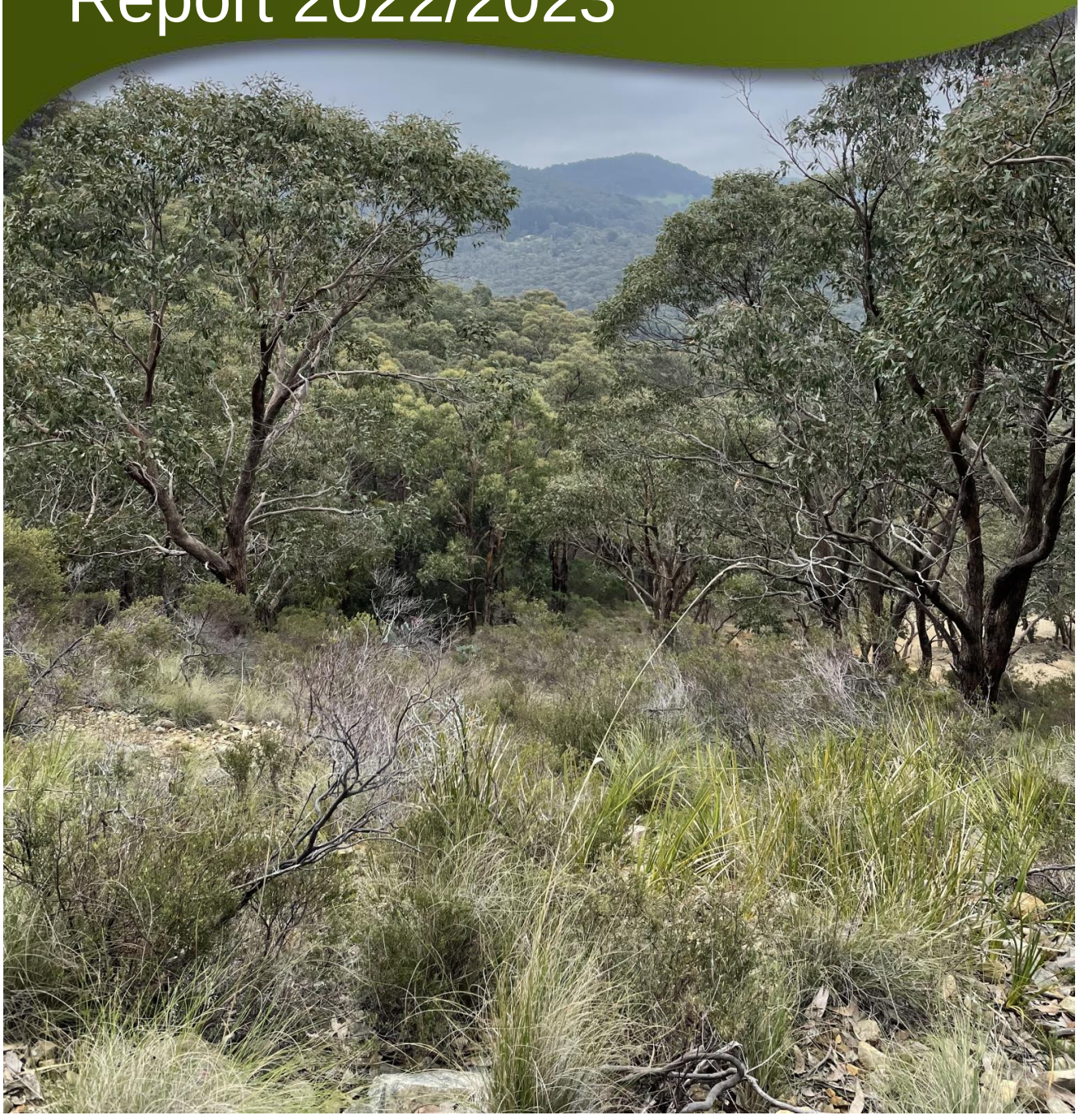
Macedon Ranges Shire Council | Strategic Planning & Environment

Annual Environment Report 2022/2023



Contents

Acknowledgement of Country **2**
Introduction **3**
Theme 1: Climate Emergency **4**
Theme 2: Biodiversity **18**
Theme 3: Water **33**
Theme 4: Waste **38**

Acknowledgement of Country

Macedon Ranges Shire Council acknowledges the Dja Dja Wurrung, Taungurung and Wurundjeri Woi-wurrung Peoples as the Traditional Owners and Custodians of this land and waterways. Council recognises their living cultures and ongoing connection to Country and pays respect to their Elders past, present and emerging.

Council also acknowledges local Aboriginal and/or Torres Strait Islander residents of Macedon Ranges for their ongoing contribution to the diverse culture of our community.

Introduction

The Environment Strategy (refreshed 2021) requires that its implementation be reported on annually through an Annual Environment Report, to document outputs (a summary of activities which contribute to achieving the strategy's actions) and outcomes (a report on the indicators listed in the strategy).

The Environment Strategy is not due for review until 2026. However, as knowledge and experience about the various aspects involved in implementing and monitoring actions becomes available, the format and content of the Annual Environment Report differs from year to year.

The Annual Environment Report is a useful tool to monitor progress against Councils zero net emission by 2030 target. The report also covers activities directed as part of the implementation of the Biodiversity Strategy, Roadside Conservation Management Plan and Environment Management Plans and Master Plans for Council managed environment and waterway reserves.

Dja Dja Wurrung Smoking Ceremony at Malmsbury Common Reserve as a part of the launch of the Reconciliation Action Plan during the Shire Autumn Festival and Reconciliation Week.

Theme 1: Climate Emergency

Highlights

- ✓ Adopted the Counting Down to Zero Net Emissions for Council Operations Plan by 2030.
- ✓ Conducted a comprehensive engagement program ('Cool-ER Changes') for the development of the shire's first Climate Emergency Plan, collaborating with residents, community groups, local and regional agencies and state government departments.
- ✓ Hosted the Cool-ER Changes launch event at the Kyneton Town Hall, showcasing community action on climate change, and including an interactive activity to inform the vision for the Climate Emergency Plan. The event was attended by over 100 participants.
- ✓ Completed community climate change action plans for Kyneton and Macedon / Mt Macedon.
- ✓ Cool Changes program placed as a 'finalist' at the LGPro Awards for Corporate and Community Planning.
- ✓ Completed an internal Climate Risk Assessment to inform Council's risk register.
- ✓ Installed additional solar panels and battery capacity to enable Macedon Community Centre and Romsey Recreation Centre to become 'off-grid' Relief Centres.
- ✓ Participated in the Community Carbon Offset pilot program, led by North Central Catchment Management Authority.
- ✓ Supported the installation of three public, fast charging electric vehicle charging stations in Macedon, Kyneton and Lancefield.
- ✓ Installed electric vehicle charging stations at Council offices in Gisborne, Kyneton and Woodend and commenced the fleet transition with the purchase of the organisations first fully electric vehicle.
- ✓ Purchased four 'Sustainable House Kits' for residents to use free of charge with a Goldfields Library card.

Noted by Council on 25 October 2023

Indicator 1: Greenhouse gas emissions from Council operations

1.1 Total Council emissions

Counting Down to Zero
On 14 December 2022, Council adopted Counting Down to Zero, a guide for meeting its target of zero net emissions for its operations by 2030. Recognising that Council can increase its accountability for emissions associated with delivering its services, the target was framed as:

> ***Zero Net Emissions for Council operations by 30 June 2030, from the baseline of 3,260.6* tonnes CO2-e at 30 June 2022.***
> *or as retrospectively amended to account for additional indirect sources of greenhouse gas emissions.

The baseline figure includes emissions Council is directly responsible for generating in undertaking its operations, and emissions that Council is indirectly responsible for generating, via contracted services for the collection and transportation of different waste streams from across the shire. The baseline figure will be amended over time, as information about other indirect sources of emissions associated with Council operations becomes available and can be included in Council's greenhouse gas emissions inventory, and as carbon accounting methods are refined.

The baseline figure excludes electricity as a source of greenhouse emissions, as all of Council's electricity is now sourced through a Power Purchase Agreement for 100% renewable energy, the Victorian Energy Collaboration (VECO).

Figure 1 shows that total emissions from Council's direct operations and contracted waste management services) increased to 3,569.5 tonnes CO2-e in 2022-2023, almost 300 tonnes more than the 3,260.6 tonnes CO2-e generated in 2021-2022 (amounts for both years include all "scopes" for all sources of emissions).

The increase in emissions is due to Council's increased consumption of gas and fuel, possibly due to the absence of pandemic-induced restrictions in 2022-2023 compared to 2021-2022, and associated increase in travel by staff.

The decrease in emissions associated with contracted waste services corresponds with a reduced amounts of waste generated in the shire in 2022-2023 compared to 2021-2022 (see chapter on Waste).

Council will need to make concerted efforts to reduce emissions generated from its use of fossil fuels over the next few years, to minimise the need for purchasing offsets in order to reach and maintain its zero net emission target.

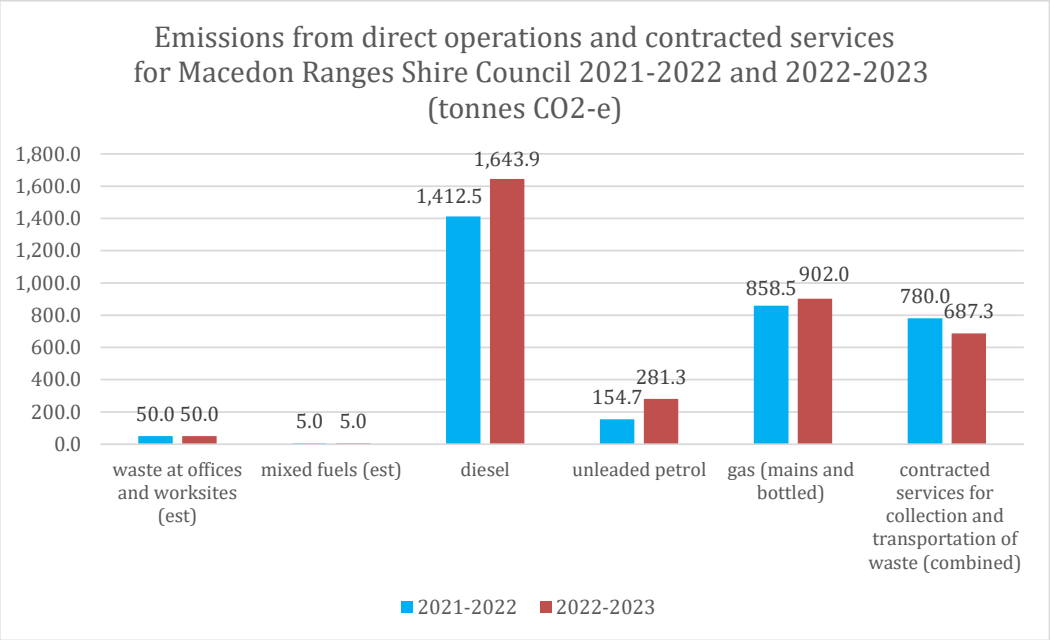


Figure 1: Emissions from Council operations for 2021-2022 and 2022-2023 (tonnes $CO2^{-e}$ by source)

1.2 Council emissions from electricity

As noted above, the Victorian Energy Collaboration (VECO) enables Council to source its electricity requirements as 100% renewable energy, effectively meaning that there are no emissions are associated with electricity usage at Council managed facilities.

However, this is not a reason for Council to stop investing in energy efficiency or working to reduce electricity consumption. Council still needs to pay for electricity, and any costs avoided can be allocated to ongoing investment in assets to improve their environmental performance.

Council can measure progress in improving energy efficiency through its total consumption of electricity. In 2022-2023, Council used approximately 3,332MWh to power its buildings and streetlights, compared to 3,312MWh used in 2021-2022. Figure 2 below shows the increased usage for streetlights compared to all other powered assets (combined), in kWh.

The increase in electricity consumption is likely due to an increased use of sites due to the absence of pandemic-induced restrictions in 2022-2023, and the installation of additional streetlights associated with new developments.

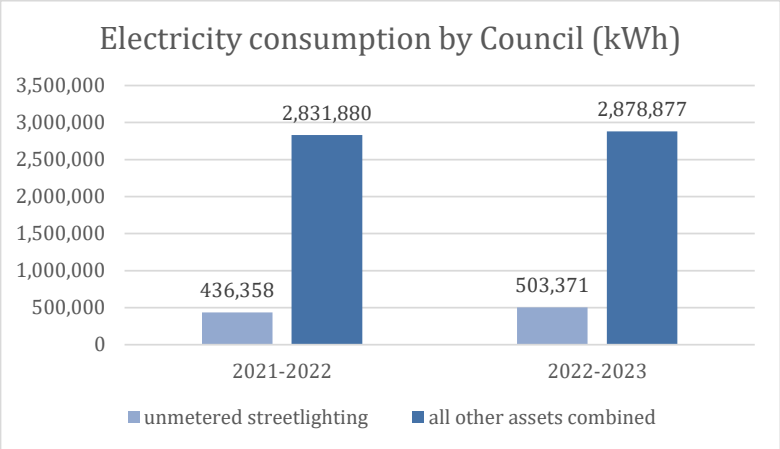


Figure 2: Electricity consumption by Council, 2021-2022 and 2022-2023 (kWh)

1.3 Council emissions from fuel

In 2022-2023, emissions associated with the use of unleaded petrol for fleet vehicles and heavy vehicles increased from 2021-2022, whereas the emissions associated with use of diesel for fleet and plant decreased slightly (as seen in figure 3).

While Council will be able to work to reduce emissions from use of unleaded fuel, reducing emissions from the use of diesel while still delivering services presents a greater challenge into the future.

Note: The baseline figure for emissions shown in Figure 1 includes all “scopes”, whereas Figure 3 below only shows Scope 1 emissions, to allow for direct comparison with data from previous years.

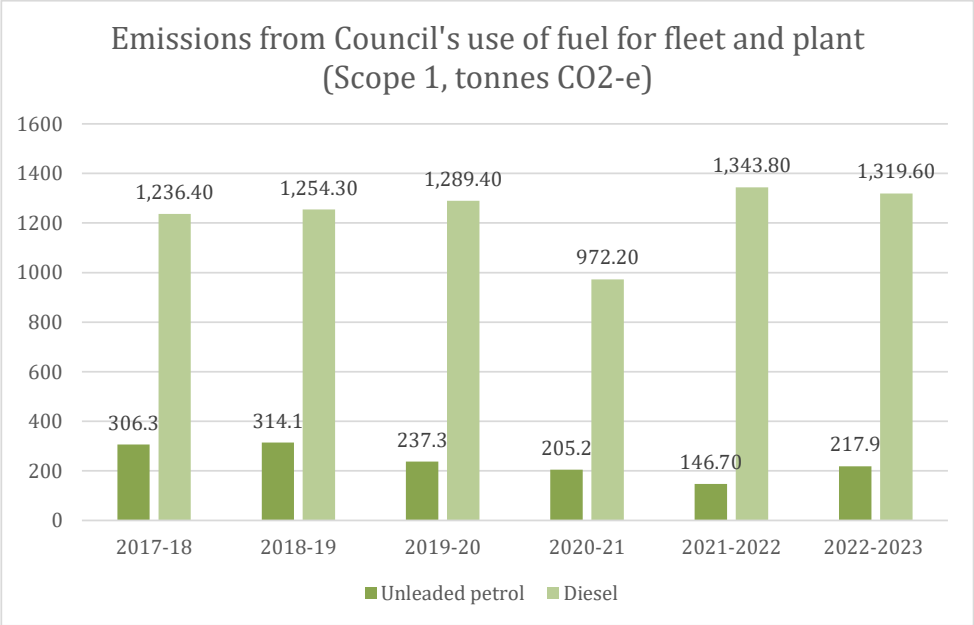


Figure 3: Emissions from Council’s use of fuel for fleet and heavy vehicles (plant)

1.4 Council emissions from mains gas and LPG

In 2022-2023, Council's use of mains gas resulted in 902 tonnes $CO2^{-e}$ of greenhouse gas emissions (including 837 tonnes CO2-e of Scope 1 emissions, an increase from the 796.8 tonnes CO2-e noted in last year's report).

While Council's use of mains gas increased in 2022-2023 (most likely due to increased use of sites due to the absence of pandemic-induced restrictions), use of cylinder LPG gas decreased, resulting in 1.5 tonnes CO2-e (compared to an estimated 2 tonnes CO2-e in 2021-2022), bringing total (Scope 1) emissions to 838.5 tonnes CO2-e.

The implementation of Counting Down to Zero will see emissions from gas consumption for Council operations decrease over the next few years. The greatest impact will be from converting the gas boilers at the two aquatic centres to electric heat pumps, to reduce emissions by approximately 795 tonnes CO2-e / year.

Note: The baseline figure for emissions shown in Figure 1 includes all "scopes", whereas Figure 4 below only shows Scope 1 emissions, to allow for direct comparison with data from previous years.

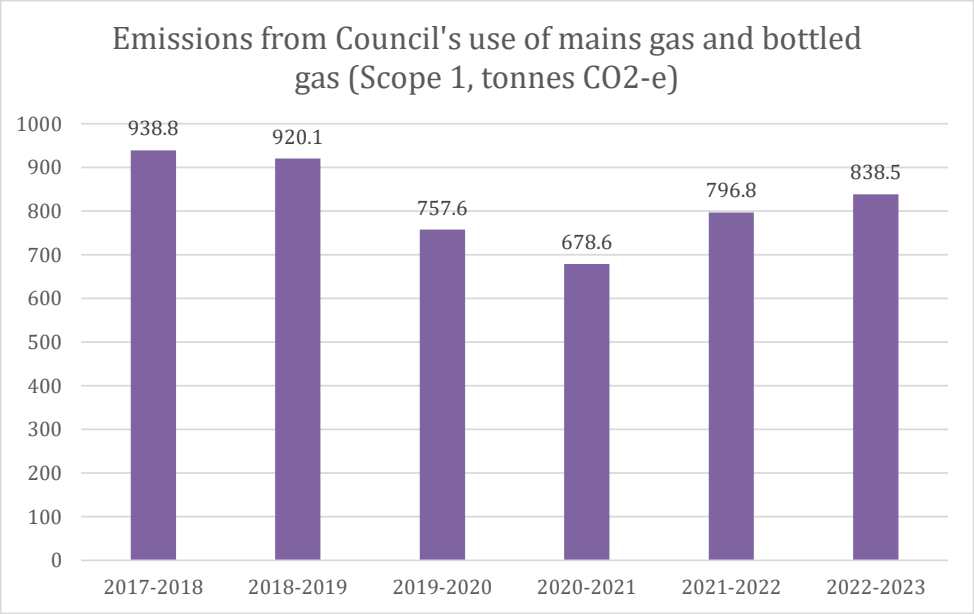


Figure 4: Emissions from Council's use of mains gas and bottled gas (LPG)

1.5 Emissions from collection and transportation of waste streams by contracted services

Council engages contractors to collect and transport various waste streams from across the shire. Council first reported on this indirect source of emissions in 2021-2022, and incorporated the corresponding 780 tonnes CO2-e into its emissions profile. It is difficult to obtain an accurate figure for this source, due to e.g. differing amounts of emissions due to differing weights in empty, partially and fully loaded trucks. Emissions associated with the contracted waste management services are

calculated based on distances travelled, vehicle type, fuel type, and fuel consumption, using published coefficients in calculations.

Figure 4 below shows emissions from contracted waste services for 2022-2023. The total figure of 687.3 tonnes CO2-e is more than 95 tonnes CO2-e less than the figure reported for 2021-2022. This seems reasonable, given the lower volumes of waste generated within the shire in 2022-2023 compared to 2021-2022 (see chapter on Waste).

Note: The Municipal Resource Recovery Facility (where recyclable materials are delivered to) and the receiving landfill site for general waste are located adjacent to each other, and as each waste stream is serviced on alternating fortnights, the distances travelled and corresponding emissions are the same.

Figure 5: Emissions from waste management services contracted by Council 2021-2022

1.6 Council emissions from kerbside waste

Council currently does not account for emissions associated from the disposal of the four streams of kerbside waste, as the waste is generated by the community and waste management facilities are located outside of the shire. Emissions associated with the collection and transportation of kerbside waste from contracted services commissioned by Council are reported in 1.5 above.

Indicator 2: Greenhouse gas emissions across the shire

2.1 Total community emissions

Snapshot Climate provides the most reliable readily available source of data for emissions from across the shire. This data was compiled by consultants Ironbark Sustainability working with Beyond Zero Emissions for 2020-2021 in accordance with

the Global Protocol for community-scale greenhouse gas inventories. Data shown is the most recent available and is an update on last year's environment report.

Snapshot Climate estimates that total emissions for Macedon Ranges Shire was 571,000 tonnes $CO2^{-e}$ for 2020-2021. More recent data is not yet available.

Figure 6 shows emissions by source (center ring) and sector (outer ring).

Snapshot Climate continues to improve its data collection methods and, as such, more inclusions are represented each year. New data in the shire emissions profile include:

- Industrial Processes & Product Use
- Scope 2 emissions associated to agricultural data
- Improvements to waste and wastewater emission data collection

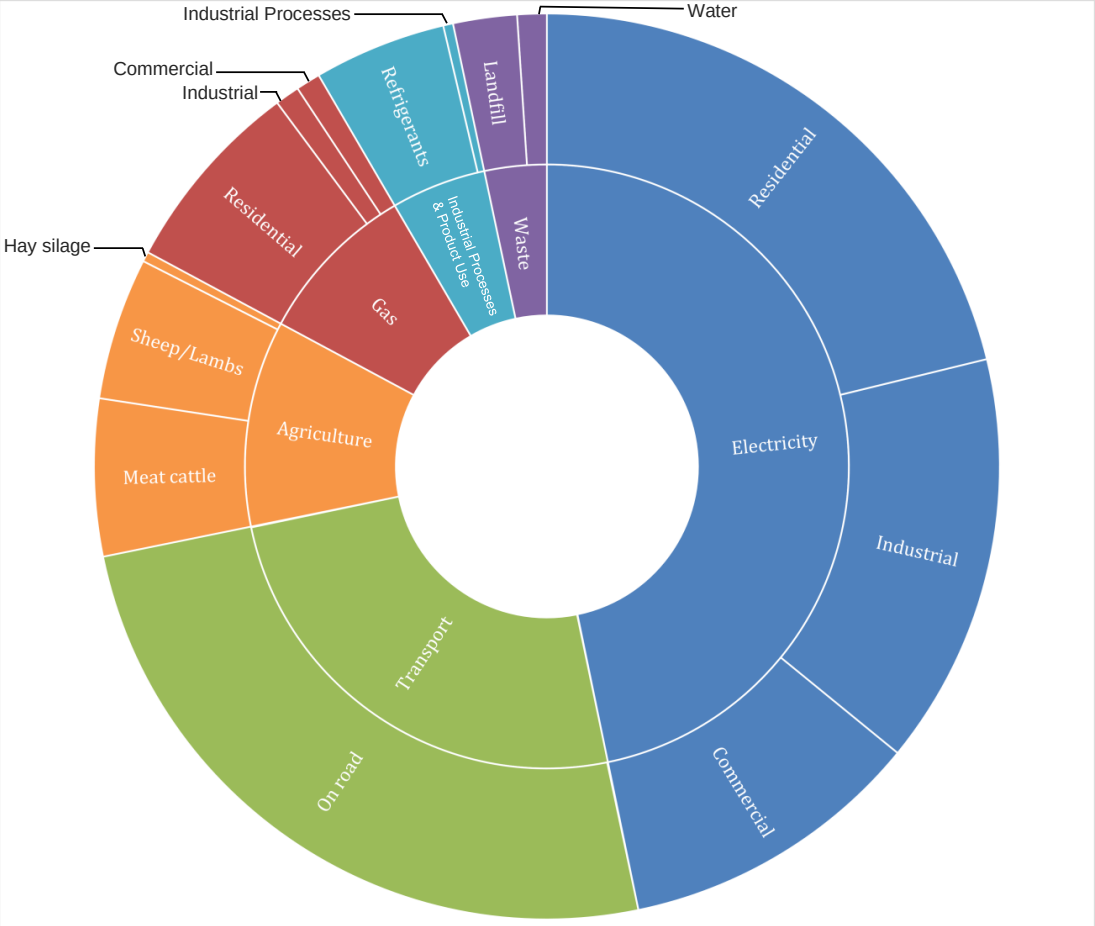


Figure 6: Total municipal emissions by source and sector 2020-2021
Source: snapshotclimate.com.au

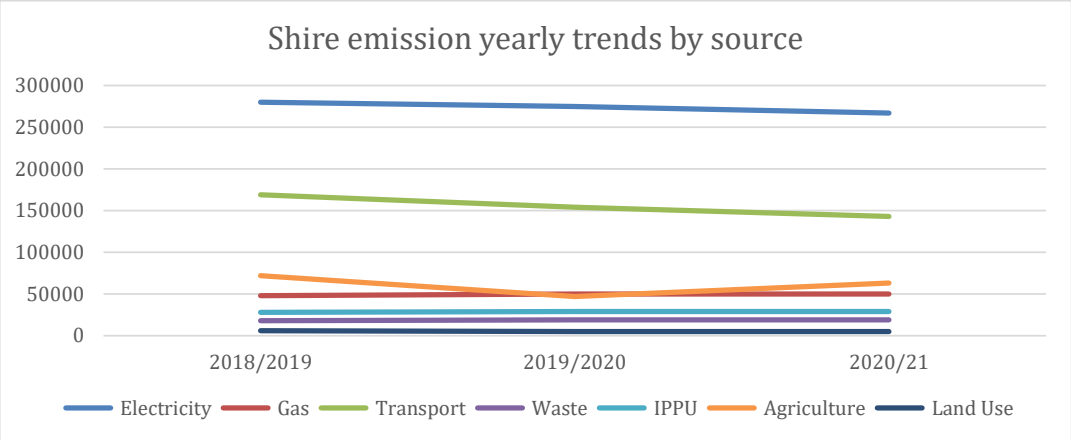


Figure 7: Community emissions by source 2018-2019 to 2020-2021
Source: snapshotclimate.com.au

Figure 7 shows limited downward trends with the shire emissions by source, indicating the need for more actions to address key causes of climate change. The incoming Climate Emergency Plan (developed to address both Council and community emissions) aims to accelerate action across the shire.

Note: all previous financial year data sources are updated with latest methodology as to enable consistency in comparison.

2.2 Community stationary emissions (electricity and gas)

Emissions associated to electricity use across the residential, commercial and industrial sectors represents the highest source of emissions throughout the shire.

Table 1 shows total stationary emissions (electricity and gas) from the residential, commercial and industrial sectors across the shire. The residential sector presents the highest total of emissions from electricity and gas use with 161,000 tonnes $CO2^{-e}$, equating to approximately 50% of the shires stationary emissions total. The commercial sector represent 21% of the shire stationary emissions and the industrial sectors represents 28% of the shires stationary emissions.

Table 1: Community emissions from electricity and gas use across the residential, commercial and industrial sectors

	Electricity (t CO2-e)	Gas (t CO2-e)	Total (t CO2-e)
Residential	121,000	40,000	161,000
Commercial	62,000	5,000	67,000
Industrial	84,000	5,000	89,000
Total	**267,000**	**50,000**	**317,000**

2.3 Community emissions from transport

Community emissions from transport in the shire equates to 143,000 tonnes $CO2^{-e}$, roughly 25% of the shires total emissions. Approximately 30% (42,900 tonnes $CO2^{-e}$)

is represented by 'freight', whilst the remaining 70% (100,100 tonnes $CO2^{-e}$) is contributed by automotive vehicles. Whilst historic data shows a decline in transport emissions (likely due to a societal shift to working from home), it still remains the second highest source of emissions in the shire emissions profile.

Indicator 3: Extent of the shire's transition to sustainable transport

3.1 Extent of the shire's cycling network (on road)

In 2022-2023, an additional 400m of on road cycle path were constructed, adding to the 10km of on-road cycling tracks within the shire. There were also 2.9kms of shared paths constructed (included in the total kms of footpath reported below in 3.2).

Macedon Ranges Shared Trails Project
Work has progressed on the $11.24 million Macedon Ranges Shared Trails Project that will deliver approximately 24 kilometres of trail for walking, running, low-volume cycling and commuting. The trail will extend from Woodend in the north to Riddells Creek in the south and will be constructed in several stages.

In 2022-2023, a short section within the Woodend township was completed (Stage 1A). The project is expected to take approximately two years to construct subject to approvals and weather, with completion scheduled for mid-2024. The Macedon Ranges Shared Trails Project is supported by the Victorian Government through the Crisis Committee of Cabinet – Infrastructure Stimulus Fund.

A constructed section of Stage 1A of the Macedon Ranges Shared Trail in Woodend

3.2 Extent of the shire's walking network

In 2022-2023, Council added 19.63kms of footpath in the shire (2.9km of footpaths with a minimum width of 2.5m are considered to be shared paths), taking the total distance of footpaths maintained by Council to 244 kilometres. Different surfaces (concrete, sealed, paved, or more natural surfaces like gravel and sand) require differing levels of maintenance to ensure people can safely enjoy the health and environmental benefits of walking.

The increase in walking infrastructure is shown in Figure 8 below. Council also maintains 67 footbridges, an increase of two since 2021-2022.

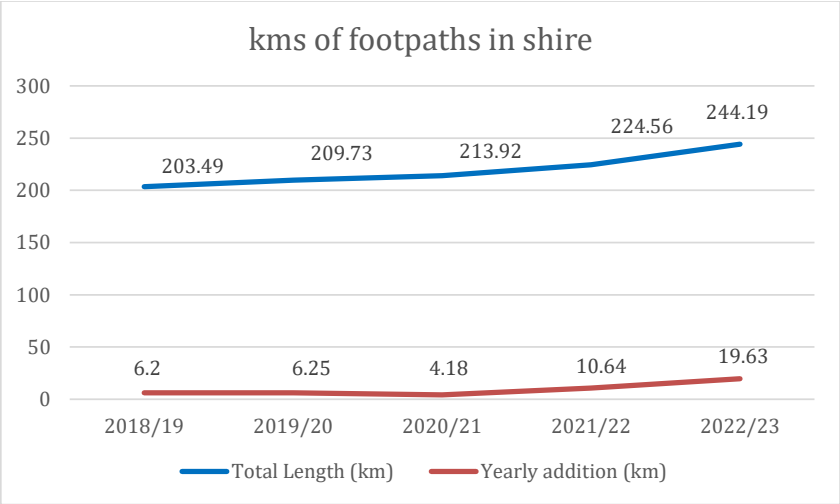


Figure 8: Kilometres of footpaths in the shire

3.3 Number of public electric vehicle charging stations in the shire

There are now five public universal electric vehicle charging stations in the shire. Two are located in Kyneton, and one each in Woodend, Macedon and Lancefield. An additional exclusive Tesla charging station is located on private land but available for public use in Kyneton.

Council is continuing to seek funding for charging stations in Malmsbury, Romsey, Gisborne and Riddells Creek to ensure regional electric vehicle connectivity.

3.4 Use of public electric vehicle charging stations

The 2022-2023 Kyneton electric vehicle charging station data indicates a total saving (when replacing Internal Combustion Engine vehicles) of 34,073.76 CO2-e/kg. Recording an overall increase when comparing to a saving of 10,966 CO2-e/kg in 2021-2022. Additional data showed a total of 1688 sessions with an average charging time of 32 minutes.

Savings in greenhouse gas emissions through use of the Kyneton charging station over the past 12 months compared to previous 12 months is shown in Figure 9.

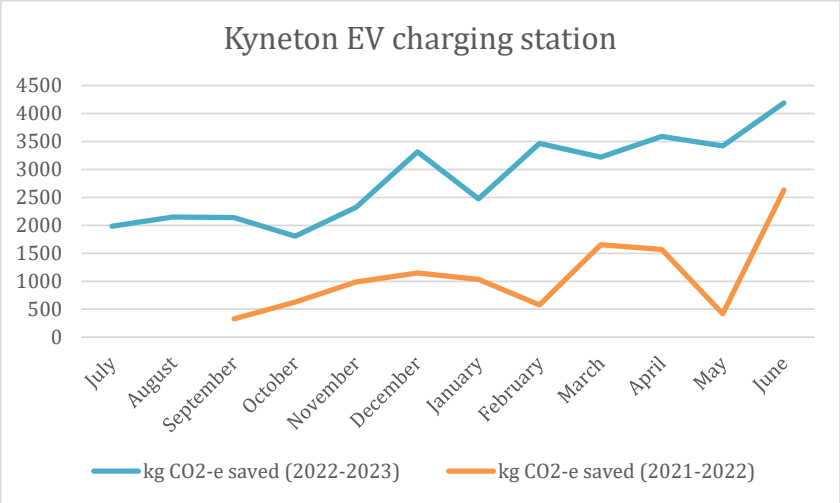


Figure 9: kg CO2-e saved by use of Kyneton EV Charging Station

The 2022-2023 Woodend electric vehicle charging station data indicates a total saving (when replacing Internal Combustion Engine (ICE) vehicles) of 21,535.85 CO2-e/kg. Recording an overall increase when comparing to a saving of 6,764 CO2-e/kg in 2021-2022. Additional data showed a total of 1,172 sessions with an average charging time of 27 minutes.

Savings in greenhouse gas emissions through usage of the Woodend charging station over the past 12 months compared to previous 12 months is shown in Figure 10.

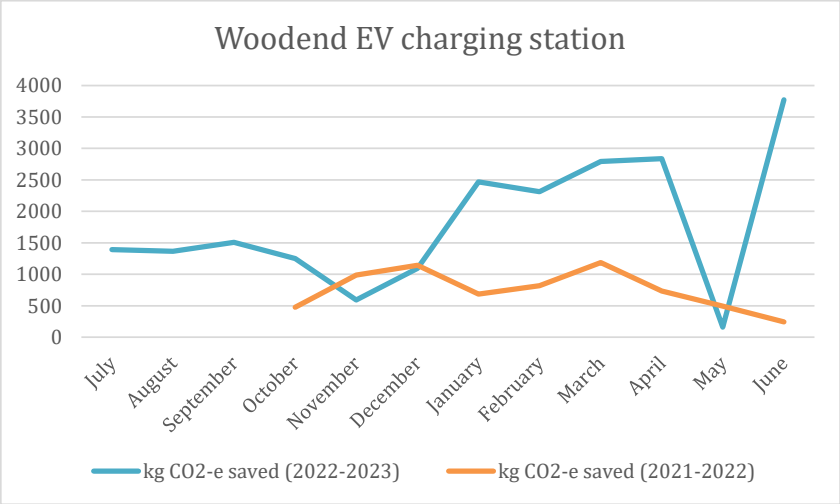


Figure 10: kg CO2-e saved by use of Woodend EV Charging Station

CO2e-kg saved replacing ICE vehicles compares the CO2e- kg emitted based on average state GreenPower energy generation, and the average ICE CO2e-kg output per unit of energy generated.

3.2 Number of electric vehicles in Council fleet

State Government funding resulted in charging stations being installed at all three of Council office locations (Gisborne, Kyneton, and Woodend) to assist the commencement of Council's passenger fleet transition.

As of 30 June 2023, the organisation had purchased its first electric vehicle in Council's fleet and had further two on order. Council has 24 hybrid vehicles and 1 plug in hybrid vehicle in the fleet.

Indicator 4: Community climate change action

Roof top solar
According to the Australian Photovoltaic Institute (APVI), there were 7,917 roof top solar systems within the shire at 28 June 2023 (of an estimated total of 23,285 available roof tops). This equates to 34% of roof tops, almost 10% higher than the state average of 24.5%.

The upward trend in roof top solar installation is shown in Table 2 below. This data is for roof top solar systems only and, therefore, does not capture solar arrays installed at ground level.

Table 2: Roof top solar systems in the shire (APVI website, accessed 28 June 2023)

Size of solar system	number systems 2019-2020	number systems 2020-2021	number systems 2021-2022	number systems 2022-2023	Total kW installed 28 June 2023
Less than 10kW (residential)	4,977	6,131	6,714	7,089	**52,533**
10kW - 100kW (residential and commercial)	258	474	648	826	**13,763**
Greater than 100kW (commercial)	3*	3*	2	2	**1,811**
Total	**5,238**	**6,608**	**7,364**	**7,917**	**48,107**

*This figure seems unlikely. It is expected that previous years have been reported incorrectly.

Community Climate Action Planning - Cool Changes
In 2022-2023, Council continued to deliver this community-led, place-based program, Cool Changes. Two additional community climate action plans were created for the townships of Kyneton and Macedon / Mount Macedon.

Additionally, Council hosted 'check-in' meetings with residents of Malmsbury, Woodend and Romsey / Lancefield to assist with the progress of actions and projects identified within plans developed in previous years.

Kyneton

Cool Changes: Kyneton took particular focus towards nature-based solutions to climate change and presents tangible action towards urban biodiverse habitat creation. This has resulted in the Kyneton Habitat Initiative which aims to assist Kyneton

residents to plant out habitat gardens to increase the resilience of fauna in a climate crisis. Kyneton Habitat Initiative is looking to grow its volunteer base and participating residents.

Cool Changes: Kyneton was designed and delivered in partnership with Kyneton Community House. Council would like to formally thank the Kyneton Community House for its contribution.

Macedon / Mount Macedon

Cool Changes: Macedon / Mount Macedon showed strong desire to explore the intersection of community resilience and climate change. 'Connection to Place' and 'Connection to People' proved to be a strong focus for many, grounded in the thought that these two concepts enhance a community's resilience to climate change and ability to respond. The group will look towards educational packages that build connections and capacity.

Cool Changes: Macedon & Mount Macedon was designed and delivered in partnership with Macedon & Mount Macedon Community House. Council would like to formally thank the Macedon & Mount Macedon Community House for its contribution.

Feedback from Cool Changes: Kyneton participant:

I have been following the progress on the plantings with interest though. From my side, I've been busy putting my money where my mouth is from our last meeting:
- joined MRSG
- signed up for their 'GREG' Go Renewable Energy Group
- installed a new super efficient hot water unit
- installed a new super efficient AC unit
- have 14kW of solar and a battery + EV charger being installed next week
- have a battery EV on order expected in a couple of weeks

So will have plenty to tell at next meeting about getting off gas, wood and diesel with the help of MRSG and [business] partners.

Table 3: Participants engaged with the Cool Changes Program at public events and tailored workshops.

What	When	Where	Attendees
Cool Changes: Riddells Creek, Implementation Meeting	27-Sep-22 2-Nov-22	Riddells Creek Neighbourhood House	10
Cool Changes: Gisborne, Implementation Meeting	29-Sept-22	Gisborne Library	3
Cool Changes: Malmsbury, check-in	9 Oct '22	Malmsbury Town Hall	8
Cool Changes: Kyneton	10 Oct '22, 17 Oct '22, 20 Oct '22, 24 Oct '22	Kyneton Community House	20
Cool Changes: Woodend, check-in	11 Nov, '22	Woodend Community Centre	17

Cool Changes: Macedon & Mt Macedon	16 Nov '22, 23 Nov '22, 30 Nov '22	Macedon / Mt Macedon Community House	15
Cool Changes: Kyneton, Implementation Meeting	27 Feb '23	Online	5
Cool Changes: Macedon & Mt Macedon, Implementation Meeting	23 Mar '23	Macedon / Mt Macedon Community House	10

Collaborative Community Climate Planning – Cool-ER Changes

Throughout the March – June 23, Council undertook the engagement process of a collaboratively designed Climate Emergency Plan 2023-30.

Table 4: Participants engaged with the Cool-ER Changes workshops

What	When	Where	Registered
Cool-ER Changes: Launch Event	2 Mar '23	Kyneton Town Hall	120
Nurturing Nature workshop	16 Mar '23	Gisborne Community Centre	31
Climate-ready Communities workshops	30 Mar '23	Kyneton Library	28
Post Fossil Fuels workshop	20 Apr '23	Gisborne Community Centre	21
Health & Wellbeing workshop	4 May '23	Romsey Mechanics Institute	20
Waste & Circular Economy workshop	18 May '23	Romsey Mechanics Institute	20
Adaptation & Emergence Response workshop	1 Jun '23	Woodend Community Centre	18

The draft Climate Emergency Plan is currently in development and will be available for public feedback in late 2023.

Theme 2: Biodiversity

Highlights

Biodiversity monitoring

- ✓ Completed nest-box surveys, Bird Blitz, Koala count and community spotlighting events.
- ✓ Undertook a wildlife camera monitoring program at Hanging Rock Reserve with a Brush-tailed Phascogale captured on camera.
- ✓ Community surveys identified an additional 500 Clover Glycine (*Glycine latrobeana*) plants at Bald Hill Reserve.

Plans and assessments

- ✓ Completed Barrm Birrm Ecological Assessment and Cultural Heritage Assessment.
- ✓ Completed a Cultural Heritage Assessment in Barringo Reserve.
- ✓ Completed the draft Environment Management Plan for Stanley Park

Healthy Landscapes – Practical Regenerative Agricultural Communities Program

- ✓ In the Macedon Ranges, the Healthy Landscapes program saw: 60 property visits, three equine discussion groups, four discussion groups, four field days/workshops, and two cultural engagement sessions. A total of 317 participants registered for events.

Conservation Reserves

- ✓ Completed a Kangaroo Ushering Manual for special events at Hanging Rock Reserve, to protect both the visitors and the kangaroos.
- ✓ Delivered Ecological Burn at Malmsbury Common over approximately three hectares.
- ✓ Improved protection of Barrm Birrm through the installation of large tree stumps at multiple vehicle breach points.

Community involvement

- ✓ 420 participants in our biodiversity related events.
- ✓ 208 new subscribers added to Environment eNews, bringing the total to 1851 subscribers.
- ✓ Supported the Macedon Field Naturalists Group, with a threatened species forum with over 80 attendees.
- ✓ Supported the formation of the Macedon and Mt Macedon Landcare Group.

Vegetation protection

- ✓ Provided environment responses to 318 planning permit referrals ensuring native vegetation removal is kept to a minimum.

Indicator 1: Biodiversity across the shire

1.1 Presence and abundance of biodiversity indicator species

Biodiversity Monitoring Program
Council's Biodiversity Monitoring Program assesses how Council is tracking against the five objectives in the *Biodiversity Strategy 2018*. Four species are used as indicators of broader ecosystem health – the Brush-tailed Phascogale, Powerful Owl, Greater Glider and the Brown Treecreeper (as part of the temperate Woodland Bird Community).

To monitor these species, Council undertakes the following annual activities:

Table 5: Biodiversity Monitoring Program

Monitoring activity	No. sites	Target species
Nest box checks (x144)	48 sites	Brush-tailed Phascogale
Spotlight surveys	16 sites	Brush-tailed Phascogale, Greater Glider and Powerful Owl
Bird Blitz surveys	84 sites	Woodland birds

The monitoring sites have been selected based on a stratification of Council's six biolink areas plus two forest blocks (Wombat and Cobaw state forests). Additional monitoring activities occur on and ad hoc or as needs basis to monitor the presence and population health of specific species.

In 2022-23 Council also completed fixed monitoring plot surveys in Bald Hill, Hobbs Road (Capping), Old Ashbourne Road, and Mt Gisborne Reserves as part of the flora monitoring program.

Birds
The 2022 Bird Blitz day on 16 October was cancelled due to severe weather and flooding – but the birds were still surveyed! Bird surveys were undertaken at 84 monitoring sites across the shire by 15 staff and volunteers. The event recorded 86 species with greater species diversity observed in the Mount William, Upper Coliban and Kyneton Biolinks, as shown in Figure 11.

Some notable findings were:

- The Grey fantail and the Crimson Rosella were the two most observed species.
- Surprisingly, the Yellow-faced Honeyeater was observed more frequently than Australian Magpie.
- A Peregrine Falcon was recorded at Red Gap Road in the Mount William biolink.

The outcomes of Council's annual Bird Blitz will become more meaningful each year as annual data is able to be compared and trends are able to be observed.

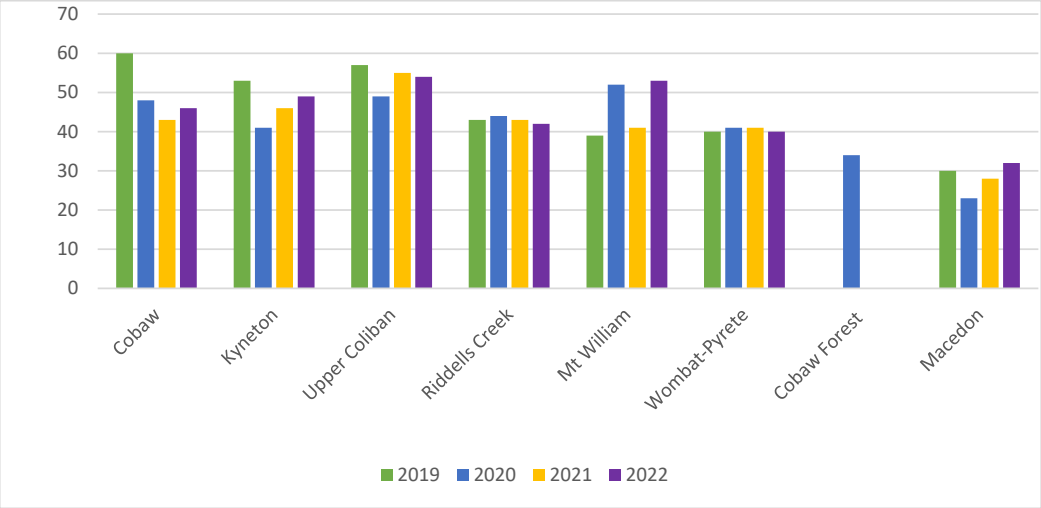


Figure 11: Number of bird species recorded during the annual Bird Blitz events by biolink

Brown-headed Honeyeater was the only member of the Threatened Woodland Bird Community observed in Kyneton Woodlands and Mount William and Cobaw biolinks. These biolinks contain woodland bird habitat, whereas Macedon and Riddell are forest bird habitat.

Low numbers of introduced bird species were recorded across all biolink areas.

Table 6: Threatened species and introduced birds recorded during 2022 Bird Blitz

Biolink	Threatened Species	Introduced birds
Cobaw	Brown-headed Honeyeater	Common Blackbird, European Starling
Kyneton Woodlands	Brown-headed Honeyeater	-
Macedon	-	Common Blackbird
Mount William	Brown-headed Honeyeater	Common Myna
Riddell	-	Common Blackbird, Common Myna
Upper Coliban	Gang-gang Cockatoo	Common Blackbird, Common Myna
Wombat Pyrete	-	European Starling
Total	2 species	3 species

Peregrine Falcon, recorded during the 2022 Bird Blitz in the Mount William Range Biolink.

Council's Nestbox Program

In 2022-23, Council inspected the majority of Councils nest boxes installed across 48 biodiversity monitoring sites across Council's six biolink areas. The outcomes of this survey of 142 nest boxes are shown below. In summary:

- 7.7% of boxes were being used by Brush-tailed Phascogale, a steady rate of occupation since the 2021 survey
- 26% of boxes were used by Sugar Gliders (up from 16.6% in 2021)

Nest box occupancy across biolink areas varied and is likely to reflect the variation in habitat. Further meaning will be extracted from the nest box surveys in future years as Council gathers further information about patterns and trends in occupancy.

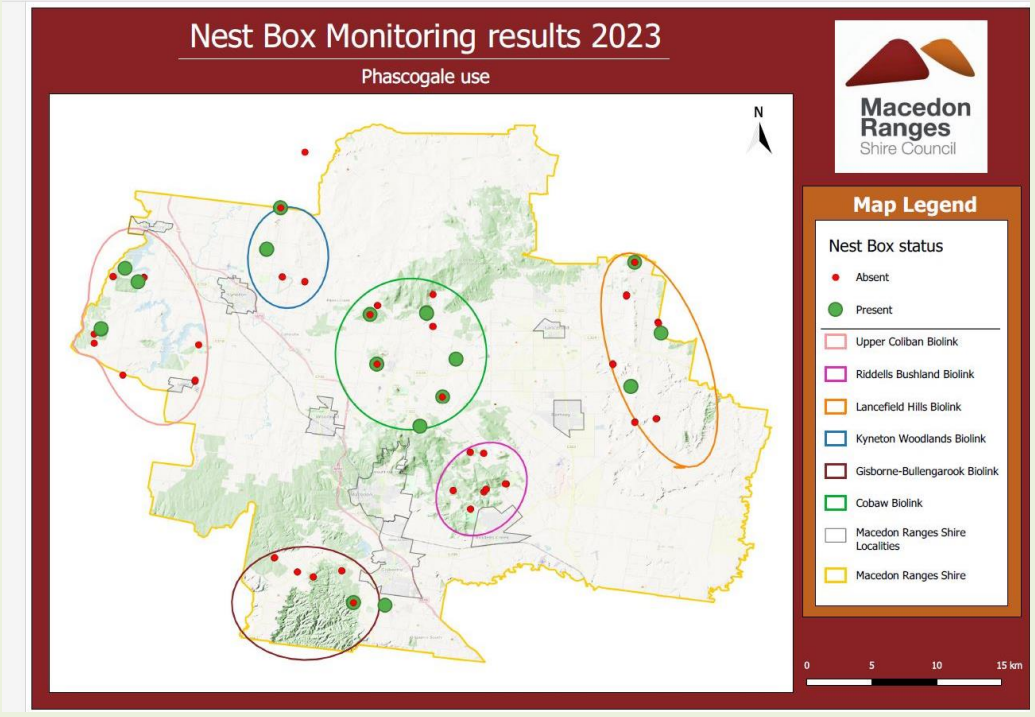


Figure 12: Phascogale occupancy by biolink area

Spotlighting Program
In April 2022 the Environment Unit held spotlighting events in each of our biolink areas and recorded 91 individuals of 14 species. Common Ringtail Possums were found in across all six biolinks. Ringtails are an important prey species for one of our indicator species, the Powerful Owl.

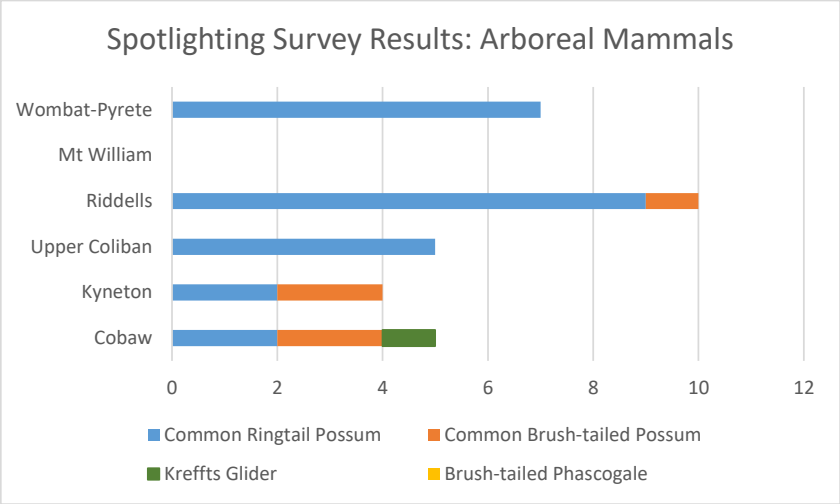


Figure 13: Species and numbers of mammals observed by biolink area

Common Ringtail Possums by volunteer and photographer Helen Evans

Indicator 2: Conservation value of Council managed land

2.1 Treated weeds on roadsides

Roadside weed control program
The 2022-2023 roadside weed program proved to be a challenging year for weed control, given the unpredictable wet weather experienced at start of the treatment program. This year Council treated 231 roadsides and council managed areas as part the annual weed control program. All of the weeds treated under the roadside weed control program are listed as Regionally Controlled or Restricted in at least one of the catchments found in the shire.

Table 7: Roadside weed control for the past two years

	2021-22	2022-23
Number of Sites treated	187	231
Area Treated (Hectares)	3.3 ha	3 ha

Following the successive treatment methods over the past few years of the weed program, many of the high-value conservation roadsides have now progressed into a maintenance phase. This has allowed for the treatment of noxious weeds on more roadsides including low and medium conservation value roadsides. Weeds of particular focus include Gorse, Blackberry and Broom.

This year, weed treatments also accounted for the following environmental weeds; Wild Watsonia, Blue Bell Creeper and Pine saplings.

Figure 14: Roadside weed control program since 2014-15

The Anderson Road Triangle project
In a great example of working together across Council and community, members of Newham & District Landcare Group and the MRSC Environment Unit have revegetated an unused road reserve, assisted by Newham Landcare Primary School students.
Newham Primary School students learnt about fauna such as Brush-tailed Phascogales and Powerful Owls. The students have now planted over 350 native plants.

Newham Primary School students at Anderson Triangle

Targeted weeds
This year Council identified 78 known populations of Chilean Needle Grass and populations of Serrated Tussock infestations were monitored. In 2023-24, our program will extend to treat Texas Needle Grass as we have identified infestations in Malmsbury. We continue to work closely with the Victorian Serrated Tussock Working Party and are currently working to assist in a survey program in conjunction with Mitchell Shire Council.

2.2 Conservation value of bushland and conservation reserves

Council has continued to control and eradicate invasive weeds and monitor and manage indigenous flora in Bushland and Conservation Reserves. Works have included the protection and monitoring of rare and significant flora species, such as Clover Glycine (*Glycine latrobeana)* found at Bald Hill Reserve.

Bushland and Conservation Reserve activities undertaken in 2022-23 include:

- **Stanley Park -** Damaged access gate refurbished and repositioned, and tree assessments in nominated volunteer working bee areas conducted.
- **Stanley Park -** Supported the establishment of the Community Asset Committee.
- **Magnet Hill Reserve -** Installed rabbit proof fencing as part of an Integrated Pest Animal project to protect remnant scoria cone vegetation.
- **Black Hill -** Emergency Track repair works undertaken on the ridge track at Black Hill Reserve. Significant washouts from several high rainfall events have been arrested and trip hazards mitigated.
- **Malmsbury Common -** Delivered Ecological Burn of over three hectares in the northern grassland and western escarpment. *Banksia marginata* planted in three distinct genetic plots. Plots are to be used for future seed collections.
- **Barrm Birrm -** Improved protection of significant flora and tracks through the installation of gates and signage which has reduced or eliminated vehicle damage.
- **Hanging Rock Reserve -** Planted 7243 trees, shrubs, grasses & sedges throughout the core conservation zones. Completed woody weed control programs across the reserve, completed stage 1 of erosion control on the summit, mapped rabbit warrens and completed fumigation program along Smokers Creek and the Racecourse Grassland. Tree protection areas expanded throughout the recreation zone utilizing logs and mulch from the storm damage.
- **Bald Hill -** Supported Friends of Bald Hill to develop interpretative and wayfinding signs, and reserve visitor brochure.
- **Hobbs Road (Bullengarook Tip Site), Kyneton and Lancefield Capping Sites -** Completed woody weed works for the Waste Team.
- **Hobbs Road Reserve -** Completed repairs of heavy duty bollards and weed eradication works.

At Hanging Rock Reserve logs & log seats from the storm recovery team were installed to define core conservation zones and connectivity zones.

Flora monitoring
In 2022-2023, flora surveys were completed across 20 fixed monitoring plots in Bald Hill, Old Ashbourne Road, and Mt Gisborne Reserve's. Bullengarook Tip Site (Hobbs Road) had transect surveys completed to monitor capping cover and species diversity.

Fixed monitoring plots provide an opportunity to closely monitor incremental changes overtime, forming a longitudinal data set, which will inform adaptive management of the bushland reserve assets. These will complement the existing fauna monitoring to increase our understanding of how environments are changing.

It should be noted that the weather in 2022, the third La Niña year in a row, was cool and very wet, which has influenced the vegetation (growth or lack thereof) and probably the survey (ability to see species in long grass).

Table 8: Highlights of flora monitoring in Bushland Reserves

Reserve	
Bullengarook Capping / Tip Site	Native orchids increased from 0.4% of cover in 2021 to 2.2% cover in 2022.
Old Ashbourne Road Reserve	Surveyed for the first time: Six survey quadrats were set up along the length of the reserve, each 2 x 10 m (total area: 20 m2).
Bald Hill and Black Hill Reserves	Two Clover Glycine surveys were completed at Bald Hill and Black Hill Reserve in areas adjacent to known populations. This resulted in 143 new plants at 4 new locations in Bald Hill Reserve and at Black Hill Reserve, an increase in one location from 16 to 30 plants and 4 new locations totalling 22 new plants
Mt Gisborne Reserve	Serrated Tussock (*Nassella trichotoma*) has been treated extensively in the past but only a small presence was identified in two plots. Due to the marginal increase in presence a targeted survey of the entire site was conducted and Serrated Tussock was treated as required.

Kangaroo Ushering at Hanging Rock Reserve
In 2022, a wildlife consultant was engaged to write a Kangaroo Ushering Manual for large events. This protocol sets out a method for safe ushering of kangaroos from areas frequented by visitors during special events at Hanging Rock Reserve, to protect both the visitors and the kangaroos.

The creation of the manual is in response to the Hanging Rock Reserve Environmental Management Plan priority action to manage Kangaroos during major events:

"Kangaroos within the Hanging Rock Reserve are actively managed to restrict movement at certain times of the year as part of preparation for large events, including annual horse racing events, annual community events, and concerts."

A New Tree Management Program
In 2022-23 a new proactive tree management program has been developed. Council managed conservation reserves, trees overhanging paths, tracks, shelters, seats, signs, play spaces and other high target potential infrastructure are inspected on a proactive cyclic basis, with the intention of achieving a four-year cyclic inspection program. The primary focus for tree inspections is to identify risk to the public within target areas and provide recommendations for risk mitigation.

This year the program achieved the following:

- Bald Hill Reserve had 431 trees assessed, with 11 trees assigned high priority and 2 assigned as Moderate and requiring works, due to location and potential to fail before the next assessment.
- Barringo Reserve had 159 trees assessed, with 15 trees assigned high priority for works
- Stanley Park had 144 trees assessed, with 4 trees assigned high priority for works
- Dalton St Reserve had 224 trees assessed, with 3 trees assigned high priority for works
- Mount Gisborne had 11 trees assessed within falling distance of the telecommunications facility
- Daly Reserve had 71 trees assessed

Total for program: 1,040 trees assessed, 33 trees treated (noting that this does not include reactive responses from customer requests).

2.3 Weeds and pest animal management

Weed control
Treated noxious weeds across 231 roadsides and open space (recreation) sites and 34 conservation reserves, including an annual weed control program targeting high threat weeds at Hanging Rock Reserve.

Table 9: Summary of weed impacts in Bushland Reserves

Reserve	Increase	Decline
Black Hill Reserve	Sweet Vernal South African Weed Orchid	Blackberry Gorse
Bald Hill Reserve	Sweet Vernal	Horehound Gorse
Mt Gisborne Reserve		Serrated Tussock Capeweed
Malmsbury Common	Brown-top Bent Grass	Phalaris Gorse Blackberry
Woodend Grassland		Spanish Heath
Bullengarook Recreation Reserve		Blackberry
Marsh Court Reserve		Gorse
Ashbourne Reserve		Blackberry English Broom

Pest Animal control
Rabbit management was undertaken in Kathryn Court Waterway Reserve and Mount Gisborne. European Wasps were treated at Malmsbury Common, Bald Hill Reserve, Bunjil Creek and Woodend Grassland.

Rabbit Control Workshops - Two rabbit control workshops were held to cater for residents in both urban and rural settings. There was an overwhelming response with 60 people attending the workshops. It was a great opportunity to share knowledge and understanding to control pest rabbits on their properties. The workshops demonstrated practical applications of rabbit control methods including smoking burrows, fumigation and bait control.

Participants at the Lancefield rabbit control workshop

2.4 Ecological and cultural burns completed

Completion of ecological burn over three hectares, in the northern grassland and western escarpment. Works planning included a site meeting with Djaara's Djandak team to discuss the burn on site. The burn was delivered with Malmsbury CFA volunteers and Bushland Contractors.

Council's Bushland Reserves Officer presented 'Local Government Ecological Burning' Webinar to increase awareness and education of ecological burning as a land management tool to manage biodiversity. The webinar has since had 466 views on YouTube.

Malmsbury burn aerial view

2.5 Plans and assessments

A number of plans and assessments were completed in 2022-2023.

- Completed the Woodend Five Mile Creek Master Plan in partnership with Woodend Landcare.
- Draft Stanley Park Environmental Management Plan (EMP) was completed. The preparation of the draft EMP is an important step in the development of an infrastructure master plan for Stanley Park.
- Completed audits of existing bushland reserve environmental management plans and master plan audits, both 10yr and 5yr intervals. Three reserves that required interval assessments included Gisborne Marshland and Magnet Hill Reserve, Black Hill Reserve and Malmsbury Common. Stakeholder engagement continues into 2023/2024 to enrich the audits and priorities works going forward.

- Completed the Barrm Birrm Ecological Assessment and Cultural Heritage Assessment. These reports are key component of progressing the Council resolution of the August 2022 Scheduled Council Meeting, where Council resolved to advocate to the Victorian Government for the public purchase of the privately owned lots within the area known as Barrm Birrm for community benefit.
- Completed a Cultural Heritage Assessment for Barringo Reserve, New Gisborne. This resulted in confirmation of the site being rich in artefacts and a significant site for the Wurundjeri Woi-wurrung. Work continues to protect these cultural values in 2023/2024.

Indicator 3: Community involvement in conservation

3.1 Participation in land management workshops

In 2022-23 Council continued to deliver the *Healthy Landscapes – Practical Regenerative Agricultural Communities* program in collaboration with Hepburn Shire, the City of Greater Bendigo, Melbourne Water and North Central Catchment Management Authority.

In 2022-23, the Healthy Landscapes program delivered:

- The Holistic Grazing Management Course to 24 participants across 20 properties
- The Small Property Management course to 46 participants across 31 properties
- 60 one on one property visits
- Four webinars to 135 participants (387 registrations)
- 17 workshop/field day/discussion groups to 312 participants
- 12 newsletters to now 1011 recipients

The number of property visits, workshop/field days, webinars, equine group meetings, small property course and holistic grazing management course meet or exceeded the allocated targets. The number of properties revisited, equiculture online course and farmer discussion groups were slightly below target. The cultural awareness day was adjusted to deliver one event in 2022-23 and three will follow in 2023-24.

Noted by Council on 2OCTOBER 2023

Participants take part in a field day as part of the Holistic Grazing Management course

Table 10: Engagement activities for Healthy Landscapes Program within the Macedon Ranges

Target	Delivered
40 property visits	60 property visits
8 discussion group	4 equine farm walk - 68 participants 4 discussion group - 43 participants
Cultural engagement	1 DjaDja Wurrung – 20 participants
Courses	51 properties
Total participation	~800 registered for events

3.2 Attendance at biodiversity events

In 2022-23 Council continued to focus on broadening engagement to inspire the local community. Council achieved this by sharing knowledge with the work that we do to empower Landcare, environment groups and residents to increase their own skills to use at their own property.

Approximately 482 participants took part in Council's biodiversity focused events in 2022-23. Popular events continued to be fauna and fauna monitoring.

Table 11: Biodiversity focused events 2022-23

Event	Participants
Creatures of the night spotlighting events x6	86 participants
Planting days	57 participants
Fauna monitoring events and webinars	Events: 82+ participants Webinars: 50+ participants
Nature walks	50+ participants

Large tree and hollow survey at Barringo Reserve

3.3 Health and activity of Landcare and Friends Groups

Previously, Landcare and Friends groups fill out a “health check” survey if they apply for funding from their relevant Catchment Management Authority. We now collect our own data as part of the Environment Group Support Grant process. 17 groups applied for funding and, therefore, completed the “health check” survey – the results of which are shown in figure 15.

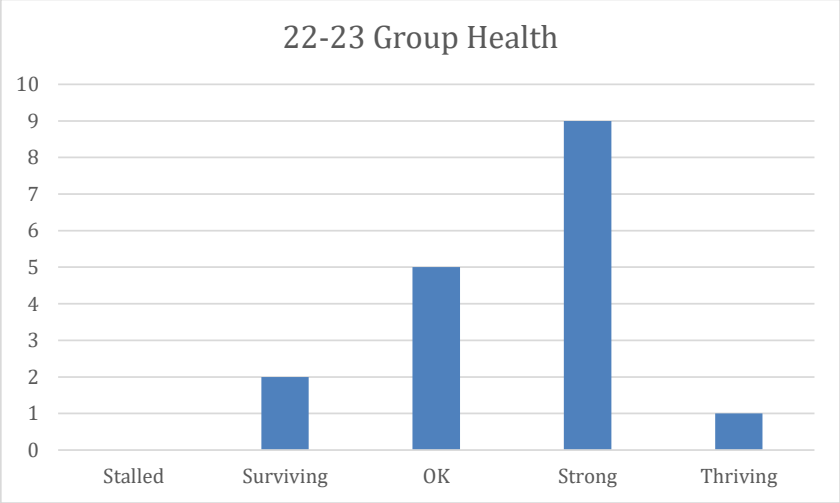


Figure 15: 2022-23 Landcare Group Health Check
Source: Environment Group Support Grants applications

New group: Macedon and Mount Macedon Landcare Group
Council welcomes the formation of the Macedon and Mount Macedon Landcare Group. The group has 40+ members, 15 of which the group describes as ‘active’ members. The group has taken an enthusiastic approach to improving biodiversity along local waterways, cultural awareness and links to local primary schools.

Conservation Reserves Officer, Simon Purves, takes Landcare volunteers on a tour of Smoker Creek at Hanging Rock

Theme 3: Water

Highlights

- ✓ Completed the Woodend Five Mile Creek Master Plan in partnership with Woodend Landcare.
- ✓ Restoration works on Bunjil Creek in Gisborne commenced resulting in some 13,000 wild flowers, grasses, sedges and shrubs planted in partnership with Regional Roads Victoria.
- ✓ Revegetation along waterways included 7243 native plants along Smokers Creek in Hanging Rock Reserve and 2358 across five Council managed waterway reserves.
- ✓ Works at Gisborne Botanic Gardens and Barkly Square in Kyneton contributed to a reduced demand for water.
- ✓ Partnered with Melbourne Water to create a new Water Sensitive Urban Design position in Council. The role will review Council's current practices and storm water assets, develop a Storm Water Management Strategy and oversee the first year of implementation. The role will also ensure water sensitive urban design is planned for in future subdivisions and enhance Council's internal skills and knowledge about the design, construction and maintenance of water sensitive urban design assets.
- ✓ Continued involvement in the Healthy Coliban Catchment Project including supporting community and landholder engagement.

Indicator 1: Water consumption from Council operations

1.1 Consumption of potable water

Council used 68,476 kL of potable water in 2022-2023, an increase of over 10,000kL from the amount used in 2021-2022, possibly reflecting increased services and use of facilities in the absence of pandemic-induced restrictions.

1.2 Consumption of recycled water

In 2022-2023, Council used an estimated 29,246kL of recycled water, considerably less than the volume used in 2021-2022, possibly due to a relatively wet summer and autumn reducing the need for watering grounds and parks. Works at several sites (most notably Gisborne Botanic Gardens and Barkly Square in Kyneton) also contributed to the reduced demand for recycled water.

Figure 16 below shows the amounts and sources of water used by Council over the past three years to deliver its operations and services.

Council will continue to work with Greater Western Water and Coliban Water to source additional amounts of recycled water for suitable suits into the future.

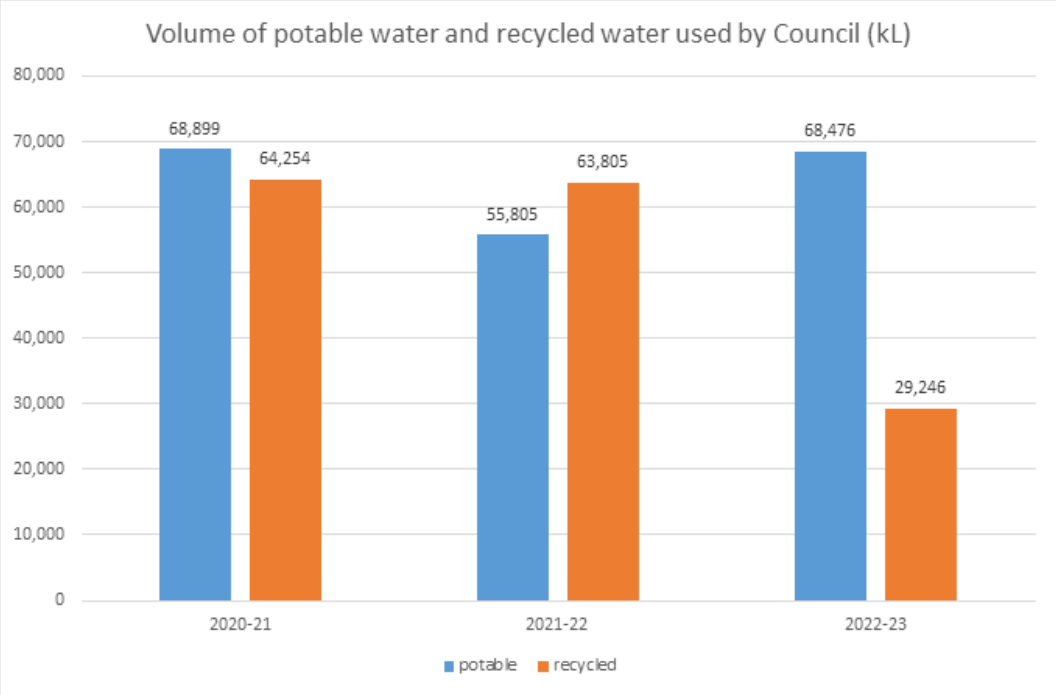


Figure 16: Volume and source of water used by Council from 2020 – 2023

Indicator 2: Extent of waterway restoration works conducted

2.1 Weed control

In 2022-2023 Council delivered weed control programs on six waterway reserves as guided by the Environmental Works Plans for Waterways - Port Phillip & Westernport catchments. High threat weeds including Blackberry, Broom, Gorse, Willows and Boneseed have been targeted and will be follow up over the next two years.

Table 12: Weed control conducted along Council managed waterway reserves in 2022-23

Waterway	Reserve	Locality	Comments
Jacksons Creek	Rotary Park Waterway Reserve	Gisborne	Woody weed removal program: Blackberry, Pine, Broom, Elm & follow up Ivy
Railway Creek	Waterfalls Rd Reserve	Macedon	Woody weed removal program: Blackberry, Gorse, Pines, Hawthorn & Irish Strawberry Tree
Riddell's Creek & Railway Creek	Tony Clarke Reserve 1 & 2	Macedon	Follow up Blackberry, Broom & Gorse, remove Large-leaf Cotoneaster, Bluebell Creeper, Japanese Honeysuckle & Pines
Deep Creek	Three Chain Road Waterway Reserve	Newham	Woody weed control program targeting: Broom, Gorse, Blackberry, & willow

Dry Creek	Kathryn Court Waterway Reserve	Riddells Creek	Follow up Blackberry, Broom & Gorse, remove Elms & Poplars
Riddells Creek Tributary	Bruce Street 3 & 4	Macedon	Woody weed control program targeting: Broom, Gorse, & Blackberry
Bunjil Creek	Bunjil 01	Gisborne	Woody weed removal program: Blackberry, Oak, Broom, Poplar, Elm & Ivy
Jackson's Creek	Jacksons Creek A, B, C & D	Gisborne	Melbourne Water Capital maintenance & weed control program
Romsey Five Mile Creek	Lions Park to Couzens Lane	Romsey	Melbourne Water Capital maintenance & weed control program
Woodend Five Mile Creek	Woodend 5MCK	Woodend	Woody Weed Eradication / Support for Woodend Landcare; Blackberries, Gorse, Broom, English Ivy
Campaspe River	Jennings Street to Mollison Street Bridge (west side of river)	Kyneton	Woody Weed Eradication / Support for the Campaspe River & Land Management Group (CR&LMG); Manual removal of Willow, Hawthorn and Gorse – Spraying Blackberry
Campaspe River	Edgecombe Street (extension) to Mollison Street Bridge (west side of river)	Kyneton	Woody Weed Eradication / Support for the Campaspe River & Land Management Group (CR&LMG); Manual removal of Willow, Poplar, Hawthorn – Spraying Blackberry and Gorse – Funded through NCCMA, works coordinated by MRSC Bushland Officer

2.2 Revegetation

The major revegetation project completed in 2022-23 was along Bunjil Creek, Gisborne.

Bunjil Creek is located in Gisborne and is a tributary to Jacksons Creek that extends approximately 4.2km south to its origin at the summit of Mount Gisborne. A Landscape Plan was completed for the restoration of Bunjil Creek from Melbourne Road to Jacksons Creek which was guided by the Environmental Management Plan (EMP) for Bunjil Creek, for the rehabilitation, revegetation and enhancement of this portion of the waterway.

This work was in response to major intersection works managed by the Department of Transport just outside of the project area. These works formed part of the community contribution from the roundabout funded by the State Government.

Consultants in collaboration with the community, Melbourne Water, Regional Roads Victoria and Council developed a detailed Landscape Plan that defines areas for restoration, including weed control and revegetation. Experienced environmental contractors have completed the woody weed removal works, jute matted the creek area and planted approximately 13,000 wild flowers, grasses, sedges and shrubs.

Bunjil creek waterway restoration works, Gisborne

Table 13: Revegetation conducted along Council managed waterway reserves

Waterway	Locality	No. plants	Comments
Dry Creek	Kathryn Crt Waterway Reserve	676	MRSC Waterway Program
Deep Creek	3 Chain Road Reserve, Newham	326	MRSC Waterway Program
Jackson's Creek	Gisborne Rotary Park	592	MRSC Waterway Program
Riddells & Railway Creek	Tony Clarke Reserve, Macedon	698	MRSC Waterway Program
Smokers Creek	Hanging Rock Reserve	7243	Hanging Rock EMP priority action
Bunjil Creek	Gisborne	13000	Funded by RRV as part of the roundabout upgrade
Jacksons Creek	Jacksons Creek A, B, C & D	-	Melbourne Water Capital Works planting completed and now in a maintenance stage

2.3 Healthy Coliban Catchment

North Central Catchment Management Authority (NCCMA), Coliban Water, and Dja Dja Wurrung Traditional Owners continue to implement A Healthy Coliban Catchment, a 20-year plan to improve the health of the upper sections of the Coliban River and its tributaries.

NCCMA provided the following information from the 2022 River Health Snapshot report:

- Overall, water quality has remained optimal despite recent extreme wind (June 2021) and rainfall (October 2022) events impacting on the project area. On-ground works were severely impacted by flooding caused by heavy rainfall during this time.
- Given that the Upper Coliban catchment is an important source of potable water, it is assuring that all water quality parameters tested by WaterWatch volunteers during 2022 were all well within the Good category.
- A noteworthy outlier in otherwise excellent water quality results for the Coliban catchment is a moderate pH result at a few sites. In both cases, although classed as Moderate, pH was just below what would be considered Good. This is likely due to the buffering ability of headwater streams, typically resulting in a slightly lower pH than what would be expected lower in the catchment, and is no particular concern.
- Macroinvertebrate surveys were conducted at two sites during December 2022. Given the surveys were undertaken shortly after heavy Spring rainfall, it is unsurprising that these results are poor. No doubt this has disturbed the sites, causing invertebrates to shift location, and delaying repopulation.

Revegetation along Kathryn Court Waterway Reserve in Riddells Creek

Theme 4: Waste

Highlights

- ✓ A reduction in total amount of kerbside general waste of 7.5%
- ✓ The Single-use Plastics policy adopted by Council on 24 May 2023
- ✓ 33 waste education sessions and workshops delivered to over 840 participants (online and in-person)
- ✓ Winning the award for Let's Get Sorted in the Outstanding Waste and Resource Recovery Project: Regional category of the Waste Innovation and Recycling Awards in October 2022
- ✓ Winning the award for the Romsey storm waste facility in the Special Projects Initiative category of the LGPro Awards for excellence in May 2023

Introduction

Council adopted the Waste and Resource Recovery Management Strategy 2021-2026 at its Scheduled Council Meeting in December 2021, and has been working to consolidate and improve many innovative waste recovery operations since then.

The four-bin kerbside collection service has been fully operational since July 2021, making Council a leader in waste management and resource recovery. This leadership has been acknowledged through winning a Waste Innovation and Recycling Award. Another resource recovery program, converting storm "waste" (fallen timber) to stakes, fencing materials, mulch, firewood, sawdust for farm animals and substrates as instream habitat, has also won an award by LGPro. Council continues to demonstrate leadership in resource recovery through commencing a soft plastics recycling trial in November 2022, and receiving expanded polystyrene at its transfer stations for recycling in 2023.

In past reports, the baseline year for reporting on waste generation and resource recovery trends has been 2016-17. In this report, the baseline year is taken to be 2018-19, the last year for which "typical" data is available, prior to the impact of the global pandemic on waste management practices (except for sales from tip shop, where the baseline year remains as 2020-2021).

Indicator 1: Waste diverted from landfill in the community

1.1 Waste received at transfer stations

Total waste received at transfer stations
In 2022-23, 8,988 tonnes of waste (combined weight of paper and cardboard, aluminium and steel, comingled recycling, glass and e-waste) was received at Council's transfer stations, in addition to oil, tyres, mattresses and garden waste. As indicated in Table 14, this total figure is comparable to 2021-22, as are the amounts for each of the five waste streams. In contrast, the amount of garden waste received at

transfer stations in 2022-23 was approximately 10,000 tonnes more than in 2021-22 (25% increase).

Waste transferred to landfill
The total amount of waste diverted from landfill through recovery at the transfer stations in 2022-23 increased by about 364 tonnes compared to 2021-22, but in terms of percentage of total amount received at the transfer stations, there was a decrease of 2.8%. In other words, the proportion of "waste" deposited at transfer stations that was recovered in 2022-23 was less than in 2021-22 (for the five waste streams measured in tonnes).

Glass and E-waste
The amount of glass deposited at transfer stations continues to trend downwards, being almost 20 tonnes less in 2022-23 than in 2021-22. This trend also applies to the glass recovered in the kerbside collection service, where the total amount collected was 142 tonnes less in 2022-23 than in 2021-22.

Table 14 below shows that the amount of e-waste deposited at transfer stations also decreased in 2022-23 compared to 2021-22, by almost 5 tonnes in total.

Table 14: Waste received at Transfer Stations

Waste stream	2018/19	2019/20	2020/21	2021/22	2022/23	*Unit*
Paper and cardboard	319.88	220.68	256.84	278.99	268.26	*tonnes*
Aluminium and steel	1,709.56	1,683.90	1,729.00	1,959.44	1,786.33	*tonnes*
Comingled recycling	149.6	122.1	83.92	79.314	78.02	*tonnes*
e-waste	118.84	146.26	105.35	87.82	82.5	*tonnes*
Glass	unknown	197.56	166.96	142.32	123.54	*tonnes*
Garden Waste	22,605	34,186	38,512	39,411	49,793	*cubic meters*
Oil	22,200	13,800	20,550	24,052	19,040	*litres*
Tyres	1,102	1,821	3,046	2,005	2,642	*number*
Mattresses	1,447	1,861	2,583	2,447	2,009	*number*
Total diverted from landfill (excluding garden waste, oil, tyres and mattresses)	2,297.88	2,566.92	2,342.00	2,547.88	2,338.64	*tonnes*
% diverted from landfill	37.80%	44.80%	28.80%	28.80%	26.02%	*%*
Total disposed in landfilled	3,789.00	3,162.81	5,789.64	6,286.09	6,650.21	*tonnes*
Total (all items) (excluding garden waste, oil, tyres and mattresses)	**6,086.88**	**5,729.73**	**8,131.64**	**8,833.97**	**8,988.85**	***tonnes***

1.2 Sales at Kyneton Tip Shop

Table 15 below shows that sales at the Kyneton Tip Shop in 2022-23 were generally lower for all categories when compared with 2021-22 sales, particularly for bicycles and furniture items. The reduction may be partly due to the tip shop being closed from February 2023 for operational and safety reasons. Interestingly, the total revenue for 2022-23 is only slightly less than for 2021-22, potentially reflecting an increase in value of recovered items made available for sale.

Council is working to upgrade the tip shop at Kyneton and establish one at the Romsey Transfer Station, aiming to have the Kyneton facility operational in late 2023 and if grant funding comes through, have the Romsey facility operating in late 2024.

Table 15: Sales from Kyneton Tip Shop

Category	2020-21		2021-22		2022-23	
	Qty	Revenue	Qty	Revenue	Qty	Revenue
Bicycles	**79**	$437	76	$650	40	$280
Books	**2**	$4	1	$2	4	$8
DVDs & CDs	**35**	$303	21	$192	26	$210
Electrical	**58**	$377	48	$290	33	$179
Furniture	**48**	$515	72	$755	29	$289
Lawn Mowers	**4**	$31	5	$52	6	$91
Miscellaneous	**108**	$658	185	$1257	203	$1,936
Steel	**169**	$1,366	100	$878	77	$986
Toys	**6**	$28	2	$4	3	$20
Revenue (inc GST)		**$4,090.90**		**$4,080.00**		**$3,999.00**

1.3 Resource Recovery from Council's kerbside collection service

Council's award winning four bin kerbside collection service enables resource recovery to be maximised across the shire. All residents in the shire have been able to separate food and garden organics from general waste since July 2021, and separate glass from other recyclable materials since February 2019, thereby diverting waste from landfill through resource recovery. Low contamination rates in each waste stream mean that there is little rejection at receiving points, and resource recovery is maximised.

Table 16 below shows that there was a decrease in the total amount of general waste, FOGO, and glass collected from the 20,855 serviced properties in the shire in 2022-23 compared to 2021-22, alongside an increase in the amount of recyclable materials collected. This indicates that residents are generating less "waste", perhaps through the influence of Council's waste education programs and activities, and waste minimisation projects within the community.

Trends in amounts of "waste" for each stream are shown in Figure 17 (total amounts) and Figure 18 (average amount / serviced property) below.

Table 16: Amounts (tonnes) / waste stream from kerbside collection service (total and per serviced property)

Waste stream	2018-2019		2019-2020		2020-21		2021-22		2022-23	
	Total weight (tonnes)	Weight / serviced property (kg)	Total weight (tonnes)	Weight / serviced property (kg)	Total weight (tonnes)	Weight / serviced property (kg)	Total weight (tonnes)	Weight / serviced property (kg)	Total weight (tonnes)	Weight / serviced property (kg)
General waste	9,222	484	8,351	428	7,170	345	6,366	316	5,889	282
Green waste / FOGO	2,969	267	5,259	365	8,505	586	10,816	534	10,185	488
Re-cyclable materials	4,509	237	3,503	180	2,716	132	2,875	142	3,001	145
Glass			832	43	1,903	92	1,955	96	1,762	85
Total	**16,701**	**988**	**17,945**	**1,016**	**20,293**	**1,155**	**22,012**	**1,087**	**20,837**	**1,000**

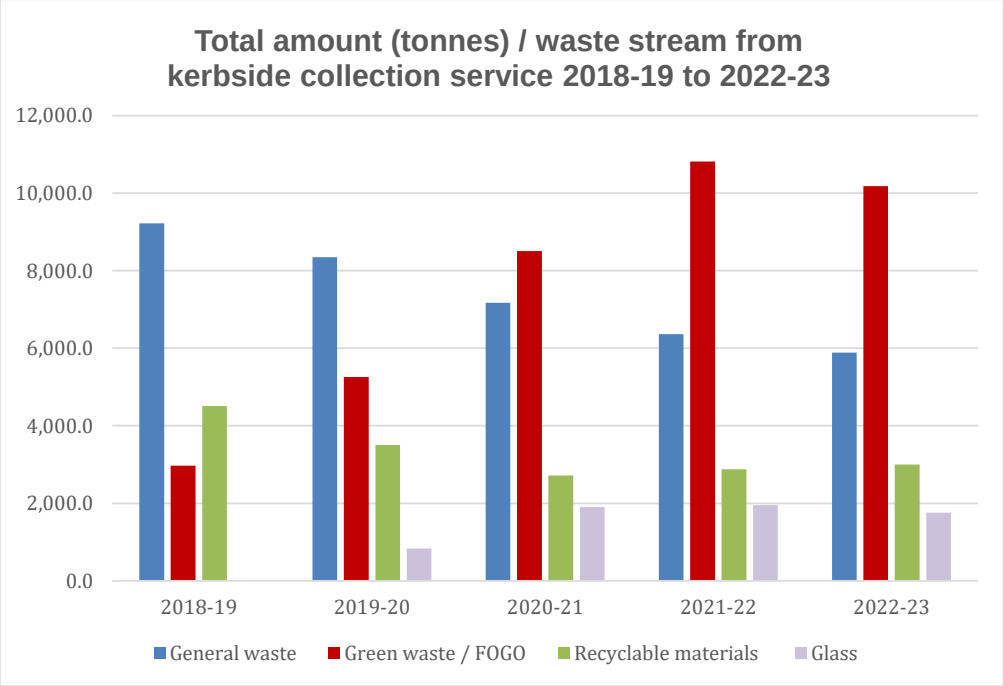


Figure 17: Total amount / waste stream collected from 2018-2019 to 2022-23.

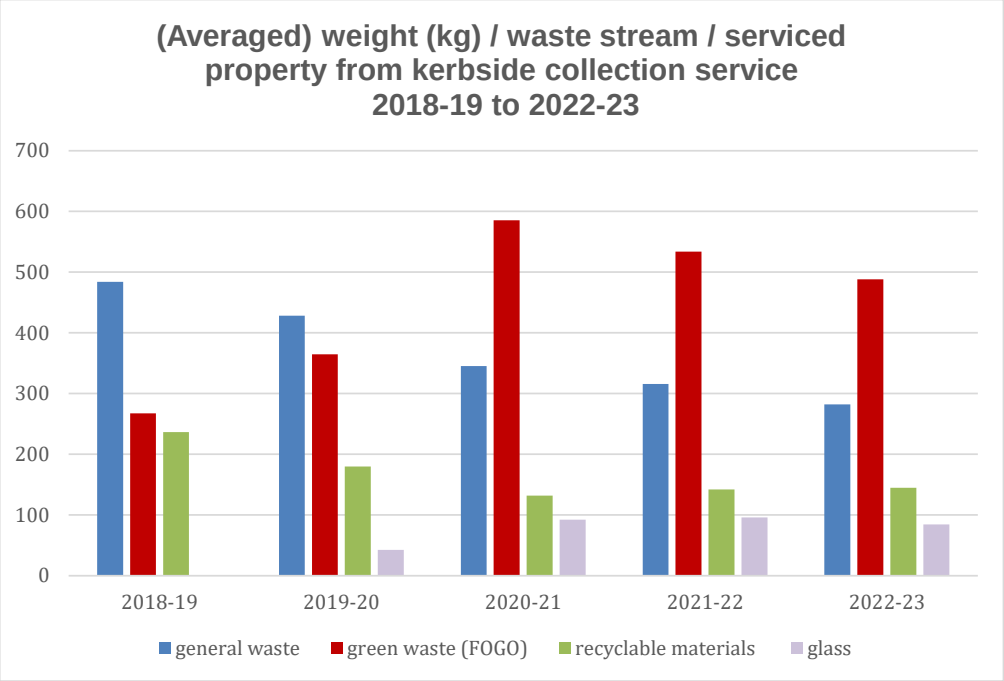


Figure 18: (Averaged) weight /waste stream/ serviced property 2018-19 to 2021-22

1.3 Waste from public places and events

Bins for recyclable materials are located in some parks, sports grounds, and townships throughout the shire. High contamination rates means that everything deposited into public place bins is taken to landfill. Council aims to raise awareness about best practice waste management in public places, and expand the service in the future.

Indicator 2: Resource efficiency within Council operations

2.1 Waste collected from Council facilities

Waste from Council facilities is collected as a part of Council's general kerbside collection service, meaning data regarding amounts of waste generated at council facilities is not available (except as the averaged amounts / serviced properties reported above). Council will aim to conduct audits of worksites to determine the volumes of waste generated at council facilities in the future.

In 2022-23, Council offices have had bins available for soft plastics available for staff to use, to provide additional material for the soft plastics recycling trial being conducted at the resource recovery facilities.

2.2 Paper use

In 2022-23, Council's total use of paper increased from 2021-22, possibly reflecting greater office time by staff, and an increase in staff numbers.

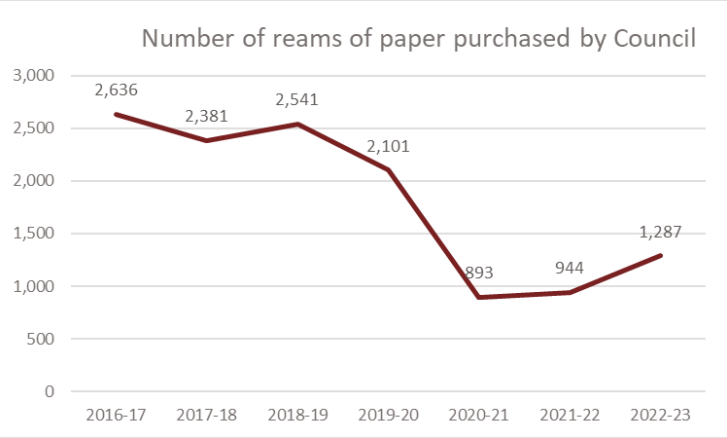


Figure 19: Council's use of paper over time

Indicator 3: Community engagement with waste education

3.1 Number of waste education events hosted by Council

In 2022-23, Council's waste education officers (one shared position) have hosted 33 waste education sessions and workshops, in-person and online, which were attended by over 840 people. This is a marked increase from the 15 workshops and 495 attendees reported for 2021-22. Many sessions were delivered in response to requests from kindergartens, primary schools and secondary schools, and community groups. Council also co-hosted workshops about its rebate for reusable nappies.

Another avenue for encouraging correct waste management practices has been the Waste App, which was installed over 800 times in the final quarter of 2022-23.

A key focus for 2023-2024 will be the development of a Waste Education Action Plan, and the completion of five short videos on correct practices to maximise the benefits of Council's waste management and resource recovery services.

Kindergarten children learning about waste in a "Let's Get Sorted" session

3.2 Use of the Wash Against Waste Trailer

In 2022-2023, the Wash Against Waste trailer (managed by the Macedon Ranges Sustainability Group, with support from Council) has been operated by volunteers used at almost 30 events, including regular use at the Woodend, Malmsbury and Lancefield farmer's markets. This equates to over 8,000 single use cups or crockery going to landfill

To ensure optimal operation of the trailer into the future, the Wash Against Waste team is developing a user manual that can be scanned from a QR code to be posted in the trailer.

Costa Georgiadis helping to promote the benefits of Wash Against Waste with local volunteers