

State of the Environment Report

2021/22



Praying mantis and green bottle fly

Best practice sustainability and environmental management

The City aspires to be a global leader in environmental sustainability, working closely with the community to protect and enhance the natural environment, address climate change and waste management while celebrating and showcasing its natural assets to the world.

The City's *Environment Plan 2014 – 2019* and other environmental programs, strategies, and policies are developed and implemented in partnership with key stakeholders and the community and focus on the sustainable use of natural resources, biodiversity conservation, waste management, energy and water efficiency and raising awareness of environmental issues within the City.

The City supports the community to undertake positive sustainable behaviours and be involved in the conservation of natural areas through education and active involvement in environmental and sustainability initiatives.

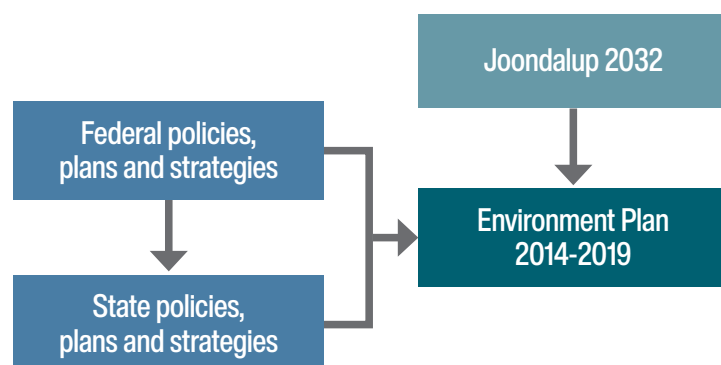
Overarching objective

To provide ongoing leadership in adaptive environmental management to ensure the sustainable use of natural resources and the conservation and enhancement of the City's natural assets for future generations.

Strategic Planning Context

The *Environment Plan 2014 – 2019* supports the *City of Joondalup Strategic Community Plan – Joondalup 2032* and is informed by the key themes and objectives of this Plan.

Joondalup 2032 is the City's long-term strategic plan, outlining the City's commitment to achieving the vision and aspirations of the community and stakeholders in the region. *Joondalup 2032* was endorsed by Council in June 2022. A new Environment Strategy will be developed in 2022/23 following endorsement of *Joondalup 2032*. The *Environment Plan 2014 – 2019* will continue to be implemented until the development of the new Environment Strategy.



Acknowledgement of Traditional Custodians

The City of Joondalup acknowledges the Traditional Custodians of this land, the Whadjuk people of the Noongar nation. The City recognises the culture of the Noongar people and the unique contribution they make to the Joondalup region and Australia. We pay our respects to Elders past, present, and emerging, as well as all Aboriginal and Torres Strait Islander peoples.

Outcomes from *Joondalup 2032* to guide the management of the local environment into the future include:

- Managed and protected
- Clean and sustainable
- Responsible and efficient
- Resilient and prepared

State of the Environment Report

The *State of the Environment Report 2021/22* describes the initiatives taken to protect and enhance the City's natural environment and improve environmental sustainability during the past financial year. It provides a snapshot of the progress made in implementing actions and initiatives from within the City's *Environment Plan 2014 – 2019* as well as issue-specific plans (informing plans) across the areas of biodiversity, water, climate change, waste, and community engagement.



Biodiversity



Water



Climate
Change



Community
Involvement



Waste

The City's natural environment services budget for 2021/22 was \$4.6 million with 30 full time equivalent staff, including environmental planning, natural areas management, waste management and litter collection services.¹

¹As detailed in the City of Joondalup Corporate Business Plan 2021/22 – 2025/26 for the natural environment net service cost including depreciation.



Biodiversity

Objective

To provide long-term protection and enhancement of the City's biodiversity through adaptive management and the delivery of targeted projects and programs.

This work is guided by the *Yellagonga Integrated Catchment Management Plan 2021-2026*, *Pathogen Management Plan*, *Bushfire Risk Management Plan*, *Weed Management Plan*, and *Natural Area Management Plans*.

Key achievements

- Conducted flora surveys and vegetation condition assessments in Craigie Bushland and Hillarys-Kallaroo Foreshore Reserve.
- Updated the five-yearly implementation plan for the *Shepherds Bush Reserve Management Plan*.
- Undertook Quenda monitoring in Craigie Bushland, in collaboration with Edith Cowan University.
- Implemented the Pathogen Treatment Program in 12 natural areas and parks.
- Analysed near infrared imagery to enable reporting against natural area key performance indicators.
- Awarded a non-chemical treatment tender for the control of weeds in nominated locations.
- Identifying the movement and concentration of contaminants within the Yellagonga Wetlands through ongoing monitoring of surface water and groundwater quality.
- Carried out mitigation works within Warwick Open Space Bushland (Warwick) funded by the Department of Fire and Emergency Services Mitigation Activity Fund Grants Program.
- Participated in the Western Australian Local Government Association Local Government Herbicide Use and Integrated Weed Management Working Group.

KPI's

- Density of environmental weeds was 8.9%, a decrease from 9.5% in 2020/21.
- Natural Areas Protected within City Reserves remains at 87.5% in 2021/22 - there was no change compared to 2020/21.
- Waste in natural areas was 16.5 items per hectare, an increase from 8.5 items per hectare in 2020/21 due to an increase in littering.



Density of Weeds

8.9%



Waste Present

16.5 items per hectare



Natural Areas Protected within City Reserves

87.5%

No change



Vegetation Condition

Craigie Bushland

% 'Good' or better (2016) **89.1%**

% 'Good' or better (2021) **89.1%**

No change



Vegetation Condition

Hillarys-Kallaroo Foreshore Reserve

% 'Good' or better (2016) **83%**

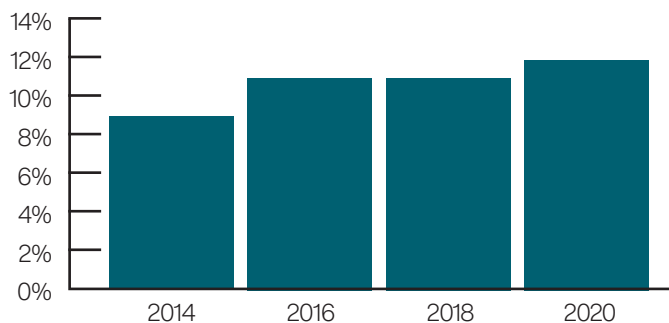
% 'Good' or better (2021) **83%**

No change

Vegetation condition is rated according to the Keighery Vegetation Condition Scale below:

Completely Degraded	Degraded	Good	Very good	Excellent	Pristine
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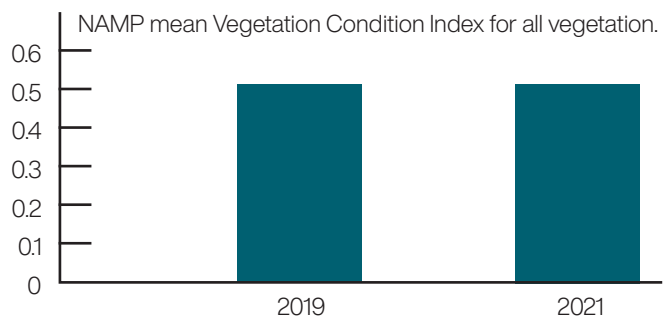
Canopy cover



Source: Urban Tree Canopy Dashboard (Western Australian Planning Commission, 2022)

The percentage of canopy cover >3 metres in the whole of the City increased from 11% in 2018 to 12% in 2020. This can be largely attributed to the implementation of projects such as the Leafy City Program and the Street Tree Planting Program.

Vegetation Condition



The mean Vegetation Condition Index for all vegetation in conservation areas with a Natural Area Management Plan (NAMP) has remained relatively stable from 2019 to 2021.







Objective

To manage the City's water resources in a sustainable manner in order to decrease water consumption, increase efficiency and improve water quality.

The *City Water Plan*, *Climate Change Strategy* and *Yellagonga Integrated Catchment Management Plan* provide a coordinated approach to manage water conservation and water quality within City operations and the community.

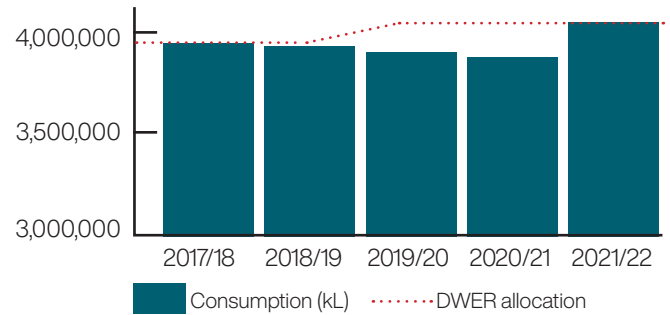
Key achievements

- Awarded Platinum Waterwise Council of the Year as part of the Waterwise Council Program for innovative sustainable water management achievements.
- Achieved endorsement of the City of Joondalup Leisure Centre – Craigie as a Waterwise Aquatic Centre.
- Received a Water Sensitive Cities Award for water sensitive practices from the Cooperative Research Centre for Water Sensitive Cities.
- Endorsement of the *Yellagonga Integrated Catchment Management Plan 2021–2026*.
- Installed a pop-up waterwise demonstration garden adjacent to the Joondalup Library and hosted a waterwise gardening workshop for the community and staff.
- Completed the Sump Beautification Project at Macedon Park (Craigie) and Newcombe Park (Padbury), which included underground storage and turf swale transforming the City's drainage infrastructure into a usable community green space.
- Delivered the Newcombe Park (Padbury) upgrade as part of the Park Amenity Renewal Program which included hydro-zoning, eco-zoning, redesigning irrigation systems, and landscaping improvements.
- Upgraded ten existing play spaces as a part of the Play Spaces Renewal Program, converting irrigated turf areas into unirrigated mulched areas which become incorporated into a nature play space.
- Managed and enhanced wetlands through integrated management, such as the use of litter traps, electronic fishing removal of feral fish, maintenance of water aerators and removal of invasive weed species.
- Continued to implement the Yellagonga Water Quality Monitoring and Improvement Program.

KPI's

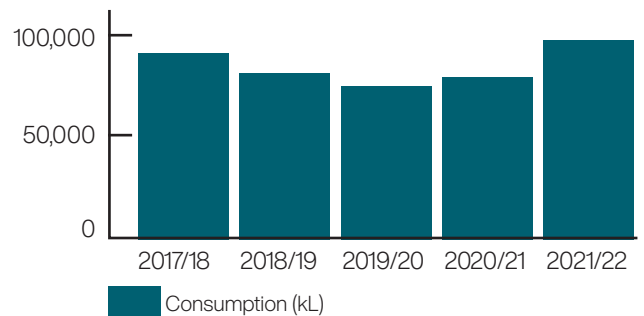
- Corporate groundwater use for 2021/22 was 4,256,201kL. This is an increase of 19% compared to the previous year (2020/21) and is 2% above the total current annual groundwater allocation limit set by the Department of Water and Environmental Regulation. This exceedance was due in part to increasing the evapotranspiration replacement percentage on irrigation parks to combat the ongoing decline in turf quality.

Corporate groundwater consumption (kL/yr)



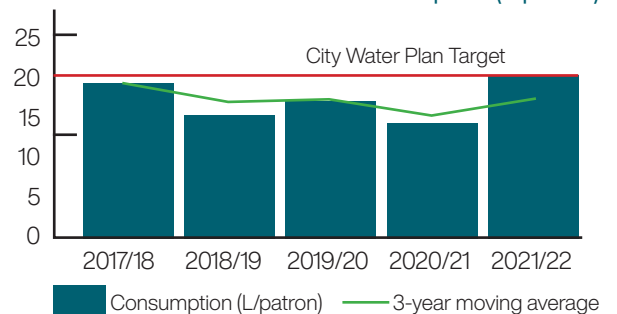
- The City's 2021/22 scheme water consumption was 98,878kL which is a 25% increase from 2020/21. This increase is attributed to several non-visible leaks detected at the City's community facilities, which have been reimbursed financially by the Water Corporation, and upgrading one dry park to scheme water irrigation to meet community expectations.

Corporate scheme water consumption (kL/yr)*



- Scheme water use at Craigie Leisure Centre for 2021/22 was 23,947kL which equates to a consumption of 20L/patron. This meets the *City Water Plan* endorsed target of 20L/patron.

Craigie Leisure Centre scheme water consumption (L/patron)



* Scheme water consumption data may vary from the data reported in the Annual Report as the Annual Report data includes a minor estimated component due to the reporting timeframes.

Objective

To reduce energy consumption and greenhouse gas emissions by the City and the community to mitigate the effects of climate change.

The City is taking steps to prepare and adapt to future climate change impacts through implementing its Climate Change Strategy and *Bike Plan*.

Key achievements

- Engaging the community to seek feedback on what the City's role should be in responding to the threat of climate change.
- Monitoring shoreline movements over time through the City's annual Coastal Monitoring Program.
- Implementing the annual Sand Bypassing Program from Sorrento Beach to Hillarys Beach.
- Purchasing 1,399 tonnes of carbon offsets to offset 100% of the City's fleet emissions.
- Generating 1,257 GJ of power from the City's Renewable Energy Program, equivalent to the electricity used by 67 households in one year.
- Saved approximately 933 tonnes of greenhouse gas emissions through the use of geothermal heating for the indoor pools at Craigie Leisure Centre.
- Upgraded additional street lighting to LEDs through the Joondalup City Centre Lighting Program and facility upgrades.
- Installing an additional 30kW solar PV system at Craigie Leisure Centre. The City has solar PV systems located on a total of 18 City buildings and solar battery backup systems on two City buildings.
- Constructed a new 1.2 kilometre shared bike pathway along Eddystone Avenue in Craigie and a new upgraded 1.2 kilometre section of the coastal shared pathway between north Mullaloo and Ocean Reef.
- Progressed the development of the Coastal Hazard Risk Management and Adaptation Plan which is aimed to be released for community consultation in 2022/23.

KPI's



Solar energy generated

1,257 GJ



Total greenhouse gas emissions

14,712 tCO₂-e

Total greenhouse gas emissions decreased by 31% in 2021/22 as compared to the baseline year in 2012/13.



Net greenhouse gas emissions

13,313 tCO₂-e

Net greenhouse gas emissions decreased by 17% in 2021/22 compared to the baseline year in 2012/13.

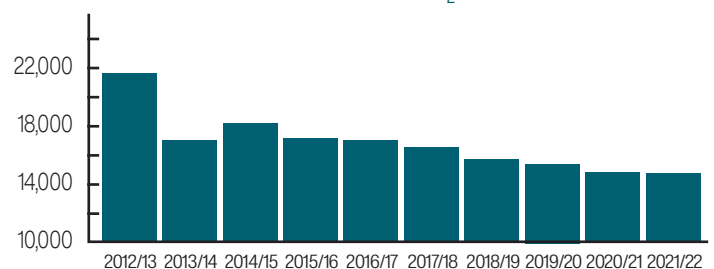


Trees planted

1,940

Across the City in urban areas through the Leafy City Program in June and July 2021.

Total greenhouse gas emissions (tCO₂-e)









Objective

To minimise waste to landfill through sustainable waste management practices which incorporate reduce, reuse, recovery and recycling principles.

The City's Waste Management Plan 2016-2021 and Local Government Waste Plan guide the City's waste management practices with the aim of minimising waste to landfill and informs long-term planning for waste management.

Key achievements

- Increasing bulk hard waste recycling of skip bins, mattresses and white goods to 6,161 tonnes of which 1,349 tonnes were recycled, meaning a diversion rate of 22%.
- Conducted bin audits to inform behaviour change and waste disposal trends.
- Delivered 72 community waste education classroom sessions with schools, and 16 waste education sessions with community groups, including worm-farming workshops.
- A total of 538 tonnes of litter collected by the City.
- A total of 17,681 tonnes of garden organic waste were collected through the Three Bin system with 99.6% being recovered into compost and diverted from landfill.

KPI's



Total Residential Waste Collected*

77,556 tonnes

Total residential waste collected in 2021/22 decreased by 0.2% compared to 2020/21.



Percentage Waste Diverted from Landfill

61%

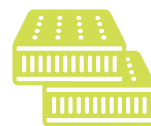
Increase of 8.4% from 2020/21.



Bulk hard waste collection

5,548 tonnes

In skip bins.



181 tonnes

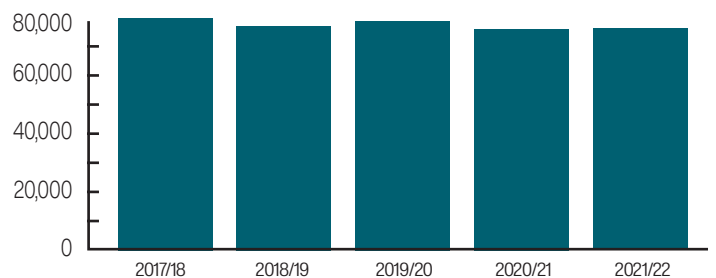
Mattresses including 154 tonnes recycled.



432 tonnes

White goods including 319 tonnes recycled.

Total residential waste collected (t/yr)



* Total residential waste collected includes all kerbside waste, bulk waste and weekend greens collections.



Objective

To enhance community participation in environmental education initiatives and encourage community appreciation and ownership of the natural environment.

The City conducts an Environmental Education Program, targeting schools, residents and the broader community. Community education and engagement is an important component in all the City's environmental plans.

Key achievements

- Continuing to support the City's Friends Groups by providing 9,700 native seedlings from the City's nursery, attending planting days and producing a Friends Group newsletter.
- Implementing the Adopt-a-Coastline/Bushland program with Davallia Primary School (Kinross), Kinross Primary School (Kinross) and Springfield Primary School (Kallaroo) at Iluka Foreshore Reserve, Shepherd's Bush Reserve, Kiernan Park and Littorina Park.
- Continuing to promote the ClimateClever Program encouraging community members, schools and business to reduce energy, water and waste consumption.
- Delivering a series of free environmental activities relating to biodiversity, energy, water, waste, and transport, including a Become a Bushland Birder workshop, Lake Goollelal Guided Bike Tour, Djeran Experience at Lake Joondalup Noongar Cultural Heritage Tour, Waterwise Garden Workshop and online Sustainable Living Workshop.
- Distribution of a regular Environmental News and Events e-newsletter promoting environmental events and initiatives to community members.

KPI's



Native plants

9,700

Provided to Friends Groups.



Friends Groups

19

Operate in the City of Joondalup.
Same as 2020/21.



Total natural area managed by Friends Groups

336 ha

Same as 2020/21.



Event attendance

A total of 145 participants attended environmental events.





Yellagonga Regional Park

Strategic Approach

Submissions

The City provides submissions to Local, State and Federal Governments on proposed plans, strategies and policies affecting local government. In 2021/22 the City prepared submissions on:

- Draft Native Vegetation Policy for WA – Department of Water and Environmental Regulation (DWER)
- Draft Native Vegetation Referrals Guideline – Western Australian Local Government Association to incorporate into their submission to DWER
- Draft Gnamangara Groundwater Allocation Plan – DWER
- Draft State Planning Policy 2.9: Planning for Water and Planning for Water Guidelines – Department of Planning, Lands and Heritage
- City of Wanneroo's Draft Coastal Management Plan – City of Wanneroo

Existing and Emerging Sustainability Challenges

Changing legislative and regulatory environment	<ul style="list-style-type: none"> • Shifting responsibilities from State to Local Government in coastal hazard planning, bushfire mitigation, carbon emission reductions and vegetation retention • Amendments to environmental legislation • Future reductions in groundwater allocations • Waste management requirements including State Government targets to reduce waste to landfill
Climate change	<ul style="list-style-type: none"> • Increasing risk of natural hazards such as bushfire, weeds and coastal erosion • Drying climate, increased temperatures and sea level rise • Loss of biodiversity
Increasing community expectations	<ul style="list-style-type: none"> • Action and leadership on climate change mitigation and adaptation issues • Sustainable approaches to weed management • Managing urban development and vegetation retention • Provision of education on key environmental issues
Environmental planning	<ul style="list-style-type: none"> • Greater requirement for environmental considerations as part of developments, projects and events • Increased requirement to advocate and provide input into State and Federal policy and legislation changes • Balancing the retention of native vegetation with the need for developments



Priorities for 2022/23

To achieve its environmental long-term objectives, the City will continue to develop, review and implement strategic management plans including development of the following plans and strategies:

- *Environment Strategy.*
- *Weed Management Plan.*
- *Climate Change Plan.*
- *Coastal Hazard Risk Management and Adaptation Plan.*
- *Iluka-Burns Beach Foreshore Reserve Management Plan.*

The City's natural environment services for 2022/23 have a budget of \$6.79 million with 40.5 full time equivalent staff, including environment organisational management, emergency management, environmental planning and development, litter collection, technical and consultancy services, waste management and natural areas/buildings.^{2}*

Stay connected with the City's environmental and sustainability initiatives

The City welcomes and encourages the community to connect and participate in its environmental and sustainability initiatives.

To learn more about the City's events and news, follow the City on social media, and subscribe to the City's e-newsletter at joondalup.wa.gov.au

² As detailed in the City of Joondalup Corporate Business Plan 2022-2026 for the natural environment net service cost including depreciation.

* The City's natural environment services for 2022-23 have increased which can be largely attributed to the inclusion of additional services such as emergency management and technical and consultancy services.



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