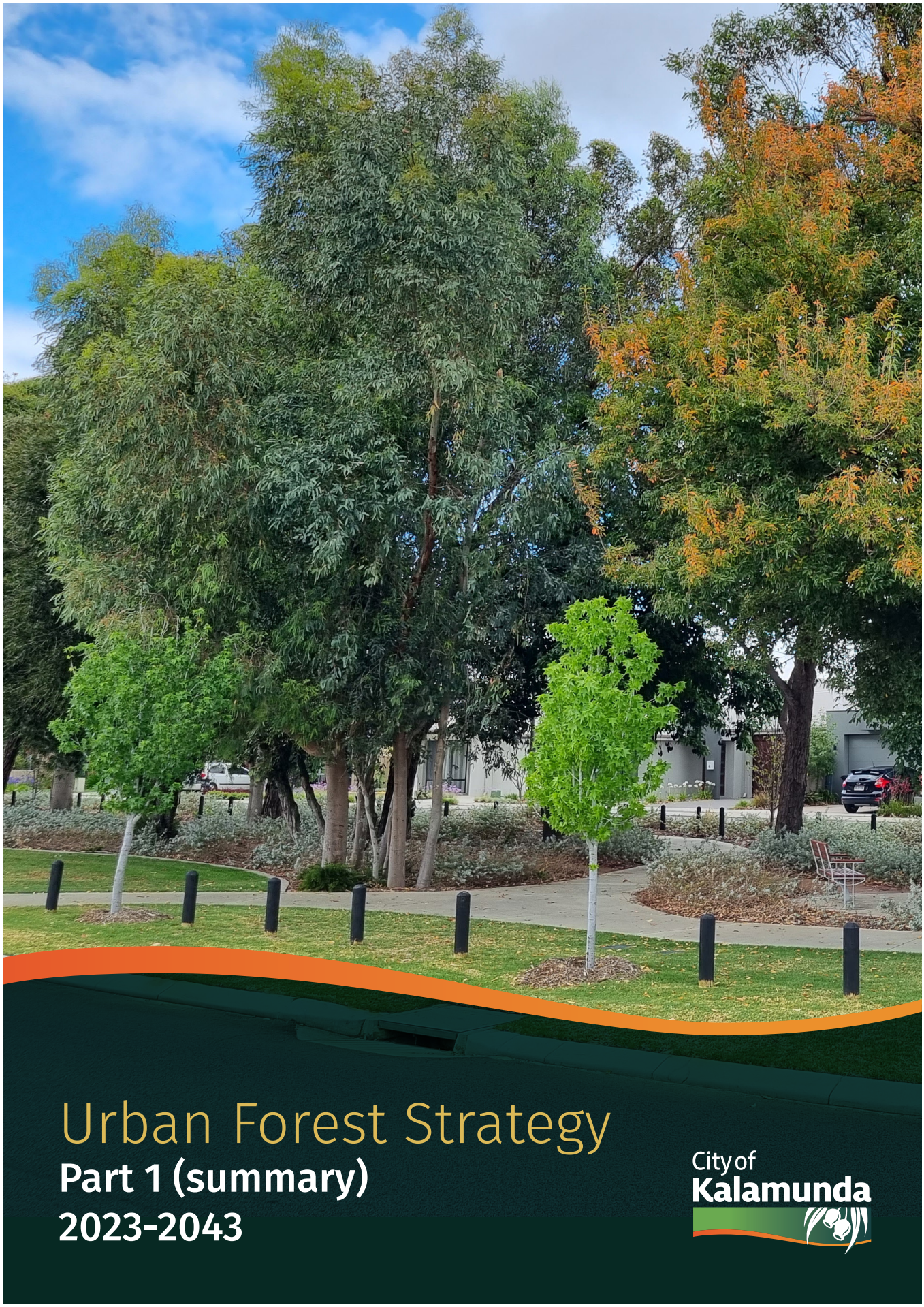


Urban Forest Strategy

Part 1 (summary)

2023-2043

City of Kalamunda



Target for the City's Urban Canopy Cover

Protect and plant enough trees to grow the City's urban canopy cover to 30% (at maturity) by 2043.

Our urban forest

The City of Kalamunda is home to a cherished landscape character, famous for its mix of natural bushland, wildflowers, waterways, vineyards, and stunning vistas. As a growing and changing community, the City of Kalamunda is committed to balancing growth and development while protecting our precious natural environment.

Leafy cover from tree canopy benefits our entire City, from our environment, to our social, psychological, and recreational wellbeing. Described collectively as 'urban forest', this vital asset includes trees on public and private land.

The City of Kalamunda's Urban Forest Strategy (UFS) guides the City in designing, managing and improving the urban forest to protect and grow the urban forest canopy for the wellbeing of our residents, enterprise, and ecosystems.

Purpose of the Urban Forest Strategy

The UFS guides the strategic and holistic management of the City's urban forest. It considers trees on both public and private land, as well as the role and amount of canopy cover in different land uses.

The strategy identifies goals and objectives to protect and grow the urban forest, and outlines specific, measurable actions needed to achieve these.

Actions are prioritised through an annual action plan, which monitors and reports on the success of the actions and enables review and continual improvement of the UFS to achieve the City's urban forest goals.

Target for the City's urban canopy cover

The City aspires to achieve a target overall urban canopy cover across the City of 30% by 2043.

This target aligns with the international best practice benchmark for urban canopy cover.

To achieve 30% canopy cover across seven land use category areas (defined on page 21 of the UFS), a 3% increase is needed (approximately an extra 324.36 ha of canopy cover). This will bring the City's total canopy cover to 3243.6 ha.

Assuming cover of approximately 38m^2 per tree, this increase equates to over 85,000 medium sized trees at maturity.

Beyond the target of 30% canopy cover, the UFS includes shorter-term goals to protect and grow the City's urban forest and engage the community to care for and contribute to the City's leafy canopy.

The goals, objectives, and actions are detailed on pages 13 and 14 of the UFS.

Acknowledgment of Country

We respectfully acknowledge the Traditional Owners, The Whadjuk Noongar People, as the Custodians of this land. We also pay respect to all Aboriginal community Elders, past and present, who have resided in the area and have been and continue to be an integral part of the history of this region.



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Mayor's Message



I am pleased to present the City of Kalamunda Urban Forest Strategy. This strategy has been developed in consultation with the community, Traditional Owners, environmental consultants and the City's Kalamunda Environmental and Sustainability Advisory Committee (KESAC).

The City of Kalamunda boasts a unique and diverse natural environment that attracts locals, visitors from Perth, and others to enjoy its serene beauty and lush bushland.

Our vision is for the urban forest to be valued as an intrinsic feature of our urban landscape, fostering a healthy and prosperous community.

The urban forest includes trees and shrubs in an urban area, such as individual trees, street trees, green spaces, and the surrounding vegetation and soil. Urban forests are often the most extensive green infrastructure in cities, providing vital ecosystem services like air pollution reduction and stormwater management.

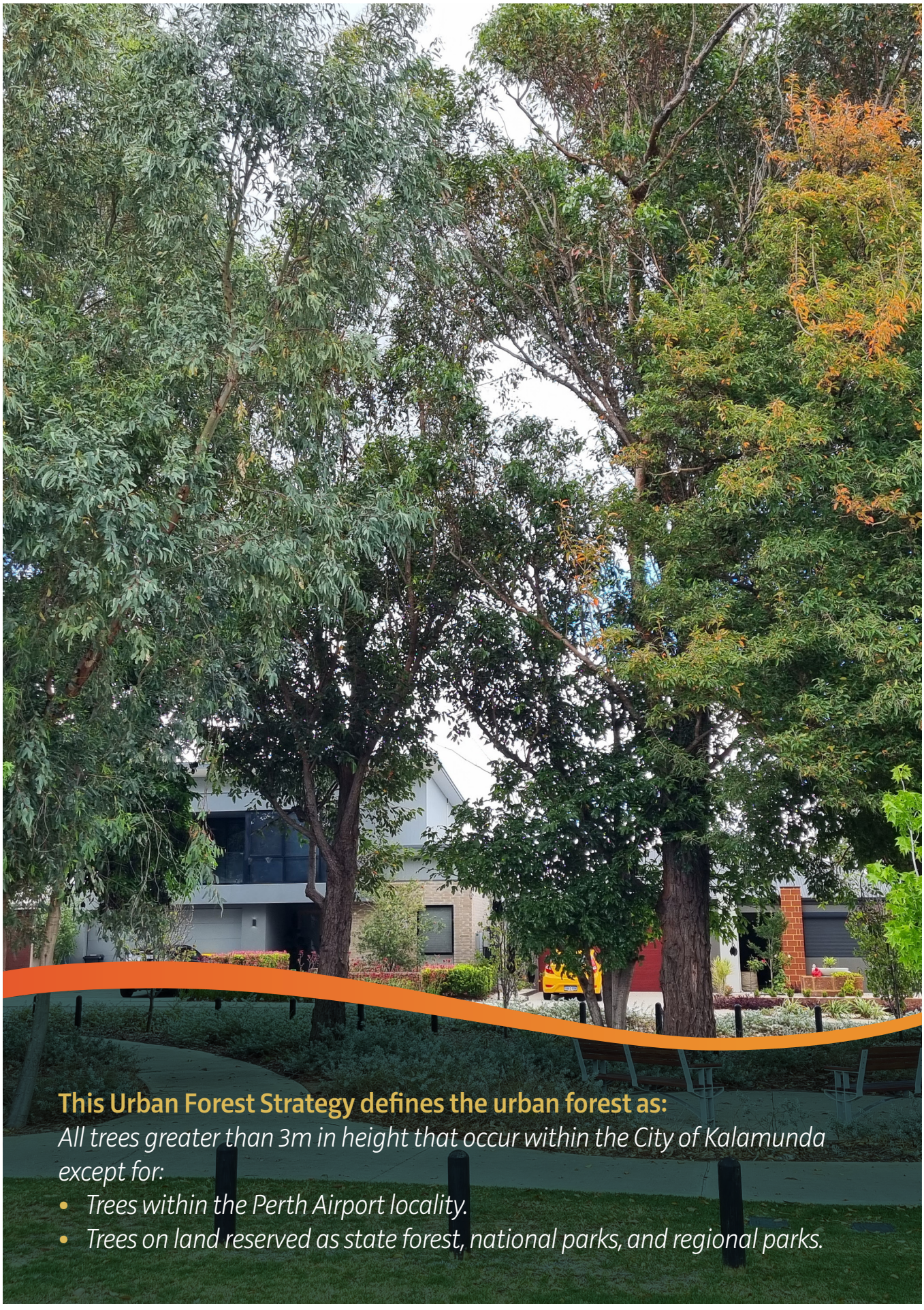
Our draft Strategy aims to ensure healthy tree canopy levels into the future, achieving 30% canopy coverage in urban and rural areas by 2043. We'll focus on three main environments (Swan Coastal Plain, Darling Scarp, and Darling Plateau) and propose specific actions to reach our targets.

We are grateful to have 40 volunteer "Friends Groups" who gift their time and skills to restore our bushland and control weeds. The community's efforts to preserve the urban forest are crucial. We must all do our part by planting trees, working together to meet development requirements, and sharing a common vision. Together, we can make a difference and bring our Kalamunda Clean and Green Local Environment Strategy to life.

Cr Margaret Thomas

Mayor





This Urban Forest Strategy defines the urban forest as:

All trees greater than 3m in height that occur within the City of Kalamunda except for:

- *Trees within the Perth Airport locality.*
- *Trees on land reserved as state forest, national parks, and regional parks.*

Defining the urban forest

Better Urban Forest Planning (Western Australian Planning Commission [WAPC] 2018) defines an "urban forest" as all vegetation growing within an urban environment, which is divided into two categories:

1. The understory, such as shrubs hedges up to three metres
2. The canopy, which is any vegetation above three metres.

While understory vegetation is also critically important, urban forest strategies generally focus on the tree canopy. This is because tree canopy cover is one of the most important measures for shading, cooling, and neighbourhood amenity. The City's Local Biodiversity Strategy (in Draft) considers native vegetation, including understorey vegetation.

The City's definition of the urban forest canopy excludes national parks, state forest and regional parks (except Ray Owen Reserve which forms part of Mundy Regional Park). These distinct areas are relatively separate from the urban environment and are not managed by the City of Kalamunda.

Including these State-managed areas in this Strategy would also skew urban canopy data, given their vast sizes.

Similarly, the Perth Airport locality has been excluded from this Strategy as the City has limited ability to influence this Commonwealth land.

While rural lands don't strictly meet the general definition of 'urban forest', they do play an important role in the City's urban forest. These lands are guided by the City's strategic planning framework.



Community benefits from urban forest

Supporting healthy people, a healthy environment, and a healthy economy – a cohesive and connected urban forest benefits the entire community.

Purifying our air quality, providing homes for animals, and playing a vital role in carbon sequestration, urban forests benefit our environment and the precious ecosystems which rely on this balance.

Our community's health and wellbeing also benefit. Leafy canopies reduce the "urban heat island effect" through natural shading and cooling effects and deliver physical and mental health benefits through improved recreation opportunities.

Economic benefits are also realised, from reduced utility use and associated costs, and increased property values in lush and leafy streets.



"Evidence suggests that green spaces help to restore our abilities, such as improving our mental alertness and enhancing recovery from stressful experiences. They can provide attractive settings for us to build capacities through physical and social recreation. Some types of greenery in our neighbourhoods may also help to mitigate the effects of wider environmental exposures, such as tree canopy providing shelter from heat island effects and road-side vegetation protecting us from traffic-related air pollution. All of these benefits accumulate and work in synergy to support child development and longer, healthier lives."

A/Prof Thomas Astell-Burt and Dr Xiaoqi Feng Population Wellbeing and Environment Research Lab (PowerLab), University of Wollongong

Growing our progress

The UFS builds on the actions the City already takes to protect and enhance the City's urban forest.

The City's *Local Planning Policy 33* (LPP 33), adopted in December 2022, carefully considers the need for removing trees of a particular size and maturity and aims to minimise the removal and impacts to these trees through the planning and development process. LPP 33 provides a balanced approach to tree retention through the inclusion of exemptions for tree removal (such as exemptions for tree removal required to comply with the City's Fire Hazard Reduction Notice), and also provisions for replacement tree planting for approved, unavoidable tree removal.

LPP 33 also includes planting provisions for new developments for certain lot densities and provides for replacement tree planting for unavoidable tree removal.

The City's current *Local Planning Scheme No.3* requires native vegetation not be damaged, destroyed or removed unless in accordance with relevant State legislation, acts, regulations, and guidelines. The new draft Local Planning Scheme 4, currently being developed by the City, will include more comprehensive provisions for vegetation protection and enhancement, including rehabilitation.

New design guidelines being implemented by the City will assist with replanting of trees in new developments, such as minimum landscaping areas within private property, and tree planting requirements in car parking areas and road verges.

The City is also in the process of preparing a Local Biodiversity Strategy, identifying actions to better protect and enhance local natural areas within the City of Kalamunda.

Beyond developing policies and local laws to protect the natural environment, the City facilitates programs which create and enhance the urban forest, including:

- Annual street tree planting (e.g. Hale Road, Wattle Grove)
- Planting of trees within public parks (e.g. Lincoln Road Reserve)
- Planting of trees with Friends Groups within local natural areas (e.g. Woodlupine Brook)
- Tree planting as part of the City's capital works projects (e.g. Central Mall, Kalamunda Town Centre)
- Annual Plants For Residents program
- Annual commemorative tree planting.

The UFS seeks to review, improve, and build on existing tree planting programs and identify new opportunities to protect and enhance the urban forest.

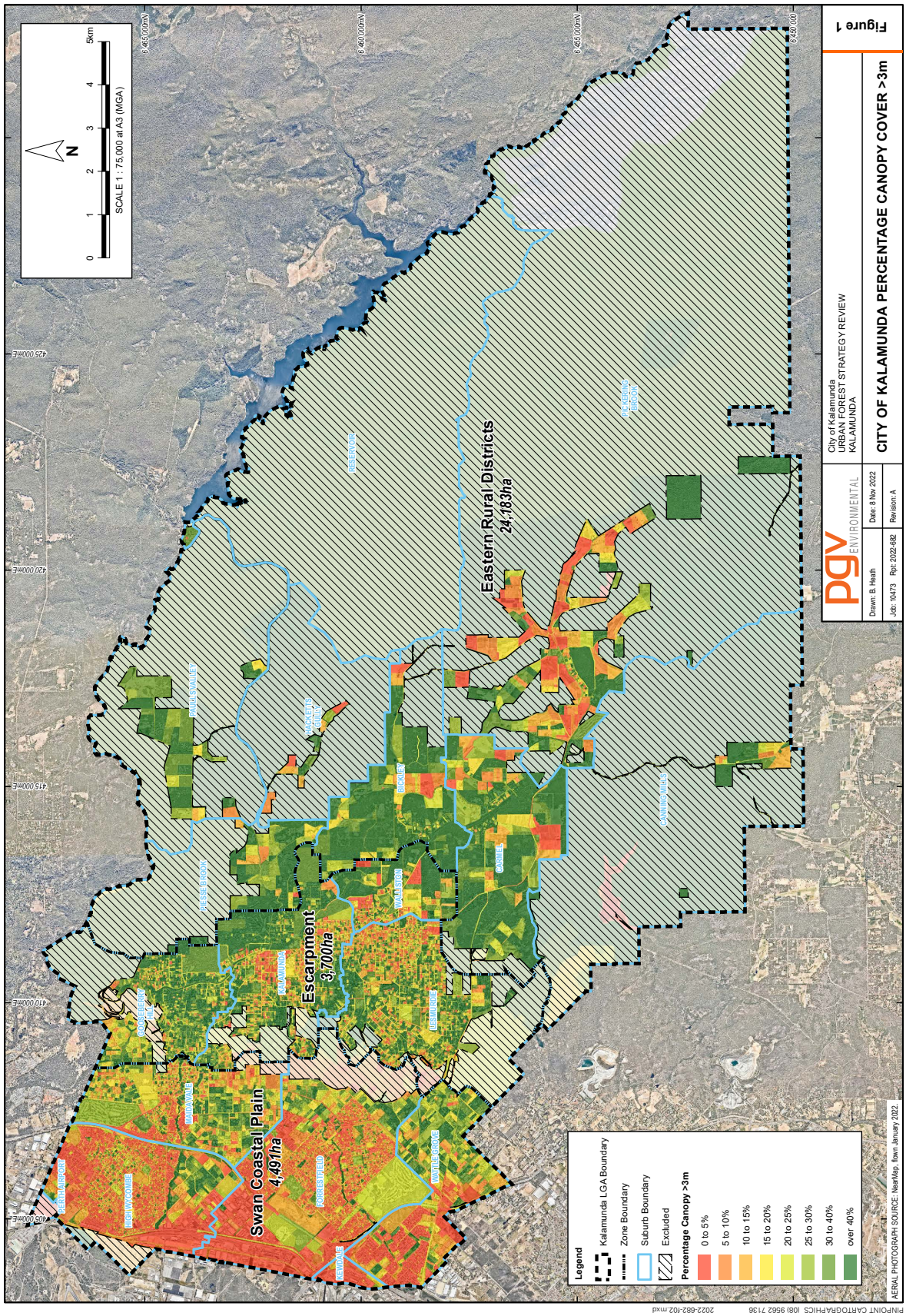


Figure 1: City of Kalamunda Percentage Canopy Cover >3m for Year 2020 (Data Source: Urban Monitor, 2022)



Roadmap for success

The UFS provides a roadmap for the City to design, manage and improve the urban forest to protect and grow the urban forest canopy for the wellbeing of our residents, enterprise, and ecosystems.

Broadly, the goals of the UFS are based on the pillars Protect, Grow, Engage, and Investigate. This provides a holistic and strategic approach to achieving our target; to protect and plant enough trees to grow the City's urban canopy cover to 30% (at maturity) by 2043.



Protect

Protect the City's urban forest on public and private land.



Grow

Grow the urban forest on public and private land through new tree plantings to maximise the social, economic, and environmental benefits of trees and urban greening.



Engage

Engage with community, research institutions, schools, government, and private sector to care for the urban forest and broaden the understanding of the benefits it provides.



Investigate

Investigate new resourcing and research opportunities to enable further investment in on-ground actions using best practice science to manage and grow the urban forest.

Data is used to understand the current canopy coverage of suburbs across the City, identify challenges and opportunities in each area, and decide the best approach to improve our urban forest.

Region	Suburb	Canopy Cover by Suburb (%)	Priority
Swan Coastal Plain	Maida Vale	23	Grow
	Wattle Grove	20	Grow
	Forrestfield	13	Grow
	High Wycombe	12	Grow
	Kewdale	3	Grow
Escarpment	Kalamunda	35	Protect
	Gooseberry Hill	35	Protect
	Walliston	33	Protect
	Lesmurdie	30	Protect
Darling Plateau	Paulls Valley	36	Protect
	Piesse Brook	39	Protect
	Carmel	39	Protect
	Bickley	44	Protect
	Pickering Brook	27	Grow
	Canning Mills	47	Protect
	Hacketts Gully	21	Grow
	Reservoir	35	Protect

Turning plans into action

Protecting and enhancing the City's urban forest is a shared responsibility between State government agencies, the City, and the community.

It is vital that all spheres work together to achieve our shared vision of increasing our urban forest and realise the benefits this creates.

Some of the collaborative ways we can work together to improve the urban forest include:

- Greening streets and parks in new developments through urban planning controls, in discussion with developers and other regulators
- Retrofitting existing streets with additional greening
- Protecting the existing plants and leafy canopy already growing on private land
- Encouraging further planting and educating residents in the social, environmental, and economic benefits of an urban forest.

To achieve the city-wide target of 30% canopy cover by 2043, as well as the goals and objectives of the UFS (outlined in Section 1.3), the City will undertake a program of strategies and actions.

Goal	Protect the City's existing urban forest on public and private land	
Objectives	• No net loss of canopy cover on public and private land. • All reported compliance matters relating to tree removal actioned within 10 business days.	
Strategy	Action ID	Action
Build knowledge and capacity of City staff to protect the City's urban forest.	1.1	Increase internal awareness on urban forest through information sessions for staff regarding their role in protecting the City's urban forest.
	1.2	Ensure staff have dedicated responsibilities to incorporate the urban forest into City Policy, processes, and procedures.
	1.3	Advocate State government to provide local government with training resources relating to ecologically sustainable bushfire management, to ensure that the City implement best practice bushfire management to protect the ongoing health and viability of the urban forest in parks (e.g. mosaic burning for prescribed burns).
	1.4	Ensure that staff involved in planning and management of the City's urban forest have appropriate training and/ or qualifications.
Establish clear policies and guidelines for protecting, managing, and maintaining urban trees on public and private land.	1.5	Review and identify any gaps in City practices and procedures, policies, design and development guidelines to align with the objectives of the UFS.
	1.6	Develop technical guidelines to inform tree selection, species, procurement, planting (e.g. rootable soil volume), replacement, maintenance (watering, pruning, staking, weed control), removal, risk management (e.g. dieback management), habitat and best practice management across the public and private land for the City, developers and residents.
	1.7	Develop and implement new or amended policies to protect existing street and parkland trees from damage caused by development works and other infrastructure works in the City.
	1.8	Undertake compliance monitoring and enforcement relating to the City's urban forest (e.g. unlawful tree removal or fulfillment of tree planting approval conditions).

Strategy	Action ID	Action
Improve the content and implementation of the local planning framework to strengthen the requirements for tree canopy protection and provision.	1.9	1)Review local planning policies that stipulate minimum landscaping requirements to ensure alignment with UFS targets. 2) Implement LPP 33 which provides for the protection of trees on public and private land. 3) Update engineering policies and guidelines for crossovers, verge treatments and street trees to protect and enhance the urban forest on public land. 4) Review and update the City's model conditions to ensure protection and enhancement conditions are consistently applied to all relevant development approvals. 5) Investigate incentives for retention of trees for new development. 6) Review all Bushfire Management Plans and the City's Fire Hazard Reduction Notices to ensure environmental objectives are balanced where possible.
Prevent and manage unauthorised activities where the City has compliance measures.	1.10	Ongoing compliance, expiations, and enforcement under relevant legislation:
	1.11	Develop and distribute education material and programs to highlight the importance of trees in the urban environment and to inform of legal and approval obligations on impacts to trees on public and private land.
Protecting canopy cover through the State Planning framework.	1.12	Advocate for the Western Australian Planning Commission to formally recognise and strengthen tree canopy protection, retention, and replacement measures in State planning instruments (e.g. model subdivision conditions, State Planning Policies etc.).
	1.13	Maintain representation on the WALGA Urban Forest Working Group to identify, communicate and seek to resolve urban forest issues through advocacy.
	1.14	In reviewing applications for subdivision, provide balanced recommendations to the WAPC on subdivision design and approval conditions, for the protection and enhancement of the City's urban forest.

Goal	Grow the urban forest on public and private land through new tree plantings to maximise the social, economic and environmental benefits of trees and urban greening.	
Objectives	•Plant enough trees by 2030 to achieve a minimum of 20% canopy cover (at maturity) in roads across the City. •Encourage landowners/ managers to increase tree planting and diversity on private land. •All new industrial developments to achieve 10% canopy cover (at maturity). •All new Urban, Centre, District Centre, Commercial, Mixed Use zoned developments to achieve 20% canopy cover (at maturity). •Ensure diversity of trees for City projects and tree planting, including no more than 10% of the same species or 30% of the same genus.	
Strategy	Action ID	Action
Informed and collaborative approach to planning and implementing UFS.	2.1	Establish a multi-disciplinary team to regularly meet to: 1. Discuss urban forest management issues and opportunities; 2. Coordinate short to medium term actions as they relate to the urban forest; 3. Communicate relevant information (such as roles and responsibilities) to internal departments.
	2.2	Participate with the Department of Planning Lands and Heritage's Urban Monitor Partners to keep up to date with the latest changes to the urban forest canopy program and assimilate any changes through reviews of this Strategy.

Strategy	Action ID	Action
Promote and use GIS tools to inform City staff and Council on urban forest values, prioritisation of where the values can be improved and spatial planning and reporting on urban forest values across the City.	2.3	Develop a technical GIS layer for urban canopy cover to allow City staff to analyse spatial information relevant to City programs and projects and use high quality data that informs decision making.
	2.4	Develop and continue to update a publicly accessible GIS layer to share spatial information on the City's urban forest with the community.
	2.5	Continue to develop and update the baseline audit of all trees currently growing on public land and streets including species, age, size, canopy spread, and health/condition within the Swan Coastal Plain suburbs as a priority, followed by the Escarpment suburbs.
	2.6	Use data from the baseline audit of all trees on public land to identify any areas where significant gaps in canopy cover may emerge due to a large proportion of street and parkland trees reaching the end of their useful life expectancy.
	2.7	Use data from the baseline audit of all trees on public land to determine the causes of tree health decline and mortalities, and risks to tree health/viability. Further, identify mitigation measures to incorporate into City policies and procedures (e.g. Technical Guidelines proposed by Action 1.4) to prevent decline of the City's urban forest.
	2.8	Establish centralised data collection and record keeping for tree assessment, planting, maintenance and removal.
	2.9	Undertake four-yearly urban forest canopy audits to review and report the changes in the urban forest across the City.

Strategy	Action ID	Action
Invest in a targeted tree planting program to maximise benefits of urban greening.	2.10	Identify and prioritise (based on lowest canopy cover) the plantable places on roads and parks where urban canopy can be increased across the City, to assist with achieving the following: 1. Aspirational target of 30% City-wide canopy cover. 2. Objective to plant enough trees in roads by 2030 to achieve a minimum of 20% canopy cover (at maturity).
	2.11	Prepare an Urban Forest Planting Masterplan based on the prioritised roads and parks identified in Action 2.10 and following the Guidelines in Action 1.4. The Urban Forest Planting Masterplan should incorporate the Street Tree Masterplan which is to be developed under the City's ELUPs. The Urban Forest Planting Masterplan should use tree species which will reach a minimum height of 3m at maturity.
	2.12	Implement yearly tree planting programs based on the identified and prioritised plantable spaces in parks and streets to achieve the objective of a minimum 20% canopy cover by 2030. Follow the Technical Guidelines in Action 1.4.
	2.13	Incorporate tree protection and maximise planting in all projects on public land, especially City owned parks, verges, and open spaces. At the onset of any proposal for significant public works, prepare a benchmarked Tree Impact Assessment of proposed design, engineering plans or changes.
	2.14	Investigate opportunities for establishing ecological linkages where appropriate to connect areas of tree canopy or vegetation.
Integrate tree retention and new tree planting into existing City capital works programs and City facilities from planning to renewal.	2.15	Establish minimum tree canopy targets and criteria for replacement planting for City projects.
	2.16	Investigate the use of structural cells and soils to create healthier growing conditions for trees in areas of high density (e.g. activity centres).
	2.17	Implement and retrofit water sensitive urban design infrastructure into ongoing capital works programs.
	2.18	Implement innovative retrofitting solutions for addressing infrastructure and community conflicts with existing mature trees

Pursue opportunities to increase canopy cover and diversity in private landholdings	2.19	Investigate and promote opportunities to increase, protect and increase canopy cover on private landholdings through incentives programs.
	2.20	Through implementation of LPP 33, ensure increased tree planting and canopy cover, and encourage diverse replacement planting through the planning process where trees are removed on public and private land.
	2.21	Incorporate minimum tree planting and canopy cover targets into the City's Industrial Local Planning Policies/Design Guidelines, consistent with LPP 33.
Urban design will enhance the diversity and ecological function of urban areas.	2.22	Identify and prioritise areas with ecological connection at the planning and design phase to include an improved palette of local native species.
	2.23	Consider ecological connections to natural areas where possible in the planning of new development areas.
	2.24	Establish minimum diversity targets for tree planting associated with City projects.
Strategy	**Action ID**	**Action**
Ensure stormwater is effectively managed for urban greening	2.25	Incorporate Water Sensitive Urban Design principles into City projects to retain vegetation and ensure pre-development hydrology and water quality is maintained.
	2.26	Continue to assess planning proposals against Water Sensitive Urban Design principles to ensure the retention of vegetation, pre-development hydrology and water quality, to protect the existing urban forest.

Goal	Engage the community, research institutions, schools, government, and private sector to care for the urban forest and broaden the understanding of the benefits it provides.	
Objectives	•Maintain or increase the physical and fiscal support provided for volunteer groups within the City for urban forest initiatives. •Increase participation in tree planting initiatives that educate and inspire the community. •Increase engagement of private landholders and developers in supporting urban forest initiatives.	
Strategy	Action ID	Action
Increase awareness about the value and importance of the urban forest	3.1	Review and develop environmental programs and engagement opportunities, including an urban forest landing page on the City's website, to educate the community on the value and importance of the urban forest, the goals and objectives of the UFS and to promote the benefits of urban greening.
Provide opportunities to participate in protecting and enhancing the City's urban forest.	3.2	Support, resource and enhance existing hands-on community programs and enable community greening initiatives, such as the annual commemorative tree planting day, National Tree Day, Plants for Residents and Friends Group programs. These programs should be reviewed and enhanced to align with the goals and objectives of the UFS, for example ensure these programs incorporate tree species that produce sufficient canopy cover.
	3.3	Investigate incentives and mechanisms to facilitate urban tree planting outcomes on private land including planting of appropriate canopy trees, riparian corridors, habitat enhancement and retention, and weed management.

Strategy	Action ID	Action
Engage the whole community in designing and protecting urban forest landscapes	3.4	Develop and maintain partnerships with schools, external agencies, and private sector to identify opportunities to grow and enhance the urban canopy and increase knowledge regarding the importance of the urban forest.
	3.5	Directly engage local residents through friends groups and other stakeholders in design and planning processes for urban forest landscapes.
	3.6	Work with Whadjuk Noongar traditional owners and Aboriginal people to develop community programs that increase knowledge about the cultural significance of landscapes, flora, and fauna in the City.
	3.7	Update policies and procedures to outline the expectations for community consultation and notification on programs and projects affecting public trees.
Resource and knowledge sharing	3.8	Engage with experienced land management groups such as landcare/friends groups and infrastructure managers (DBCA/DWER) to promote knowledge exchange.
	3.9	Through WALGA, advocate for the WAPC to continue fund the Urban Monitor Program to assist local government with monitoring urban forest canopy cover.
	3.10	Identify and look to participate in tertiary institution, Cooperative Research Centres (CRCs), WALGA and government lead projects/partnerships to leverage funding for urban canopy projects.
	3.11	Identify and support broader Natural Resources Management group initiatives for landscape scale restoration.
	3.12	Encourage community participation in tree planting days run by third parties through active engagement.
	3.13	Engage and educate residents on suitable tree retention, tree planting (e.g. fire-wise species) and management (pruning of lower limbs and removal of leaf litter) for bushfire protection on private property.

Goal	Investigate new resourcing and research opportunities to enable further investment in on ground actions using best practice science to manage and grow the urban forest.	
Objectives	•Increase available funding to facilitate protection and enhancement of the City's urban forest. •Identify and secure opportunities for offset tree planting under State and Commonwealth legislative approvals for private and government projects. •Continually improve urban forest practices and outcomes.	
Strategy	Action ID	Action
Investigate and secure funding opportunities for urban forest protection and growth in the private and public sector.	4.1	Develop a business case to advocate for increased government funding for tree planting programs.
	4.2	Adopt and implement a tree valuation methodology to ensure appropriate value of compensation is received when public trees are removed.
	4.3	Ensure that compensation received from successful prosecutions relating to unlawful tree removal contributes towards an environmental reserve which is used for replacement tree planting and/or improved environmental outcomes.
	4.4	Develop and promote an offset register of land that will be managed for conservation purposes and provide opportunity for replacement tree planting, in line with State and Commonwealth legislative offset requirements for State and private development proposals.

Strategy	Action ID	Action
Investigate and improve urban forest practices and outcomes.	4.5	Undertake monitoring of urban forest outcomes across case study areas (refer Appendix 5) within the City to determine if pre-development urban forest predictions are achieved.
	4.6	Identify opportunities to improve urban forest practices and implement measures to achieve improved urban forest outcomes based on the results of monitoring undertaken (action 4.5).

Monitoring and reporting on our shared success

A Monitoring and Evaluation Program (MEP) will be established by the working group to track the progress and relative success of the UFS actions and assess whether the City is meeting the goals and objectives. The objectives of the UFS are specific, measurable, actionable, realistic and time-bound to ensure progress toward targets can be effectively measured and reported and adapted if needed.

Each year the City will monitor and report against:

1. Progress toward the aspirational target of 30% city-wide canopy cover (refer Section 1.3)
2. Progress toward the broad goals (Protect, Grow, Engage, Investigate- refer Section 1.3)
3. Progress toward the shorter-term objectives (refer Action Plan Table 4)
4. Achievement of the actions and their determined, measurable targets under the Annual Urban Forest Action Plan for the given year.

Reporting on the progress and measures of success of the UFS actions will be undertaken annually through the City's Corporate Business Plan, and provided with the following years' annual action plan. Additionally, key updates on the UFS will be reported via an Urban Forest landing page on the City's website.

The UFS will be reviewed every four years to analyse changes in the urban canopy and to determine if the UFS needs to be adjusted to address any new issues or actions that have not been effective.

Urban canopy data collected from the DPLH Urban Monitor program for Year 2020 is proposed to be the baseline year of data for this UFS. This data is anticipated to be updated by DPLH every two years and will be analysed to see the change in canopy cover for trees >3m in height.



The Hales

Tree retention and planting at the Hales in Forrestfield is anticipated to achieve a 7% increase in canopy cover at maturity.



2 Railway Road, Kalamunda WA 6076
PO Box 42, Kalamunda WA 6926
T: 08 9257 9999. F: 08 9293 2715
E: enquiries@kalamunda.wa.gov.au
www.kalamunda.wa.gov.au

City of Kalamunda