

Perth and Peel Urban Greening Strategy

Submission June 2024

1. Introduction

The Western Australian Local Government Association (WALGA) is an independent, member-based, not for profit organisation representing and supporting the WA Local Government sector. Our membership includes all 139 Local Governments in the State.

WALGA uses its influence, support and expertise to deliver better outcomes for WA Local Governments and their communities.

We advocate to all levels of Government on behalf of our Members, and provide expert advice, services and support to Local Governments.

WALGA's vision is for agile and inclusive Local Governments, enhancing community wellbeing and enabling economic prosperity.

Urban forests are defined as all vegetation growing within the urban environment, on both public and private land. Trees and other vegetation in urban areas provide significant social, economic, and environmental benefits to the community. The retention and growth of a healthy, resilient and diverse urban forest is a shared responsibility across State and Local Governments, landholders, industry, businesses and the community.

Urban forests face multiple challenges worldwide, impacting their growth and protection. In urban environments, trees contend with exposure to pollutants, extreme temperatures, drought, urban development, and limited space for root and crown development. These conditions increase susceptibility to insects and diseases. However, governments and communities are increasingly recognising the importance of urban forests for quality of life, climate resilience, and ecosystem services.

Western Australia is already experiencing the impacts of climate change, including more frequent and severe droughts, heatwaves, high-risk bushfire weather, extreme rainfall events and rising sea levelsⁱ. Climate change projections show that Western Australia will experience more hot days and a decrease in rainfall in the South-West Regionⁱⁱ.

Planting trees and increasing native vegetative cover in urban areas are key climate change mitigation and adaptation measures, with local species increasing resilience to environmental changes and vegetation cooling local environments by 5-6°Cⁱⁱⁱ. The right tree in the right place provides multiple benefits, including reducing the urban heat island effect, contributing to stormwater infiltration, providing food and shelter for local wildlife and improving human health and wellbeing.

Loss of tree canopy cover and native vegetation are key issues for Local Governments. In most urban areas across Western Australia, there has been a decline in canopy cover, with 41% of Local Governments experiencing a significant loss of canopy^{iv}. Perth has 16% canopy cover^v, the lowest of all capital cities in Australia. The discovery of the Polyphagous shot-hole bore in WA in late 2021, and the subsequent ongoing response, that has seen over 3,000 trees removed to date, places greater pressure on Perth's already shrinking urban forest.

The Perth and Peel regions are located within the South-West of WA biosphere, an area that forms one of only two global biodiversity hotspots in Australia. Several ecological communities of the region are now nationally listed as likely to become extinct through loss of extent, including the Banksia Woodlands of the Swan Coastal Plain and Tuart Woodlands of the Swan Coastal Plain.

WALGA has completed a significant body of policy and advocacy work to support Local Governments with their urban forest planning and management, including:

- Local Biodiversity Program (2001 – 2014)
- Better Urban Forest Planning Guide (2018)
- Coordination of the Local Government Urban Forest Working Group (31 Local Governments)
- Local Government Approaches to Tree Retention Issues Paper (2022)
- Urban Forest Conferences (2021, 2023)
- Urban Forest Advocacy Position (2023)
- Model Local Planning Policy Tree Retention (2024)

WALGA commends the State Government on the development of the strategy, which is a key step towards creating a cooler, greener, biodiverse and climate resilient urban environment in the Perth and Peel regions. This submission outlines WALGA's key priorities and recommendations for the Perth and Peel Urban Greening Strategy (the strategy). The full list of the 29 recommendations is provided in Appendix 1.

This submission is informed by WALGA's Urban Forest Advocacy Position (Appendix 2), and consultation opportunities delivered in partnership with the Department of Planning, Lands and Heritage (DPLH). These included a meeting with the Urban Forest Working Group on 28 March 2024, and targeted workshops with Local Government officers on 30 April 2024 and Elected Members on 2 May 2024. The consultation opportunities involved 30 of the 33 Local Governments in the Perth and Peel regions, together with four Local Governments from the south-west and great southern regions of the State. Participating Local Governments are provided in Appendix 3.

The level of engagement with the Local Government sector to date has been significant. Local Government is a key stakeholder in the development of the strategy with extensive experience and expertise in urban forest policy development and implementation. WALGA therefore welcomes the opportunity to continue to engage with the State Government during the development of the strategy and explore identified key topics further with the sector.

2. Establishment of a lead agency for urban forest

WALGA supports the establishment of a lead agency within the State Government to coordinate urban greening policy development and delivery of urban greening initiatives. In Western Australia, there is a growing number of public greening initiatives being undertaken by State Government, Local Government and non-government organisations as well as policies and programs that directly and indirectly impact the achievement of urban greening objectives. A lead agency will ensure greater alignment across government on the objectives of the Strategy.

Establishment of a lead agency was also identified in the State Infrastructure Strategy^{vi} (2022), with responsibilities including the overarching coordination; resourcing and funding mechanisms; program evaluation; facilitating partnerships and reviewing planning policy settings.

Experience in other Australian jurisdictions highlights the benefits of coordination across State agencies and multiple stakeholders. For example, Green Adelaide is a government supported statutory board established in July 2020, reporting to the Minister for Environment and Water. Green Adelaide's vision is to create a cooler, greener, wilder and climate resilient metropolitan South Australia.

- Recommendation 1 (R1): Determine the preferred agency to lead implementation of the Urban Forest Strategy, including an effective governance arrangement and transparent mechanisms to report on progress toward the goals and targets of the Strategy.

3. Development of a state-wide Urban Forest Strategy

An overarching state-wide Urban Forest Strategy that sets the strategic direction and priorities for the Perth and Peel region as well as regional urban centres is fundamental to address the loss of tree canopy and achieve liveable communities.

The strategy should determine the responsibilities and capacities of all State Government Departments to contribute towards urban greening objectives.

WA is experiencing a housing crisis, with population growth, a lack of affordable housing and an increasing number of people unable to access the rental market due to limited supply. WALGA strongly believes that the provision of housing and urban greening are, and should be, compatible objectives. Green infrastructure is a critical element of liveable neighbourhoods and an investment in the long-term sustainability and resilience of communities. The strategy should ensure the prioritisation of the retention of existing trees or provision of suitable planting areas is central to State Government plans for housing supply and affordability.

Many regional Local Governments identify urban greening initiatives as key priorities in their Strategic Community Plans, as informed by local communities. For example, the City of Greater Geraldton launched the Million Trees project in 2011, following a series of community engagement events where the community was asked what would make it a better place to live by 2029. The number one response was to green the city centre and wider district. By 2021, more than 500,000 trees and shrubs have been planted by the Local Government, businesses, community groups and individuals.

- R2: Ensure the strategy identifies the responsibilities of all relevant State Government Departments and Agencies to contribute towards urban greening objectives.
- R3: Ensure the provision of green infrastructure is central to State Government plans for affordable housing.
- R4: Expand the focus of the Perth and Peel Urban Greening Strategy to include regional urban areas.

4. Tree canopy targets

In the Perth region, only 22% of suburbs have canopy cover above 20% and ongoing loss is occurring. Approximately 50% of these Local Governments have committed to urban tree canopy targets of between 20-30% canopy cover within timeframes of between 2030 to 2050. These targets broadly align with other States' targets for their urban areas. Local Governments in the Peel region have not adopted urban canopy targets.

WALGA's Urban Forest Advocacy Position supports the adoption of a minimum tree canopy target of 30% by 2040 for the Perth and Peel regions. It is intended that this target is for the region as a whole, in acknowledgement that the urban forest is not evenly distributed and there will be variation in what is achievable at the suburb and neighbourhood level.

Research in Australia has found that 30% is an important threshold – a minimum canopy cover percentage that ensures health and wellbeing benefits to residents^{vii}. Many cities in the world in terms of greening have set a target of 30% canopy cover, including Barcelona, Bristol, Canberra, Seattle and Vancouver.

Internationally, there is growing implementation of the *3-30-300 Rule*, which sets a target of 3 visible trees from every home, 30% canopy cover in every neighbourhood, and high-quality greenspace within 300 m of every home^{viii}. It offers a benchmark for cities to promote equitable access to nature, and strikes a balance between being comprehensive, straightforward to implement and monitor, and easy to communicate to the wider public.

As shown in other jurisdictions, setting a city-wide canopy cover targets facilitates coordination between State and Local Government, supports Local Governments to set and work towards targets, requires developers to consider tree retention and planting, and assists with community education and engagement.

Within the Local Government sector, there is a lack of consistency in the methodology used to develop targets. Many Local Governments with canopy cover targets encompass the urban forest in its entirety (both public and private land), while a growing number of Local Governments are establishing targets for specific classes of land. For instance, the City of Rockingham's canopy cover targets are 30% for suburban residential, 20% for urban and 15% for rural land. The City of Perth's target is to increase canopy cover in the public realm from 19% to 30% over a 30-year period.

Monitoring changes to canopy cover over time has demonstrated that Local Governments are experiencing difficulties in achieving their targets due to the ongoing removal of trees on private land. For example, the City of Stirling has a target of 18% by 2040 across all land classes, however tree canopy has declined over a ten-year period and is currently around 12%. The City's canopy cover has grown by 130 ha on council managed land, which has been offset by an equivalent loss on private land. The City of Canning has set a target of 9.3% total canopy cover by 2039, a 22.3% increase from the current 7.7%. This involves planting in public open space (17.6% to 40%) and streetscapes (6.1% to 12.9%) to increase canopy cover. However, despite the City's planting program, they are experiencing difficulties making progress towards the target due to loss of trees through urban infill development.

Several Local Governments with city-wide targets are considering revising targets per land class, given the lack of management control over trees on residential land. Other Local Governments, such as the City of Belmont and City of Melville, have endorsed targets of "no net canopy loss".

In the future, Local Governments may also consider canopy cover targets for different strata (or layers) of the urban forest. Plant communities with multiple layers decrease air temperature to a higher degree than those with tall canopy only^{ix}.

- R5: Adopt a minimum tree canopy target of 30% by 2040 for the Perth and Peel Regions and consider sub-regional targets.
- R6: Provide guidance on land categories (e.g. residential, parks, public realm) and vegetation strata (understorey, midstorey, overstorey) for canopy cover measurement.

5. Data to inform decision making

There is growing recognition of the need to identify where green infrastructure is best located to provide the greatest return for investment, though consideration of environmental, climate and social factors. Initiatives underway aim to collate datasets into one mapping portal (e.g. Thriving Perth, Water Corporation) or undertake suitability analysis of areas for planting programs



informed by the weighting of data layers according to local priorities (e.g. Australian Urban Design Research Centre). These projects present valuable tools for use by State and Local Government to inform priority areas for green infrastructure.

Urban heat mapping

CSIRO has published open access Urban Heat Island (UHI) estimates for the Perth region for 2019. The data is captured at 50 cm resolution using aerial imagery. The data measures the deviation between urban temperatures and baseline native vegetation on a scale from <0, 0 – 1, 1 – 3, 3 – 5, 5 – 7 and >7°C. Local Governments have identified several improvements to the UHI data to meet their requirements:

- The UHI data is limited to the 2019 capture, with no ability to monitor change over time;
- The UHI data is captured at a certain point in time and is necessarily influenced by the weather conditions of the day; and
- The UHI data requires classification into discrete classes and assignment of a heat map colour palette when displayed in Local Government GIS systems, such as ArcGIS, QGIS or Intramaps. This presents a barrier to use of the data for Local Governments that don't have internal GIS resources and capacity.

The State Government should fund regular UHI mapping as part of the strategy.

Urban canopy cover

DPLH has published open access Urban Monitor products (suburb, mesh block and parcel data) for the Perth and Peel regions for 2009, 2014, 2016, 2018 and 2020. The data is captured at 50 cm resolution using aerial imagery. Vegetation is reported for each height strata of 0 – 3 m, 3 – 8 m, 8 – 15 m and 15+ m. Vegetation cover greater than 3 m in height is deemed tree canopy.

Consistent and standardised canopy cover data at regular intervals is necessary to monitor trends over time, inform the setting of realistic targets, and prioritise greening projects to the areas of greatest need.

Approximately 50% of Local Governments in the Perth region procure canopy cover data at their own expense to assist with urban forest planning. Local Governments have identified the following improvements to the Urban Monitor products that would enable it to better meet their requirements:

- Provision of raster data to allow monitoring of growth/loss of individual trees and identify growth rates of species (useful for canopy growth projections);
- Use of consistent cadastre to standardise data across years;
- Provision of data on an annual basis;
- Review of the value of the Urban Monitor Dashboard;
- Ability to spatially view data on a mapping portal (many smaller or regional Local Governments have limited GIS resources); and
- Extension to regional urban centres.

These changes should be considered as part of the recommendations of the strategy.

Green linkages

Habitat fragmentation is a key threatening process leading to the loss of biodiversity. Once a vegetation community falls below 30% of its original extent, there is a rapid decline in the number of species that can survive in the landscape as connectivity and minimum habitat requirements for species are lost. The spatial arrangement of natural areas across the landscape becomes critically important for maintaining biodiversity^x.

Data on Perth's regional ecological linkages (WALGA, 2004) is available on DataWA, and NatureLink Perth has developed a [storymap](#) that identifies nature-friendly pathways joining two (or more) protected natural areas, providing the least risk to species movement across the landscape.

Approximately 70% of metropolitan Local Governments have mapped the location of ecological linkages, and approximately 50% of metropolitan Local Governments use this data to inform their planting programs. For example, the City of Kwinana have identified regional and local ecological linkages in their Local Biodiversity Strategy (2022), which are incorporated in the City's draft Local Planning Strategy.

State Government protection of Bush Forever sites and recognition of regional ecological linkages in the planning framework would assist Local Governments to implement local green linkages.

Species suitability

Improving the diversity and resilience of species selected for planting programs is necessary for a future proof urban forest. Species selection should be determined according to the requirements or constraints of the particular location, considering parameters such as canopy cover, drought tolerance, biodiversity contribution, allergenicity, performance in urban settings, root invasiveness and biosecurity. Informed species selection appropriate to the location can deliver multiple benefits for the community and environment. Further guidance is needed, with research often focusing on one aspect of plant selection (e.g. biodiversity or climate resilience). For example, Macquarie University has developed the [Which Plant Where](#) tool, which is a searchable online species selection tool for climate-smart urban greening.

Vulnerable communities

Localised spatial data that identifies areas of socio-economic disadvantage, vulnerable community cohorts are important considerations to ensure community benefit from urban greening programs.

The Heat Mapping Vulnerability Project, a collaboration between the State Government and the Western Australian Council of Social Services, is mapping high heat and heatwave risk across Western Australia. The mapping will enable the design of targeted strategies, which are likely to include urban greening, to reduce the risk of heat-related morbidity and mortality.

Part 5 of the *Public Health Act 2016* came into effect on 4 June 2024, requiring the State Government to develop a new State Public Health Plan within one year and Local Governments to develop Local Public Health Plans within two years of this date. The plans will include the use of health data to develop health profile reports and may assist map 'hot spots' of community need.

Water sensitive urban design

The long-term availability of water to is critical to realising achieving the benefits of urban greening initiatives. Greening projects that have access to water assets, including shallow groundwater, wetlands, streams, and drainage nodes, represent a simple and effective opportunity to support the establishment of vegetation and support maximum growth.

Water availability drives landscaping outcomes, and there is the need for a sustainable water management approach to meet urban canopy goals. Trials at the City of Melbourne have demonstrated that street trees supported by stormwater fed tree pits can have up to nearly double the canopy growth of trees growing in parkland settings (D. Callow pers comm, City of Melbourne). There is widespread recognition that provision of the 'blue' is critical to achieve the 'green'.



- R7: Support the development of guidance/tools to assist with species selection to deliver multiple benefits, and mapping tools that enable prioritisation of areas for urban greening based on environmental, social and economic considerations.
- R8: Work with Local Governments to identify improvements to the suite of Urban Monitor products available, to enable it to better inform urban forest planning and outcomes.
- R9: The State Government should fund regular UHI mapping and engage with the Local Government sector to tailor Urban Monitor and UHI data products to their needs.
- R10: Undertake a public review the Bush Forever policy to ensure adequate protection, particularly where they occur on private land, exist for regionally significant bushland.
- R11: Incorporate ecological linkages into the state planning frameworks to support their consideration during land use planning and revegetation actions.

6. Legislative and policy mechanisms

Regulatory mechanism to consider the removal of trees as a form of development

Retaining more trees on private land is key to achieving urban canopy outcomes, given that 80% of all trees within urban areas are located on private land. This is similar to other capital cities in Australia, with the City of Melbourne reporting 75% of all green space is on private property.

The data demonstrates, and the sector has clearly communicated that the loss of trees on private land is negating gains being made on public land. Local Government planting programs and other available provisions such as significant tree registers and tree retention orders are unable to make a significant difference to canopy cover if the loss of trees on private land is not stemmed.

An analysis of tree protection mechanisms across Australia rated WA as having the weakest protections for trees on private land of any State^{xi}. Importantly, other jurisdictions are continuing to strengthen their state-wide tree protections regimes^{xii}.

The State planning system lacks appropriate guidance, policy mechanisms and tools to adequately regulate the removal of trees on private land.

Historically development approval has not been required to remove a tree in WA. This has resulted in land being cleared prior to lodging a development application for other works on site. Most infill development in WA is medium density, with duplex and triplex developments replacing single homes and resulting in the removal of existing canopy. The loss of trees coupled with excessive hardscaping of medium density developments in Perth limits opportunities to retain and grow canopy.

Local Governments are seeking to address this through implementing various statutory measures to retain trees on private land, including local planning policies or local planning scheme provisions including significant tree registers (voluntary or non-voluntary) and tree preservation orders (where impending works have the potential to negatively impact trees). In some cases, heritage protection laws also provide protections for some trees on private land.

The centralised nature of the State planning framework, and the lack of strong tree retention provisions, demonstrates the need for the State Government to provide contemporary legislative

and policy mechanisms to enable the broad protection and growth of urban forest, in both greenfield and in-fill settings.

In recent years, several Local Governments, including the City of Nedlands and City of South Perth, have consulted with their communities, and sought to progress amendments to Local Planning Schemes that would require development applications to retain trees meeting certain criteria on private land. However, these amendments have been refused by the Minister for Planning, leaving the sector uncertain as to what mechanisms can be used.

In April 2024, WALGA released the *Tree Retention Model Local Planning Policy*^{xiii} (LPP), which clarifies tree removal (or other tree damaging activity) is works that requires a development approval and the circumstances in which approval is required to remove a tree.

The LPP aims to establish a consistent policy setting and provisions for regulating trees on private land at all stages of the planning and development process. Several Local Governments are progressing with adoption of the model policy.

A broadly consistent approach would ensure the equitable provision of tree canopy across new and established urban areas, with lower tree canopy generally correlated with lower socioeconomic areas. It would also create certainty for proponents, decision makers and the community. Model and Deemed provisions within the Planning and Development (Local Planning Schem) Regulations 2015, for tree retention and protection, would be an effective regulatory mechanism.

As an example, in the ACT the *Urban Forest Act 2023* (formerly the *Tree Protection Act 2005*) has increased protections for trees on public and private land by classifying all trees on public land as protected trees, reducing size requirements for protected trees on private land, and protecting some dead native trees. Relatively high maximum penalties for tree damaging activities have also been included, particularly where a person is considering developing a property for financial gain, to act as an effective deterrent.

Broad protections for regulated trees are more effective than significant tree registers that only protect individual culturally significant trees. Tree registers that can only be nominated or consented to by the owner of the land which contains the trees further reduces the effectiveness of these registers.

By excluding consideration of regulatory mechanisms from the strategy and choosing to focus on incentive-based and educative mechanisms to grow the urban forest, the State Government has excluded the most effective tools to halt and reverse the loss of large urban trees. As has been shown in other jurisdictions around Australia, regulatory protections for trees on private land are necessary and effective instruments for protecting and growing canopy.

WALGA recommends that a key action under the strategy should be the development of a comprehensive analysis of current and proposed regulatory mechanisms for protecting urban trees across Australia and provide Government with an options paper for implementing such requirements into Western Australia

- **R12: State Government undertake a comprehensive analysis of current and proposed regulatory mechanisms for protecting trees on private land in urban areas across Australia and provide an options paper for implementing such requirements into Western Australia**
- **R13: Provide an effective and efficient State Government regulatory mechanism that allows Local Government to consider the removal or alteration of a tree as a form of development that requires development approval.**

Incentivising retention of trees and requiring tree planting on private property

In recent years the State Government has made policy and regulatory changes to retain and promote trees in response to declining canopy cover on private land, with a focus on incentivising retention of trees or requiring the planting of new trees.

State Government amendments to Residential Design Codes (R-Codes) Volume 1 for low-density (single house) development in mid-2021 includes a minimum tree planting requirement of one tree, with a minimum planting area of 2 x 2m. For group dwelling developments, trees greater than 3m are required to be retained and provided in communal open space areas.

The Medium Density Codes (MDC) were developed for medium density development (R30 – R60) and due to be gazetted in 2023. However, in response to growing concerns around pressures on the housing market and industry the MDC were amended at the request of the Minister for Planning.

The updated R-codes that were gazetted in early 2024 introduced new minimum tree planting requirements for grouped or multiple dwellings and incentives for retaining existing significant trees including reduction of soft landscaping requirement and site areas reductions for multiple dwellings. However, these incentive provisions do not capture single houses in areas code R30-40 under the amended R-Codes which is the most common form of development.

R-Codes Volume 2 for high density (apartment) development also includes provisions to maximise the retention of existing trees, improve tree canopy and provide deep soil areas to sustain healthy tree growth, together with minimum tree planting requirements based on lot size.

While the above measures go some way toward enabling future canopy growth on private land, the R-Codes do not go far enough in providing for, or incentivising, the retention of established canopy trees. For example, apartment developments that retain an existing tree can receive a 3% reduction in deep soil area provision, which does not increase regardless of the number of trees retained on site. As a result, for proponents trying to maximise yield, it is easier and more cost-effective to clear the site of trees prior to lodging an application or nominate replacement trees at the rate prescribed in the R-Codes.

Regulating trees on private land outside residential zones can also have its own challenges and opportunities. The requirement for car parking can often conflict with landscaping requirements specifically on commercial and industrial sites. Car parking areas can be designed with limited ability to accommodate trees. The use of permeable paving and other alternate surfaces, coupled with deep soil zones should be considered to aid in access to water for urban planting survival and trees should also be prioritised over other shade structures.

Policy mechanisms and tools developed to regulate trees on private land, don't usually consider compliance monitoring. The City of Stirling reported a 5% compliance rate with their Local Planning Policy requirements for minimum tree provisions. While the R-Codes includes tree planting requirements, it is unclear if these will be effective on ground and DPLH should be responsible for monitoring their compliance to inform any future changes to the tree provisions.

Incentives outside of the regulatory provisions of the planning system could be used to encourage land holders to retain trees on private land. Another mechanism could be providing financial assistance towards the cost of maintaining retained trees.

The City of Melbourne's Urban Forest Fund was created in 2017 and provides an example of a program that provides financial support for new greening projects on private property. Land holders are able to apply for a grant funding matched dollar-for-dollar by the City, with the program providing over \$1.7 million in funding to date.

The City of Melbourne have also designed a Green Factor tool to help ensure the construction of new buildings and significant alterations include greening provisions, to help increase the amount of vegetative cover on private land. When first released, the tool was used in a voluntary capacity by landscape designers, architects and developers. The City of Melbourne is now progressing with embedding the tool into their planning scheme, with all new developments or alterations/additions above 1000 m² floor area required to achieve minimum green factor scores.

- R14: DPLH undertake compliance program to ensure required minimum tree planting provisions are effective and inform any future changes to the R-Codes.
- R15: Identify suitable incentives to support the retention of trees on private property.

Prioritisation of trees and vegetation as a key structural element in neighbourhood design

Historical practices of subdivision in Western Australia facilitated the preservation of the natural landscape and typography, which allowed the retention of existing trees. In recent decades, this has been superseded by bulk earthworks that typically involve wholesale clearing prior to land sales and dwelling construction. The current community expectation is that they will purchase a flat, cleared and serviced lot to construct their dwelling.

Liveable Neighbourhoods is a Western Australian Planning Commission (WAPC) operational policy that guides the structure planning and subdivision for greenfield and large brownfield (urban infill) sites. This policy does include provisions for retaining and providing trees but does not adequately prioritise the protection of trees and vegetation when designing new suburbs, resulting in this large scale clearing and insufficient space to accommodate new trees in new suburbs.

WAPC's *Model Subdivision Conditions Schedule* also facilitates this form of development by requiring land to be filled, stabilised, drained and/or graded, resulting in trees being removed to meet such conditions. *Environmental Advice Note Ena510* pertains to the retention of trees, however currently there are no model conditions requiring trees to be retained or that provides for allowances or concessions for retaining trees.

This current greenfield development pattern also generally requires significant basic raw materials (BRM) such as sand and limestone. The need for BRW places additional burden on vegetation on the swan coastal plain, as significant clearing occurs to support BRM operations.

Creating sustainable and resilient communities is also increasing becoming challenging in the context of a changing climate with hotter temperatures and more destructive and extreme weather events.

Even in highly urbanised contexts, areas of green spaces and waterbodies have clear cooling effects, highlighting the importance of the retention of natural environmental assets in neighbourhood design. Research on the impact of urban morphologies urban heat and the cooling effect of different green space designs, such as being undertaken by AUDRC, will provide valuable information to guide the planning of liveable neighbourhoods.

Current greenfield development is compounding the loss of both urban and regional vegetation, impacting biodiversity, reducing habitat for threatened ecological communities, and increasing the community's vulnerability to climate change and high heat events.

Liveable Neighbourhoods is currently under review and is intended to be replaced by Neighbourhood Design State Planning Policy. The policy settings of Neighbourhood Design, including the broader impacts of that policy, must be a key consideration of Government as part of the strategy.

Whilst these policy settings are critical, the implementation of the policy is also essential. Trees and vegetation need to be prioritised through the whole development process including structure

planning, subdivision, detail design and occupation stages. Tree retention and provisions should be considered early in the development process, and each stage needs to set up pre-conditions for the next stage to be successful.

Further, the current frameworks reviews and designs land parcels in relative isolation. The State Government's *Strategic Assessment of the Perth and Peel Regions* (SAPPR) sought to provide certainty over land use planning while addressing cumulative environmental impacts. The process began in 2011 but was discontinued in 2022, with regional planning in the Perth and Peel region to be prioritised through WA's Native Vegetation Policy. As a result, areas of high-quality native vegetation have not been identified for protection from urban development.

- R16: Establish tree canopy targets for new neighbourhoods to facilitate retention of existing trees and native vegetation in the design phase.
- R17: Prioritise the protection of identified areas of high value native vegetation, including Bush Forever sites, through links to other State Government projects such as the WA Native Vegetation Policy.
- R18: Review WAPC *Model Subdivision Conditions Schedule* to include a condition requiring the identification and retention of trees.
- R19: Ensure the review of Liveable Neighbourhoods and the development of Neighbourhood Design identifies improvements to public realm design to elevate and support tree retention and urban greening opportunities e.g. early consideration of trees and native vegetation retention at the design stage, wider road reserves widths, minimum soil volume mandates, common conduiting, public open space provisions.

7. Public realm design

Local Governments consider that there are several barriers limiting opportunities for tree retention and new plantings in the public realm, as follows:

In-ground infrastructure: Underground services in verges include water, gas and electricity, which are often not aligned and limit the available area to plant trees. For instance, the [Utility Providers Code of Practice for Western Australia](#) requires trees must be planted 2.7m from the property boundary line and a minimum of 0.5m from water assets. Common conduiting would ensure the allocated space for services is minimised and services are located together on one side of the road reserve.

Infrastructure maintenance: Existing trees and areas of vegetation can be removed or damaged when utility providers such as Western Power or the Water Corporation undertake maintenance or repairs to in-ground infrastructure.

Road reserve and verge widths: Increasingly narrow road reserves and increasing road pavement has limited the space the available for street trees. Road reserves need to accommodate a range of competing elements, including street trees, landscaping, urban water management, services, street furniture, parking and footpaths. There needs to be a significant shift in the design and width of road reserves to ensure street trees can be accommodated.

Soil volumes: Insufficient deep soil volumes and poor subsoil conditions limit opportunities for new plantings and result in more frequent tree failure or low growth rates. Industry best practice recommends 2m³ of quality soil volume for every m² of mature canopy area. This translates to 10m³ for a small species to ≥80m³ soil volume for large species^{xiv}.

Overhead powerlines: The [Guidelines for the management of vegetation near powerlines](#) required minimum vegetation clearance distances from powerlines, which in urban areas are typically 2.5 metres to the side and 2 metres below the powerlines, with no vegetation above the powerlines, limiting the development of full canopy potential.

Bulk earthworks: Developers often clear all vegetation as the most cost-effective way to create a level building site.

Local geography and drainage design: Topography informs water and sewer pipe gradients, with clearing and additional fill needed in many instances. Much of the Swan Coastal Plain is flood prone, with additional fill required to support underground infrastructure and the integrity of building foundations. For example, in the City of Swan, up to three meters of fill can be required to create a suitable building site, which necessitates the removal of all existing vegetation.

Damage to assets: Trees are often considered a problem in areas with significant areas of hardstand, where they can lift footpaths and asphalt. Public realm design that provides suitable areas to support trees, and use of species with lower root invasiveness, is required to minimise damage to assets.

Vehicle crossovers: With larger houses and sub-divided lots, double garages are becoming a common feature of modern residential homes, with one or more crossovers built on verges and comprising a large proportion of the available verge space. Crossover specifications could be amended to address this, for instance single crossovers that then widen to access the double garage. The use of permeable paving options for vehicle crossovers should also be considered.

Up-front costs: Project costs may increase when designing to retain existing trees, with developers often considering this economically unviable when an optional consideration. This fails to take into account the monetary value of trees as a public good more broadly and their societal value, as well as the opportunity cost of not designing the public realm to increase resilience to climate change. A more balance view on this matter should be supported.

Lack of early consideration: The retention of trees or planting of news trees is often considered at the development stage, rather than at the point of subdivision. Roads can be designed around trees if considered at the earliest stage of the development process.

Lack of collaboration: Projects designed by engineers, without input from landscape architects, arborists, hydrologists and environmental staff, lack a holistic consideration of opportunities for urban greening.

Tree protection zones: Local Governments have reported that in some cases developers do not meet the Australian Standards for Tree Protection Zones around street trees.

Public open space: Often POS have been designed and developed with little regard for the natural topography and existing tree canopy. POS is also increasing required to accommodate a range of different functions, not only environmental. Sufficient POS needs to be provided in neighbourhoods to accommodate all these competing interests and to ensure the natural landscape and quality vegetation are retained and preserved.

Bushfire risk mitigation: Local Governments require private landowners in high bushfire risk areas to create asset protection zones, which involves the modification or removal of vegetation. State and Local Government also undertake fuel hazard reduction programs in natural areas and road reserves to minimise the risk of bushfire to human life and property. Programs often involve clearing of trees and understorey vegetation, whereas a more nuanced approach can utilise activities such as weed control, selective thinning and removal of elevated fuels, and implementing prescribed burn programs at intervals tailored to the ecological requirements of species and ecological communities.

Timing of planting: Street trees planted when the street is established are at risk of being damaged when the houses on the street are constructed.

- **R19: Ensure the review of Liveable Neighbourhoods and the development of Neighbourhood Design identifies improvements to public realm design to elevate and support tree retention and urban greening opportunities e.g. early consideration of trees**



and native vegetation retention at the design stage, wider road reserves widths, minimum soil volume mandates, common conduiting, public open space provisions.

8. Enhancement of canopy on underutilised land

Local Governments consider there is significant potential for additional greening on State managed reserves and roads, followed by residential verges, school land, and lastly commercial and industrial verges.

Increasing canopy in road reserves can be a quick win, provided there is available planting space.

Local Governments support the setting of canopy targets for State Government managed and owned land, with the Department of Education and schools in particular identified as areas that could support significant increases trees and vegetative cover. The Department of Water and Environmental Regulation and Water Corporation's 'Drainage for Liveability' program have also been identified as significant opportunities to green stormwater drains and basins across WA.

Many Local Governments offer verge plant subsidy schemes to local residents, which are popular and often fully subscribed each year. The Water Corporation provides up to \$10,000 per year for endorsed Waterwise Councils in WA with an approved waterwise verge policy to co-fund verge greening initiatives.

Extensive land clearing often occurs to support infrastructure projects, such as road and rail extensions. Revegetation requirements and urban canopy plans should be incorporated into the scope of these project. For example, the recent extension of Tonkin Highway in north-east Perth has created a wide potential green corridor adjoining the new principle share path. This land is currently unvegetated and provides no biodiversity or urban greening benefit. These areas can usually be regenerated without interfering with the safe use of the transport corridor.

- R20: Establish tree canopy targets for State Government managed and owned land.
- R21: Develop new and expand existing State Government programs such as Drainage for Liveability, to support greening of underutilised public land.
- R22: Consider funding Local Government to establish or expand subsidised native plant programs to residents and businesses, both for verges and private land.
- R23: Ensure revegetation requirements and urban canopy plans are incorporated into major State Government infrastructure projects.

9. Urban greening grant program

WALGA acknowledges and welcomes the State Government's commitment in the 2023-24 Budget of \$3.75m over two years for the Peel Urban Greening Grant Program for Local Governments in the Perth and Peel regions being administered by WALGA is therefore welcome.

WALGA is advocating for an expanded, long-term State Government commitment to a state-wide urban greening program, most recently as part of our [2024-25 State Budget submission](#), which sought \$20 million between 2024-25 and 2027-28 to expand the Urban Greening Grant Program beyond the Perth and Peel regions. The State Infrastructure Strategy also recommended extending the grant program to other major regional urban centres.

Funding for planting programs should factor in the full life-cycle costs of planting and maintaining trees. The majority of the cost of planting programs is not attributed to the purchase of the tree, but rather the supplementary items to support growth (soil conditioner, structural cells), planting (labour and traffic management), establishment care (watering over the dry season for two to three years) and juvenile tree care (annual audits and formative pruning). For example, a 35 L tree costs approximately \$80 to purchase, but full lifecycle costs range from \$400 per tree in unconstrained park settings to \$4,000 per tree in constrained environments such as city centres where items such as mechanical soil excavation, soil structural cells and water harvesting infrastructure are required. While more costly, green infrastructure provides a critical function in highly modified city streetscapes with high community use.

- **R24: The State Government should fund a long-term, comprehensive and accessible Urban Greening Grant program to support Local Government investment in public realm planting, in both metropolitan areas and regional urban centres.**

10. Biosecurity management

A pressing issue for urban forests is the Polyphagous shot-hole borer (PSHB) biosecurity emergency, which is having a devastating impact on tree canopy across the Perth metropolitan area. The response to PSHB has required the removal of more than 3,000 mature trees as of May 2024, with more to be removed as the borer is detected. This will have a devastating impact on tree canopy and undermine the collective efforts of State and Local Governments to retain and grow the urban forest.

The strategy should identify existing and emerging biosecurity threats to urban greening, and support the work of the Department of Primary Industries and Regional Development to implement improvements to the *Biosecurity and Agriculture Management Act 2007* identified following the independent statutory review that commenced in 2022.

- **R25: Ensure plant biosecurity issues and their management are considered in the strategy.**
- **R26: That the Government develop and implement a recovery plan for the PSHB including dedicated funding for replanting and research into alternative treatment methods.**

11. Aboriginal co-design

WALGA is committed to reconciliation and supports the efforts of WA Local Governments to foster respectful partnerships and strengthen relationships with local Aboriginal communities.

Ongoing partnerships should be established to integrate Noongar knowledge and values in the strategy through a process of listening, learning and co-design. This process will facilitate Aboriginal empowerment and ensure the State Government considers Aboriginal perspectives in the development of goals and actions in the strategy. Many native trees have spiritual or medicinal significance to Noongar people, while all land and vegetation in the landscape has cultural meaning and purpose. It is important that the strategy reflects the cultural heritage of the region and that initiatives contribute to caring for country.

A roundtable with First Nations leaders from Perth and WA found that members were particularly interested in how local Whadjuk knowledge could help rebuild the natural corridors and linkages that existed before European settlement^{xv}.

- **R27: Undertake meaningful engagement with Traditional Owners to develop the goals and actions in the strategy, and ensure representation in the lead agency for urban greening.**

12. Community education

There is a need for continued engagement and education to increase community awareness of the issues associated with canopy tree loss and the benefits of retention of vegetation. Many Local Governments are currently undertaking this work in line with their Urban Forest Strategies. These efforts could be amplified and have greater impact and reach through common messaging and guidance from the State Government.

Key areas to address in community education campaign include the benefit of trees, as well as common misconceptions, such as the risk/danger trees present to the safety of property and people. Many community members are not aware of the importance or broader purpose of verge trees and will vandalise or remove planted trees. Community education should occur alongside street tree planting programs to build understanding and support from local residents.

For the past three years, Local Governments from across the State have collaborated to deliver the WA Tree Festival, a successful community engagement initiative that provides a program of fun and educational events to celebrate the value of trees with local communities. Tree Fest highlights the importance of daily connections to nature, and the often-invisible benefits trees provide, to understanding issues around tree canopy loss, climate change and how communities can help. Tree Fest harnesses the collective power of the sector to amplify the impact and facilitate the behaviour change necessary for everyone to be a key participant in the growth and protection of our urban forests. From a starting group of eleven Local Governments in 2022, Tree Fest continues to grow, with over 30 Local Governments providing 150 events that engaged approximately 15,000 community members in 2024. The intention is to continue to expand the Local Governments participating in the festival, including in regional areas.

Incorporation of education in the school curriculum presents a valuable option to ensure the next generation understand and value the benefits trees provide. Millenium Kids and the Department of Education provide a program to participating schools to implement sustainability across the Australian Curriculum. Initiatives identified by youth are implemented in partnership with Local Governments and community groups. The program also equips youth to become emerging leaders.

NatureLink Perth works with a diverse group of stakeholders to conserve biodiversity and integrate nature into our cities, through restoration, creation and enhancement of natural areas and green spaces. The program also supports research and community awareness and understanding.

Residential property makes up 80% of greenspaces in Perth and provide a valuable opportunity to build connections to remnant native vegetation. Perth NRM's ReWild Perth encourages Local Government to work with community to grow gardens with local wildlife in mind and build the connections to green spaces in Perth. The program promotes greening opportunities for large properties through to small balconies, with online resources provided to help select plants and habitat tailored to the needs of local fauna. The program is set to expand to the Peel region, and potentially further across the State.

Volunteers, such as 'friends of' groups, undertake valuable restoration, surveillance and maintenance of natural areas, and build local community and an understanding of local environmental values.

- **R28: Develop and implement a State Government community education campaign on the benefits of urban greening.**
- **R29: Provide support to grow existing successful community engagement programs e.g. WA Tree Festival, Millenium Kids, ReWild Perth, NatureLink Perth, Friends of organisations.**

13. Conclusion

A whole of government approach to urban greening is critical to provide the strategic direction and oversight necessary to halt the ongoing decline of tree canopy and vegetative cover. The provision of appropriate legislation, policy and programs to support the integration of well-designed green space in the public realm and retention of tree canopy on private land is critical to the success of the strategy. There are significant opportunities to build upon existing successful greening and education initiatives and capitalise on underutilised land resources. The strategy must support the availability of robust data to inform evidence-based targets and decisions on priorities areas for green infrastructure and be adequately resourced to enable delivery. By harnessing the efforts of government, industry, business, and community, we can work together to create a resilient, connected and equitable urban forest now and into the future.

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- xiii WALGA (2024) Model Local Planning Policy for Tree Retention. [Urban Forest | WALGA](#)
- xiv City of Perth (2023) Street tree guide. [Urban Greening | City of Perth](#)
- xv Pettitt, B (2023) Climate Positive Perth Consultation Draft. [Climate Positive Perth - Brad Pettitt](#)

Appendix 1: Summary of recommendations for the strategy

1. Determine the preferred agency to lead implementation of the Urban Forest Strategy, including an effective governance arrangement and transparent mechanisms to report on progress toward the goals and targets of the Strategy.
2. Ensure the strategy identifies the responsibilities of all relevant State Government Departments and Agencies to contribute towards urban greening objectives.
3. Ensure the provision of green infrastructure is central to State Government plans for affordable housing.
4. Expand the focus of the Perth and Peel Urban Greening Strategy to include regional urban areas.
5. Adopt a minimum tree canopy target of 30% by 2040 for the Perth and Peel Regions and consider sub-regional targets.
6. Provide guidance on land categories (e.g. residential, parks, public realm) and vegetation strata (understorey, midstorey, overstorey) for canopy cover measurement.
7. Support the development of guidance/tools to assist with species selection to deliver multiple benefits, and mapping tools that enable prioritisation of areas for urban greening based on environmental, social and economic considerations.
8. Work with Local Governments to identify improvements to the suite of Urban Monitor products available, to enable it to better inform urban forest planning and outcomes.
9. The State Government should fund regular UHI mapping and engage with the Local Government sector to tailor Urban Monitor and UHI data products to their needs.
10. Undertake a public review of the Bush Forever policy to ensure adequate protection, particularly where they occur on private land, exist for regionally significant bushland.
11. Incorporate ecological linkages into the state planning frameworks to support their consideration during land use planning and revegetation actions.
12. State Government undertake a comprehensive analysis of current and proposed regulatory mechanisms for protecting trees on private land in urban areas across Australia and provide an options paper for implementing such requirements into Western Australia.
13. Provide an effective and efficient State Government regulatory mechanism that allows Local Government to consider the removal or alteration of a tree as a form of development that requires development approval.
14. DPLH undertake compliance program to ensure required minimum tree planting provisions are effective and inform any future changes to the R-Codes.
15. Identify suitable incentives to support the retention of trees on private property.
16. Establish tree canopy targets for new neighbourhoods to facilitate retention of existing trees and native vegetation in the design phase.
17. Prioritise the protection of identified areas of high value native vegetation, including Bush Forever sites, through links to other State Government projects such as the WA Native Vegetation Policy.
18. Review WAPC Model Subdivision Conditions Schedule to include a condition requiring the identification and retention of trees.
19. Ensure the review of Liveable Neighbourhoods and the development of Neighbourhood Design identifies improvements to public realm design to elevate and support tree retention and urban greening opportunities e.g. early consideration of trees and native vegetation retention at the design stage, wider road reserves widths, minimum soil volume mandates, common conduiting, public open space provisions.
20. Establish tree canopy targets for State Government managed and owned land.
21. Develop new and expand existing State Government programs such as Drainage for Liveability, to support greening of underutilised public land.

22. Consider funding Local Government to establish or expand subsidised native plant programs to residents and businesses, both for verges and private land.
23. Ensure revegetation requirements and urban canopy plans are incorporated into major State Government infrastructure projects.
24. The State Government should fund a long-term, comprehensive and accessible Urban Greening Grant program to support Local Government investment in public realm planting, in both metropolitan areas and regional urban centres.
25. Ensure plant biosecurity issues and their management are considered in the strategy.
26. That the Government develop and implement a recovery plan for the PSHB including dedicated funding for replanting and research into alternative treatment methods.
27. Undertake meaningful engagement with Traditional Owners to develop the goals and actions in the strategy, and ensure representation in the lead agency for urban greening.
28. Develop and implement a State Government community education campaign on the benefits of urban greening.
29. Provide support to grow existing successful community engagement programs e.g. WA Tree Festival, Millenium Kids, ReWild Perth, NatureLink Perth, Friends of organisations.

Appendix 2: WALGA's Urban Forest Advocacy Position

To promote the growth of Western Australia's urban forest the State Government should:

1. Identify a lead agency with responsibility for setting the strategic direction and oversight of urban forest initiatives.
2. Provide recurrent funding for a comprehensive and accessible Urban Greening Grant program to support Local Government investment in public realm planting, focusing on high urban heat areas and enhancing biodiversity outcomes.
3. In consultation with Local Government:
 - a) Develop a state-wide Urban Forest Strategy, based on the overarching principles of a resilient, connected, expanded and equitable urban forest including:
 - i. a minimum tree canopy target of 30% by 2040 for the Perth and Peel regions,
 - ii. robust and contemporary data to inform decision making,
 - iii. funding mechanisms to support growth in urban canopy.
 - b) Develop contemporary legislative and policy mechanisms to enable the protection and growth of urban forest, including:
 - i. an effective and efficient regulatory mechanism that allows Local Government to consider the removal or alteration of a significant tree as a form of development,
 - ii. incentivising the provision and retention of trees on private property within the state planning framework,
 - iii. prioritisation of trees and vegetation as a key structural element in the design of new neighbourhoods to facilitate climate resilient and liveable communities,
 - iv. consideration of public realm design to maximise opportunities for tree retention and new planting consistent with any tree canopy targets.
4. Work with Local Government and other stakeholders to increase community awareness and promote behaviour change in relation to urban forest growth and retention to support State and Local Government targets and action.

Appendix 3: Local Government participants in the Perth and Peel Urban Greening Strategy Consultation Opportunities

Perth Region (28 of 30)		
Armadale	East Fremantle	Rockingham
Bassendean	Gosnells	Serpentine Jarrahdale
Bayswater	Joondalup	South Perth
Belmont	Kalamunda	Stirling
Bunbury	Kwinana	Swan
Cambridge	Melville	Victoria Park
Canning	Mundaring	Vincent
Claremont	Nedlands	Wanneroo
Cockburn	Peppermint Grove	
Cottesloe	Perth	
Peel region (2 of 3)		
Mandurah	Murray	
Other regions		
Albany	Augusta-Margaret River	Bunbury
Busselton		