



# 2023 Environmental Sustainability Review



# Contents

Introduction .....	3
1 Greenhouse gas emissions .....	4
2 Biodiversity and trees .....	10
3 Waste and resources .....	17
4 Water .....	22
5 Corporate action .....	25
Appendix 1: Calculations and notes .....	31
Appendix 2: Additional statistics .....	36
Appendix 3: Waste education activities .....	39
Appendix 4: Achievements on conservation trails .....	41

## Cover images

**Main image:** Award-winning wetland at Kensington Gardens Reserve/Kensington Wama.

**Inset images:**

1. Kerbside organics bin being used for food waste
2. Council staff planting a street tree
3. Meadow Argus butterfly (*Junonia villida*) at Gully Reserve

# Introduction

The City of Burnside has a strong commitment to environmental sustainability. This commitment is demonstrated in *Burnside 2030*, Council's Strategic Community Plan. Within the plan, *Environment* is one of three themes, alongside *Community* and *Place*. This high-level, strategic recognition guides action by the organisation and ensures an ongoing focus on environmental matters. Further priorities are articulated in Council's *Environmental Sustainability Strategy*.

This strategic direction is supported by Council policies on Biodiversity, Climate Change, Kerbside Waste Management, Urban Tree Management, and Water Sensitive Urban Design. Additionally, environmental sustainability is embedded within many other Council policies which influence the environmental performance of the organisation, such as the Procurement Policy.

This annual *Environmental Sustainability Review* is divided into five sections:

1. **Greenhouse gas emissions**
2. **Biodiversity and trees**
3. **Waste and resources**
4. **Water**
5. **Corporate Action**

These sections align with strategic priorities and goals set by Council. Reporting on these important matters provides accountability and transparency on Council's performance. Further, tracking the performance of the organisation over time informs decision making as Council strives to improve its environmental performance.

## 2023 Environmental highlights

- **Powering Up:** New solar panel systems were installed at Council's Swimming Centre, Depot and Dulwich Community Centre. Over time, these systems will save Council money and reduce carbon emissions.
- **Prolific Planting:** Council planted over 9,000 plants in Burnside, including over 1,300 trees along streets and in reserves. Council also gave over 7,000 plants to private landholders in Burnside to increase canopy cover and improve habitat. Additionally, the *Burnside Carbon Offset Scheme* (B-COS) funded the seeding of over 5,000 trees near Kapunda.
- **Less Waste:** Compared to the previous year, there was a 236-tonne reduction in landfill waste collected through Council's kerbside bin service. This reduction is good for the environment and saved Council over \$45,000 in landfill levy and fees.
- **Better Bins:** Council is working with East Waste and bin manufacturer MASTEC to trial bins with up to 80% recycled plastic. This project is part of a commitment to Circular Procurement, buying recycled materials to reduce Council's environmental footprint.
- **Water Wise:** Council installed over 80 new verge soakers. These devices capture water, allowing it to soak into the soil, supporting street trees and reducing stormwater runoff.

**Note:** unless otherwise noted, references to years in this report are related to financial years. For example, the year 2023 refers to the 2023 financial year, from 1 July 2022 to 30 June 2023. The shorter reference is used to minimise crowding and maximise readability of text, tables and figures.



# 1 Greenhouse gas emissions

## 1.1 Background: greenhouse gas emissions

Council's *Environmental Sustainability Strategy* sets a priority for strategic and cost-effective reduction of Council's carbon footprint. This priority requires the monitoring of Council's greenhouse gas emissions to inform decision-making and gauge progress. Annual greenhouse gas emissions have been calculated for Council facilities and vehicles since 2019. This report presents an emissions inventory for 2023, with comparisons to previous years. Further details on calculations and supplementary notes are presented in [Appendix 1: Calculations and notes](#).

## 1.2 Greenhouse gas emissions 2023

[Table 1](#) provides the greenhouse gas emissions in tonnes of carbon dioxide equivalent (CO<sub>2</sub>-e). **During 2023, the City of Burnside was responsible for 1,538 tonnes CO<sub>2</sub>-e.**

As it can be difficult to visualise emissions, the 2023 emissions have been converted into cubic metres for visualisation. The 1,538 tonnes would occupy around 839,000 cubic metres (at 21°C). To picture that volume of gas, imagine covering the Hazelwood Park Reserve, over 13 hectares of land, entirely with a blanket of gas. The blanket of gas would be almost six-and-a-half metres thick. For comparison, just four years ago in 2019, the blanket would have been over 10 metres thick.

**Table 1. Greenhouse gas emissions, by year**

<b>Financial Year</b>	<b>Emissions (tonnes CO<sub>2</sub>-e)</b>	<b>Change (% change from previous year)</b>
BASELINE: expected emissions in 2021	2,008	Not relevant
2019	2,499	Not calculated
2020	1,855	-26%
2021	1,581	-15%
2022	1,471	-7%
<b>2023</b>	<b>1,538</b>	<b>+5%</b>

### 1.3 Changes in greenhouse gas emissions

Table 1 indicates a **5% increase in emissions from 2022 to 2023**. Key drivers were:

1. No reduction in state-wide grid emissions; and
2. Increased consumption of fuel, gas and electricity.

**State-wide grid emissions:** in previous years, improvements to the grid have reduced Council's emissions profile. For example, almost half of the reduction in emissions last year was due to improvements in the grid. For 2023, changes in how emissions from electricity were calculated have negated improvements in the grid. Thus, while the grid has become cleaner, the improvement has not flowed through to Council's calculations. This is an accounting anomaly and improvements to the grid will continue to reduce Council's emissions profile in future years. Further details are provided in [Appendix 1: Calculations and notes](#).

**Fuel consumption increased by 8%, responsible for 33 tonnes of emissions.** The increase in fuel consumption may be explained by an increase of two full-time field staff during 2023, leading to more field activity. These were not new positions, but vacancies that had been difficult to fill in a difficult employment market. Further investigation will be required if a trend of increasing fuel consumption develops. However, fuel consumption is expected to decrease as more electric vehicles and equipment are purchased and utilised by Council.

**Gas consumption increased by 8%, responsible for 29 tonnes of emissions.** This increase in gas consumption was largely driven by pool heating at the George Bolton Swimming Centre. The centre is operational from September to April each financial year, with the pool heated to 27°C daily. The 2023 pool season had more days below 27°C and daily temperatures further below 27°C than recent comparable years. Cooler days meant that more heating was required and more gas was consumed. The pool heater will soon be replaced with an electric system which will substantially reduce greenhouse gas emissions.

**Electricity consumption increased by 1%, responsible for 4 tonnes of emissions.** This small increase in electricity consumption may be explained by the weather. Compared to the previous year, temperatures were further outside of the comfortable office temperature range (21-25°C). Therefore, more heating and cooling was required, powered by electricity. Another factor may be an increase in electrical equipment. Installations of several solar panel systems during 2023 will reduce electricity consumption from the grid in future years.

## 1.4 Sources of greenhouse gas emissions

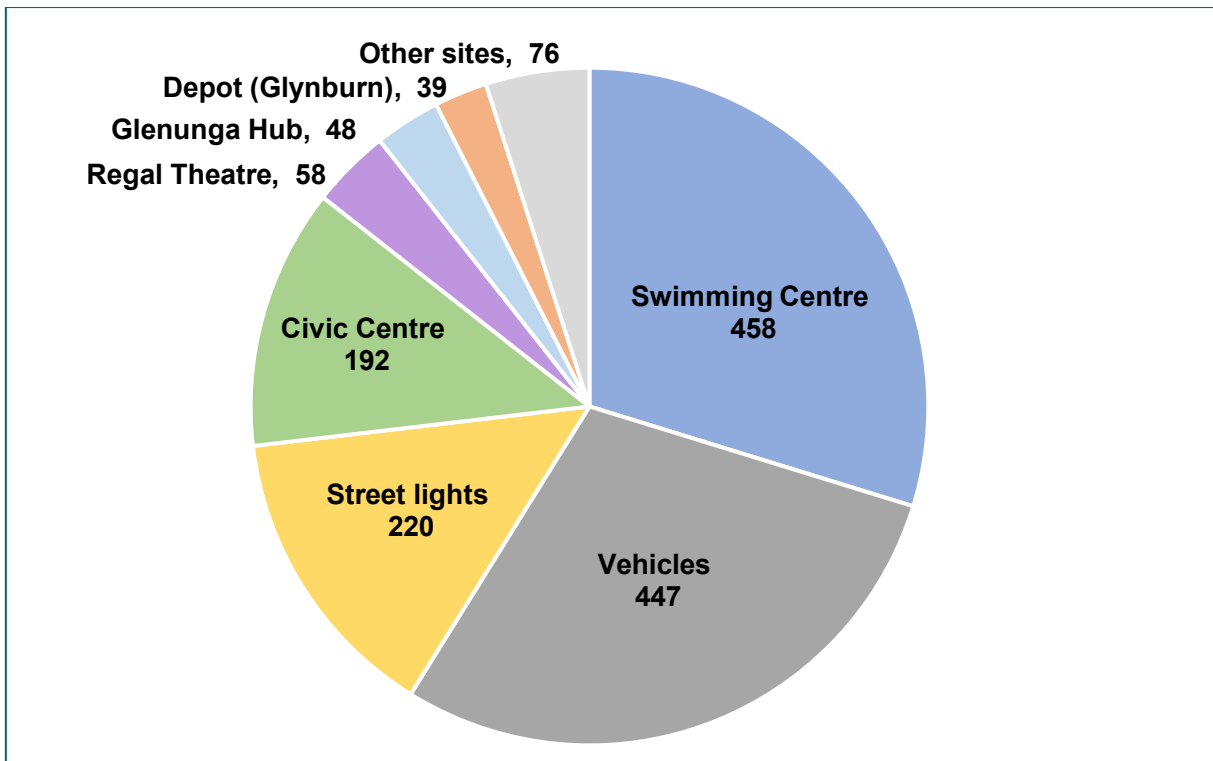
Table 2 provides data on the types of energy use that generated Council’s greenhouse gas emissions.

*Table 2. Greenhouse gas emissions by type, by year*

<b>Financial Year</b>	<b>Electricity EMISSIONS</b> (tonnes CO <sub>2</sub> -e)	<b>Gas EMISSIONS</b> (tonnes CO <sub>2</sub> -e)	<b>Fuel EMISSIONS</b> (tonnes CO <sub>2</sub> -e)	<b>TOTAL EMISSIONS</b> (tonnes CO <sub>2</sub> -e)
2019	1,754	370	375	2,499
2020	1,131	331	394	1,855
2021	831	384	367	1,581
2022	683	373	414	1,471
<b>2023</b>	<b>688</b>	<b>402</b>	<b>447</b>	<b>1,538</b>

Figure 1 depicts the greenhouse gas emissions by Council source for 2023, demonstrating the major sources of Council emissions. Points of interest are:

1. The George Bolton Swimming Centre accounts for 30% of Council’s greenhouse gas emissions. The gas pool heater, alone, accounts for 24% of Council’s emissions. The upcoming replacement of the gas heater with an electric system which will substantially reduce greenhouse gas emissions.
2. The ‘vehicles’ category includes all fuel for diesel and unleaded vehicles, accounting for 29% of Council’s emissions. This source of emissions will drop as Council transitions to an electric fleet. Additional electric vehicles will be added to the fleet during 2024.
3. Greenhouse gas emissions from streetlights reduced by 5 tonnes in 2023. Council continues to improve the network of streetlights, with 79 new LED streetlights installed during the financial year. Further detail on Council’s transition to LED streetlights is available in [Appendix 2: Additional statistics](#).



**Figure 1. Greenhouse gas emissions by Council source, 2023**

### 1.5 Carbon offsets

Carbon offsets are a responsible way to mitigate the negative environmental impacts of greenhouse gas emissions. When organisations release greenhouse gases into the atmosphere through activities like driving or air-conditioning, they contribute to global warming. Carbon offsets offer a way to counterbalance or ‘offset’ these emissions by investing in projects that remove an equivalent volume of greenhouse gases from the atmosphere.

For 2023, \$11,773 (ex-GST) was collected for the Burnside Carbon Offset Scheme (B-COS). These funds have been used to plant almost 3,000 trees. This planting is expected to offset 589 tonnes of greenhouse gas emissions.

The organisation ‘Trees for Life’ conducted the first seeding for B-COS (pictured). The seeding occurred at the Mantina Quarries site, near Kapunda. Seeding for the first two years of the scheme occurred during August 2023, with over 5,000 trees seeded, plus additional local shrubs to generate habitat.

Further details about B-COS are available in [Appendix 1: Calculations and notes](#), with annual accounting in [Appendix 2: Additional statistics](#).



## 1.6 Council’s carbon footprint

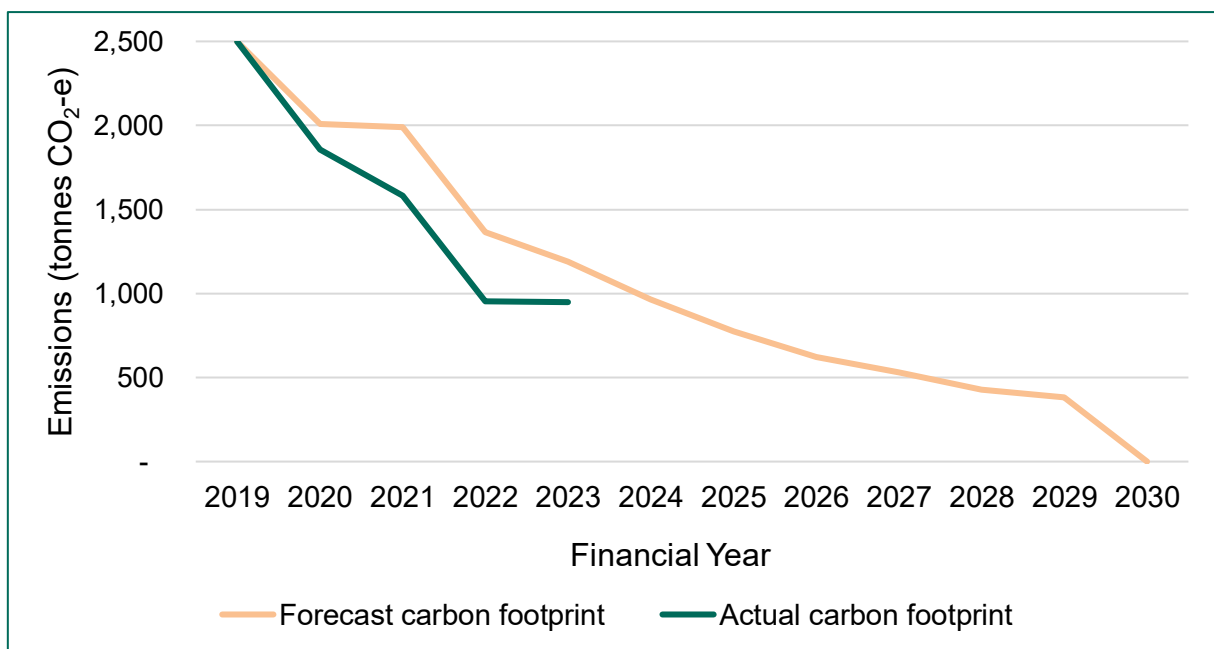
A carbon footprint includes both emissions and offsets. Thus, the footprint represents the quantity of greenhouse gas emissions that have been produced and have not been offset. **Table 3** depicts Council’s carbon footprint by year. In the first three years there were no offsets, so the carbon footprint was the same as the total emissions. In 2022, with the introduction of the offset scheme (B-COS), the footprint of the Council is substantially reduced by the offsets.

**Table 3. Carbon footprint calculations, by year**

Financial Year	Total emissions (tonnes CO <sub>2</sub> -e)	Total offsets (tonnes CO <sub>2</sub> -e)	Carbon footprint (tonnes CO <sub>2</sub> -e)	Change (% change from previous year)
2019	2,499	0	2,499	Not relevant
2020	1,855	0	1,855	-26%
2021	1,581	0	1,581	-15%
2022	1,471	518	953	-40%
<b>2023</b>	<b>1,538</b>	<b>589</b>	<b>949</b>	<b>-&lt;1%</b>

Council established a baseline carbon footprint for 2021, at 2,008 tonnes CO<sub>2</sub>-e. **The 2023 carbon footprint represents a 53% reduction from the established baseline in just a few years.**

Council has continued its trajectory to be Carbon Neutral by 2030. Figure 2 demonstrates that the organisation is ahead of the forecast position for 2023 (i.e., the footprint is lower than expected). The small decrease in the carbon footprint from 2022 to 2023 is an anomaly that will not affect Council’s overall journey towards carbon neutrality. Several upcoming projects will continue to reduce Council’s carbon footprint, as described below.



**Figure 2. Forecast and actual carbon footprints 2019-2030**



## 1.7 Looking forward: greenhouse gas emissions

During 2023, solar panel systems were installed on several Council facilities. While they were installed during 2023, their impact on Council's emissions will not be apparent until next year when they are operational. The installations were:

- **Glynburn Road Depot:** 40 kW system (pictured at the beginning of this section).
- **George Bolton Swimming Centre:** 48 kW system (pictured).
- **Dulwich Community Centre:** 5 kW system.

The depot and swimming centre systems were smaller than originally planned due to site constraints, with some financial savings from the projects returned to Council.



### Further projects include:

1. During 2024, an additional solar panel system will be installed at the Burnside Civic Centre.
2. The gas water heater at the George Bolton Swimming Centre will be replaced with a more efficient electric unit during the pool's off-season, between May and August 2024.
3. Council will continue to transition fleet vehicles to more efficient options such as hybrids and electric vehicles (EVs). At least five new electric vehicles are expected to be added to the fleet during 2024.
4. Ongoing upgrades to building lighting and air-conditioning will continue to reduce energy consumption.
5. Council has an intern student from UniSA, examining the organisation's Scope 3 emissions in preparation for the need to report on these emissions in the future; for further details, see [Appendix 1: Calculations and notes](#).
6. Through [Resilient East](#), Council is participating in a project to assess carbon offsetting opportunities for councils in South Australia. Results of this project may inform the future development of B-COS.
7. Through [ERA](#), Council is exploring opportunities to establish a Power Purchasing Agreement to purchase renewable electricity and lower expenditure on electricity.
8. Council is exploring opportunities to support the community to reduce greenhouse gas emissions.



## 2 Biodiversity and trees

### 2.1 Background: biodiversity and trees

There are two important elements related to the management of biodiversity and trees in Council's *Environmental Sustainability Strategy*:

1. Preserve and promote biodiversity, and the natural environment, including habitat for healthy wildlife populations.
2. Conserve and enhance canopy cover, including promotion and protection of trees on private land.

To support decision making against these priorities, this report presents data on Council's tree planting and biodiversity-related activities. Further detailed information about Burnside's urban trees, tree planting and tree maintenance is available on Council's *Urban Forest Interactive* website: [trees.burnside.sa.gov.au](https://trees.burnside.sa.gov.au).

### 2.2 The 2023 planting season

The planting season typically runs from April to September each year. While this report is focused on the 2023 financial year, the timing of planting each year means that reporting is best done for the planting season. This approach provides a better understanding of trends over time.

During 2023, over 16,000 plants were part of planting programs for public and private land. Council planted over 9,000 plants, including over 1,300 trees. Council also gave over 7,000 plants to private landholders in Burnside to increase canopy cover and improve habitat. [Table 4](#) includes key statistics for growing and planting during the 2023 season. Additional details and comparisons to previous years are provided in [Appendix 2: Additional statistics](#).

**Table 4. Season 2023: growing and planting statistics for trees, shrubs, wildflowers and grasses.**

Growing and planting activities	Quantities
<b>Plants grown at Burnside Biodiversity Nursery</b>	<b>16,927</b>
<b>Plants provided for planting on private land (A)</b>	<b>7,021</b>
Street tree planting	932
Other tree planting	403
Other planting*	8,050
<b>TOTAL: planting on public land (B)</b>	<b>9,385</b>
<b>GRAND TOTAL: public and private planting programs (A+B)</b>	<b>16,406</b>

*\*Other planting includes shrubs, wildflowers, grasses and aquatic plants.*

## 2.3 Support for trees on private land

Council recognises that the greatest potential to increase canopy cover and habitat in Burnside exists on private land. Two Council initiatives provided the plants to private landholders that are noted on Table 4:

1. **Biodiversity Nursery Giveaway** saw 425 trees and 6,424 smaller plants given to residents (example pictured). In addition to providing plants for private landholders, this annual initiative collects donations for an environmental charity. In 2023, the giveaway received donations for the [Friends of Ferguson Conservation Park](#) totaling \$5,144. The funds are being used to undertake sensitive bushcare works around native orchid sites and to control new threats to the park's flora from South African bulb species.



2. **The Native Tree Giveaway** saw 172 trees collected by residents. As this total was lower than the previous year (327 trees), promotion of the initiative will be increased for 2024.

**Tree Assistance Fund:** this fund provides financial assistance to private landholders to support the identification and rectification of issues with Regulated or Significant Trees. During 2023, Council supported work on 25 trees on private land, a decrease from the previous year, when work on 46 trees was supported. However, there was still a substantial financial contribution from Council, with almost \$40,000 contributed to assist with the care of trees on private land.

## 2.4 Tree removals

Table 5 includes data on the number of tree removals conducted during 2023. This information relates to trees managed as part of Burnside’s urban forest (i.e., street trees and trees in urban parks) and does not include woody weeds removed in the Hills Face area. The numbers are considered low, relative to the size of the urban forest, with over 42,000 trees under management.

**Table 5. Trees removals by year**

Reason for removal	2022	2023
Dead	161	103
Risk/ Low Useful Life Expectancy	138	191
Vandalised	43	21
Stolen	17	11
Removed for Private Property Development	9	13
<b>Total</b>	<b>368</b>	<b>339</b>

## 2.5 Biodiversity sites

Council’s *Hills Face Reserves* are managed for biodiversity, including Gully Reserve, Heatherbank Reserve and Wyfield Reserve. **The total area under management for biodiversity at Hills Face Reserves in 2023 was 119 hectares**, the same area as the previous year.

Further description of biodiversity sites is provided in [Appendix 1: Calculations and notes](#).

## 2.6 Woody weed control

During 2023, **0.9 hectares of primary woody weed control was conducted** in Hills Face Reserves. The area of woody weeds that can be controlled each year is highly variable because of variations in sites, weed densities and methods used. For example, some sites have difficult terrain, safety issues and poor access for machinery. **Over the last nine years, 34 hectares have undergone primary woody weed control**. Annual progress has ranged from less than one hectare (at difficult sites) to over nine hectares (at easier sites).

During 2023, almost 400 m of the Pioneer Women’s Trail was cleared of woody weeds and revegetated with over 130 indigenous trees and shrubs (pictured).



As part of the ongoing restoration of Chambers Gully Reserve an area of approximately 0.25 ha has been cleared of woody weeds and over 400 indigenous trees, shrubs and understorey plants planted (pictured).

Further description of woody weed control is provided in [Appendix 1: Calculations and notes](#).

## 2.7 Urban biodiversity sites

Council's Urban Biodiversity Sites exist in reserves, or parts of reserves, and are managed to create healthy habitat. Examples include Simpson Reserve, Sydney Street Reserve, Linden Gardens Reserve and parts of Bell Yett Reserve, Kensington Park Reserve and Harris Reserve.

**The total area under management as Urban Biodiversity Sites in 2023 was 12.75 hectares.** There was an increase this year, up from 12.5 hectares the previous year, with small additions to Biodiversity Sites in several locations, including Bell Yet Reserve, Brock Reserve, and along Sitters Memorial Drive.

Following the success of the new biodiversity areas in Kensington Gardens Reserve/Kensington Wama, management of the southeast corner of the site (the Kaurna Place of Reflection) was taken over by Council's Conservation and Land Management Program. Over 1,000 new local indigenous plants were established, representing 58 species of wildflowers, shrubs and trees (pictured below).

## 2.8 Creeklines

Creeklines provide habitat and form important corridors of vegetation through urban areas. These corridors allow indigenous plants and animals to persist in the City when much of the natural habitat has been removed or fragmented.

**There are 6.2 kilometres of identified creeklines within the City.** The designation of creeklines is complex because creeks in the region often have intermittent flows and it can be problematic to distinguish between a creek and other areas where water flows are intermittent. In quantifying the length of creeklines in the City, Council staff have focussed on creeklines that are readily identified as such, including First, Second and Stonyfell creeks.



There are 3.2 kilometres of creeklines restored and managed for conservation and habitat within the City. This length of creekline equates to 52% of the identified creeklines in the City, with no additional creeklines restored during 2023 as resources were concentrated on other projects.

## 2.9 Conservation trails

A network of over 26 kilometres of Conservation Trails exists through the City's hills face reserves. This network of trails is maintained and upgraded as necessary, with 263 metres of new trail created and 669 metres upgraded during 2023. The condition of each trail is assessed annually, with works prioritised accordingly.

**Tracker counts:** a total of 210,549 walkers were detected during 2023 at 4 tracker counter locations, a 16% decrease on the previous year.

**Achievements on Conservation Trails** are provided as [Appendix 4: Achievements on conservation trails](#).

## 2.10 Additional biodiversity and tree matters

City of Burnside has progressed many initiatives during 2023:

1. **Tree City of the World:** for a fourth year, the City of Burnside has been recognised as a Tree City of the World. The Council is part of a growing group of cities recognised for leading in the management and celebration of our urban forest. This recognition does not come lightly, with the Council needing to demonstrate its commitment to tree management in several ways, including:

- Policy commitments (e.g., the Urban Tree Management Policy).
- Tree and forest assessments (e.g., canopy cover reports).
- Annual budget (i.e., for tree management).
- Celebrating achievements (e.g., Nature Festival activities).

1. **National Tree Day:** four schools accepted trees from Council: Burnside, Magill, Norwood and Glenunga; each school was provided with three trees.
2. **Planting along Pepper Street, Magill:** this street was previously void of trees as planting was considered challenging due to limited growing space and infrastructure in the location. Community consultation was undertaken which proposed planting trees along the Western side of the street. The local community were in support of the planting, and 34 trees were planted (pictured on page 35). The species chosen was *Malus tschonoskii* (Pillar Apple) which is new to the City of Burnside. The species will be trialled for use in difficult growing environments which include limiting growing space and competing infrastructure such as powerlines and water utilities. The plantings will provide a much-needed break from the harsh visual environment in the location, improving the streetscape.



3. **Southern Brown Bandicoots:** University of Adelaide have continued to study this threatened species, supported by Council and Green Adelaide. In the Waterfall Gully area, 14 sites were surveyed using 'camera traps' (motion-activated wildlife cameras). A further 17 sites were surveyed in nearby Brownhill Creek. Across all sites, over 47,000 photographs were taken. Around 360 volunteers checked the photos on the Australian Museum's citizen science website, 'Digivol'. While no bandicoots were photographed in Burnside, they were recorded in adjacent areas (e.g., Winter Track). It was also noted that there are 16 records of bandicoots in Burnside on [iNaturalist](#). As part of the university project, Burnside residents attended workshops with members of the Brownhill Creek and Kaurna communities. Waterfall Gully residents were also surveyed to understand how they spend time within local bushland and on their properties. The survey sought to uncover win-win actions that people would be happy to conduct to support bandicoots in the valley. Residents mostly reported spending time walking and watching wildlife. They reported they would be happy to use natural garden products and protect a 'pet-free wild zone' along First Creek to help support local bandicoots. Overall, the project has built community connections, increased knowledge about local biodiversity, encouraged the development of wildlife-friendly gardens, increased citizen science activity, and raised the profile of bandicoots in Burnside.

4. **Michael Perry Garden:** following the adoption of the Michael Perry Historic Garden Adaptation Plan in 2019, the third and final stage of the garden's restoration has been completed. This has included implementation of a new garden path, fencing, and new plantings of over 270 new ornamental plants, including ten exotic trees (pictured). Additionally, a series of interpretive boards have been developed to showcase the history and nature of the reserve.



5. **Threatened Plant Species:** Council is involved in an ongoing collaboration with Trees For Life, Green Adelaide, the University of Adelaide (through Katja Hogendoorn, native bee expert), and the SA Seed Conservation Centre to re-establish several species of threatened plant back on City of Burnside Reserves, including several threatened native daisy species and fodder plants for the Golden Pea Bee (*Trichocolletes venustus*).

6. **Habitat corridors:** work on this project is ongoing, in collaboration with UniSA, exploring the potential for habitat corridors and stepping stones in the City of Burnside.

7. **Landholder liaison:** Council's Conservation team liaised with landholders in the Hills Face area and owners of private creek lines, providing links to resources and plants for revegetation through the Biodiversity Nursery Local Native Plant Giveaway.

## 8. Support for volunteer groups:

- **Friends of Cleland National Park** were provided with over 870 indigenous plants and advice from Council's Biodiversity Nursery.
- **Botanica Environs Group** at Glenside were provided over 200 indigenous plants, planting advice and a new Bee Hotel manufactured by volunteers at *The Shed*, assisted by volunteers at the Biodiversity Nursery, and installed by Council staff.
- **Rose Park Primary School** were provided with 526 tubes of indigenous plants from the Biodiversity Nursery for a bush tucker garden (Rose Park staff pictured with volunteers from the nursery).



## 9. **Advocacy:** City of Burnside has advocated to the State Government on several matters:

- A Submission to the Parliamentary Inquiry into the Urban Forest (Council Resolution C140223/13353).
- A letter to the Minister for Climate, Environment and Water, regarding support for koala management (Council Resolution C230822/13266).
- A letter to the Minister for Climate, Environment and Water, supporting state-wide cat management and stricter controls on pet cats (Council Resolution C101023/13545).

## 2.11 Looking forward: biodiversity and trees

**Ongoing tree planting and habitat creation:** Council will continue to plant trees and create habitat through its well-established and well-supported tree planting, conservation and reserve management programs.

**Canopy assessment:** a detailed report on canopy cover was presented in Council's [2020 Environmental Sustainability Report](#). Council is working with *Green Adelaide* and other councils to conduct a second canopy assessment across metropolitan Adelaide. Results are expected in early 2024. The second assessment will include details of change over time.

Several projects that were identified in the Council report on *Koalas in the City of Burnside* (Council Resolution C230822/13266) will be advanced, including:

1. Community consultation about Council reserves that could be considered as 'Dog on Leash Areas' for the protection of local threatened species.
2. Development of a trial community grant scheme for habitat restoration on private land, including koala food trees.





## 3 Waste and resources

### 3.1 Background: waste and resources

Council’s *Environmental Sustainability Strategy* sets a priority to support our community to reduce waste and increase the recycling of resources. Council works closely with East Waste, a regional subsidiary, to monitor and promote improvements in the management of waste and resources.

### 3.2 Kerbside waste and resources

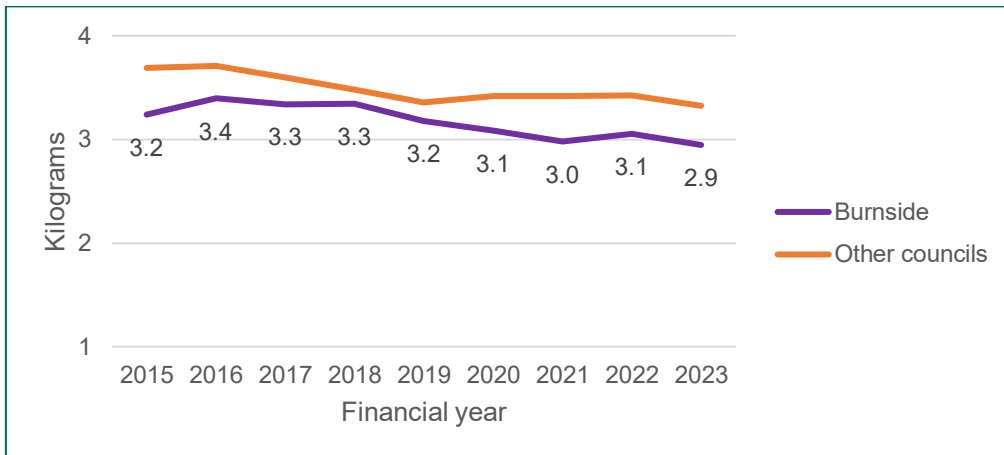
Table 6 includes statistics for kerbside collections of waste and resources. **During 2023, there were decreases in landfill (3%) recyclables (1%) and hard waste (4%),** with a 10% increase in organics. The 236-tonne reduction in landfill waste is good for the environment and saved Council over \$45,000 in landfill levy and fees. The increase in organics was likely caused by increased rainfall, leading to additional plant growth and heavy, wet organic material. Rainfall recorded at Burnside weather station was 758mm for the 2023 financial year, 175mm more than the average for the previous 10 years.

**Table 6. Kerbside waste and resources, with corrected weights and comparisons\***

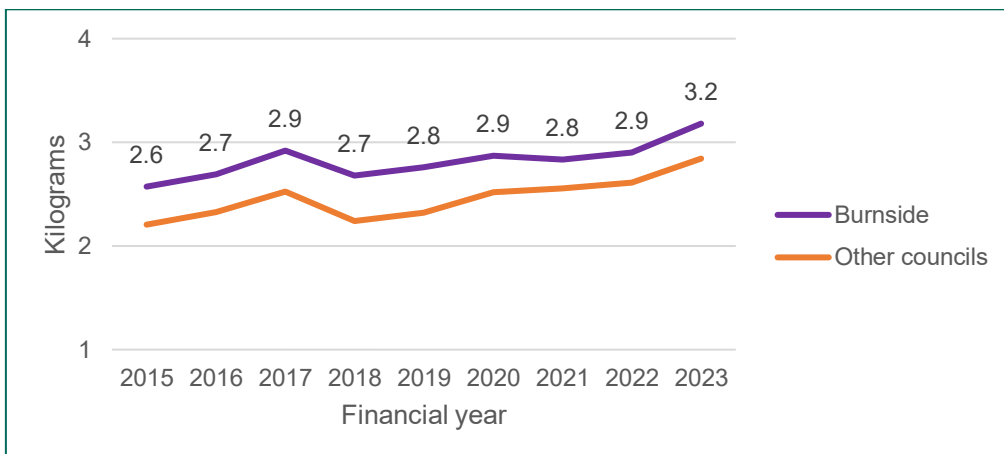
	Landfill	Organics	Recyclables	Hard waste
<b>2023 weights</b> (tonnes)	7,198	7,771	3,825	385
<b>Corrected weights</b> (tonnes)	7,705	7,693	3,760	377
<b>Equivalent weights</b> (Boeing 747s)	35	35	17	2
Comparison to previous year				
<b>2022 weights</b> (tonnes)	7,434	7,068	3,983	443
<b>Change from 2022</b> (tonnes and %)	-236 (-3%)	+703 (+10%)	-22 (-1%)	-158 (-4%)

\*Corrected weights account for contamination and post-collection processes, see [Appendix 1: Calculations and notes](#)

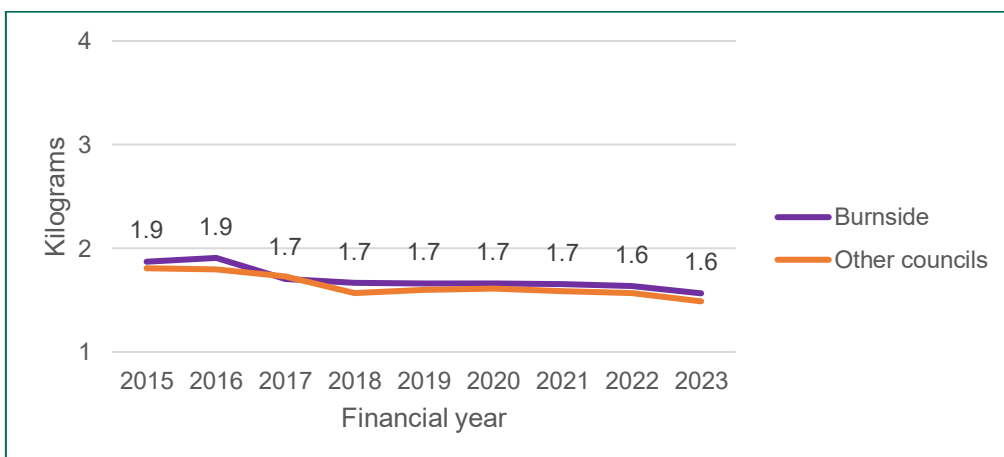
**Trends in residential waste management:** the graphs below provide further data on changes over time for collection tonnages of waste-to-landfill (Figure 3), organics (Figure 4), and recycling (Figure 5). The graphs report the averages of kilograms of waste or resource per capita per week, which may help visualise the quantities. The three graphs all use the same scale on the vertical axis, so they are comparable. When the averages are calculated, changes in population are accounted for based on community profile data available through council websites. The comparative data from other councils are from public sources (e.g., East Waste Annual Reports).



**Figure 3. Landfill per capita per week, by year - East Waste councils**



**Figure 4. Organics per capita per week, by year - East Waste councils**



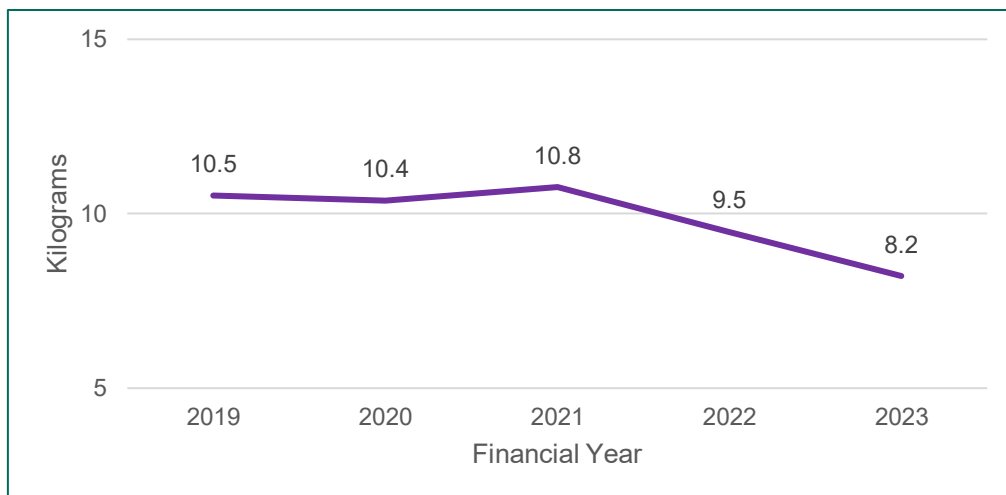
**Figure 5. Recyclables per capita per week, by year - East Waste councils**

### 3.3 At-call hard waste service

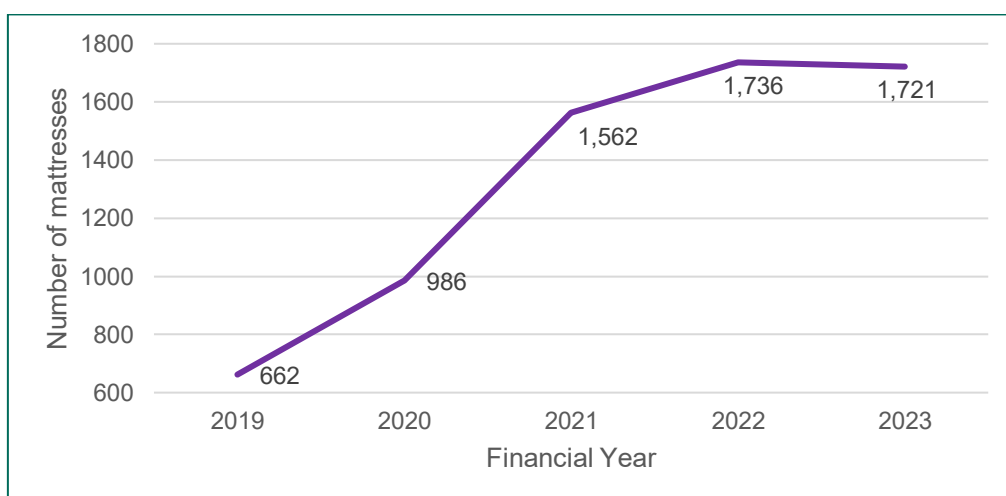
The following graphs provide further data on changes over time for hard waste collections. The earliest data provided is for the 2019 financial year, the first year with comparable data, when mattresses were collected separately from other hard waste.

Figure 6 displays hard waste collection tonnages. The results are displayed in kilograms per capita so that quantities can be readily visualised. Changes in population are accounted for based on community profile data available through the Council website. It is important to note that the quantities are presented as kilograms per year and so cannot be directly compared to the previous graphs which displayed kilograms per week (there is far less hard waste collected per resident than other kerbside waste collections).

Figure 7 displays the number of mattresses collected annually through the at-call hard waste system. The increases of recent years have not been evident during 2023, although the number of mattresses collected was still high.



**Figure 6. Annual hard waste per capita, by year**



**Figure 7. Annual mattress collection, by year**

### 3.4 Additional waste matters

Additional waste-related statistics are provided in Table 11 in Appendix 2: Additional statistics. Noteworthy items include:

1. The percentage of households provided with compostable bags by Council continues to decrease, from 21% in 2021, to 19% in 2022 and 17% in 2023. This decrease is likely explained by the increase in availability of free compostable bags from local supermarkets (i.e., compostable bags for taking fresh produce home are now available in several local supermarkets). It is worth noting that over 1,700 households received one roll of compostable bags through Council's bin-tagging project. As this was a once-off project, the numbers have not been included in the totals because it would skew the long-term trends.
2. Hard waste bookings decreased by 8%. The reduction in bookings is matched by a reduction in hard waste collected (Table 6 and Figure 6).

**Advocacy:** City of Burnside made a submission to the South Australian Legislative Council's Select Committee on Recycling of Soft Plastics (Council Resolution C120923/13518).

**Waste in apartment buildings:** Council continued to support the collection of waste from apartment buildings. The waste management of these buildings is conducted privately as it has special requirements for collection. Council support includes a financial contribution to the managers of the buildings, based on the number of rate-paying apartments in the buildings. The financial contribution is greater to apartment buildings that provide suitable organic waste disposal for residents. This system has encouraged two apartment buildings to initiate the collection of organic waste. Council also engages with the property managers and provides compostable bags and kitchen caddies as needed (pictured).



#### **George Bolton Swimming Centre organic bin**

**trial:** an organics bin was successfully trialed during 2022. While organics bins in reserves are problematic, with contamination levels too high for processing as organics, the swimming centre provided a more controlled environment for this trial. Council worked with Café staff, where compostable packaging is used for most food. Organics bins were placed strategically, behind landfill bins, so that uninterested users would use the landfill bins, thus reducing the chance of contamination. Bins were monitored weekly, identifying low contamination rates. Following this success, two additional green bins were provided for the public at the Swimming Centre. However, the additional bins, away from the Café, were found to be heavily contaminated and cannot be continued. The one successful location, near the Café, will be maintained for pool visitors who are keen to use the organics service.

**Doggie Dummies** are installed in popular dog walking areas for the composting of dog waste. During 2023, a *Doggie Dummie* was installed at Brock Reserve, the fifth unit in the City of Burnside. Further information is online: [www.burnside.sa.gov.au/dogwaste](http://www.burnside.sa.gov.au/dogwaste).

**Businesses:** Council wrote to 554 business owners in June 2023. The letter informed business owners of the support Council provides, including: kerbside bins and collection, hard waste collection, kitchen caddies and compostable bags, plus advice on waste management.

Council will conduct ongoing engagement of residents, schools, businesses and sporting clubs to promote and encourage best-practice waste management.

**Waste education activities** conducted during 2023 are presented as [Appendix 3: Waste education activities](#).

### 3.5 Looking forward: waste and resources

**Engaging renters:** from October 2023, Council will conduct a door knocking initiative, focussed on engagement of renters. This initiative is designed to raise awareness about Council waste services, with a particular focus on food waste going in organics bins. Rental properties will be engaged because these households may have limited interaction with Council and its services. There may also be a higher turnover of occupancy than for owner-occupied dwellings. Households will be provided with kitchen caddies, compostable bags and information booklets as required, supported by funding from Green Industries SA. There is a target to door-knock 1,200 households.

**Engaging businesses:** Council will engage businesses and offer support to improve waste management practices. Environmental Sustainability Officers will visit business to ensure they are aware of Council waste services and provide guidance on incoming bans of single-use plastics, in collaboration with [Plastic Free SA](#).

**Waste Hub:** Council is developing a waste hub to provide residents with a central drop-off location for tricky household items, like batteries, mobile phones, light globes and X-Rays. These items are recyclable, but not through the kerbside bin collection system. The waste hub will be similar to the City of [Adelaide's Reuse and Recycle Hubs](#).

**Sustainable Kerbside Service:** this term is used to describe weekly collection of organics bins and fortnightly collection of landfill bins, with no change to the frequency of collection for recycling bins. Council is planning a trial of a Sustainable Kerbside Service to commence in September 2024 (Council Resolution C230523/13452). The trial will be conducted for six months, including around 1,300 households. Households will be given the option to opt-out and receive weekly landfill bin collection. This initiative will be developed in line with successful trials in other council areas. A Sustainable Kerbside Service is expected to deliver a reduction in landfill, reduced greenhouse gas emissions from landfill, and additional organics capacity for garden organics.



## 4 Water

### 4.1 Background: water

Water is a valuable resource used by Council to maintain parks and reserves and supply buildings, pools and other services. Parks and reserves account for most of Council's water use.

There are two important elements to water management contained in Council's Environmental Sustainability Strategy:

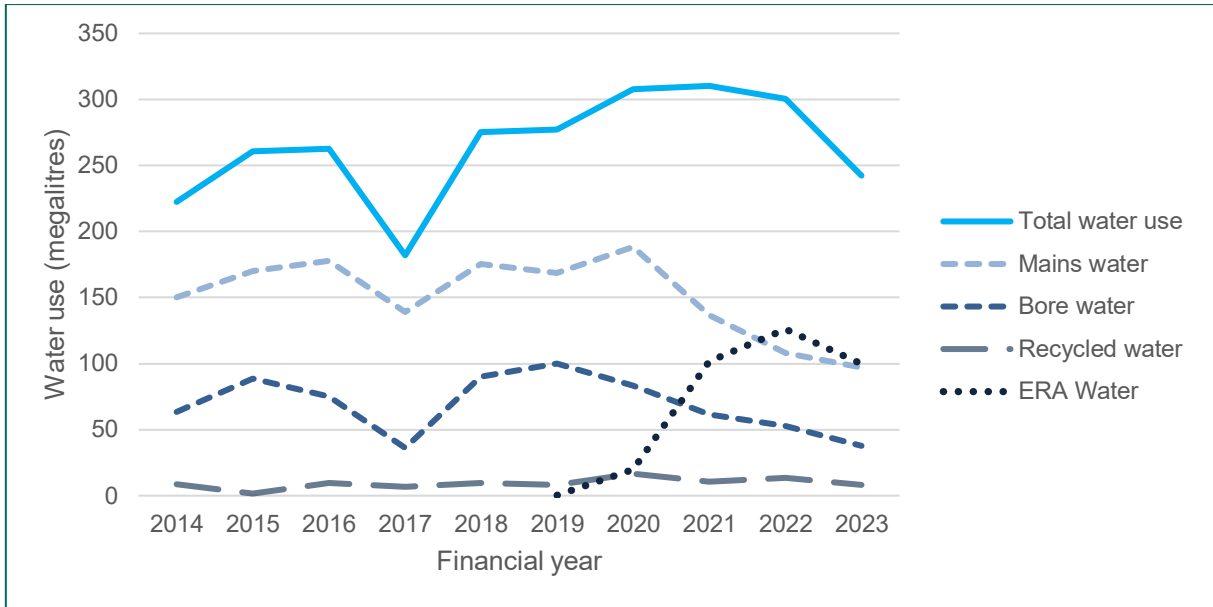
1. Manage water for best value to the environment and community, recognising the multiple sources and uses of water.
2. Strategic approach to water management, incorporating WSUD.

Further information about Burnside's water management is available on Council's *Water Smart Burnside* website: [www.burnside.sa.gov.au/water-smart](http://www.burnside.sa.gov.au/water-smart)

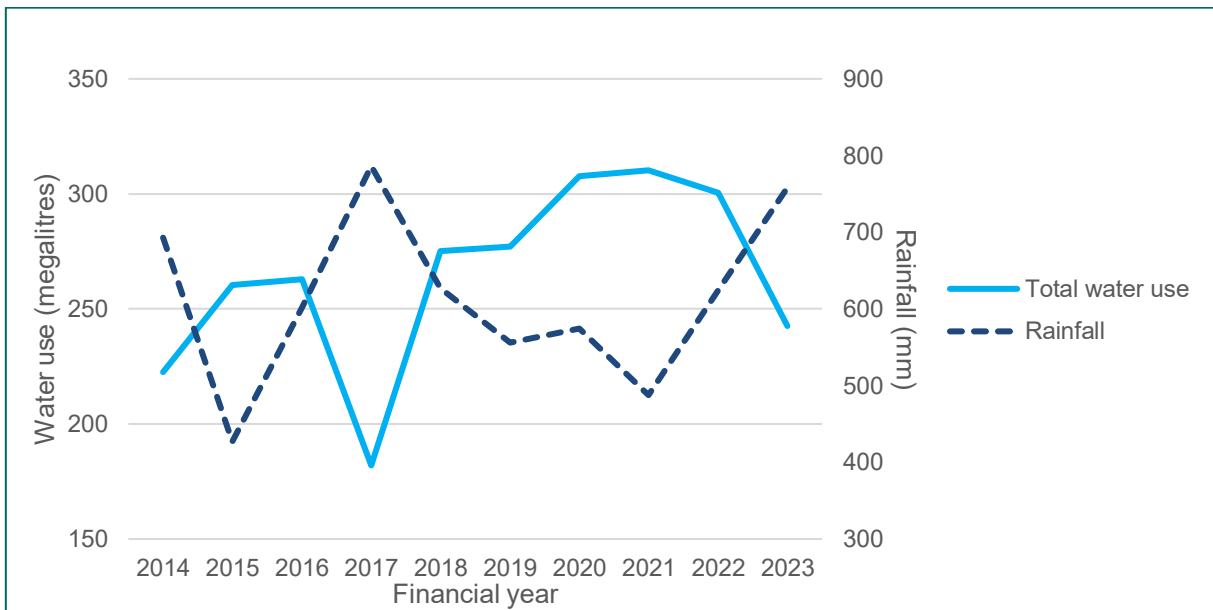
### 4.2 Water use

Council's total use of water in 2023 was lower than the average for the previous nine years, at **243 megalitres, 19% less than the previous year** (Figure 8). The consumption of all sources of water decreased, including ERA Water, mains water, bore water and recycled water. Details of the sources of water are provided in [Appendix 1: Calculations and notes](#).

Council's use of water is typically higher in years of low rainfall and lower in years of high rainfall. This trend indicates that the Council is using water resources wisely. During 2023 there was a 21% increase rainfall. This increase in rainfall was matched by a decrease in the use of water (Figure 9).



**Figure 8. Water use by source, by year**



**Figure 9. Water use versus rainfall (Burnside weather station), by year**

### 4.3 Water Sensitive Urban Design (WSUD)

WSUD involves integrating the sustainable use of water into urban areas. Council implements many WSUD systems each year. [Table 7](#) lists the WSUD system installations within the Council, with **87 systems installed during 2023**.

**Table 7. Water Sensitive Urban Design systems installed, by year**

<b>System</b>	<b>pre-2019</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>
Verge soakers (B-Pods)	184	188	196	234	250	270
Verge soakers (Kerbside inlets)	25	79	157	247	270	333
Creekline WSUD measures	43	58	71	74	75	75
Permeable paving	5	14	26	37	43	47
Rainwater tanks	20	20	23	23	24	24
Rain Gardens	8	8	8	8	8	8
Swales	23	23	23	23	23	23
Detention basins	5	5	5	5	5	5
Wetlands	0	0	0	0	1	1
Soakage pits	5	5	5	5	5	5
<b>TOTALS</b>	<b>318</b>	<b>400</b>	<b>514</b>	<b>653</b>	<b>704</b>	<b>791</b>

City of Burnside continues to partner with [Water Sensitive SA](#) to support the development of a water sensitive city.

#### **4.4 Looking forward: water**

Council will continue to install small-scale WSUD systems and promote WSUD during 2024. Council's *Water Smart Burnside* website is updated as new WSUD devices are installed: [www.burnside.sa.gov.au/water-smart](http://www.burnside.sa.gov.au/water-smart)

Council plans to conduct a review of water sources and water use in the near future.





## 5 Corporate action

### 5.1 Background: corporate Action

There are three important elements related to corporate action in Council's Environmental Sustainability Strategy:

1. Promote environmental sustainability through advocacy, community engagement and education.
2. Environmental sustainability is embedded within decision-making, resource allocation, processes and operations.
3. Increase Council and community resilience and preparedness for the impacts of climate change.

### 5.2 Promotion of environmental sustainability

**Nature Festival:** South Australia's *Nature Festival* was held during October 2022, engaging over 20,000 participants through 366 events, including several in Burnside. Council conducted guided walks in Michael Perry Reserve (pictured above) and Hazelwood Park Reserve (pictured right). Council held an art exhibition entitled *Life Among Trees* at the Burnside Civic Centre. Council also presented the film *River* at the Regal Theatre.



**Burnside Library** regularly conducts activities related to Environmental Sustainability. Examples during 2023 were:

- Storytime sessions (e.g., frog habitats and butterfly lifecycles)
- Author Talks (e.g., “Koala a Life in Trees”, October 2022)
- School holiday activities (e.g., Games from recycled materials, January 2023)
- Parenting sessions (e.g., Nature Play, March 2023)

**Burnside Neutral 2030:** Council continued this video series, with videos available through social media and on YouTube: [bit.ly/burnsideneutral](https://bit.ly/burnsideneutral); topics covered during 2023 were:

- Burnside Environmental Action Team (BEAT)
- Nature Festival
- Bin Tagging
- Water Smart Burnside
- Cycling in Burnside
- Landfill savings
- Environmental Scorecard and Review
- Doggie Dunnies
- Wetland habitats
- Going Solar
- Recycling Plastics

**Biodiversity Nursery:** Council’s Conservation Officer conducted tours of the Biodiversity Nursery and local area for several groups during 2023, demonstrating Council’s leadership in conservation:

- Green Adelaide, September 2022
- Local Government Biodiversity Network, September 2022
- Department for Environment, October 2022
- Aboriginal Urban Design, November 2022
- Native Butterfly Society, January 2023
- Friends of Belair National Park, February 2023
- Zoos SA, February 2023

Additional **engagement activities** included:

- Council supported the [Garage Sale Trail](#), a national initiative to promote re-use of household products. As part of this support, Burnside Library hosted workshops on decluttering and renovating with the planet in mind.
- Council supported a food swap at the Laurel Avenue Pirkurna Wirra / Peter Bennett Organic Community Garden.
- A guided environmental history walk was conducted in Hazelwood Park Reserve during the [SA History Festival](#).

- Council's quarterly [Focus newsletter](#) regularly included articles on Environmental Sustainability.
- An educational session was conducted at St Peters Girls School, introducing students to Citizen Science and the *Digivol* platform, during March 2023.
- Waste education activities are described in [Appendix 3: Waste education activities](#).
- Additional engagement activities were presented as part of a Council Report, the [2023 Environmental Sustainability Update](#), during May 2023.

### 5.3 Embedding environmental sustainability within decision-making, resource allocation, processes and operations

**Environmental Sustainability Strategy:** a review of Council's Environmental Sustainability Strategy was commenced during 2023. A revised strategy will undergo public consultation in preparation for presentation to Council for endorsement in early 2024.

**Council reports:** in line with Council's Climate Change Policy, all Council reports include a section on environmental sustainability.

**Monitoring of Circular Procurement:** Council's commitment to Circular Procurement includes monitoring the quantity of recycled materials that are purchased ([Table 8](#)). Key outcomes during 2023:

- A total of **881 tonnes of recycled materials were purchased**.
- **Better Bins:** Council is working with East Waste and bin manufacturer MASTEC to trial bins with up to 80% recycled plastic. Previously, the bins had been up to 40% recycled plastic.
- **Fencing:** recycled plastic was used in fencing and bollards for projects in Bell Yett Reserve, Wattle Park Reserve and Hazelwood Park Reserve.
- **Less recycled asphalt:** less recycled asphalt was used during 2023 for two reasons. First, 16% less asphalt was used in road resurfacing, reducing the opportunity for recycled product to be utilised. Second, contractors used less recycled asphalt than they had been contracted to use. This matter has been followed up and is expected to improve during 2024.

**Table 8. Quantities of recycled materials purchased by financial year**

(These totals only include the recycled material; for example, if 100 tonnes of asphalt were purchased and 30% of it was recycled material, 30 tonnes would be recorded as recycled material)

Categories and products	2022 (tonnes)	2023 (tonnes)
<b>Construction Materials</b>		
Asphalt (Recycled Asphalt Product)	2,004	621
Sand and rubble (made from crushed concrete)	248	97
Crushed glass (utilised in recycled asphalt)	78	119
Envirocrete (concrete)	-	2
<b>SUBTOTAL: construction materials</b>	<b>2,330</b>	<b>839</b>
<b>Plastics</b>		
Bollards, posts and decking (incorporating recycled plastic)	11	4
Bins (kerbside bins were 40-80% recycled plastic)	4	4
Greenwells (100% recycled, used with street tree planting)	3	1
Verge-soaker crates (WSUD devices; 100% recycled plastic)	<1	<1
Pots (tubes used at Council Nursery; 100% recycled plastic)	< 1	< 1
<b>SUBTOTAL: plastics</b>	<b>19</b>	<b>10</b>
<b>Compost and soil</b>		
Organic soil mix/mulch	2	20
<b>SUBTOTAL: compost and soil</b>	<b>2</b>	<b>20</b>
<b>Paper</b>		
Office paper, <i>Focus</i> newsletter and other printing	9	13
<b>SUBTOTAL: paper</b>	<b>9</b>	<b>13</b>
<b>TOTAL RECYCLED CONTENT PURCHASED (tonnes)</b>	<b>2,359</b>	<b>881</b>

Some materials were not included in Table 8, because there are not yet established processes to record some items. For example, recycled materials used by contractors are not always reported to the Council. Ongoing work will identify gaps and implement processes to improve reporting.

## 5.4 Increase Council and community resilience and preparedness for the impacts of climate change

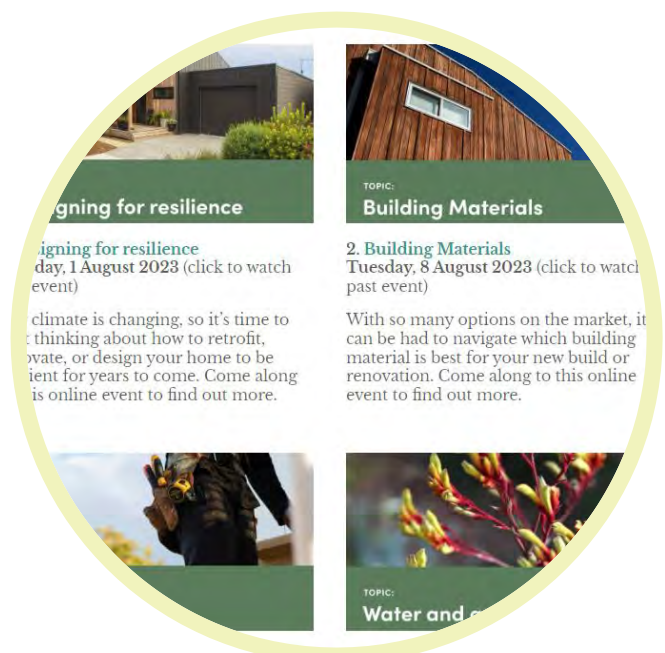
**Grow it Local** is an online platform that supports grass-roots sharing of knowledge about growing food, plus sharing of the food itself. Regular online workshops are hosted by experts from around Australia, including personalities like Sophie Thomson and Paul West. The website now hosts a substantial library of on-demand material from previous workshops. **Almost 350 City of Burnside residents have registered on the *Grow it Local* website.** *Green Adelaide* is supporting the introduction of *Grow it Local* in Adelaide. Council also hosted a workshop with *Grow it Local* founder Paul West, attended by 50 guests, during October 2022 (pictured). Further information is at: [www.growitlocal.com/](http://www.growitlocal.com/)



**Resilient East:** City of Burnside is a member of Resilient East, a partnership between state and local government organisations in eastern Adelaide. Resilient East is about making sure the eastern region remains a vibrant, desirable and productive place to live, work and visit, and that our businesses, communities and environments can respond positively to the challenges and opportunities presented by a changing climate. Highlights from Resilient East during 2023 include:

1. **Sustainable Homes Expert Webinar series:** Resilient East has supported the development and delivery of a series of webinars about sustainable, climate ready housing. The series commenced in May 2023. Completed webinars are available for viewing on the Resilient East website (pictured): [www.resilienteast.com/sustainable-homes-webinars](http://www.resilienteast.com/sustainable-homes-webinars). Topics include:

- Electric Vehicles
- Buying GreenPower
- All-Electric Homes
- Winter Comfort at Home
- Winter Comfort for Renters
- Designing for resilience
- Building Materials
- Build your team
- Water and gardening
- New to solar and batteries
- Got solar, new to batteries
- Summer comfort for renters
- Summer comfort at home



2. **My Cool Home:** Resilient East is supporting the ongoing development of the *My Cool Home* website. This online resource includes a 3D interactive house and garden walk-through (pictured) and a home assessment tool. The assessment tool can be used to assess the energy efficiency and comfort of a home, either an existing home or one being planned – with projected cost savings and optimisation to help users improve home comfort and save money on home running costs. The website is: [www.adaptwest.com.au/my-cool-home](http://www.adaptwest.com.au/my-cool-home)



3. **Climate Risk Capacity Building:** Resilient East is working with other Regional Climate Partnerships and State Government to develop resources about climate risk.
4. **Climate Practitioners Showcase:** Resilient East hosted an event for local and state government professionals to share learnings from projects and build capacity in the sector.

**Living Lightly Locally:** UniSA was awarded \$280,000 from the Federal Government to develop a new community program about environmental sustainability. Council partners on the project are Burnside and Mount Barker. The University team continued to develop the program through 2023, with a small cohort of Burnside residents involved. The course covers topics including: wellbeing, waste, energy, water, transport, home, garden, food, climate and community. Further information is at: [www.livinglightlylocally.com.au](http://www.livinglightlylocally.com.au)

**BEAT:** Council staff have commenced the Burnside Environmental Action Team (BEAT) to improve internal management of waste, power and water. During 2023, the BEAT has focussed on waste management and energy conservation. The BEAT also promoted **Plastic Free July** across the organisation, with 63 staff pledging to reduce the use of single-use plastics, and hosted a **Nude Food Day**, with 41 staff members participating.

## 5.5 Looking Forward: Corporate Action

Council will continue to improve its performance and promotion of environmental sustainability, supporting resilience of the organisation and the community to climate change.

# Appendix 1: Calculations and notes

## Greenhouse gas emissions

Carbon dioxide equivalent (CO<sub>2</sub>-e) is a standard measure that allows for comparison of greenhouse gas emissions across years and organisations. The term, 'equivalent' is used because the measure accounts for carbon dioxide (CO<sub>2</sub>) along with other polluting gases such as methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O). These three gasses are reported because they all make substantial contributions to global warming. Carbon dioxide makes the greatest contribution of the three gasses and is therefore used as the reference. While their contributions are lesser, the other two gasses have greater warming potential than carbon dioxide. For example, the *National Greenhouse Accounts Factors (2023)* lists the global warming potential of methane at 28 times that of carbon dioxide, and nitrous oxide at 265 times that of carbon dioxide (but far less of these gasses is generated). The global warming potential of all three gasses is accounted for in the carbon dioxide equivalent (CO<sub>2</sub>-e).

Different types of emissions can be included in inventories of greenhouse gas emissions. The following types of emissions have been included in the calculations for the City of Burnside:

- **Scope 1 emissions** (direct emissions), generated by gas consumption in council facilities and the use of fuel in vehicles or machinery;
- **Scope 2 emissions** (indirect emissions), generated by electricity consumption in council facilities (emissions from electricity are considered indirect because the electricity is produced elsewhere); transmission losses are not included; and
- **Scope 3 emissions** (other indirect emissions), limited to those emissions generated in the production and transport of gas, electricity and fuel.

The focus of Council's work has been on emissions generated by the organisation (e.g., by using electricity, gas and fuel). These emissions may readily be reduced through changes to infrastructure (e.g., solar panel installations, vehicle upgrades or energy efficiency measures) and staff behaviour. The Council has a goal to be Carbon Neutral for these emissions by 2030.

Calculation of emissions is conducted following protocols provided by the Australian Government in the [National Greenhouse Account Factors 2023](#). For electricity, the location-based method is utilised.

### Additional Scope 3 emissions

Additional indirect Scope 3 emissions, such as those associated with other purchased goods and services, are not yet included in City of Burnside's emissions inventory. Based on some preliminary work conducted during 2023, key contributors to Council's Scope 3 emissions are likely to be:

- Asphalt works (e.g., road resurfacing);
- Staff commuting to work;
- Concrete works (e.g., drains and kerbing);
- Waste disposal (i.e., Council-generated waste); and
- Information and communications technology services and equipment.

These Scope 3 emissions were not included in the City of Burnside's initial emissions inventory because they require more resources to calculate and they can require greater effort to reduce, compared with the direct emissions from the organisation. Further, it is hoped that the suppliers of these goods or services might reduce, mitigate and offset their own emissions, before they need to be included in Council's emissions inventory.

It is likely that the organisation will be required to report all Scope 3 emissions within a few years, following the implementation of standards for sustainability reporting being considered by Federal Parliament under the Treasury Laws Amendment Bill 2023.

### Changes in greenhouse gas emissions

Regarding gas consumption to heat the George Bolton Swimming Centre, there is a strong correlation between annual gas consumption and a sum of the degrees below 27°C, counted on a daily basis and summed for the annual pool season. This analysis was conducted on data from 2019 to 2023, with 2020 excluded because pool operations were affected by Covid-19 lockdowns.

### State-wide grid emissions

In previous years, Council has benefitted from improvements in the electricity emissions factors published as part of the National Greenhouse Account Factors. These grid factors reduce as renewable energy production increases (i.e., more renewable electricity production reduces the emissions intensity of the grid). As the grid becomes cleaner, Council's emissions per unit of electricity consumption are reduced. For example, around half of the reduction in emissions recorded in 2022 was due to improvements in the grid.

For 2023, however, the grid factor has not reduced – it is the same as the previous year. This similarity has occurred despite increases in renewable electricity production. The grid has become cleaner, but it is not represented in the grid factors. The reason for the disparity between improvements in the grid and the grid factors is that there have been changes in how emissions from electricity are calculated.

In 2023, for the first time, the National Greenhouse Account Factors have not included self-consumption of small-scale rooftop solar as part of each State's electricity grid. Thus, a substantial amount of renewable electricity has been taken out of the equation, negating improvements in the grid for this year. Improvements in the grid in South Australia during 2023 must have equaled the self-consumption of small-scale solar (sometimes called "behind the meter" consumption).

This lack of grid improvement is an accounting anomaly. The change in accounting protocols does have a benefit – it removes some double-counting of renewables from the accounting framework. In previous years, behind-the-meter consumption of renewables could be claimed by individuals or organisations, and also claimed as part of grid electricity consumption. This form of double-counting has now been removed, improving the robustness of Australia's National Greenhouse Account Factors.

Improvements to the grid will reduce Council's emissions profile in future years. As more renewables are used to generate electricity into the grid, all consumers benefit.

### Carbon Offsets

During 2021, the City of Burnside committed to becoming carbon neutral by 2030, with a clear plan of how to achieve this goal (Council Resolution C12708). The carbon neutral plan has financial and environmental benefits, saving both money and emissions in the long term. The plan included the



development of the Burnside Carbon Offset Scheme, or B-COS (Council Resolutions C12708 and C12646).

Financially, the Burnside Carbon Offset Scheme (B-COS) commenced during 2022. From then, Visitors to George Bolton Swimming Centre and the Regal Theatre have paid a small fee (10 cents per visit). While the contribution from each visitor was small, collectively the funds enable Council to offset the emissions from these facilities. Additionally, residents who have additional landfill bins paid a fee to offset the emissions associated with landfill (\$13.40 per additional bin per annum). It is important to note that the fee for bins only applies to approved landfill bins in addition to the typical three-bin system, of which there only around 60 in the Council area.

The trees planted for B-COS are planted outside of the Adelaide metropolitan area. Direct seeding is the most cost-effective way to plant the quantity of trees required to offset the greenhouse gas emissions of the associated Council services. The trees cannot be planted on City of Burnside land because there is not space for the direct seeding of thousands of trees per annum within the Council.

While the primary purpose of the tree planting is to offset greenhouse gas emissions, many additional benefits will be realised, including the creation of habitat for wildlife and the generation of jobs in South Australia.

Carbon offsets are calculated at an industry standard of 5 trees per tonne, claimed upon planting. This is a basic calculation for the generation of carbon offsets. The offset will be achieved over the life of the trees and can only be claimed once. Further work is being conducted to develop more advanced methods of calculation.

### **Council's carbon footprint**

The forecast data for Council's carbon footprint are from the Council Report "Measures for Reducing Council's Carbon Footprint" (Council Resolution C12708).

### **Biodiversity sites**

The total area of biodiversity sites includes all Hills Face Reserves but not roadsides. Further, the total does not include several trails (i.e. McBeath unmade road reserve, Old Bullock Track and Mt Osmond unmade road reserve).

The term 'Biodiversity' refers to the variety of living things on Earth. Council uses this term to describe sites where indigenous plants are the focus (i.e., "biodiversity sites"). While these sites are managed to create healthy habitat, biodiversity is not limited to these sites. Biodiversity exists in public parks and streetscapes, as well as in private gardens everywhere. Indigenous plants are those that are naturally found in the City of Burnside and may also be found naturally in other places (e.g., River Red Gums, Gold Dust Wattle and Hardenbergia are indigenous).

Council has a focus on the management of biodiversity at numerous sites, where restoration of natural environments is prioritised, along with fire risk reduction. Examples include the hillside woodland and creekline in Michael Perry Reserve. There are also highly urban examples such as the beds in Beaumont Common and the south-eastern end of Alan E Cousin Reserve.

Council restores and maintains vegetation that has existed in this area for hundreds or thousands of years. The local plants provide habitat for local native wildlife. Together, these indigenous plants and animals are distinctive and underpin the character of the City of Burnside.

Council's skilled biodiversity teams, specialist bushcare contractors and volunteers carefully control invasive exotic plants and encourage native plants to regenerate naturally, with supplementary planting also used to re-introduce diversity. The result is a patchwork of hills-face and urban reserves that protect, reflect and celebrate the environmental heritage of the City.

### Woody weed control

Woody weeds are a persistent issue in Hills Face Reserves. Woody weeds degrade the City's natural heritage and contribute to fuel loads (a factor in the risk of fire). Infestations of woody weeds have been mapped using aerial photography and ground truthing (on-site observations to confirm the analysis). Each year, progress in primary clearance of woody weeds is mapped and quantified. The woody weeds mapped and managed include declared pest species such as Olives, Italian Buckthorn, Aleppo Pine, Desert Ash, and Boneseed. These plants are declared as weeds and regulated under the Landscape South Australia Act (2019) because of their threat to primary industry, the natural environment or public safety.

### Waste and Resources

Key to [Table 6. Kerbside waste and resources, with corrected weights and comparisons](#):

- **2023 weights** (tonnes): The weight of waste collected through the kerbside system.
- **Corrected weights** (tonnes): Accounts for contamination in waste streams (e.g., landfill waste collected in recyclables). For hard waste, the reported total is utilised to produce energy. However, some hard waste is separated for recycling or landfill, before it is sent to produce energy. Some estimates required, based on the most recent and appropriate data possible (e.g., the percentages of mattresses that are recycled).
- **Equivalent weights** (Boeing 747s): This equivalent weight is provided to assist in visualisation of tonnages; a Boeing 747-8 commercial passenger aeroplane (unladen weight = 220 tonnes).
- **2022 weights** (tonnes): Data from the previous year.
- **Change from 2022** (tonnes and %): the change in tonnes and percentage change from the previous year.

### Water sources

Council utilises water from various sources, including:

1. **Mains water**: provided by SA Water and used in reserves and buildings around the City.
2. **Bore water**: Council has bores in two reserves, Hazelwood Park and Kensington Park Reserve. The bores provide water at very low cost (relative to mains water), but there are new limits on how much can be used. The two bores are now limited to 74 Megalitres per annum (combined).
3. **Recycled Water**: the Glenelg to Adelaide Parklands Recycled Water Project is commonly known as GAP water. The GAP scheme provides for the reuse of treated wastewater from the Glenelg wastewater treatment plant. The project is designed to reduce Adelaide's reliance on River Murray water, reduce wastewater being pumped into Gulf St Vincent, and increase water availability to support urban greening. Wastewater is filtered and disinfected before being

pumped to the Adelaide Parklands. The City of Burnside has access to this water near Fullarton Road and the water is used to water the reserve along Alexandra Avenue.

4. **ERA Water:** ERA Water is a regional subsidiary of three councils: Burnside, Walkerville and NPSP (Norwood, Payneham & St Peters). The ERA Water scheme provides Aquifer Storage and Recovery (ASR) capacity to Council. The scheme diverts creek water during high flows (e.g., winter) into Felixtow Wetlands. The wetlands clean the water, which is then pumped underground and stored in a natural aquifer. The water is then pumped out of the aquifer when it is required to water parks and reserves during the drier months.

### Water Sensitive Urban Design (WSUD)

WSUD involves integrating the sustainable use of water into urban areas. This approach to planning and urban design can include the management of rainwater, stormwater, groundwater, mains water and wastewater. Implementing WSUD typically involves measures to slow water flows, allow water to infiltrate, or capture water for later use. WSUD is often implemented to support urban greening. In practice, WSUD can be as simple as installing rainwater tanks to collect water or swales to slow water flows. At the other end of the spectrum, WSUD can be complex and involve multiple treatments, such as the construction of artificial wetlands to clean water for aquifer storage for subsequent use. There are many benefits of WSUD, including the support for urban greening (i.e., water management to support trees and vegetation). Urban greening has many associated benefits, such as urban cooling and the maintenance or improvement of neighbourhood character. WSUD features can also improve water quality and reduce downstream pollution (e.g., by reducing freshwater pulses into Gulf St Vincent).

Council utilises water from two large-scale WSUD sources, ERA Water (an Aquifer Storage and Recovery scheme) and the GAP scheme (treated wastewater). Council also implements many smaller-scale WSUD systems. Further information about Burnside's water management is available on Council's *Water Smart Burnside* website: [www.burnside.sa.gov.au/water-smart](http://www.burnside.sa.gov.au/water-smart)

#### Pictured below:

1. Tree planting on Pepper Street, Magill
2. A native, blue-banded bee (*Amegilla* species) at Gully Reserve
3. A Waxlip orchid (*Glossodia major*) in Cleland Conservation Park



## Appendix 2: Additional statistics

### Greenhouse gas emissions

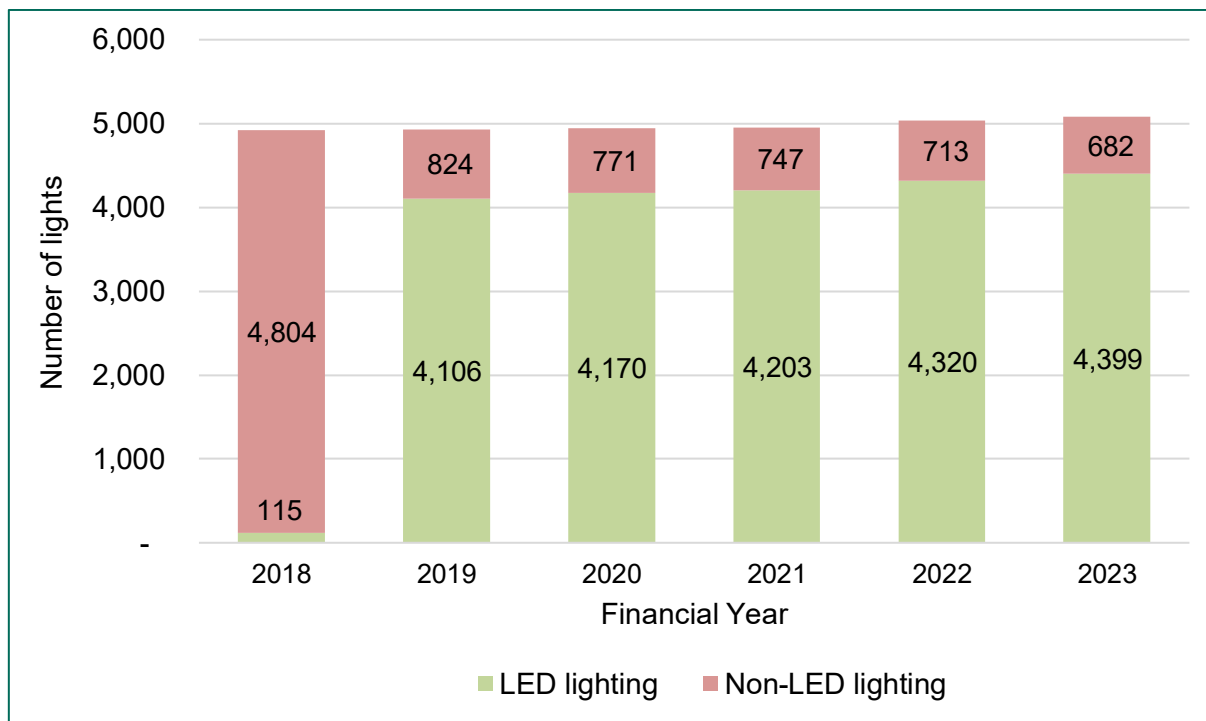


Figure 10. Streetlights by type (LEDs and non-LEDs), by year

### Carbon offsets

Table 9. Burnside Carbon Offset Scheme (B-COS) accounting, by year

Financial Year	Funds generated (\$ ex-GST)	Trees planted	Emissions offset (tonnes CO <sub>2</sub> -e)
2022	\$10,367	2,592	518
2023	\$11,773	2,943	589
<b>TOTALS</b>	<b>\$22,140</b>	<b>5,535</b>	<b>1,107</b>

## Biodiversity and trees

**Table 10. Season 2023: growing and planting statistics with data from previous years for comparison**

Year	2020	2021	2022	2023
<b>Plant growing:</b>				
Plants grown at Burnside Biodiversity Nursery	8,697	11,798	14,191	16,927
<b>Plants provided for planting on private land:</b>				
Native tree giveaway initiative	100	175	327	172
Biodiversity Nursery giveaway: trees	289	321	493	425
Biodiversity Nursery giveaway: shrubs/wildflowers/grasses	2,776	2,900	6,283	6,424
<b>TOTAL: plants provided for planting on private land (A)</b>	<b>3,165</b>	<b>3,396</b>	<b>7,103</b>	<b>7,021</b>
<b>Planting on public land:</b>				
Street tree planting	905	1,069	1,038	932
Urban Biodiversity site planting: trees	221	259	113	91
Urban Biodiversity site planting: shrubs/wildflowers/grasses	2,500	5,952	4,428	3,656
Hills Face Reserve planting: trees	381	241	304	250
Hills Face Reserve planting: shrubs/wildflowers/grasses	967	1,245	2,070	2,624
Park planting: trees	66	33	86	52
Park planting: shrubs <sup>1</sup>	1,970	335	5,112	1,510
Michael Perry Historic Garden (trees)		19	10	10
Michael Perry Historic Garden (other plants)	854	275	599	260
<b>Strategic project planting on public land by contractors:<sup>2</sup></b>				
Tree planting		51	8	
Terrestrial planting: shrubs/wildflowers/grasses		5,625	2,800	
Wetland planting		10,300		
<b>Subtotal: trees planted on public land</b>	<b>1,573</b>	<b>1,672</b>	<b>1,559</b>	<b>1,335</b>
<b>Subtotal: other plants planted on public land</b>	<b>6,291</b>	<b>23,732</b>	<b>15,009</b>	<b>8,050</b>
<b>TOTAL: planting on public land (B)</b>	<b>7,864</b>	<b>25,404</b>	<b>16,568</b>	<b>9,385</b>
<b>GRAND TOTAL: public and private planting programs (A+B)</b>	<b>11,029</b>	<b>28,800</b>	<b>23,671</b>	<b>16,406</b>

**Notes:**

1. Large numbers of shrubs were planted during 2022 because there was additional funding of an Ornamental Planting Program.
2. Strategic project planting by contractors includes planting at the redevelopment of Kensington Gardens Reserve/Kensington Wama during 2021 and 2022. These numbers have been added to this report for the first time in 2023.

## Waste and resources

**Table 11. Additional waste statistics: hard waste, bins and compostable bags, by year**

<b>Financial Year</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>
<b>Hard Waste</b>							
Hard waste bookings	4,163	4,416	4,142	5,161	4,584	4,819	4,436
Hard waste collections	3,682	3,894	3,556	3,672	3,855	3,920	3,560
Cancelled bookings	264	281	327	372	390	602	365
Bookings not collected (no items to collect on collection day)	217	241	259	352	339	297	357
Second collections within the financial year (paid by resident)	56	87	97	104	119	93	80
Number of customer requests relating to dumped rubbish	506	320	336	421	418	441	453
<b>Compostable bags (household bags provided free to residents)</b>							
Households provided with compostable bags	3,313	3,416	3,531	4,143	3,684	3,454	
Percentage of households in City of Burnside provided with compostable bags (including independent living households)	17%	18%	18%	21%	19%	17%	
<b>Bins</b>							
Bins reported as stolen or misplaced		207	187	199	276	192	
Bin repair requests		307	282	319	415	373	
Bins replaced due to irreparable damage		154	96	122	166	229	
Complaints to Ranger Services about bins being left out		22	27	33	28	23	
<b>E-Waste</b>							
E-waste (tonnes; sources include the monthly resident drop off to the Council Depot plus collection of illegally dumped e-waste; 2019/20 was the first full year of e-waste service at the Council Depot)			8.3	5.8	9.2	7.5	

## Appendix 3: Waste education activities

### Bin tagging

From September to December 2022, Council conducted a bin tagging trial project with support from Green Industries SA. This project was designed to provide direct feedback to households about their use of the organics (green-lidded) bins. The aim was to improve household use of organics bins. The project was based on the successful bin-tagging trial in Burnside during 2021.

Bin-tagging involved rapid visual inspections of bins when bins were on the verge. Feedback was provided in the form of informative tags (paper signs) attached to the bin handle. Households that used organics bins for food waste received a smiley-face bin tag, while households that disposed of food waste in landfill bins received a sad-face tag. Most households were checked three times as repetition is known to be effective in changing household behaviour.

During the project, 1,450 households were visited two or three times. Of the 977 households that were visited three times, a clear improvement in food waste management was observed. On the first visit, 253 households received smiley-faced bin tags for correctly disposing of food waste. By the third visit, 396 households received smiley-faced bin tags. Thus, 57% more households were correctly disposing of food waste.

### Council activities with schools and childcare centres

- **Saint Peter's Girls:** recycling engagement activities for Year 4 students, July 2022.
- **Norwood International High School:** delivery of 35 kitchen caddies and 70 compostable bag rolls, plus educational materials.
- **Seymour College:** circular economy presentation at all-school assembly, June 2023.
- **Glenunga International High School:** judging at Environment Expo, June 2023.
- **St Peters Girls:** recycling engagement activities for Year 4 students, June 2023.
- **Sustainability Story time at library,** June 2023.

### KESAB education (funded by Council, through East Waste)

- **Community:** Bees wax wrap session, July 2022.
- **Magill Primary School:** Presentation to staff meeting, October 2022.
- **Community 'Beyond the Kerb' bus tour,** November 2022 (pictured on next page, left).
- **St Peter's Girls School:** excursions to the KESAB Education Centre, May 2023.
- **Community 'Beyond the Kerb' bus tour,** May 2023.
- **Norwood International High School:** Whole school bin audit, February 2023 (pictured).



## Events and activities

- **Plastic Free July stall** at Civic Centre, July 2022.
- **Seed paper making workshop**, September 2022.
- **“Don’t waste your rates” flyer included with rates notice**, October 2022.
- **Garage Sale trail/National recycling week stall** at Lions Bookmart, November 2022 (pictured below right).
- **Garage Sale Trail (Reuse) stall**, November 2022.
- **National Recycling Week Stall**, November 2022.
- **Carols in the Park**, stall and bin monitoring, December 2022 (pictured below centre).
- **Sustainable Christmas decorations workshop**, December 2022.
- **Burnside Environment Day**, Waste education stall, March 2023.
- **Presentation at Regis Burnside**, March 2023
- **International composting week**, Civic Centre, May 2023.
- **International composting week**, Pepper Street, May 2023.
- **International composting week**, composting competition, May 2023.





## Appendix 4: Achievements on conservation trails

### Trail Header Boards

A series of new Trail Header Boards have been developed and installed at four locations on the Mt Osmond Trails network. Boards feature walking routes, safety information, trail etiquette and promote trail sharing. An additional Board featuring the Pioneer Women's Trail has been developed and installed at Brock Reserve in collaboration with the SA National Trust (pictured below left).

### Trails Map Plates

All Trail Map plates have been reformatted, updated and installed at 24 locations.

### New Trails

MS2-2 Wattle Park Link trail upgraded to an aggregate all weather surface, 263 metres long (pictured below centre).

### Section upgrades

A total of 669 metres of existing hills face trails have been remediated, with some badly eroded sections of the Pioneer Women's Trail being resurfaced, stormwater diverted from the trail and in some cases natural rock barriers to prevent short cutting and erosion installed.

### Wayfinding

A revised wayfinding system of trail markers has been developed for the Mount Osmond Trails and is in progress of being installed. This system will be rolled out over other hills face trails over the next few years (pictured below right, Wheal Watkins Circuit).

