

HAWKESBURY CITY COUNCIL

URBAN GREENING STRATEGY 2023–2033

Greening the Hawkesbury

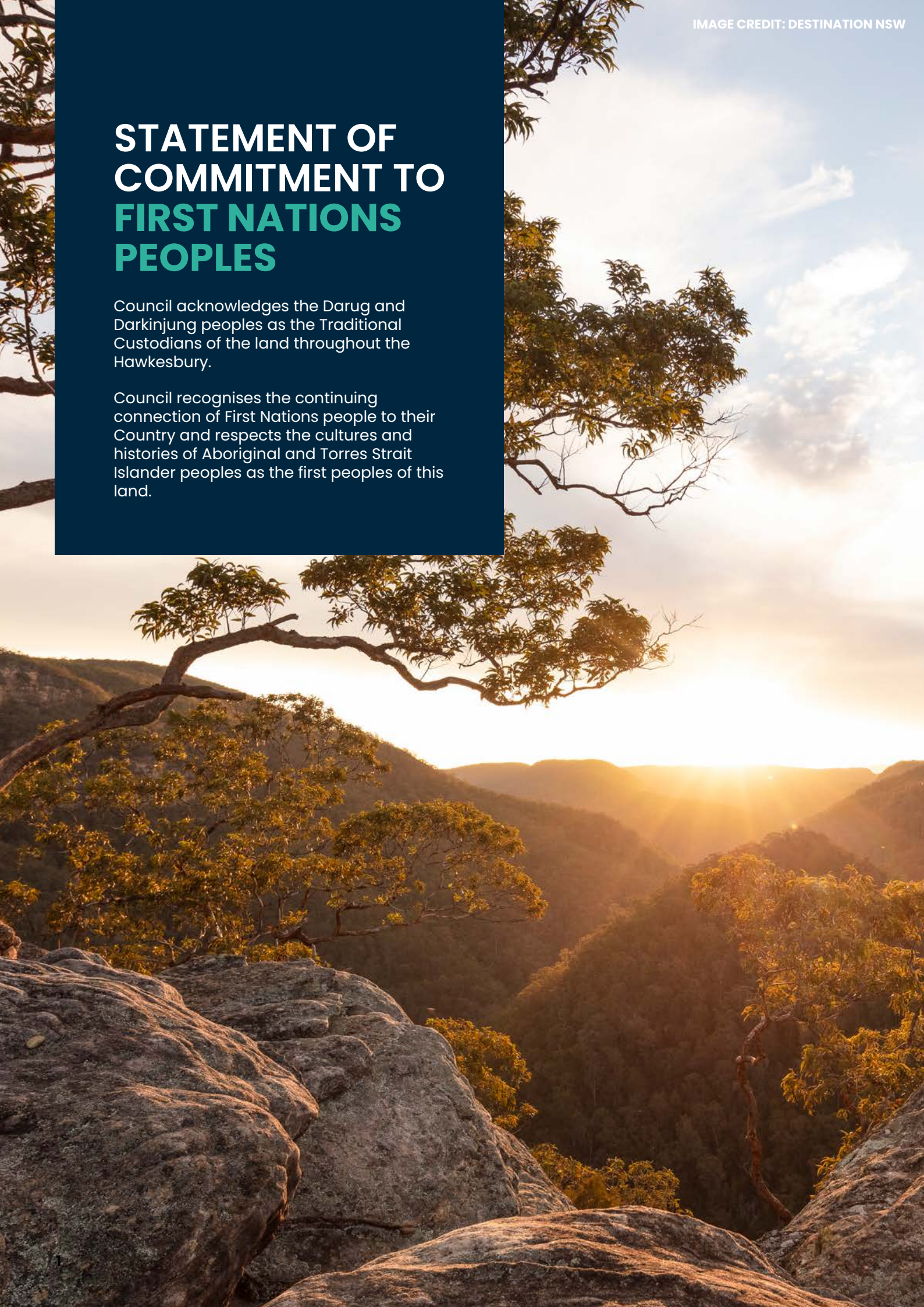


www.hawkesbury.nsw.gov.au

STATEMENT OF COMMITMENT TO FIRST NATIONS PEOPLES

Council acknowledges the Darug and Darkinjung peoples as the Traditional Custodians of the land throughout the Hawkesbury.

Council recognises the continuing connection of First Nations people to their Country and respects the cultures and histories of Aboriginal and Torres Strait Islander peoples as the first peoples of this land.



Contents

1. Executive Summary	4
2. Urban greening is the life force of our region	6
3. Strategy Overview	7
Vision	9
Principles	11
4. Background	14
Policy drivers for urban greening	15
Embedding the Strategy	17
What is urban greening?	19
Benefits of urban greening	21
Successful urban greening	23
5. HAWKESBURY CONTEXT	28
Our challenges and opportunities	29
What we heard from Our Community	35
Hawkesbury's drivers for Urban Greening	37
Where we are now and Where we need to be	39
6. IMPLEMENTATION AND OVERSIGHT	44
Implementation Plan	45
Goal 1	46
Goal 2	50
Goal 3	56
7. How can you get involved?	60
8. Endnotes	62



EXECUTIVE SUMMARY

Strategy purpose and scope

Urban greening includes all trees, shrubs and ground covers in public and private land in built-up areas. This strategy provides a road map to protect and expand urban greenery across the Hawkesbury Local Government Area. It considers how to improve urban greenery on Council managed land and support community members, business and organisations to take action on private and institutional land. Areas outside our township are not in scope of this strategy.

Strategy rationale

Urban greening has a critical role to play in making the Hawkesbury healthier, more livable and sustainable. It can deliver a range of economic, environmental and social benefits, such as reducing heat and encouraging our community to get outside and connect. This strategy directs our efforts and will help us deliver the intended outcomes in the time-frame we seek.

We need our whole community to get involved in greening the Hawkesbury

To talk to our community nursery contact nursery@hawkesbury.nsw.gov.au or (02) 4560 4651 or see page 60 of this strategy.

Vision Cool, connected and well maintained urban green spaces make the Hawkesbury an even better place to live or visit.

Goals

- 1 Existing areas of urban green are protected and enhanced.
- 2 Green links are created where they are most needed.
- 3 Our community stewards our urban greening.

Principles These principles direct how we work and are embedded in our focus areas and actions:

- 1 Use best practice approaches to become a leader in urban greening.
- 2 Use urban greening to adapt to climate change and mitigate biodiversity loss.
- 3 Prioritise urban greening to deliver the most health and wellbeing benefits.

Focus areas & actions

- Key areas we will focus on, including a snapshot of where we are now and where we need to be at the end of this strategy.
- Key actions we will undertake, their delivery time frame and which area of Council will lead.

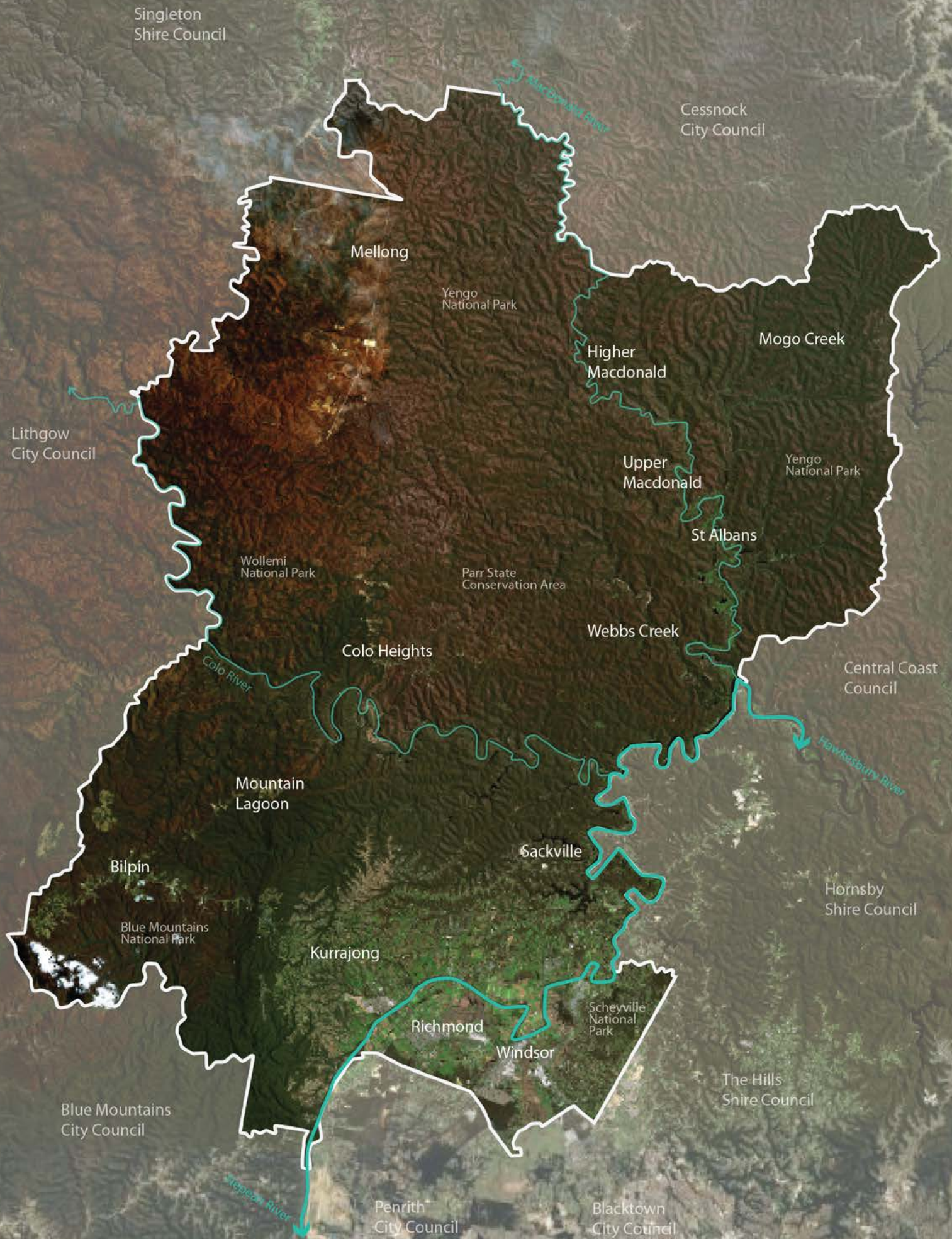
Implementation An implementation framework to support the successful delivery of this strategy:

Steering Committee and Working Group to driver the actions and ensure they are reflected in Council budgets and plans.

A Grant Funding and Coordination role to seek State and Federal Government grants for this work.

A scoreboard will be developed by the Working Group to report on the current baseline and track key success indicators. This scoreboard will be communicated to Council and the community.

Formal evaluation of the strategy at years 3 and 6.



Urban greening is the life force of our region.

In 2022 we engaged with our community around the importance of our environment. Feedback from our First Nations community clearly highlighted how critical this work is as well as the way forward.

Importance

“
Conserving, protecting and maintaining community and cultural wellbeing is of utmost importance. As Aboriginal people we see ourselves as part of Country. It is our mental, emotional and physical well-being we are protecting when we care for Country.”

“
We need to be mindful that nature cleans our air, our water, provides foods, medicines, helps with floods. Provides coverage from the sun. Nature provides for our native animals habitat and food as well. This helps to keep us all healthy, when the ecosystem is in balance.”

Way forward

“
The Indigenous community cared for Country by using land management that worked with the environment... 50,000 years of proven success... The way forward is our past.”

“
Be aware of the cultural landscape and look at the area as one big story of interconnected sites, not in isolation of each other. Bring appreciation and education to the foreground.”

Strategy Overview

This strategy provides a road map to protect and expand urban greenery across the Hawkesbury Local Government Area.

This strategy considers how to improve urban greenery on Council managed land in and around our townships, as well as how to encourage and support community members, business and organisations to take action on private and institutional land in built up areas. Areas outside our townships, such as some state and national parks and large rural areas are not in scope for this strategy.



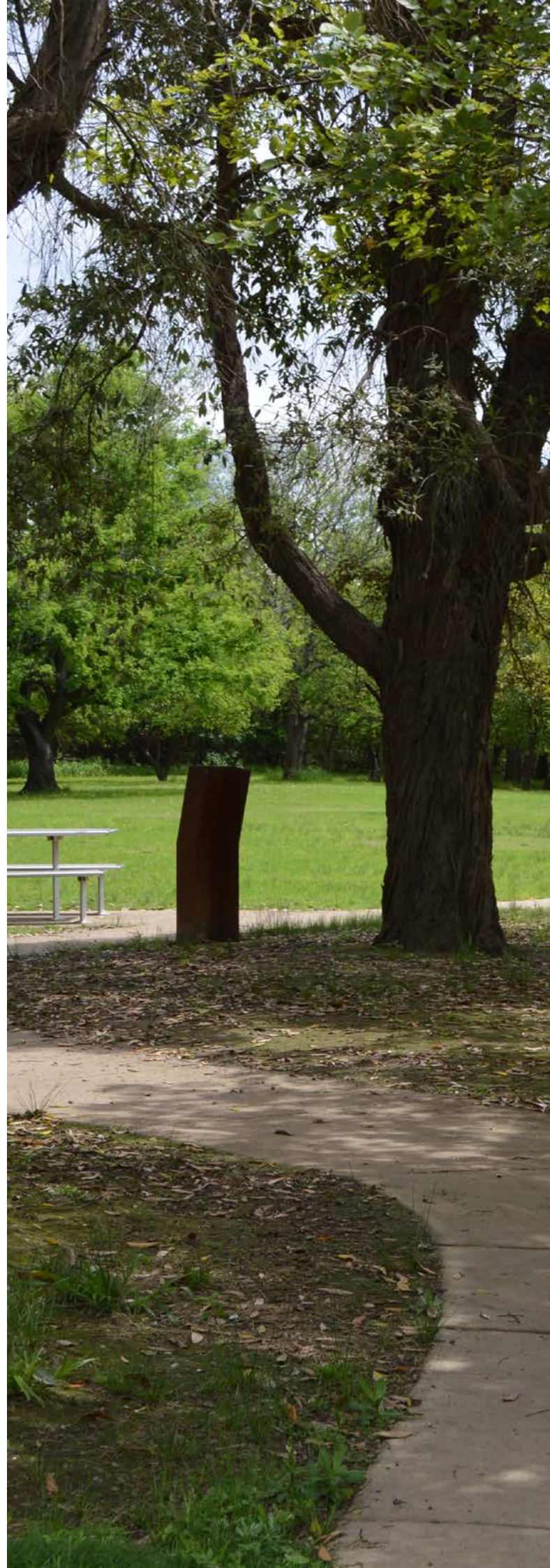
Fig. 1 Strategy Structure

Our Vision

“

Cool, connected and well maintained urban green spaces make the Hawkesbury an even better place to live or visit.

”





The Hawkesbury Urban Greening Strategy vision is enabled by its goals and principles. Our Goals highlight what we will focus on. Our Principles highlight key considerations for how we work to achieve the most sustainable outcomes.

Goals

1

Existing areas of urban green are protected and enhanced.

Principles

Use best practice approaches to become a leader in Urban Greening

- » Inform and involve the community in decision-making around landscape adaptation and change.
- » Increase the public profile and understanding of the attributes, roles and benefits of urban greening.
- » Value trees and other forms of greenery as assets.
- » Foster landscapes to reflect the identity and character of Hawkesbury and its neighbourhoods.

2

Green links are created where they are most needed.

3

Our community stewards our urban greening.

Adapt to Climate Change and Mitigate Biodiversity Loss

- » Build a resilient network of urban greening that can continue to thrive in future climatic extremes.
- » Ensure a diversity of tree species and ages to maximise resilience against pests and disease.
- » Provide shade and cooling to reduce heat absorption by the built environment.
- » Improve and increase biodiversity in urban green spaces for future generations.

Urban Greening for health and wellbeing

- » Prioritise urban greening actions that moderate heat and flooding, strengthen a sense of place, improve tourism and support a greater connection with urban nature.



BACKGROUND



Policy drivers for urban greening

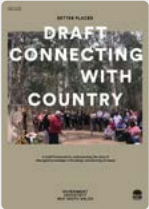


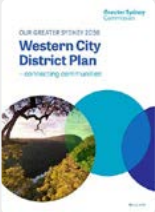
There is strong support for urban greening from the New South Wales Government, as well as the Federal Government.

This support has enabled the Hawkesbury to consider local needs.

This strategy is informed by the following plans and strategies.

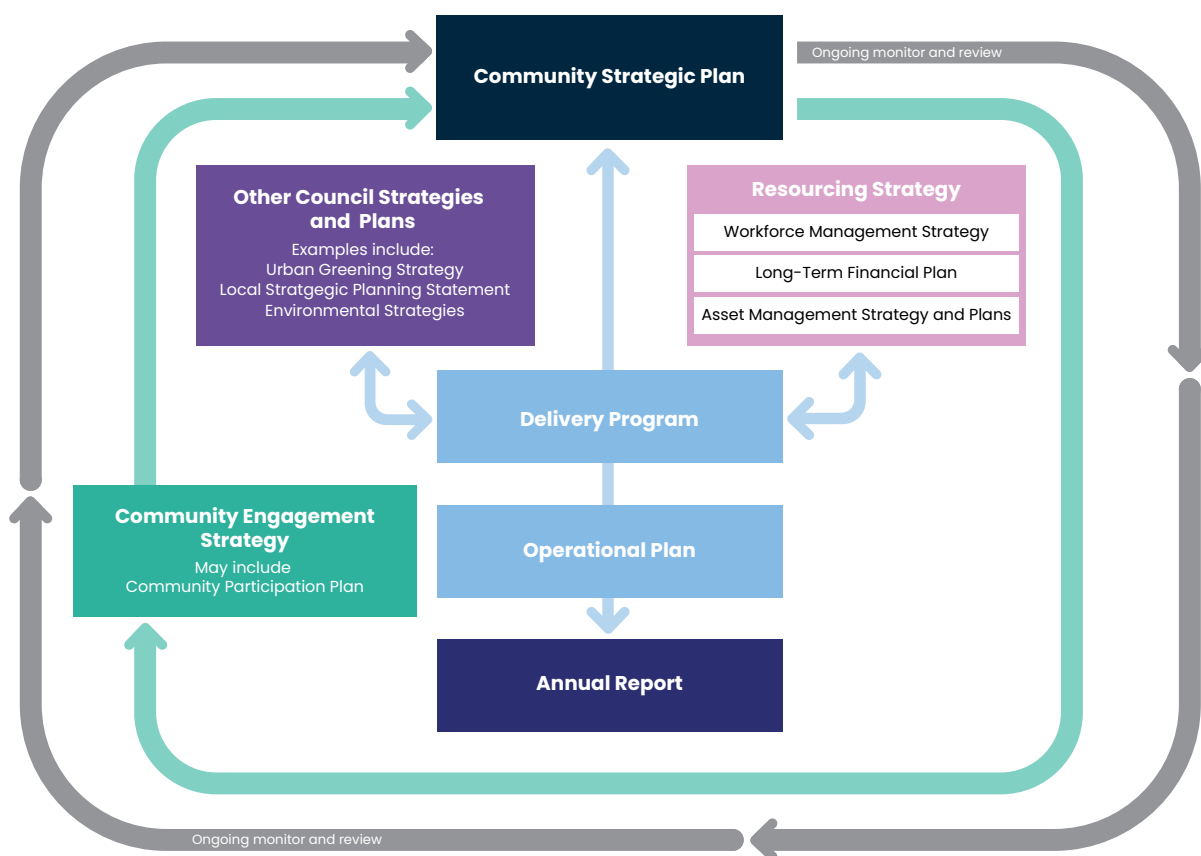
Our approach is informed by the knowledge and recommendations in these policies.

Authority	Policies	Link to this Strategy
Department of Premier and Cabinet	» Premier's Priorities	» Sustainably grow and invest in a healthier future.
Department of Planning and Environment	» State Environmental Planning Policies (SEPP)	» Outline the rules that control the development of land in the Hawkesbury.
New South Wales Government Architects Office	» Draft Greener Places Design Guide 	» Provides recommendations for planning and improvement in urban tree canopy, a framework for improving wildlife connectivity, and improving public open space planning.
	» Sydney Green Grid 	» Identifies a network of green spaces that connects Hawkesbury's green spaces to Greater Sydney's.

Authority	Policies	Link to this Strategy
New South Wales Government Architects Office	<ul style="list-style-type: none"> » Connecting with Country Framework » Designing with Country Framework <div style="display: flex; justify-content: space-around; align-items: center;">   </div>	<ul style="list-style-type: none"> » Supports the health and wellbeing of Country through deep listening and respect. » Asks Council and designers to respond to Aboriginal cultural connections to Country.
Infrastructure New South Wales	<ul style="list-style-type: none"> » Flood Mitigation and Management Strategies <div style="text-align: center;">  </div>	<ul style="list-style-type: none"> » Emphasises the need to mitigate flood risks through strategic and integrated land use and road planning.
Greater Cities Commission	<ul style="list-style-type: none"> » Western City District Plan <div style="text-align: center;">  </div>	<ul style="list-style-type: none"> » Envisions the Hawkesbury as a key part of the Western Parkland City, connecting urban spaces to green and natural spaces.

Embedding the Strategy

The Hawkesbury Urban Greening Strategy aligns with existing Council policies, strategies and community needs. Through ongoing monitoring and review, Council can work towards achieving the community's vision.





What is urban greening?

Urban Greening is Green Infrastructure

Urban Greening, also known as Urban Green Infrastructure, includes all trees, shrubs and ground covers in public and private land in built-up areas. However, national parks, state forests, and rural areas are not classed as urban greening as they are located outside urban areas.

“ **Green Infrastructure has been defined as:** *All vegetation that provides environmental, economic and social benefits, such as clean air and water, climate regulation, food provision, erosion control and places for recreation.*¹ ”

Urban Greening Examples

Public land, including land managed by Council and the State Government such as:

Urban parks and bushland reserves



Wetlands and waterway corridors



Streets and roadside verges



Pedestrian trails and bike paths



Railway corridors



Community gardens



Urban Greening Examples

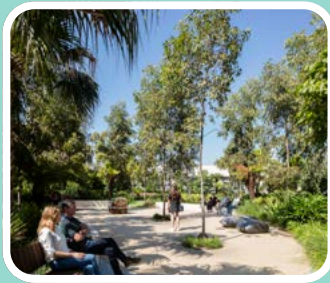
Land owned by businesses and institutions such as:

Private land such as:

Schools + Universities



Hospitals



Residential gardens



Cemeteries + Derelict land



Business parks



Wall and rooftop gardens



Benefits of urban greening

Urban greening can provide social, economic and environmental benefits in public and private space if the right vegetation, including trees, are planted in the right place, and maintained in the right way.

While trees and other types of plants can provide 'disservices', such as roots causing footpath damage or dropping fruits and leaves, many of these risks can be moderated by applying strong urban forestry and water sensitive urban design practices. It is these practices this strategy seeks to embed in the Hawkesbury.

Environmental Benefits

Urban greening can enable a more resilient and healthy ecosystem for all who live in a place, human and non-human.

Personal Benefits

- » Treat air pollution
- » Provide habitat for wildlife
- » Creates nature connection opportunities
- » Trees and vegetation can reduce felt temperatures by up to 8 degrees

Community Benefits

- » Treat stormwater
- » Slow overland stormwater flows that can reduce surges into waterways that contribute to flooding
- » Reduce landslips along waterways
- » Provide habitat for threatened species that live in urban areas

Social Benefits

Urban greening can improve human social, physical and mental health and wellbeing.

Economic Benefits

Urban greening, including trees, can reduce costs and create additional monetary value.

Personal Benefits

- » Green views and canopy cover can encourage walking and cycling
- » Reduce loneliness
- » Improve mental health and attention

Personal Benefits

- » Reduce residential power bills by 12-15% per annum
- » Reduce house repaint time
- » Improve house values by \$5K to \$50K

Community Benefits

- » Reduce heat related deaths
- » Tree cover can reduce crime
- » Green views can help patients recover faster
- » Vegetation and trees can connect people to their culture

Community Benefits

- » Extend bitchem's life on road from 20 to 30 years
- » Boost tourism and spend per visit
- » Reduce hospital admissions

Successful urban greening

Successful urban greening creates healthy and resilient green places and links them together to enable people and wildlife to easily and safely move.

Successful Green Places

In successful green places the right trees and other vegetation are selected to cope with the site's conditions and deliver the benefits sought. Their health is supported with the right planting approach and ongoing maintenance that changes as the site matures.

Successful Green Corridors

These green places should be linked into a network of green infrastructure. This network must be resilient to environmental conditions. A healthy network of trees and supporting greenery means they are resilient to pests, disease, damage, and a changing climate, which is driving higher floods and hotter temperatures.



Successful urban greening



Continuous canopy cover

Up to 40% canopy cover and understory reduces temperatures. Continuous canopy cover and ground level greening to destinations encourages walking or cycling. This can be achieved through planting where space allows in front yards, in parks and along roads.



Resilient and Biodiverse

Tree and understory species should be selected for habitat.

A diversity of species in the network will reduce the likelihood of mass failures across the network. A proactive planting and maintenance regime supports a healthy place.



Water Sensitive

Green corridors include water sensitive design to direct stormwater to plantings to optimise their growth rate, size, health, and slow the rate of storm water entering waterways. This reduces peak flows and landslips, as well as supports the health of waterway corridors used for recreation and by wildlife.



Activated and Safer

Green corridors include community places to enable a diversity of activities and support people to easily move and spend time among greenery.



HAWKESBURY CONTEXT

Our challenges and opportunities

To deliver our urban greening vision, the actions contained in this Strategy harness our opportunities and address our challenges.

Challenges

Low Existing Tree Canopy Cover

The Hawkesbury's urban areas have between 5% and 20% tree canopy cover. The NSW State Government suggests communities should aim for 15% in built up areas through to 40% in lower density areas².

Flooding, bush fire and storm risk

The environment in the Hawkesbury presents risks that can make urban greening challenging.

Poor soil conditions

Multiple floods have likely increased soil salinity and made it harder to grow healthy trees and plants. Soil health and testing will need to be considered as part of successful planting strategies.

Evidence around our current state

A detailed understanding of our current network of urban greenery, including canopy cover, is needed to inform our priorities.

Funding

Grant funding will be required to support pilot projects and a greater portion of Council's operational budget is required to cover the scope of this work.

Hawkesbury Canopy Cover Estimate (2019)

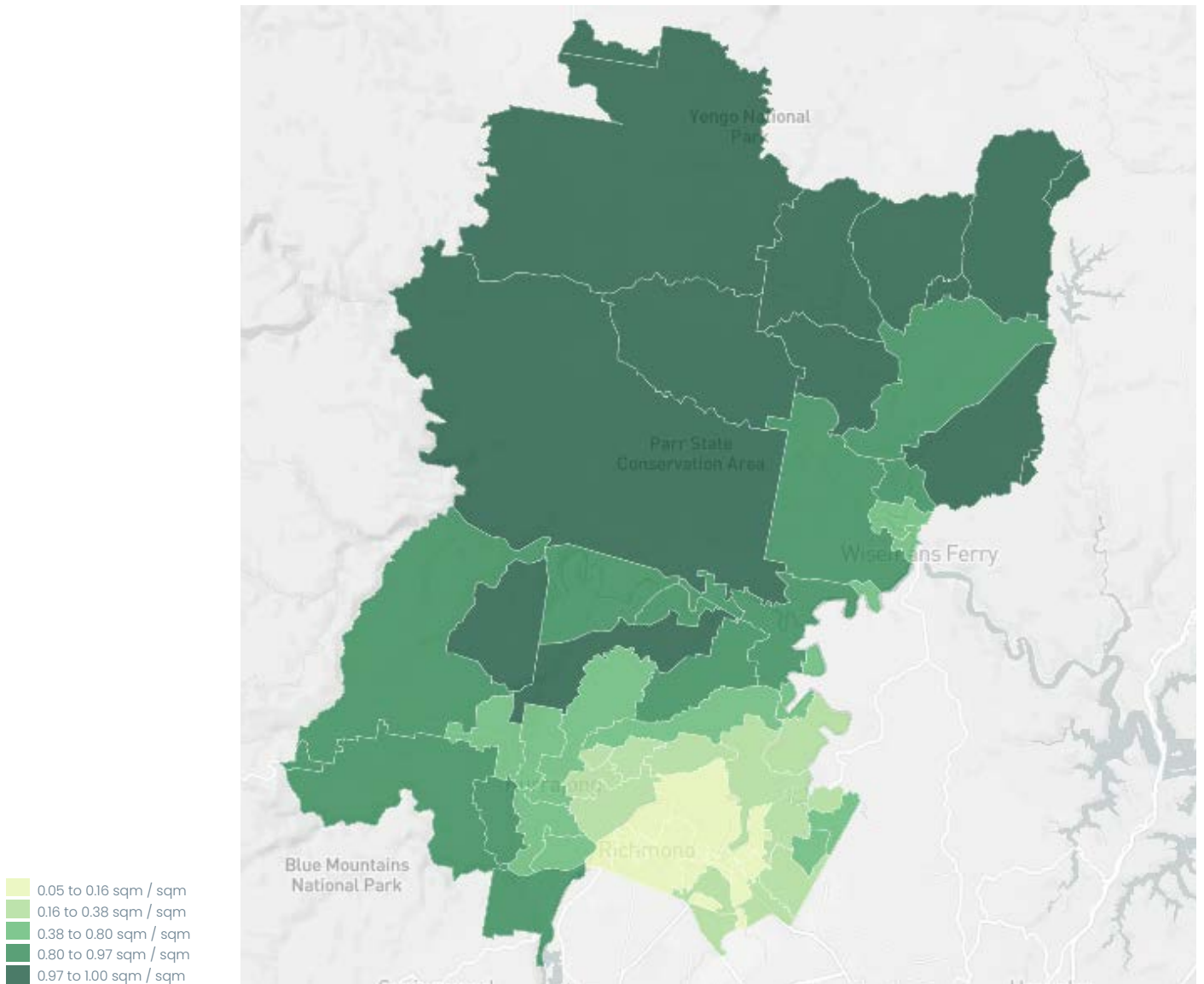


Fig. 2 NSW State Government 2019³

Urban Core Canopy Cover Estimate (2019)

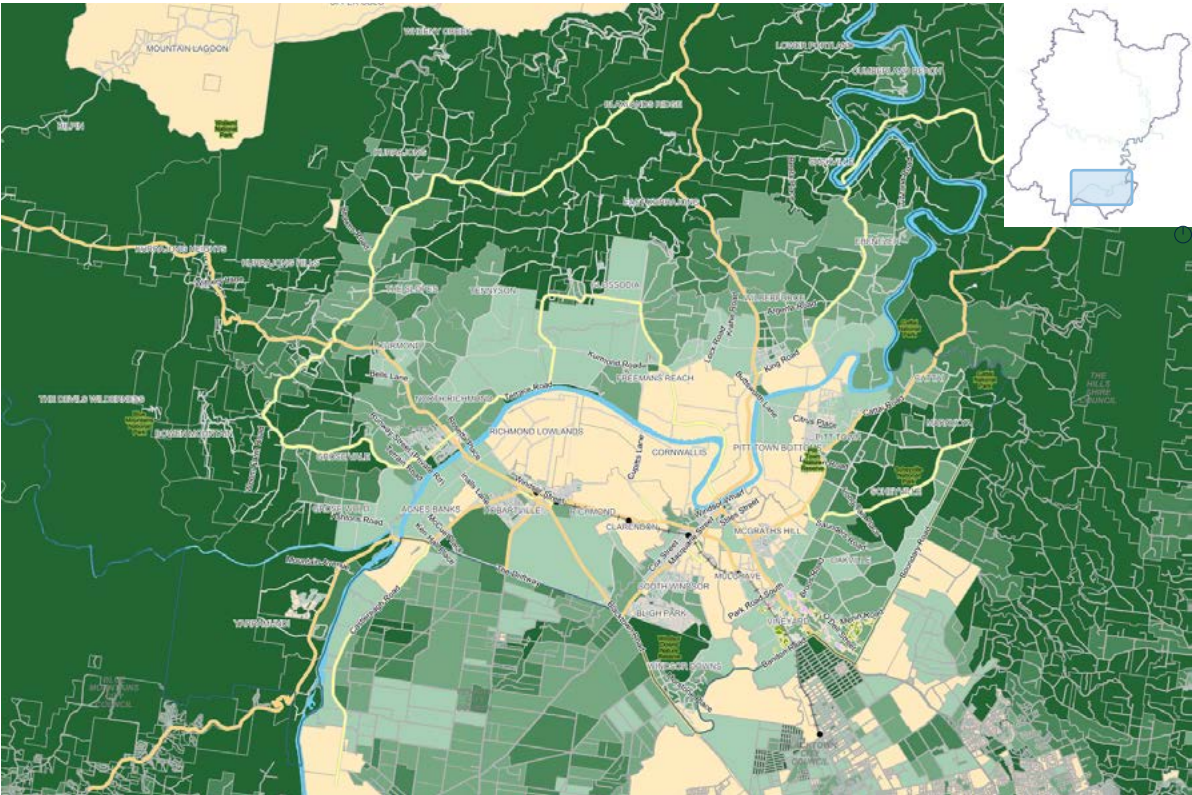
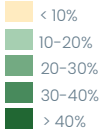


Fig 3. NSW State Government, 2019⁴



Urban Heat Island Effect at Urban Core (2016)

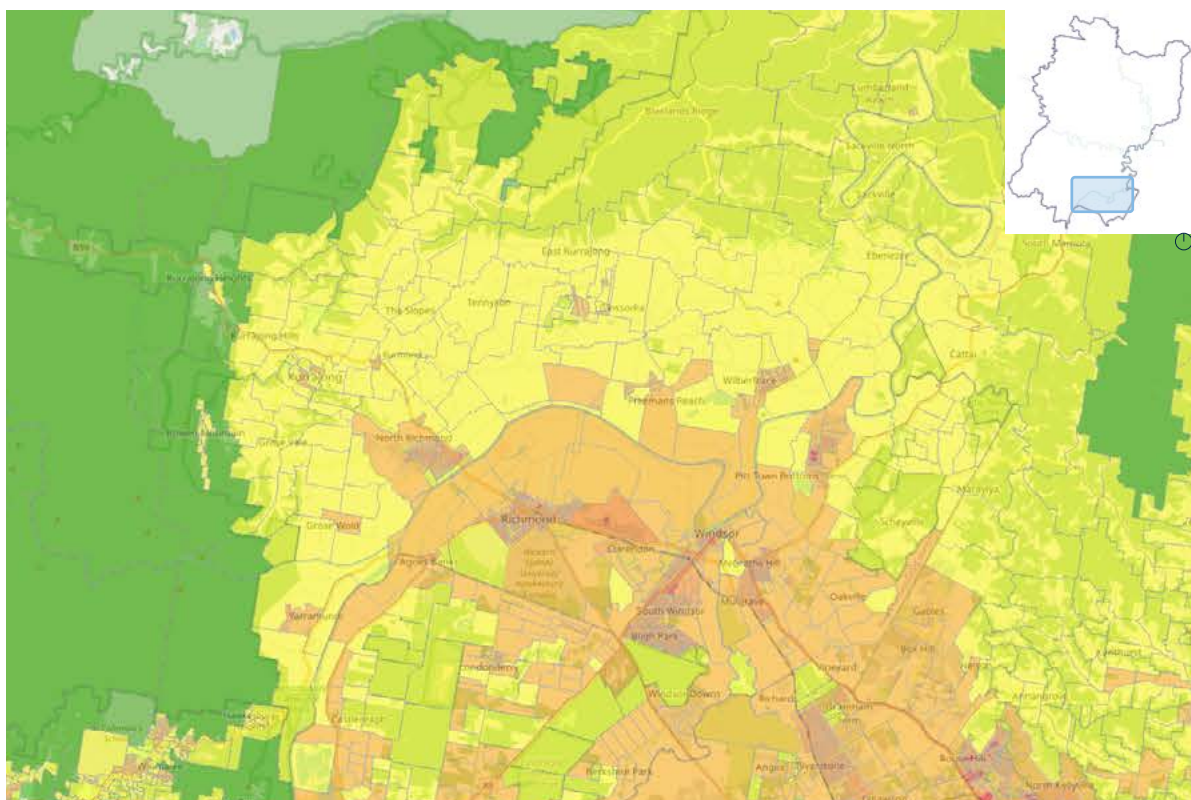
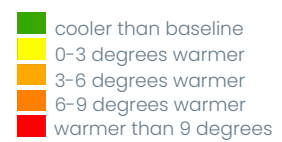


Fig. 4 NSW Government, 2016⁵



Opportunities

Reduce urban heat

To reduce the heat in urban areas we can replace hardscapes with urban greenery.

Access the community nursery

Council runs a community nursery that grows local and endemic species that can support the community with advice and locally acclimatised plants.

Community engagement

Enable our community to get involved in urban greening so they can become active supporters of this work.

Create green links between destinations

Use urban greenery to link key destinations across our urban centres, such as parks and shops, to encourage more people to walk, ride or spend time outside.

Partnerships

We can engage with a range of private and public groups, such as universities, who can support this work with resources and evidence.

Adopt existing best practice approaches

Many other local government areas and universities are looking at how to improve urban greening. Accessing tested resources can improve our practices.

Water sensitive urban design approaches

Access to water is a key component of planting success. Urban greenery can also moderate minor flooding by slowing and reducing overland flows into waterways. Water sensitive strategies can improve vegetation health by capturing public and private storm water for use in the landscape.



What we heard from Our Community

In 2022, we spoke with 521 community members at the Hawkesbury Show about what came to mind when they thought about trees in particular.

Issues were raised by 2% of the community around additional maintenance to support increased greening and the need for the right tree for the right place, to reduce risks and costs.

They highlighted the following benefits:

39%	Environmental benefits	"environmental protection and preservation"
35%	Physical health	"clean air"
34%	Habitat + Biodiversity	"need more understory, not just canopy"
34%	Aesthetics	"wonderful habitat for birds and other animals" "green and leaves floating down in Autumn"
22%	Mental health + wellbeing	"calms me and rejuvenates my soul"
17%	Cooling + shade	"shade... a nice place to rest under"
8%	Enabling play	"climbing, picnics"
7%	Reducing climate risks	"trees help prevent floods"
7%	Economic	"natural resources"
5%	Active Transport	"encouraging long walks"



Hawkesbury's drivers for Urban Greening

Urban greening can deliver a range of benefits so it is important to define what is important to our community in particular. Understanding our key drivers helps us prioritise where to focus our efforts over the next ten years.

Conversations with the community and Council highlighted the following reasons for the Hawkesbury to invest in improving its urban greening.

Liveability

Enhance the Hawkesbury as a great place to live.



- » **Reduce heat**
Replacing areas of grey concrete with greenery (trees and other vegetation) can reduce temperatures and help reduce our urban heat island.



- » **Reduce minor flooding**
Trees and other vegetation can reduce landslips and slow stormwater flows to moderate minor flooding.

To be a great place to live, the Hawkesbury must be healthy and sustainable.



- » **Strengthen a sense of place**
The Hawkesbury is known for its heritage townships. Trees and other greening can create landmarks and define character.



- » **More greening can deliver a range of health benefits**
such as improved air quality and reduced loneliness by encouraging more people outdoors.
- » **Improve biodiversity**
Our urban areas are where most of us experience nature and are an extension of the national parks that surround us. Urban areas can provide important habitat for select species.



- » **Increase walking and cycling**
Enables us to get active and reduce our reliance on cars with cooler streets.



- » **Improve the economy**
Urban greening can enhance the Hawkesbury as a tourism and events destination.

Where we are now and Where we need to be

Retaining more of our existing trees and greenery, while developing a prioritised plan to improve our cover and connect our green spaces is central to achieving this Strategy.

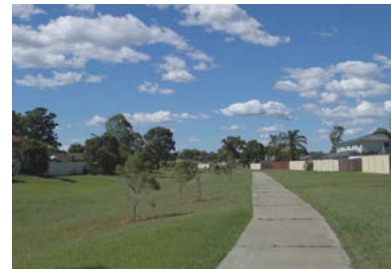
The images show two sites now, and what they could look like when the actions in this Strategy are realised.

Future



Urban Greening for connected networks

Now



Reserve, Bligh Park

Targeted green cover where its needed

We need to understand the gaps in our existing green network (trees and understory) to help plan what projects to prioritise and where.

In the future we will understand where more trees and understory are required to moderate urban heat, encourage walking and cycling, moderate flooding and provide habitat, among other goals. This knowledge will inform our priorities.

Future



Urban Greening for amenity

Now



Smith Park, Richmond

Where we are now and Where we need to be

Connected urban greenery

Existing canopy and understory vegetation cover is low and in isolated pockets that do not form links for people or wildlife.

In the future our green spaces, including urban parks, cycleways and pedestrian paths, will be linked into corridors, with continuous tree canopy and understory cover as a connected network for people and wildlife.



Proactive maintenance and replacement informed by a tree inventory

Tree inventory data that records our trees (health and species diversity) in priority areas is not available.

In the future we will have tree inventories to inform our planting priorities and maintenance and replacement program. We will plant more trees than we remove.



A resilient green network

Urban greening has not been purposefully planned to support our goals, for example considering aesthetics, habitat for wildlife and climate change.

In the future we will have an evidence based tree and understory selection process to reduce the risk of failure across the green network, supported by tree health and diversity targets.



Existing trees and understory are protected

Existing green infrastructure must be valued for all the benefits it is currently delivering. Existing trees, especially those with hollows that much of our wildlife need to survive, must be protected.

In the future we need to protect and celebrate our mature trees and pockets of remnant vegetation on public and private land.



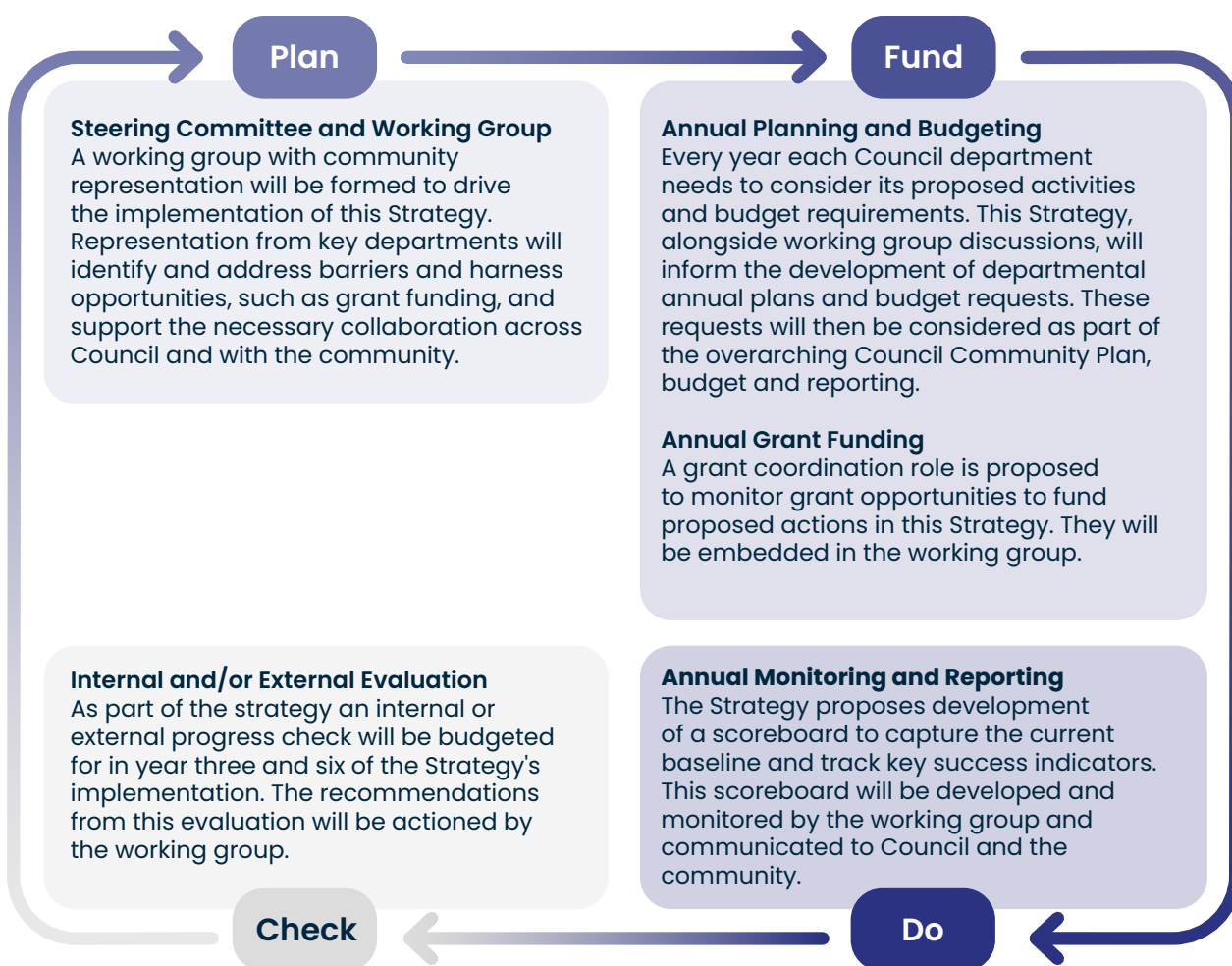


IMPLEMENTATION AND OVERSIGHT

Implementation Plan

To successfully implement this Strategy, Council must align the vision with the right capabilities and resources. Developing a monitoring and evaluation cycle ensures this Strategy delivers the goals and actions for each goal.

The implementation plan that follows outlines key targets, priority actions and time frames under the three goals.



Goal 1: Existing areas of urban green are protected and enhanced.

Our targets: Where are we now and where we need to be

Focus Areas	Now	Time frame
Tree inventory	Develop a tree inventory across priority areas to understand the health and diversity of our urban forest to support maintenance and replacement actions.	<p>By 2028, a tree inventory of priority areas recording tree diversity and health.</p> <p>By 2033, aim for our urban forest in Council managed land to be comprised of no more than 5% of one tree species, 10% of one genus and 20% of one family⁶.</p> <p>By 2033, aim for 90% of our urban tree population in Council managed parks and streets to be healthy, noting the challenge of flooding in select areas.</p>
Tree and habitat protection	Our existing trees on private and public land need to be better protected in our planning frameworks.	<p>By 2027, our planning frameworks better protect existing trees and understory greening.</p> <p>By 2028, an increase in tree retention on private land.</p> <p>By 2028, our remnant pockets and mature trees with hollows will be better protected.</p>

Actions

Timeframes

Ongoing	= Annually or repeated periodically
■ Short	= within 2 yrs by June 2025
■ Medium	= within 5 yrs by June 2028
■ Long	= within 10 yrs by June 2033

Objective	Action	Time	Lead
Map canopy cover	Develop a 'top down' understanding of existing tree canopy cover using i-Tree, Lidar data or another approach.	Short	Infrastructure Services
Prepare Tree Inventory	Undertake a 'bottom up' tree inventory in priority areas.	Medium to ongoing	Infrastructure Services
	Embed tree inventory classification into existing processes.		
Map + Protect Existing Trees	Map hollow bearing trees in urban areas, including dead trees.	Long	Infrastructure Services
	Protect hollow bearing trees where possible, while ensuring safety		
Review Tree Inventory	Review existing tree inventory process against best practice tree inventory approaches ⁷ .	Short	Infrastructure Services
Manage Trees	Define and adopt evidence based canopy cover, health, soil moisture and diversity targets.	Short	Infrastructure Services
	Review existing urban forest against these targets. Integrate these targets into tree management policies, guidelines and plans.		
Maintain Trees	Develop, cost, document and implement a proactive health and maintenance plan using tree inventory data to set annual health assessments and replacement schedules based on tree diversity, health, and functional assessment (i.e. retain dead trees if habitat). Monitor, treat and evaluate threats and risks. Undertake regular watering, mulching and other treatments to seasonal requirements.	Medium	Infrastructure Services

Objective	Action	Time	Lead
Protect greening	Strengthen tree and understory retention and protection regulations and conformance. For example, define tree canopy protection zones and embed in policies.	Medium	City Planning
	Ensure maintenance regimes accommodate the habitat value of particular sites, such as road reserves.	Short then ongoing	Infrastructure Services
	Require government, landholders and managers to minimise edge effects on core areas and corridor areas.		City Planning
	Require management plans to incorporate the need to protect, restore, enhance, create, and connect ecological habitats.		
	Create development controls that assess biodiversity impacts at lot scale, support habitat enhancement and avoid impacts.	Medium	
	Monitor and enforce.		
	Establish threshold levels for ecological communities beyond which no further development can be considered.		
Water Sensitive Design	Develop a discussion paper on best practice water sensitive urban design approaches aligned to local needs to support new and existing plantings across public space. Draw from available evidence.	Short then ongoing	Infrastructure Services
	Incorporate recommendations into tree and understory master plans, pilot sites and other relevant plans, policies or guidelines.		
Monitor progress	Establish a Council wide scorecard that tracks key metrics, such as tree number, tree replacement, tree failure rates, requests for removal and planting.	Short then ongoing	City Planning
	Establish a strategy working group with community representation.		
	Undertake a formal evaluation of this strategy after three and six years and refine actions.	Medium	



Goal 2: Green links are created where they are most needed

Key targets: Where are we now and where we need to be

Focus Areas	Now	Where we need to be
Canopy cover	<p>Low canopy cover across many urban areas.</p> <p>Our key walking and cycling (active) transport routes require continuous tree canopy cover.</p>	<p>By 2033, aim for our urban forest to meet state government benchmarks of 15% canopy cover in CBD areas, 25% canopy cover in medium density areas and up to 40% canopy cover overall in lower density areas².</p> <p>By 2025, determine priority routes between key community destinations by defining a 'Hawkesbury Green Grid'.</p> <p>By 2033, plant for continuous canopy cover along those routes.</p>
Understory	<p>Consider how to increase understory in streets, parks, waterways and other priority spaces.</p>	<p>By 2025, enhance vegetation strata diversity by planting shrubs, ground covers and grasses where appropriate.</p>
Tree and vegetation selection	<p>Create an evidence based tree and vegetation selection process to guide species selection.</p>	<p>By 2025, implement a tree and vegetation selection policy which outlines the appropriate species selections for specific locations, given spatial and climatic constraints, site character and diversity targets.</p>
Planning	<p>Planning controls need to encourage additional urban greenery and biodiversity in new and infill developments⁸.</p>	<p>By 2030, increase the tree and understory planting in private land with consideration of biodiversity.</p>
Tree and vegetation health	<p>Our trees and understory are impacted by our environmental conditions, including floods and drought.</p>	<p>By 2025, maintain soil moisture levels of new plantings at the required level to provide healthy growth.</p> <p>Consider flood impacts in plant selection and placement.</p>
Habitat enhancement and connectivity	<p>Understand how connected our urban areas are for different types of wildlife.</p>	<p>By 2025, understand the connectivity gaps and barriers for a diversity of wildlife.</p> <p>By 2026, prioritise actions and begin to address priority gaps.</p>



Actions

Timeframes

Ongoing	= Annually or repeated periodically
■ Short	= within 2 yrs by June 2025
■ Medium	= within 5 yrs by June 2028
■ Long	= within 10 yrs by June 2033

Objective	Action	Time	Lead
Habitat Creation	Undertake functional connectivity mapping across urban areas to understand how connected the landscape is for different types of wildlife ⁹ .	Medium	City Planning
	Prioritise gaps to be addressed considering threatened species, endangered ecological communities, locally rare species, location to core bushland, and habitat corridors.		
	Develop and implement an action plan to address gaps.	Long	
	Develop a biodiversity strategy in collaboration with universities that includes urban areas.		
Restoration	Assess riparian zones and tributaries for land slip risk due to a lack of vegetation ¹⁰ .	Medium to long	Infrastructure Services
	Develop a program of re-vegetation in partnership with the Community and Council nursery drawing on best practice regeneration resources ¹¹ .		
Improved Planning Outcomes	Incorporate urban tree canopy targets into existing strategic planning and reporting frameworks.	Short	City Planning
	Modify existing Council policies to prioritise effective urban tree canopy and understory provision and enable benefits such as shade.	Medium	
	Review LEP and DCP planning controls to promote canopy trees and understory planting and biodiversity on private land (new developments, extensions and infill), e.g. minimum canopy tree and understory policies, revisions to design criteria such as open space retention in configurations that allow deep soil zones and percentage on site perviousness, habitat creation.	Long	
	Adopt and implement revised LEP and DCP provisions for urban tree canopy and understory.		

Actions

Objective	Action	Time	Lead
Selection appropriate species	<p>Develop and implement a tree and vegetation selection, placement and management policy drawing on best practice².</p> <p>Incorporate a scientifically based tree selection matrix for different place typologies which proposes mixed species on streets to accommodate varied site constraints and benefits.</p> <p>Review every three years.</p> <p>Create canopy tree and understory species lists informed by existing resilience research and place typologies¹².</p> <p>Review species performance annually based on new research and in ground performance.</p>	Short	Infrastructure Services
Evidence based Planting and Maintenance practices	<p>Develop and implement tree and vegetation planting and maintenance guidelines that draw on best practice and consider the needs of different place typologies. For example how to create enhanced planting opportunities in streets to create space for larger, healthier trees to grow by replacing hard surfaces with porous surfaces, utilising water sensitive strategies to reduce heat and support soil moisture, improving soil structures as part of soil preparation before planting.</p>	Short	Infrastructure Services
Determine LGA wide priorities	<p>Undertake a Green Grid planning process consistent with the State Government Green Grid approach¹³:</p> <ol style="list-style-type: none"> Determine needs based assessment criteria to identify priority planting sites. (For example current canopy cover, existing tree health, heat, SIEFA score, connectivity, current and forecast population density, riparian land slip risks, connectivity for wildlife and catchments of highly valued waterways). Locate geo-spatial data for the assessment criteria. Undertake analysis to determine high, medium and low priority areas with high level costing across the LGA to inform annual priorities for operational and grant funding. Seek funding for priority sites. 	Short	City Planning

Actions

Objective	Action	Time	Lead
Grow Grants	Embed urban greening goals and design strategies in all new appropriate funding submissions, for example, active transport funding.	Short	Infrastructure Services+ City Planning
Define Master Plans	<p>Develop tree and understory master plans with budgets for priority Green Grid sites each year¹⁴.</p> <p>a. Develop and apply criteria to define where opportunity sites for canopy trees and other vegetation exist (e.g. likely deep soil, conflict with services, potential for water sensitive urban design support)</p> <p>b. Integrate biodiversity and urban ecology approaches.</p> <p>c. Detail species and locations.</p> <p>Seek funding for master plans and implement.</p>	Short to ongoing	Infrastructure Services



Goal 3: Our community stewards our urban greening

Key targets: Where are we now and Where we need to be

Focus Areas	Now	Where we need to be
Awareness	Help our community to understand the diverse benefits of urban greening, including understory and canopy trees.	By 2033, understand the benefits of urban greening commensurate with community needs and priorities. This entails targeted community engagement attached to project sites, as well as general community education.
Engagement	Enable community involvement in decision making around urban greening.	By 2033, enable various pathways for community involvement in decision making around urban greening initiatives.
Ownership	Support the community to take positive self driven action to improve urban greening.	By 2033, establish avenues for the community to propose and lead urban greening initiatives across public and private land.
Partnership	Bring together interested stakeholders and large private landholders to make collective change.	By 2033, establish a 'Greening the Hawkesbury' ¹⁵ collective impact partnership to bring together Council owned land, institutional land and other priority sites.

Actions

Timeframes

- Ongoing = Annually or repeated periodically
- Short = within 2 yrs by June 2025
- Medium = within 5 yrs by June 2028
- Long = within 10 yrs by June 2033

Objective	Action	Time frame	Lead
Map Communities	Identify community and stakeholder groups located in identified priority areas.	Short to ongoing	City Planning
	Understand key benefits and concerns regarding increased trees and understory.		
	Scope targeted engagement initiatives to engage these groups.		
Educate	Map existing external information resources to understand benefits relative to community and decision making concerns.	Short to ongoing	City Planning
	Make this information available to the community and priority groups in various forms.		
	Scope, trial and implement targeted community education initiatives to improve the awareness of urban greening benefits, e.g. Traders and the role of tree canopy cover and greening in property values and economic success.	Short	Infrastructure Services
	Implement a pilot case study 'display' approach to at least one public park and street upgrade to trial and showcase a diverse scope of progressive urban greening design strategies, including water and biodiversity sensitive urban design.	Short to ongoing	Corporate Services
	Transfer learnings from this project into all new project briefs and operational processes, including maintenance costing.		
Link the Council arts program to the value of improving urban greening, including understory, trees, waterways and biodiversity.			

Actions

Objective	Action	Time frame	Lead
Engage	<p>Scope, trial, adopt and embed programs to encourage and enable the community to plant and maintain urban greenery on public and private land, e.g. Plant the verge guidelines, 'Select a tree for your street', 'Gardens for wildlife', 'Request a street tree', 'Tree Planting days', 'Free plants from Council nursery as part of rates notices', 'Streets alive' programs or other funding for local initiatives¹⁶.</p> <p>Encourage and enable productive landscapes, in public urban spaces and with private landowners.</p> <p>Develop programs to encourage safe interaction between people and nature in urban areas in partnership with the Council Nursery, e.g. Gardens for wildlife program¹⁷.</p>	Medium	City Planning
Collaborate	<p>Enable the community to input into the design of future places.</p> <p>Trial innovative tools to facilitate engagement and ownership.</p>	Medium	City Planning
Partner	<p>Partner with other municipalities to share knowledge.</p> <p>Partner with Traditional Custodians to increase community knowledge of the cultural significance of landscapes and land management practices.</p> <p>Partner with universities to support further research into the Hawkesbury context and best practice approaches.</p> <p>Scope and implement a 'Greening the Hawkesbury' collective impact partnership with large private landholders and other state based authorities. Consider embedding the Saving our Species Program¹⁸ as part of the collective's goals.</p>	<p>Short</p> <p>Medium</p> <p>Long</p>	City Planning



How can you get involved?

We need our whole community to get involved in greening the Hawkesbury so we can see the benefits we seek faster.

Sign up to the Council Newsletter

Sign up to the Council newsletter so we can update you as programs are developed as part of this strategy. Visit hawkesbury.nsw.gov.au/_resources/forms/subscribe-for-council-notifications

Request a street tree

We will be looking at where to plant street trees across the municipality as part of this strategy. While many areas may require street trees, we will trial an 'opt in' program where you can sign up to request a street tree. Sign up to the Council newsletter to hear more as this program develops.

Plant a garden for wildlife or tree at home

Talk to, or visit, our community nursery to discuss what types of trees and plants may work at your home **(02) 4560 4651** or nursery@hawkesbury.nsw.gov.au

You may also consider planting out your verge as a garden for wildlife subject to certain conditions that will be placed on the Council website as part of this strategy.

Champion a greening plan for your school, university or workplace

Talk to your school, workplace or university about urban greening using this strategy. Ask them what they are doing about 'greening' on their site and develop an action plan together.

Look after urban green areas and trees

In the heat of summer immature street trees and other greening in your area may benefit from additional water. Your support in providing additional watering during summer will support these plants to deliver their benefits sooner.

Become a citizen scientist

Citizen scientists support researchers to understand how well urban greening is performing, for example, how many types of bird species there are in urban areas and whether more target species are arriving due to an increase in habitat. The New South Wales Government's 'Saving Our Species' program is one place to explore becoming a citizen scientist.

Join a planting community group

There are a range of bush regeneration activities across the municipality, some facilitated by Council and some separate to Council.

Talk to our Community nursery on **(02) 4560 4651** or nursery@hawkesbury.nsw.gov.au about what is happening and opportunities to get involved.



Endnotes.

1 CSIRO (2021), Establishing a national agenda for Green Infrastructure (2021), Available from [https://www.csiro.au/en/research/environmental-impacts/sustainability/green-infrastructure#:~:text=Urban%20green%20infrastructure%20\(GI\)%20refers,control%20and%20places%20for%20recreation](https://www.csiro.au/en/research/environmental-impacts/sustainability/green-infrastructure#:~:text=Urban%20green%20infrastructure%20(GI)%20refers,control%20and%20places%20for%20recreation)

2 Government Architect New South Wales (2020), Draft Greener Places Design Guide- Open Space for Recreation Urban Tree Canopy Bushland and Waterways, Issue no. 4 , Available from: <https://www.governmentarchitect.nsw.gov.au/resources/ga/media/files/ga/discussionpapers/discussion-guide-greener-places-2020-06-03.pdf>

3 NSW State Government (2019), 2019 LGA Wide Canopy Cover Estimate, Available from <https://datasets.seed.nsw.gov.au/dataset/greater-sydney-urban-vegetation-cover-to-modified-mesh-block-2019>

4 NSW State Government (2016), 2016 Urban Core Canopy Cover Estimate, Available from <https://datasets.seed.nsw.gov.au/dataset/nsw-urban-heat-island-to-modified-mesh-block-2016>

5 NSW State Government 2016, 2016 Urban Heat Island Effect, Available from <https://datasets.seed.nsw.gov.au/dataset/nsw-urban-heat-island-to-modified-mesh-block-2016>

6 City of Melbourne, Aspect and Tree Logic (2011), Urban Forest Diversity Guidelines; Tree Species Selection Strategy for the City of Melbourne, Available from: <https://www.melbourne.vic.gov.au/SiteCollectionDocuments/urban-forest-diversity-guidelines.pdf>

7 Bond, J., (2013) Best Management Practices - Tree Inventories, Second Edition, Available from <https://www.isa-arbor.com/store/product/137/>

8 Sochacka, B., Kenway S., Bertram N., London G., Renouf M., Sainsbury O., Surendran S., Moravej M., Nice K., Todorovic T., Tarakemehzadeh N., Martin D.J (2020). Water sensitive outcomes for infill development: final report, Melbourne, Australia: Cooperative Research Centre for Water Sensitive Cities , Available from: <https://watersensitivecities.org.au/content/water-sensitive-outcomes-for-infill-development-final-report-2/>

9 Kirk H, Threlfall C, Soanes K, Ramalho C, Parris K, Amati M, Bekessy SA, Mata L. (2018), Improving connectivity for biodiversity across the City of Melbourne: A framework for evaluating and planning management actions, Report prepared for the City of Melbourne Urban Sustainability Branch. Available from: <https://nespurban.edu.au/wp-content/uploads/2021/02/Improving-connectivity-for-biodiversity-across-the-City-of-Melbourne.pdf>

10 Beesley LS, Middleton J, Gwinn DC, Pettit N, Quinton B and Davies PM, 2017, Riparian Design Guidelines to Inform the Ecological Repair of Urban Waterways- Protection and restoration of urban freshwater ecosystems: informing management and planning (Project B2.2/3)B2.2/3-2-2017, Cooperative Research Centre for Water Sensitive Cities, Available from <https://watersensitivecities.org.au/>

11 Standards Reference Group SERA (2021) National Standards for the Practice of Ecological Restoration in Australia. Edition 2.2. Society for Ecological Restoration Australasia. Available from URL: Available from <http://www.seraustralia.com/standards/home.html>

12 Macquarie University (2022), Which Plant Where- Future proof urban landscape projects with climate-ready species, Available from: <https://www.whichplantwhere.com.au/>

13 Tyrrell Studios and Government Architect New South Wales (2017), Sydney Green Grid Spatial Framework and Project Opportunities, Available from: <https://www.governmentarchitect.nsw.gov.au/resources/ga/media/files/ga/plans/sydney-greengrid-plan-1-introduction-2017.pdf>

14 City of Melbourne (2013), City of Melbourne Tree Precinct Plans, Available from: <https://www.melbourne.vic.gov.au/community/greening-the-city/urban-forest/Pages/urbanforest-precinct-plans.aspx>

15 Greening the West, (2023), Greening the West Collaboration, Available from <https://greeningthewest.org.au/>

16 North Sydney Council (2023), Streets Alive Program, Available from <https://www.northsydney.nsw.gov.au/streets-alive>

17 Gardens for Wildlife Victoria, (2021), Embracing nature - Gardens of all shapes and sizes can be wonderful places for wildlife, Available from: <https://gardensforwildlifevictoria.com/>

18 NSW Department of Planning and Environment (2023), Saving our Species Program, Available from <https://www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species/saving-our-species-program>



Address 366 George Street, Windsor NSW 2756
Mailing Address PO Box 146, Windsor NSW 2756
Phone (02) 4560 4444
Email council@hawkesbury.nsw.gov.au
Website www.hawkesbury.nsw.gov.au
Office Hours Monday to Friday 8:30am – 5pm