Government Act 1999* prescribes the roles the City of Tea Tree Gully can play in relation to waste management which include service provision, regulation, education, advocacy and asset provision.

### • **Environmental Protection (Waste to Resources) Policy 2010**

The *Environmental Protection (Waste to Resources) Policy 2010* provides specific guidance to councils and other organisations in the waste management industry when it comes to handling and processing waste.

Clause 10(2) currently mandates that councils in metropolitan Adelaide must provide a weekly general kerbside waste collection service (other than for recyclable waste or vegetative matter).

This policy is currently under review.

### • **Green Industries SA Act 2004**

The *Green Industries SA Act 2004* is the main legislative instrument which guides the performance of South Australia's waste management industry.

Part 4 of the Act requires Green Industries SA to develop a waste strategy for the state, at least every five years. The current strategy period concludes in 2025.

- **Supporting the Circular Economy – South Australia’s Waste Strategy 2020–2025**

*South Australia’s Waste Strategy 2020–2025* emphasises the transition to a circular economy, where resources are used efficiently, waste is minimised, and materials are reused, recycled or repurposed.

The strategy focuses on implementing initiatives such as improved waste infrastructure, promoting product stewardship, enhancing resource recovery capabilities, and fostering innovation in waste management. It also emphasises community engagement, education, and collaboration with industry and stakeholders to drive behavioral change.

- **Valuing Our Food Waste – South Australia’s Strategy to reduce and divert household and business food waste 2020–2025**

South Australia’s food waste strategy aims to tackle the environmental, economic, and social impacts of food waste. The key objectives include raising awareness about food waste, promoting behavior change, improving waste infrastructure, and fostering collaboration between government, industry, and communities.

- **Single-use and Other Plastic Products (Waste Avoidance) Act 2020**

The Act prohibits the sale, supply or distribution of single-use plastic products.

- **Single-use and Other Plastic Products (Waste Avoidance) Regulations 2021**

This legislation prohibits the sale, supply and distribution of certain single-use plastic products and establishes a framework for adding other products in the future.

- **Plastic Shopping Bags (Waste Avoidance) Act 2008**

The Act governs (restricts) the use of lightweight, checkout-style plastic bags.

- **Local Nuisance and Litter Control Act 2016**

The Act formalises the role of Local Government in managing local nuisance issues such as litter and illegal dumping.

- **Planning Development and Infrastructure Act 2016**

This is the principle Act for matters related to the use, management, and development of land and buildings.

### State targets

#### 2023

- 60% diversion – Household bin systems
- 65% diversion – All municipal solid waste
- 85% diversion – Commercial & industrial
- 90% diversion – Construction & demolition

#### 2025

- 70% diversion – Household bin systems
- 75% diversion – All municipal solid waste
- 90% diversion – Commercial & industrial
- 95% diversion – Construction & demolition
- 100% of packaging in South Australia is recyclable, compostable or reusable

#### 2030

- Zero avoidable waste to landfill
- 5% per person reduction in total waste generated from a 2020 baseline
- 50% reduction in food waste by 2030

## Local

- **City of Tea Tree Gully Strategic Plan 2025**

The Strategic Plan 2025 articulates Council's vision for 'a thriving community with a quality lifestyle that values its people and natural environment'.

The plan provides specific objectives under aspiration 2 that relate to the provision of waste management services and the consumption of natural resources.

- **Waste Management Policy**

The City of Tea Tree Gully's *Waste Management Policy* guides Council's activities in relation to kerbside waste collection and recycling. The policy also confirms Council's intention to pursue the goals and targets set by the state government.

The current policy will be reviewed following adoption of this strategy by Council.

- **Other related policies**

- Asset Management Policy
- Procurement Policy
- Risk Management Policy

# Challenges and opportunities

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The challenges and opportunities outlined in this section are the drivers for change in waste management and resource recovery at a local, state and national level. These changes provide us with opportunities to diversify, enhance and innovate to ensure long-term success.

## Challenges

### The linear economy

The traditional economic system of ‘take-make-waste’ poses a number of environmental issues. In this system, resources are extracted from the environment, transformed into products, used briefly, and then discarded as waste. A more sustainable and circular model of production and consumption is required to address issues surrounding resource depletion, energy consumption, greenhouse gas generation, landfill capacity and the environmental contamination.

### Landfill capacity

As the population and waste generation continue to increase, landfill capacity is being stretched, with several sites reaching their capacity and being closed to new waste. The diminishing availability of suitable landfill sites calls for innovative waste management strategies, such as waste-to-energy, to divert non-avoidable waste from landfills.

### Solid waste levy

The solid waste levy is a tax applied by the state government to encourage the diversion of waste from landfill. The levy, which is paid by Council to the state government, has more than tripled over the past decade, and will likely continue to increase. Despite this substantial rise, we have not seen a comparable reinvestment in resolving the many waste management challenges in South Australia.

For metropolitan Adelaide, the solid waste levy for 2023–2024 is \$156 per tonne – that’s an increase of \$7 (4.7%) per tonne in just 12 months (\$149 in 2022–2023). In 2012–2013 it was just \$42 per tonne. That’s a 271% increase over the past decade.

### **Ambitious waste targets**

A 'business as usual' approach will see us fail to contribute to achieving the ambitious targets set by the Australian and South Australian governments. A long-term, data-driven, multi-pronged approach is required to drive behaviour change. This must be matched by a flexible legislative framework, a revised kerbside collection model, and equitable access to waste management services. Increased collaboration between research institutions, the industry, private enterprise, the community and government is also required.

### **Transitioning to a circular economy**

The circular economy has joined the waste hierarchy as a priority of *South Australia's Waste Strategy 2020-2025*. The progressive transition to a circular economy will take some time and will require increased investment in infrastructure, demand for sustainable products made from recycled materials, and substantial consumer behaviour change.

### **Infrastructure capability and capacity**

Waste and resource recovery and infrastructure planning and investment will play an important role in supporting future industry development and transiting to a circular economy.

Green Industries SA's *Waste and Resource Recovery Infrastructure Plan* projects the investment required for waste management and resource recovery infrastructure over the next 10–30 years.

Government grant programs seek to support innovation and investment in infrastructure that expand the state's and country's capacity to sort, process and re-manufacture recycled materials.

### **Commodity pricing and markets**

While South Australia's resource recovery industry is well established, with around 88% of all recovered material reprocessed locally, 5% interstate and 7% overseas (Rawtec 2020), restrictions on the trading of recycled commodities, material price volatility and demand can impact the viability of the state's recycling businesses and the cost to Council. Limited end-markets for low-quality recyclables locally and nationally, along with the cost of using virgin materials vs recycled materials, also pose a challenge.

### **Waste export bans**

In March 2020, the Australian, state and territory governments, and the Local Government Association of Australia agreed that the export of waste glass, plastic (including processed engineered fuel), tyres and paper be regulated by the Australian Government.

These regulations effectively prohibit the export of specific raw (unprocessed) materials collected for recycling. Any materials that have been re-processed and turned into other 'value-added' materials (those ready for further use) can still be exported under the law.

In 2021, a ban on the export of unprocessed waste glass, plastic and tyres was introduced. Regulation of waste paper and cardboard will commence 1 July 2024.

The export of properly processed waste glass, plastic, tyres and paper, will prevent these materials from being dumped overseas, reducing harm to the environment and human health.

## **Greenwashing**

Greenwashing is the process of conveying a false impression or misleading information about the environmental credentials of a product or service. As the use of environmental and sustainability claims become increasingly common in the marketing of consumer goods and services, so too is the concern that many of these claims may be false, misleading or have no reasonable basis. This applies equally to claims made by service providers within the waste industry. These deceptive claims undermine the genuine efforts to address the environmental impacts of waste disposal and recycling.

## **Population growth and changing consumer habits**

Population growth, urbanisation, and changing consumer habits will affect the amount of waste and recyclable material produced by our community. This, in turn, will impact the sustainability of our waste infrastructure.

At the same time, product design and advanced manufacturing have contributed to the development of products that are much more complex to re-process, often leading to new waste streams that need to be managed. This includes trends such as complex packaging, growth in e-waste, increased adoption of solar panels and batteries, as well as a shift away from fibres and metals to complex plastics. Effective management of these waste streams is required.

## **Carbon emissions**

Australia has committed to reducing greenhouse gas emissions under international agreements. This commitment further drives the need to address emissions from various sectors, including waste management. Carbon emissions regulations create a framework that encourages a shift towards more environmentally friendly waste management.

## **Opportunities**

### **Advanced waste processing**

A number of advanced waste processing technologies have been used globally to recover recyclable material and produce electricity, gas, liquid fuel and solid fuel from waste. These technologies provide an opportunity to divert waste from landfills, reduce greenhouse gas emissions, recover valuable resources, and contribute to a more sustainable waste management system.

While there are a number of major projects under development across Australia, we must ensure that these processes are properly regulated to minimise any potential negative environmental or health impacts, avoid potential impact on recycling rates, and the need for careful waste selection to avoid the incineration of recyclable or valuable material.

### **System optimisation**

Implementing effective source separation programs and optimising waste collection routes and schedules can improve the efficiency of waste collection and increase the quality and quantity of recyclables recovered.

### **Hazardous waste management**

Proper handling and disposal of hazardous waste necessitate specialised facilities and awareness programs targeting businesses and households. Opportunities lie in partnerships with state government and industry experts as well as promoting responsible waste disposal practices.

### **Waste data management**

Enhancing waste data collection, analysis and reporting enables evidence-based decision-making and performance monitoring. Opportunities lie in investing in waste management data systems and promoting better data sharing among stakeholders.

### **Product stewardship and extended producer responsibility**

Product stewardship and extended producer responsibility schemes support the environmentally sound management of products and materials over their life, including the development, design, creation, production, assembly, supply, use or re-use, recovery, recycling or disposal of the product.

Under these schemes, everyone who imports, designs, produces, sells, uses and disposes of products has a shared responsibility to reduce the environmental and human health and safety impacts of those products.

These schemes typically involve the establishment of collection and recycling services funded by product manufacturers and retailers, so consumers can access a convenient recycling service at no cost to themselves or to the local authority.

Product stewardship schemes in Australia can vary in terms of their scope, target products, and operational mechanisms. Examples of specific schemes include the National Television and Computer Recycling Scheme, MobileMuster for mobile phones, DrumMuster for agricultural chemical containers, Cartridges 4 Planet Ark for printer cartridges, and Bounceback for mattresses.

### **Container deposit scheme extension**

South Australia's container deposit scheme (CDS) is one of the longest running and successful product stewardship schemes in Australia. Under the CDS about 600 million beverage containers (more than 40,000 tonnes) are returned by South Australians for refund and recycling each year.

A review of the scheme may see the scope expanded to incorporate a wider range of beverage containers. Such a change may result in greater diversion of beverage containers away from the current kerbside bin system.

### **Plastic bans**

South Australia's *Single-use and Other Plastic Products (Waste Avoidance) Act 2020* is a legislation aimed at reducing the use and impact of single-use plastics. The Act prohibits the supply, sale, or distribution of certain single-use plastic products such as straws, cutlery, beverage stirrers, polystyrene cups, bowls, plates and clamshell containers and oxo-degradable plastic products.

A further three product bans have been flagged by the state government. These bans will be progressively implemented between now and 1 September 2025.

- **1 September 2023**

Single-use plastic bowls and plates, plastic stemmed cotton buds and plastic pizza savers.

- **1 September 2024**

Plastic produce bags, thick supermarket or boutique-style plastic bags, other expanded polystyrene consumer food and beverage containers, plastic confetti, plastic balloon sticks/ties, plastic bread tags, single use plastic beverage containers (including coffee cups) and single-use plastic food containers.

- **1 September 2025**

Plastic fruit stickers, plastic soy sauce fish and pre-packaged and attached products (eg products that contain plastic straws or cutlery).

The Act also includes provisions for product stewardship schemes, encouraging manufacturers and retailers to take responsibility for managing the life cycle of their products.

### **Community support**

Substantial community support for more sustainable waste management practices provides a solid platform through which to drive positive change.

## Food waste

Food waste is a significant issue in South Australia, with a considerable amount of edible food being discarded each year. According to the National Food Waste Strategy, the value of the food wasted by Australian households is estimated to be somewhere between \$2,200 and \$3,800 per household annually.

While there is a level of “unavoidable” food waste associated with food preparation and consumption, most of this organic material is going to landfill. By weight, food waste makes up about 50% of the material collected through the City of Tea Tree Gully’s red-lid general waste bin. This material could be composted avoiding the Solid Waste Levy being applied to every tonne.

The Australian Government’s National Food Waste Strategy seeks to achieve a 50% reduction in food waste by 2030. The need to address food waste is also emphasised in Australia’s *National Waste Policy* and the *National Waste Policy Action Plan*. Food waste is also a key pillar in *South Australia’s Waste Strategy 2020–2025* and is the focus of *Valuing Our Food Waste: South Australia’s strategy to reduce food waste*.

## Behaviour change

While changing behaviour plays a crucial role in waste management and resource recovery, it takes time and sustained effort to shift ingrained habits, counter resistance to change and address cultural and social factors.

Behaviour change requires a long-term, multi-faceted approach involving changes to policy and legislation, awareness campaigns, accessible infrastructure, incentives and disincentives, as well as collaboration between government, businesses, and community organisations to create a supportive environment for sustainable waste practices.

## Illegal dumping

Illegal dumping refers to the unauthorised disposal of waste in areas such as public spaces, vacant lots, bushland, or waterways. It is a major concern and poses significant environmental, social and economic challenges. It also impacts on the aesthetic appeal of our City.

Tackling illegal dumping requires stronger enforcement, surveillance, and public awareness campaigns. Opportunities exist to engage communities in reporting incidents and implementing targeted clean-up initiatives.

## Collaboration

Through collaboration, common problems can be tackled with shared solutions, risks can be shared amongst collaborators and large-scale projects become more doable, having meaningful impact and maximising effectiveness. This includes other local governments, state government, private enterprise and our community. Building on existing partnerships and creating new connections will help us work towards our low waste and circular economy future.

## Technology

The integration of smart technology offers significant potential to streamline operations, increase recycling rates, reduce waste, and contribute to a more sustainable and efficient waste management system. From using AI-powered systems to sort waste and AI algorithms to predict future waste generation patterns to smart bins that send alerts when full and web-based platforms to facilitate education and behaviour change, embracing smart technologies has many benefits.



# Our city

Population growth, urbanisation, and changing consumer habits will affect the amount of waste and recyclable material produced by our community. This, in turn, will impact the sustainability of our waste infrastructure. Understanding our community will help us build a resilient waste and resource recovery system and improve the amenity and livability of our city.

## City profile

### Total land area:

9,521 hectares

- 66% urban area
- 33% rural area

### Open space:

1,305 hectares

### Parks and reserves:

606

### Trees:

500,000+

### Sealed roads:

578 km

## Economic profile

### Gross domestic product:

\$3.4 billion in 2021

### Registered businesses:

5,499

### Jobs in CTTG:

25,879

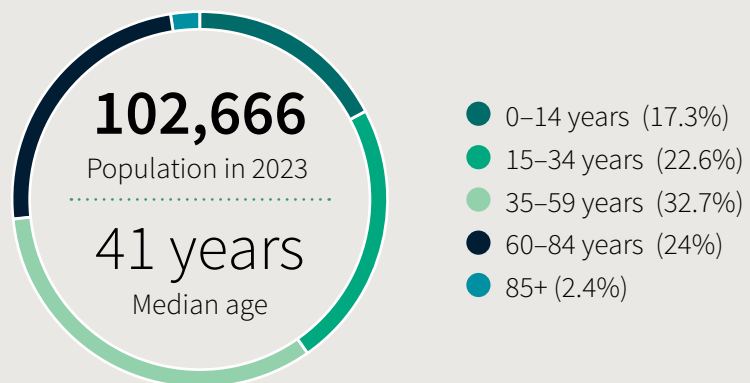
### Employed residents:

50,906

### Household income:

\$2,138 median per week

## Community profile

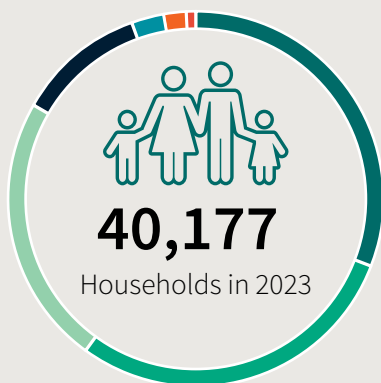


**Population in 2033:** 106,424

**Population in 2043:** 110,302

### Over the next 20 years:

- The City of Tea Tree Gully's population is forecast to have an annualised growth rate of 0.36%.
- Older workers aged 50-64 will represent the largest portion of the population.
- The age group that will experience the largest change are those aged 80+, which will almost double.
- With new housing proposed at the urban fringe, our population is likely to increase by about 1,500 residents.



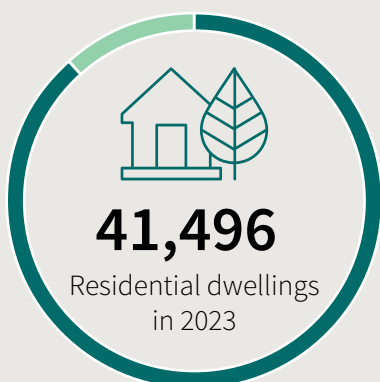
- Couple family with children (12,389)
- Couple family no children (11,535)
- Lone person household (9,292)
- One parent family (4,480)
- Multiple family (1,068)
- Group household (757)
- Other family (328)

**Households in 2033:** 41,788

**Households in 2043:** 43,650

#### Over the next 20 years:

- City of Tea Tree Gully households are forecast to have an annualised growth rate of 0.46%.
- Couples with no children and lone person households are forecast to increase.
- Couples with no children will become the largest household type in the City of Tea Tree Gully.



- Separate house (36,721)
- Medium density (4,734)

**Residential dwellings in 2033:** 43,546

**Residential dwellings in 2043:** 45,471

#### Over the next 20 years:

- Separate house dwellings will continue to represent the largest portion of dwellings in the City of Tea Tree Gully, accounting for about 86.7% of all dwellings in 2043.
- It is expected that about 500 new homes will be built in the north-east of the city.

#### Live in separate house dwellings:

92.6%

#### Average occupancy rate:

49.5%

#### Family households:

71.5%

#### Families with children:

17,340

#### Own two motor vehicles

37.5%

#### Residents born overseas:

27.3%

#### Residents with tertiary qualifications:

49.5%

#### Residents employed

62.2%

#### Speak English at home:

82.3%

#### Speak other languages at home:

17.7%

#### Top 5 languages spoken other than English:

- Punjabi (1.6%)
- Italian (1.4%)
- Mandarin (1.2%)
- Arabic (0.7%)
- Hindi (0.7%)

# Service provision

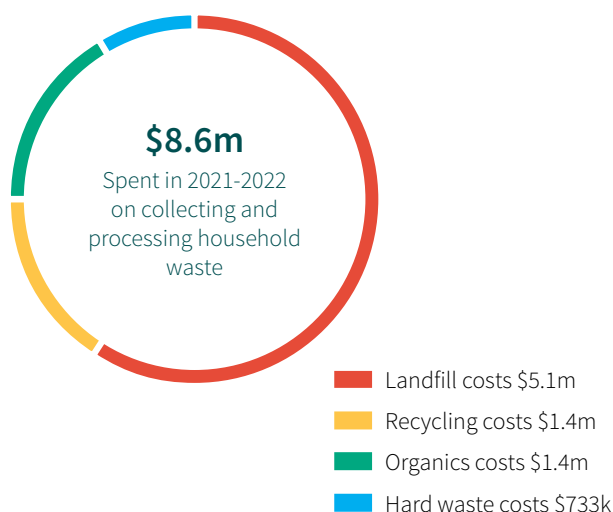
The City of Tea Tree Gully provides residents with one of the most comprehensive waste and recycling service offerings in metropolitan Adelaide.

In addition to the three-bin kerbside waste and recycling service, we provide a wide range of waste management services. These include hard waste collection, drop-off services, removal of illegal dumping, managing and removing litter from public places, ensuring new developments plan for waste management as well as waste education.

Waste management is one of the most costly services Council provides, accounting for about 10% of total revenue.

The Solid Waste Levy is a state government fee Council pays to send waste to landfill. This charge makes up about 30% of the total annual cost of collecting and processing household waste. That's about \$2.8 million in fees, much of which could be avoided by putting items in the right bin.

Council does not pay the Solid Waste Levy on material placed in the recycling bin or the green organics bin.



## Kerbside collection services

Residential properties and some businesses are provided with a three-bin kerbside collection system as part of their standard rateable entitlement.



The red-lid general waste bin is collected weekly, with alternating fortnightly collections for the yellow-lid recycling bin and green-lid food and organics bin.

Residents can request additional bins and collections for an added cost. From 1 July 2023, the one-off hire fee and yearly collection fee for an additional yellow-lid recycling bin or green-lid food and green organics bin will be removed.

## Mini Munchers

Households can request a free Mini Muncher kitchen caddy, which comes with a year's supply of compostable bin liners. We have distributed more than 25,000 Mini Munchers since their introduction in 2015.

Additional compostable bin liners are available for collection free of charge from the City of Tea Tree Gully Civic Centre.

All new dwellings are provided with a kitchen caddy and compostable bags as part of their kerbside bin system.

### **Hard waste service**

Residents are entitled to two free hard waste collections per year. This service is provided for those items which are too big to dispose of through the kerbside collection service.

Up to two cubic metres of hard waste may be disposed on each occasion.

### **Enviro Care**

We conduct about 20 Enviro Care events per year on select Wednesdays and Sundays. Enviro Care provides a free green waste drop-off event for leaves, lawn clippings and branches (up to 20 cm in diameter).

### **Hazardous household waste**

Residents can access the free metropolitan drop-off locations for hazardous waste items such as paints, acids, chemicals, cleaners, poisons, engine oils, gas cylinders and light globes.

The NAWMA Resource Recovery Centre in Edinburgh North and the Campbelltown Works Depot in Campbelltown are the closest drop-off facilities for City of Tea Tree Gully residents.

Batteries, mobile phones and printer cartridges can be dropped off at the Tea Tree Gully Civic Centre for recycling.

### **Public place services and litter**

We provide about 485 waste bins along public streets and in parks and reserves. The majority of these bins are for general waste (477), with some recycling (4) and food and organics (4) services provided.

These facilities play a critical role in improving environmental amenity, as well as providing residents with the opportunity to dispose of waste

and recycling away from the home. Unfortunately, litter is still an issue in our City.

In the past few years, Council has introduced 13 compactor bins to better manage waste at Civic Park, Goldenfields and Waterworld.

In addition to this, we provide street sweeping services and regular cleaning of parks, reserves and sporting fields.

### **Illegal dumping**

Illegal dumping relates to material that is larger than litter and most commonly includes household waste, mattresses, furniture, white goods and building materials. Illegal dumping occurs at parks, charity bins, public places and the kerbside.

This issue results in a loss of amenity and poses a threat to both human and environmental wellbeing.

In 2021–2022 we cleaned up a number incidents of illegal dumping. The collected material was taken to a recycling facility and sorted to ensure that as much of the material as possible was recycled.

# Waste performance

Over the past decade, the population of the City of Tea Tree Gully has grown by 4.2% (4,108 residents). Over the next decade, the population is forecast to increase by a further 3.7% (3,758 residents) and the number of dwellings by 5.4% (2,222).

Over the same period of time, our economy has also expanded. It currently supports 25,879 jobs and has an annual economic output of \$6,436 billion (Remplan).

Population growth and a prosperous economy are intrinsically linked to waste generation. More people means more waste generated and a more prosperous economy means this waste generation is not just contained to the household.

The two key considerations for Council are as follows:

- The total amount of waste generated
- How much waste is being recovered

## Household bins

### Household waste generation

Over the past decade, the total amount of household waste generated in the City of Tea Tree Gully has increased by 9.8%, from 37,195 tonnes of municipal solid waste in 2012–2013 to 40,825 tonnes in 2021–2022. Over the same period, the number of serviceable bins also increased by 8.1%.

**Table 1:** Comparison of the number of bins and waste collected in 2021-2022 and 2012-2013.

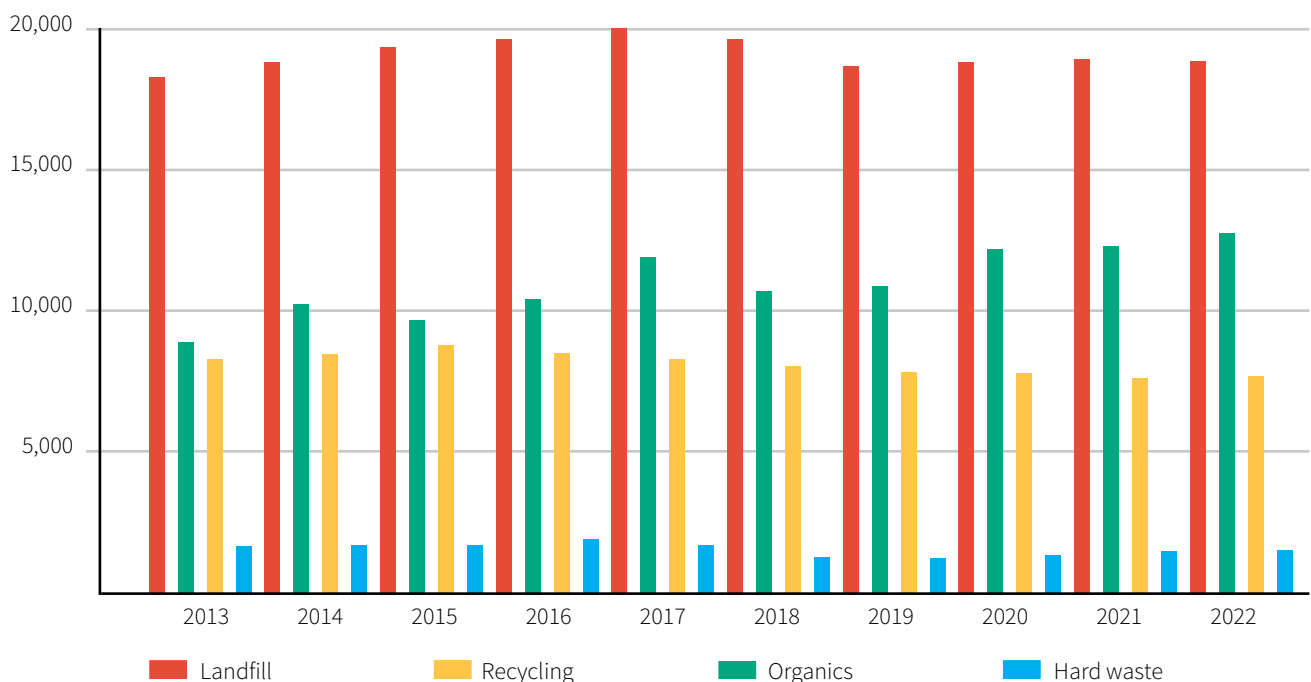
#### 2021–2022

	Landfill	Recycling	Organics	Hard waste	Total
<b>Bins</b>	43,399	42,985	43,238	-	129,622
<b>Tonnes</b>	18,809.3	7,695.4	12,760.5	1,559.8	40,825

#### 2012–2013

	Landfill	Recycling	Organics	Hard Waste	Total
<b>Bins</b>	40,225	40,106	39,568	-	119,899
<b>Tonnes</b>	18,244.9	8,317.8	8,905.2	1,727.1	37,195

**Figure 6:** Household waste generation 2012–2013 to 2021–2022



While waste to landfill experienced a slight increase (3%), the biggest change has been in the collection of organic waste through the green-lid food and organics bin, which increased by 43%. This is likely due to the progressive adoption of green-lid food and organics bins and Mini Muncher kitchen caddies.

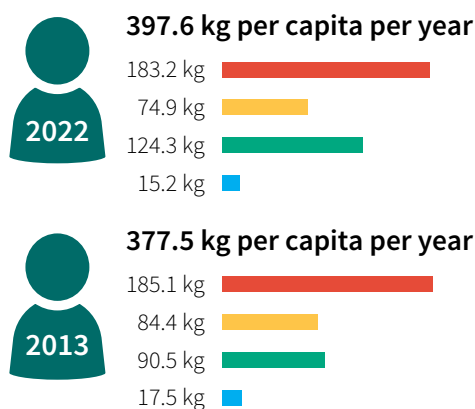
Despite a slight increase in waste to landfill over the past decade, we have seen some positive signs, with a 2.6% decline in total household waste generation since its peak of 41,904 tonnes in 2016-2017. The introduction of a targeted waste education campaign in the same year has positively impacted this result and contributed to a 5.8% decline in waste to landfill.

The COVID-19 pandemic has resulted in a slight increase in household waste generation with more people working from home and the introduction of additional new waste materials. However, we are now starting to see a progressive decline with fewer residents working from home.

### Waste generation per capita

Over the past decade the amount of waste generated per capita has increased by an average of 20 kg (5%) per person.

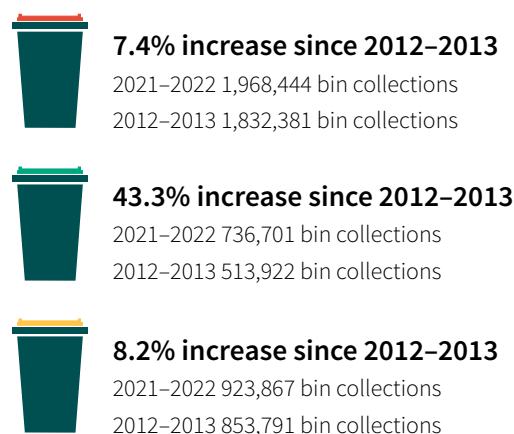
**Figure 7:** Comparison of waste generation per capita per year between 2021–2022 and 2012–2013



While the amount of waste generated per capita may have increased, the profile of that waste has changed. What we can see from figure 5 is a substantial increase in the use of the green-lid food and organics bin and a decline in usage of the yellow-lid recycling bin.

This is consistent with the bin collection data, which show a 43.3% increase in the number of green-lid food and organics bins collected annually over the past decade. Over the same period, the total number of yellow-lid recycling bin collections has increased by 8.2% and red-lid general waste bin collections by 7.4%.

**Figure 8:** Household bin collections



Despite increasing presentation of the red-lid general waste bin, we have seen the average weight of the bin decrease by 5% (0.5 kg), from about 10 kg per collection in 2012–2013 to 9.5 kg in 2021–2022 (see table 2).

Over the same period of time, we have seen a 14.4% (1.4 kg) decrease in the average weight of the yellow-lid recycling bin per collection.

While the average weight of the green-lid food and organics bin has remained relatively steady, the volume of organic material collected has increased substantially.

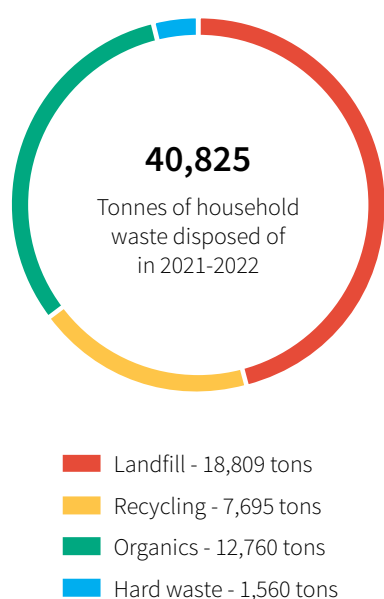
**Table 2:** Comparison of the average bin weight per collection between 2021–2022 and 2012–2013.

	Landfill	Recycling	Organics
<b>2021–2022</b>	9.5 kg	8.3 kg	17.3 kg
<b>2012–2013</b>	10 kg	9.7 kg	17.3 kg

### Waste diversion

Almost half (49.89%) of the 40,825 tonnes of household waste disposed of by our community in 2021–2022 was sent to landfill.

**Figure 9:** Breakdown of total household waste generated in 2021–2022.



This puts the average diversion rate for the City of Tea Tree Gully at 50.11%. This means that just half of the household waste our residents produce is actually recycled.

While the diversion rate has improved incrementally over the past decade, we have a substantial amount of work to do as a City to achieve the current state target of 75% of household waste diverted from landfill. We have even more work to do to reach the national diversion target of 80%.

**Table 3:** Household waste diversion rate including hard waste

	CTTG	Metro SA	Target
<b>2012–2013</b>	46.30%	48.7%	75%
<b>2013–2014</b>	47.68%	49.4%	
<b>2014–2015</b>	46.74%	47.8%	
<b>2015–2016</b>	46.76%	48.2%	
<b>2016–2017</b>	48.45%	49.9%	
<b>2017–2018</b>	47.29%	48.2%	
<b>2018–2019</b>	48.40%	48.7%	
<b>2019–2020</b>	49.78%	50.5%	
<b>2020–2021</b>	49.39%	50.6%	
<b>2021–2022</b>	50.11%	N/A	

### The red-lid general waste bin

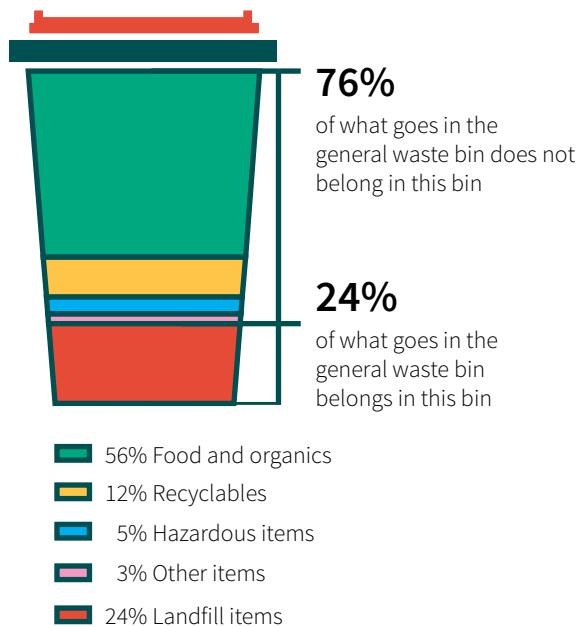
According to the 2019 kerbside bin audit, just over three quarters (76% by weight) of the items found in the general waste bin could be diverted from landfill. These items could be recycled or do not belong in the bin at all.

This means around 14,295 tonnes of resources were sent to landfill unnecessarily in 2021–2022. The disposal of this organic, recyclable and hazardous material cost the community about \$2.13 million in avoidable solid waste levy charges for that year..

The solid waste levy is more than three times that of the cost to dispose of food and organic material through the green-lid food and organics bin and about two times the cost of disposing of recycled material through the yellow-lid recycling bin.

The high volume of recyclable material found in the red-lid general waste bin indicates one of two things, either a lack of awareness or a level of entrenched behaviour. Addressing bin contamination requires improved system design and sorting systems, incentives, public education, and stricter enforcement of disposal guidelines.

**Figure 10:** Bin composition based on 2019 kerbside bin audit

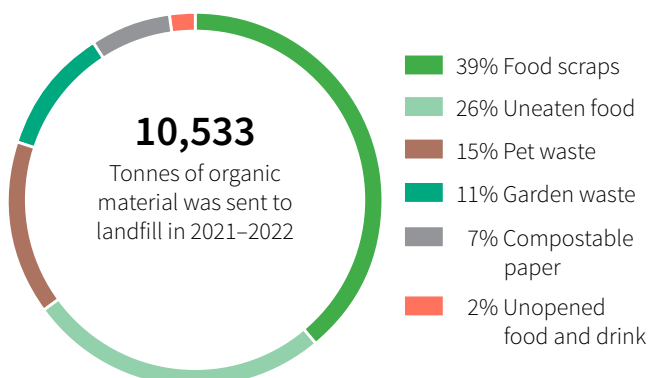


### The organic opportunity

In 2021–2022, about 56% of the landfill bin was organic material such as food scraps, uneaten food, pet waste, garden waste and compostable paper. That's 10,533 tonnes of organic material that could have been placed in the green-lid food and organics bin and used to make compost.

Putting these items in the green-lid food and organics bin could have saved about \$1.5 million in avoidable solid waste levy fees.

**Figure 11:** Breakdown of organic material found in the red-lid general waste bin

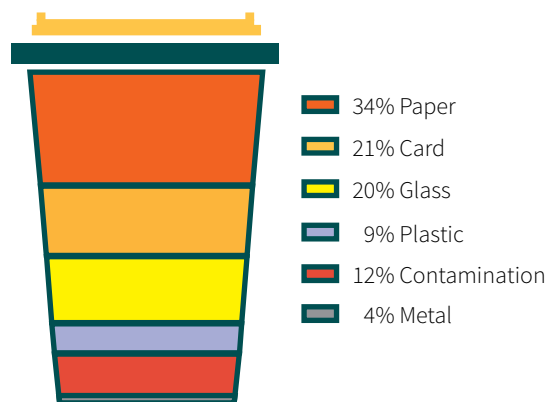


### The yellow-lid recycling bin

In 2021–2022, about 7,695 tonnes of recyclable material was collected through the recycling bin. That's about 75 kg of recyclable material per person.

About 12% of what is placed in the recycling bin does not belong in this bin. This mainly includes plastic bags, polystyrene, clothing and building material.

**Figure 12:** Bin composition based on 2019 kerbside bin audit



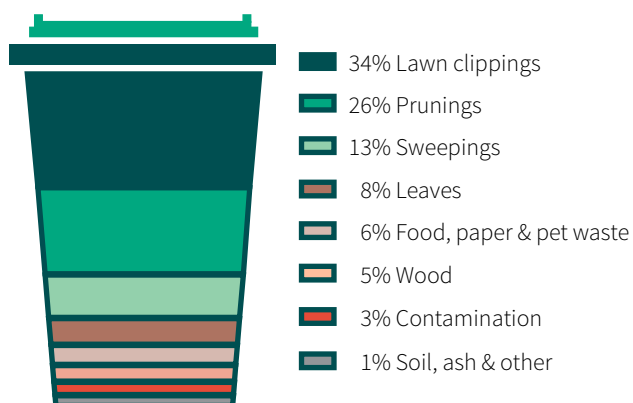
### The green-lid food and organics bin

In 2021–2022, about 12,760 tonnes of organic material was collected through the organics bin. That's about 126 kg of organics per person.

Garden material makes up about 91% of the organic material recycled through the organics bin. Less than 6% is food scraps and pet waste.

About 3% of what is placed in the green-lid food and organics bin does not belong in this bin. This mainly includes plastic bags, soil, treated timber and building materials.

**Figure 13:** *Bin composition based on 2019 kerbside bin audit*



## Business bins

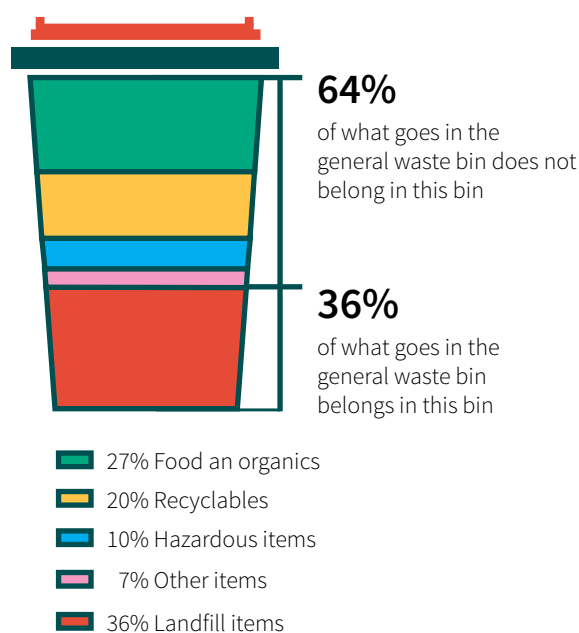
Businesses in the City of Tea Tree Gully that generate a small amount of waste, similar to a residential premise are provided with a 140 litre red-lid general waste bin, a 240 litre yellow-lid recycling bin, and a 240 litre green-lid food and organics bin.

The collection frequency is the same for both businesses and residential bins.

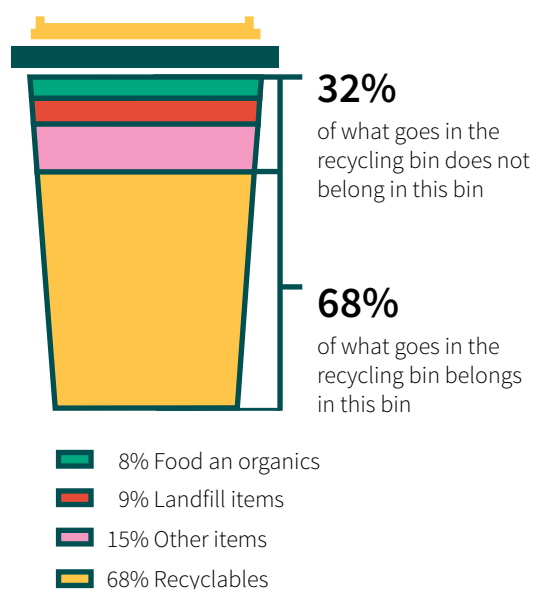
An audit of business's red-lid general waste bins and yellow-lid recycling bins in 2019 found:

- Businesses disposed of more material per collection than households.
- On average about 64% of the material found in the red-lid general waste bin could be diverted from landfill. These items could be recycled, composted or do not belong in the bin at all.
- In general, business red-lid general waste bins contained more recyclable material and less organic material than household bins.
- The composition of business waste varied considerably with business type as did the waste performance.

**Figure 14:** Bin composition based on 2019 kerbside bin audit



**Figure 15:** Bin composition based on 2019 kerbside bin audit



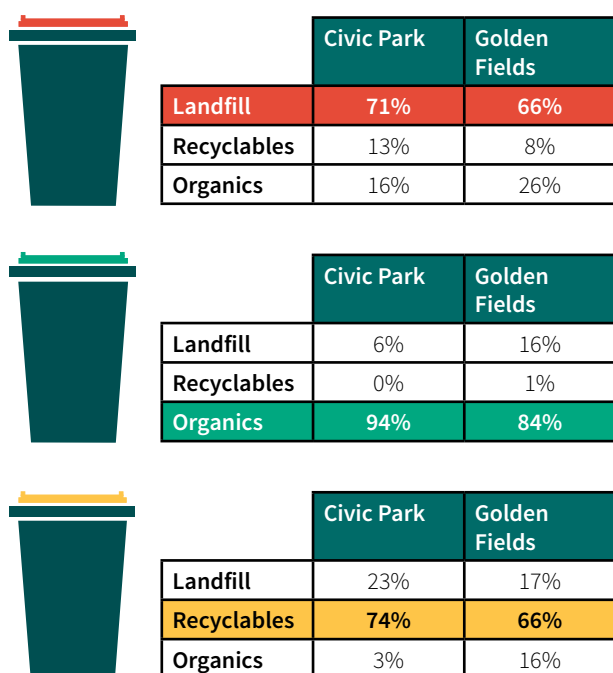
## Public place bins

Council provides about 485 waste bins along public streets and in parks and reserves. The majority of these bins are for general waste, with some recycling and food and organics services provided.

In 2020, Council conducted an audit of its bins at Civic Park and Golden Fields Reserve. The audit showed that where the three-bin system is used to encourage source separation, the dominant material for each bin matched the desired stream. However, contamination still remains high.

The three-bin system found in our public places is the same as the household system. Its introduction is designed to reinforce behaviours that support improved recycling.

**Figure 16:** Bin composition based on 2021 waste reduction services bin audit



Where a single stand-alone bin was used, these bins contained a greater percentage of compostable and recyclable material. Anywhere between 54% and 35% by weight of the material contained in the audited bins at Golden Fields Reserve was either compostable or recyclable.

When the material contained in the yellow-lid recycling and green-lid food and organics bins are highly contaminated they will likely be sent to landfill.

## Where our waste goes

We have the following waste collection and processing contracts in place to manage waste in the City of Tea Tree Gully.

- The collection of landfill, commingled recycling and food and organics from households, businesses and public areas is contracted to Solo Resource Recovery. As is the collection of hard waste and some illegal dumping.
- Landfill disposed of through the red-lid general waste bin is processed by Cleanaway and is disposed of at the Inkerman landfill.
- Recyclable material in the yellow-lid recycling bin is sent to NAWMA's (Northern Adelaide Waste Management Authority) materials recovery facility in Edinburgh North.
- The organic material in the green-lid food and organics bin is sent to Jeffries in Buckland Park, where it is turned into high-quality nutrient-rich compost.

Council's contract for landfill processing concludes in late 2023, while all other contractual arrangements end in 2025.



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# Engagement

To better understand community, government and industry, we undertook a number of engagement activities to obtain feedback and ideas, increase awareness and strengthen relationships.

The development of our Waste and Resource Recovery Strategy was done with the involvement of the community, government and industry, with much of the feedback provided incorporated into this strategy.

As the Waste and Resource Recovery Strategy is likely to have a substantial impact on our community and the way waste is managed in our City, it was considered important to engage prior to the formulation of the strategy. These engagement activities were underpinned by Council's *Community Engagement Public Consultation Policy*.

Our engagement activities sought to do the following:

- Open up a dialogue with all stakeholders
- Build a better understanding of current behaviours, attitudes and perceptions
- Identify key challenges and opportunities
- Strengthen relationships and build awareness.

We received an overwhelming response to the engagement, with 1,420 valid survey responses from residents, businesses, community and sporting groups and local educational institutions. We also received a further 514 community contributions through our ideas walls.

Further, we met with more than 37 external and internal stakeholders, and reviewed more than 20 national and state policies, strategies, plans and research documents during this period to better understand the broader state of the industry.

## Key findings

Our community strongly supports more responsible waste management, with 87% of respondents stating that reducing the amount of waste sent to landfill and recycling was either very or extremely important to them.

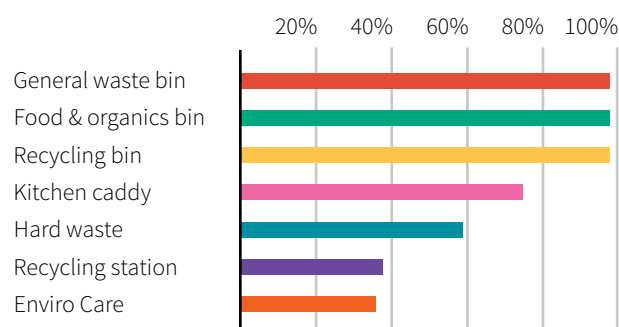
When asked why, respondents were mainly concerned with protecting the environment and preserving natural resources for future generations.

For others further down the importance scale, the 'busyness of life' became more of a factor as did confusion about what goes in which bin.

## Bin usage

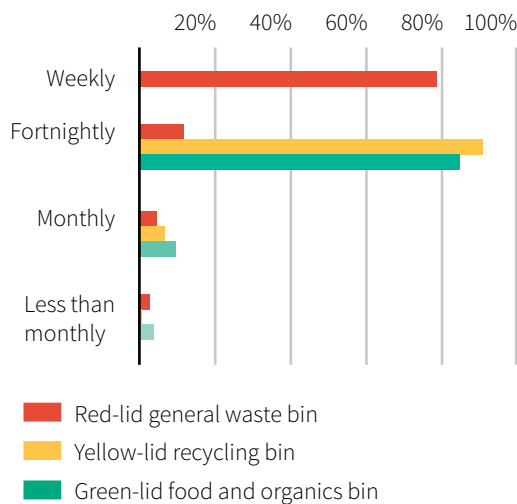
Respondents told us they actively use the three bin system, with 80% putting two of a possible three bins out for collection every week. Around three quarters use a Mini Muncher kitchen caddy and just over half had used Council's hard waste service in the past 12 months.

**Figure 17:** Waste and recycling services usage



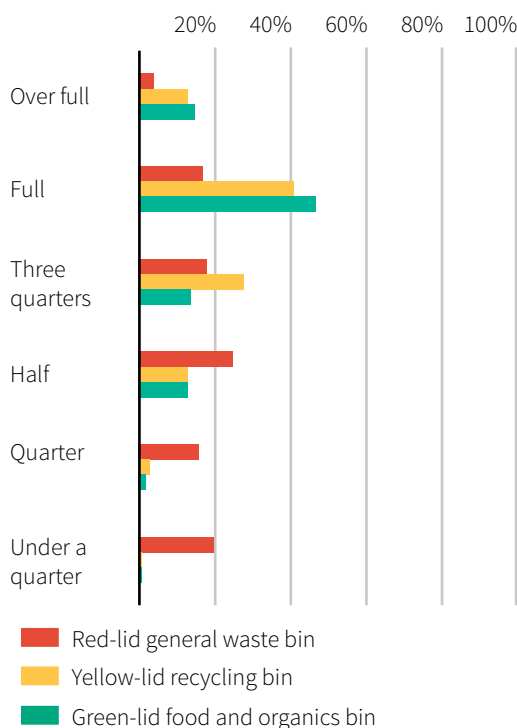
Respondents mentioned around 30 other services provided by third parties that they used to recycle items such as e-waste, hazardous chemicals, clothing, blister packs, light bulbs and bread tags.

**Figure 18:** Frequency of waste service usage



About 61% of respondents red-lid general waste bins were half-full or less, with just one in five either full or over full. In contrast, over half of all respondents yellow-lid recycling bins (54%) and green-lid food and organics bins (62%) were either full or over full.

**Figure 19:** Average bin volume at time of collection



## What's important to our community

When managing waste, respondents told us that the most important things were as follows:

- Knowing that what goes in your yellow-lid recycling bin and green-lid food and organics bins is actually recycled (51%).
- Avoiding the creation of waste and reducing the amount of waste sent to landfill (51%)
- Minimising the environmental impact of waste (38%).

Respondents also said they wanted additional options to dispose of items that do not belong in the kerbside bin system (34%) and a more convenient waste disposal system (21%).

Similarly, respondents said the provision of additional options to recycle items that do not belong in the kerbside bin system (64%) was the most important priority for Council. Assisting households and business to reduce waste to landfill (46%) and improving kerbside recycling options – eg the provision of a weekly organics bin collection (42%) were also considered top priorities.

## Challenges and opportunities

Respondents provided a large volume of ideas and suggestions in relation to waste management. The top five themes can be broadly categorised as follows:

1. A soft plastic collection and recycling solution
2. Waste education and community assistance
3. Weekly green-lid food and organics bin collection and additional organic material recycling options
4. Provision of additional options to recycle items that do not belong in the curbside bin system
5. Collaboration between government and business to address issues such as packaging.

### Ideas from the community

- 'Landfill isn't sustainable, It's not safe for us or the environment.'
- 'It's extremely important to reduce waste and divert our valuable resources from landfill. The resources are not finite. Our children and future generations deserve better and I firmly believe that every little thing we can all do will add up to making an important difference.'
- 'Costs need to be kept to a minimum, Council rates are already really high.'
- 'Fitting everything in recycle and green bin. Our green bin is always full to the brim.'
- 'There is too much waste coming into the home from packaging.'
- 'It's hard to figure out what goes in which bin sometimes and also hate putting things in the red bin when I feel it could be recycled.'
- 'I'd love a local campaign to improve recycled waste and reduce landfill, we should recruit champions like me in the community.'
- 'Change the green bin to weekly and the red bin to fortnightly.'
- 'The recycling of non-standard items like batteries, electronics etc.'
- 'Look into alternative recycling methods that may benefit the local community.'
- 'Have more businesses that actually recycle waste.'
- 'Structure council operations to embrace the Circular Economy and Zero Waste principles.'
- 'Reward ratepayers who demonstrate high achievement in recycling household waste.'
- 'Champion research and development.'
- 'More investment in grass roots community programs/projects.'







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