Draft Greener Places, Healthier Waterways

A Vision for the Camden Green and Blue Grid



November 2022

Council acknowledges the Dharawal people as the traditional custodians of this land and pay our respect to their Elders past, present and emerging.

This artwork represents country, both land and water. It shows the feet at the base and the journey lines that connect across country, representing our life journey and its different paths. Artwork by Danielle Mate Sullivan, 2020

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What is a Green and Blue Grid?

fields, urban tree canopy, rivers. The Green and Blue Grid can comprise of natural and constructed wetlands, rain gardens and water features).

When protected and enhanced,

- Provide biodiversity and habitat corridors;
- Help the urban environment to cool:
- Contribute to cleaner air and
- Support walking and cycling

As the population grows, the of Camden's Green and Blue important to support a liveable and sustainable Camden.

The Green Grid













and walking











1. Lakes

2. Natural wetlands* 3. Constructed wetlands**



4. Rivers

5. Farm dams







6. Water NSW Upper Canal

Water Sensitive Urban Design

7. Rain gardens and 8. Creeks

Draft Greener Places, Healthier Waterways Vision

Our Vision

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Credit Murray Wilson

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Our Green and Blue Grid Vision



Introduction

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Introduction

The purpose of this document is to set a clear vision to create greener places and healthier waterways across the Camden Local Government Area (LGA).

The Camden LGA is renowned for its picturesque scenic landscapes, for the pristine gardens at the Australian Botanic Garden at Mount Annan, and for the many natural waterways including the Nepean River which are frequently visited by both residents and visitors. These places are not only important landmarks inherently tied to the local character and identity of Camden, but also contribute to the local and regional Green and Blue Grid. The COVID-19 pandemic and recent natural disasters including floods and bush fires have highlighted the need for high quality green open spaces and resilience planning to be key considerations for the Camden LGA. Coupled with managing Camden's population growth, delivering a connected and accessible local Green and Blue Grid will become increasingly important to support a liveable and sustainable Camden.

The concept of a 'Green Grid' was introduced by the NSW Government Architect in 2017. The Green Grid establishes a spatial framework for ensuring key interconnected 'green' links are incorporated into the design of public spaces. It also aims to create new and enhanced existing green links by strategically planting trees and vegetation along waterways, public transport routes, neighbourhood streets, footpaths, cycleways, and at playgrounds, sports fields, community facilities and Town Centres. Locally, Camden's Green Grid spans across the entire LGA on both public and private land.

Camden Council recognises the Green Grid goes hand-in-hand with the 'Blue Grid' - the network of rivers, lakes, creeks, ponds, farm dams, water sensitive urban design (WSUD) and water features incorporated into built environments. Trees and vegetation need a source of water to survive, while vegetation planted near creeks, rivers and lakes helps to support the ecosystem and the health of the waterway. There are clear benefits to managing the Green and Blue Grid together to maximise the benefits for both.

In April 2020, Council adopted the Camden Local Strategic Planning Statement (Camden LSPS), the guiding land-use planning vision for Camden over the next 20 years. The LSPS includes a local priority (Priority S1) to improve the accessibility and connectivity of Camden's Green and Blue Grid and delivering high quality open space. The LSPS also includes the following short-term actions:

- Action 82 Prepare a Green and Blue Grid Analysis for Camden and identify mechanisms to implement the Green and Blue Grid; and
- Action 88 Investigate opportunities to provide physical and visual connections to waterways and green spaces.

In response, Clouston Associates were engaged by Council to undertake an analysis of Camden's Green and Blue Grid and to provide Council with recommendations on what could be done across the Camden LGA to improve the connectivity and quality of the local network. This work has been used to help inform this Vision.

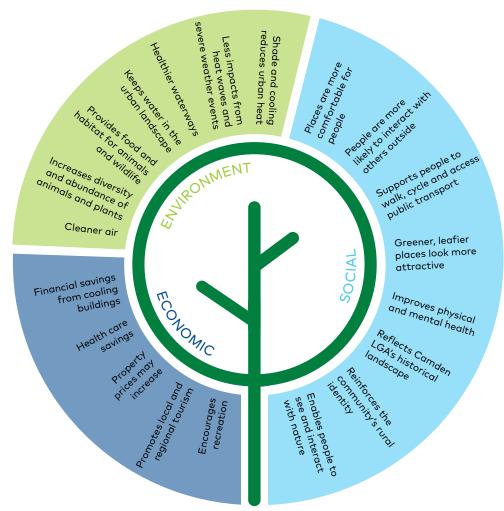
Benefits from trees and healthy waterways

Trees, vegetation and water are key features of what makes places liveable for both people and animals. They provide:

- Attractive landscapes and settings, helping people to move around their neighbourhoods under a network of shaded paths and streets;
- Cleaner air and waterways;
- A cooler urban environment, making places more comfortable for people to enjoy;
- Biodiversity and habitat corridors for local and migratory animals to live; and
- The opportunity for people to interact with nature and watch local animals in their natural habitats.

As shown in Figure 1, there are many social, environmental and economic benefits to delivering a healthy, connected, accessible and sustainable Green and Blue Grid network.

Figure 1 - Benefits from trees and healthy waterways



Setting the Scene

1.0



your

voice

camden

Background

Residents have told us they choose to live in the Camden LGA because of its rural setting and because it is a great place to raise their family¹. When asked to describe their aspirations for the Camden area, people said they want a "greener", "family-friendly" and "community-focused place"².

Open spaces and parks are considered important assets by the Camden community as spaces for exercise and recreation, especially for people who have smaller or no backyards. The community have asked Council to increase trees in bushland corridors, deliver walking and cycling tracks, provide community access to bushland, improve amenity at sporting fields, parks and playgrounds, and around the Nepean River, and to ensure parks and community facilities are well maintained³.

The Camden LGA is forecast to have the largest housing growth in Metropolitan Sydney over the next 25 years (2016 to 2041)⁴. The residential population is set to increase to 233,950 people in 2036 - a 112% increase from 110,600 people calling Camden home in 2021. As the population continues to grow, and the landscape changes through development, the demand for more open spaces and greener, healthier neighbourhoods will be higher.

Based on community feedback, Camden Council has made a commitment in the Camden LSPS to:

- Investigate opportunities to improve urban tree canopy cover in new and established areas;
- Improve the connectivity between open spaces and waterways and provide the community with better access to the natural environment and greener urban places;
- Protect and celebrate rural land and natural assets such as the Nepean River;
- Mitigate the impacts from urban development on biodiversity corridors and bushland; and
- Deliver high quality and accessible open spaces.

Council recognises the local Green and Blue Grid feeds into district scale projects for the Western Parkland City such as projects to enhance the green spaces around South Creek, Kemps Creek and the Water NSW Upper Canal. Improving the local Green and Blue Grid creates a healthier and more liveable community for residents living in Camden to enjoy now and into the future.

Have Your Say

Council welcomes feedback on the Greener Places, Healthier Waterways: A draft Vision for the Camden Green and Blue Grid to ensure we capture the community's collective aspirational vision and goals for increasing tree canopy cover and improving the health of waterways across the Camden LGA. Submissions will close on 28 November 2022. Please visit Council's website **yourvoice.camden.nsw.gov.au** for information on how to share your ideas and have your say.

1. Camden Local Strategic Planning Statement – Community Engagement Report 2019. 2. Camden Local Strategic Planning Statement – Community Engagement Report 2019. 3. Camden Local Strategic Planning Statement – Community Engagement Report 2019. 4. NSW Department of Planning and Environment – Population Projections 2019.

The strategic context

This Green and Blue Grid Vision responds to planning priorities set by the State Government in the Greater Sydney Region Plan (Region Plan) and Western City District Plan (District Plan), as well as local planning priorities established by Council and the Camden community in the Community Strategic Plan and Camden LSPS. The approach to identifying the local Green and Blue Grid framework is modelled from the NSW Government Architects Sydney Green Grid. The Green and Blue Grid Vision sits within a suite of Strategies developed by Camden Council that aim to create a healthy, liveable and sustainable natural environment in both urban and rural areas across the Camden LGA.





The local context

For every 10% increase in tree canopy cover, the land surface temperature reduces by 1.13°C*









Camden LGA's urban tree canopy cover in 2019 was 15%⁵. Suburbs within the New Urban Area were found to have the lowest tree canopy cover. Future Urban Areas are likely to experience the most significant tree loss as development occurs⁶. There are more children (O-17 years) living in Camden LGA compared to the Greater Sydney Region⁷. The number of older people aged 60+ is forecast to be 56,300 in 2041, an increase from 11,550 in 2016⁸. Almost 4.5% of the population have a severe or profound disability⁹. Camden LGA's population has higher rates of chronic and lifestyle diseases such as diabetes, heart disease and obesity requiring hospitalisation compared to the NSW average¹⁰. 86% of people living in the Camden area drive to work, only 9% use public transport or active transport¹¹. There are 5 Biobanking/ Biodiversity Stewardship Agreements in place across Camden LGA, protecting 321.26 hectares of native bushland¹².

How can enhancing the Green and Blue Grid help?

Increasing urban tree canopy cover in Established, New and Future Urban Areas while maintaining and improving the tree canopy cover within the Existing Urban and Rural Areas will help Camden LGA to reach the target of 40% tree canopy cover¹³. Open spaces and pedestrian paths shaded by trees can assist people to stay active and connected in their community. Cooling the environment can help to reduce the impact of urban heat events on vulnerable people living in the Camden LGA. Constructing more paths and planting trees to provide shading over pedestrian paths and cycleways and throughout parks and open spaces can support people to exercise more - improving both their physical and mental health. Offering shaded pedestrian and cycle paths to destinations such as bus stops, train stations, Town Centres and employment areas can encourage more people to commute to work and school on public transport or by walking. Maintaining a connected green corridor of native vegetation using Biobanking/Biodiversity Stewardship Agreements and other conservation measures will help protect habitat for plants and animals.

5. Department of Planning and Environment, 2019 - Resilient Sydney Greater Sydney Canopy cover by LGA. 6. Clouston Associates, 2020 – Camden Green and Blue Grid Analysis 7. Profile Id, 2016 – Camden LGA 8. NSW Department of Planning and Environment, 2019 – Camden Council NSW Population Projections 9. Profile Id, 2016 – Camden LGA 10. NSW Health, 2019 - Health Stats NSW Camden LGA. 11. Camden Council, 2020 – Camden Local Strategic Planning Statement. 12. NSW Office of Environment and Heritage – Biobanking public register *Note: Statistic is correct as of April 2022. 13. Greater Sydney Region Plan – Objective 30 – Greater Sydney Commission.

Our Existing Green and Blue Grid

Camden's Green and Blue Grid includes waterways, reserves and habitat corridors that span across the entire LGA. As shown in Figure 2, they create a series of linear corridors and interconnecting landscapes, that when combined, illustrate Camden's existing Green and Blue Grid.

Figure 2 identifies key everyday destinations such as retail centres (strategic, town, local and neighbourhood), existing and future train stations, and parks and reserves. Planting trees along key travel routes and at these key destinations can encourage people to walk and cycle and stay longer in these places.

The South Creek corridor is a defining spatial element at the heart of the Western Parkland City. The State Government has plans to transform South Creek into a corridor of public open spaces, joined by walking and cycling trails. At the centre of this transformation are plans to improve tree canopy cover, riparian vegetation and the health of South Creek. Camden can support the achievement of this district goal by delivering Green and Blue Grid initiatives along the South Creek corridor within Camden LGA.

The State Government has also identified the Water NSW Upper Canal as an important piece of infrastructure that could benefit the Green and Blue Grid. Utilising the space along the Water NSW Upper Canal as open space, active transport corridor and to plant additional trees is identified as a district level action.

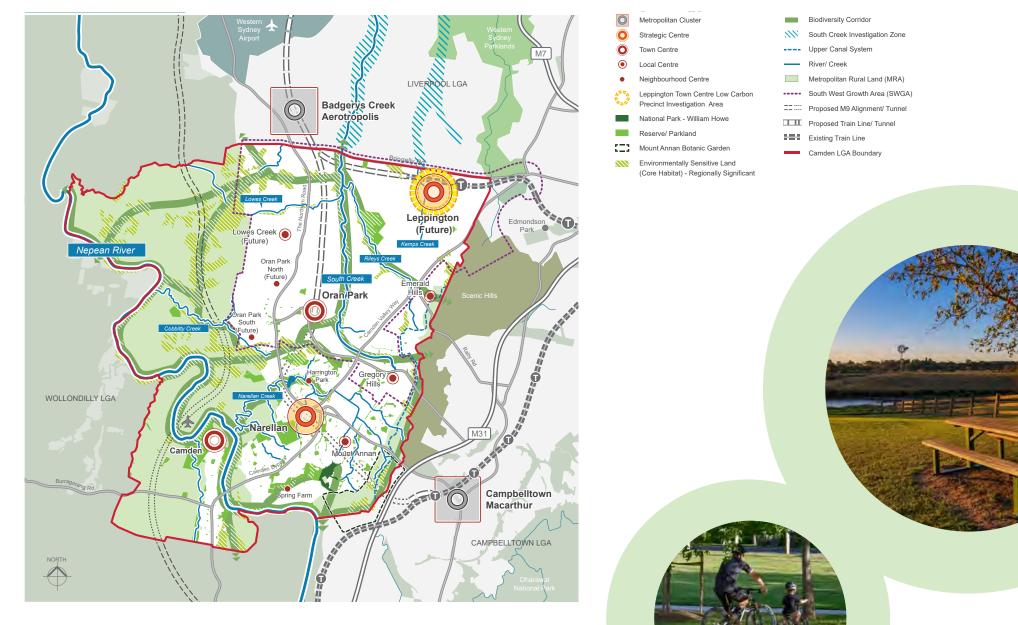


Figure 2 – Camden LGA's existing Green and Blue Grid map

Camden's Blue and Green Grid Analysis

CLOUSTON associates

Camden's Green and Blue Grid Analysis

In 2020, Clouston Associates completed an independent analysis of Camden LGA's Green and Blue Grid. As part of this work, the LGA was divided into four settlements areas (Rural, Established Urban, New Urban and Future Urban) based on their different physical characteristics, landscape features and age of development growth. These aspects were found to present both opportunities and challenges for improving the connectivity of the Green and Blue Grids at the suburb, development area, and LGA-wide scales.

The Analysis identified a number of potential projects for Council to consider across the LGA to enhance the local Green and Blue Grid, including projects in Camden and Narellan Town Centres.

Further information on these projects are contained within the Green and Blue Grid Analysis 2020 (p.38-39; 46-47; and 52-53). Implementation of these projects will be subject to further consideration by Council.

Key findings from the Green and Blue Grid Analysis

Blue Grid Blue Grid acts as a skeleton to support the Green Grid. The Analysis identified the river and permanent creek network is still well connected and evident on the ground. The health of the river and creek system can be improved by focusing efforts on maintaining the waterflow in streams, creek tributaries and rivulets that support the function of the larger rivers and creeks.

> 2. The local Green Grid contains high quality bushland, parks, and reserves, however there are 'missing links' across the existing network of green open spaces.

4. Retaining and reinstating native vegetation associated with South Creek and Kemps Creek in the Future Urban areas will be critical to maintaining Green Grid connectivity as these areas are transformed into residential areas.

3. The most intact areas of native vegetation are found in the western and northern parts of the Camden LGA, particularly east of the Nepean River around Cobbitty, Bringelly and Lowes Creek and many are privately

> 5. Council has the greatest opportunity to influence the Green and Blue Grid transformation in the Established Urban areas of the Camden LGA.

6. There are opportunities to enhance and create linear corridors of green spaces along the Nepean River and South Creek. These linear corridors will provide important habitat corridors for local animals and plants and improve people's access to natural environments.

7.

Public utility corridors, the road and street network, and cycleways (i.e. the Grey Grid) should be treated with trees and vegetation and incorporate Water Sensitive Urban Design (WSUD) principles to ensure plants benefit from an ongoing water source. Planting trees to support the grey grid will create a more liveable environment for people, plants, and animals. Trees and vegetation along The Northern Road and the Water NSW Upper Canal can be added to enhance recreation opportunities, promote active transport, and provide tree canopy corridors.

8. The suburbs of Camden, Narellan, Spring Farm and Leppington are identified as locations for local Green and Blue Grid loops to be developed. These loops will offer new links between daily destinations such as shops, school, work, and public transport and should follow existing creek lines.

9. There are opportunities to better connect the suburbs of Camden and Spring Farm to the Nepean River, and Oran Park and Leppington to South Creek.

> **10.** Several missing eastwest links in the Green and Blue Grid Network have been identified including:

 between Spring Farm and Mount Annan (Green Grid);

• the Nepean River and South Creek through Harrington Forest (Green and Blue Grid); and

• Camden and Narellan Town Centres (Green Grid).

waterways to

a more natural

Key Recommendations

1. Create linear open space 'Green Grid' corridors to promote walking, cycling and public transport usage, and to provide important habitat corridors for animals and wildlife.

2. Design a riverside walk alona the Nepean River, Cobbitty Creek and Bringelly Creek that will provide additional recreation opportunities for the community and important biodiversity links.

4. Keep existing farm dams and wetlands when designing new and future suburbs – these will provide a water source for wildlife and create focal point within new open spaces for people to

enjoy.

5. Use the electricity easements as green links by vegetating these areas with low native planting - offering new walking and cycling tracks for people to use as Create more well as creating new east-west links of biodiversity links for trees and vegetation wildlife. across the local arid to

connect Town Centres and river and creek systems - This will provide a steppingstone of habitats for animals to move between as well as provide shade for people to move about their local

3.

area.

6. Unlock the value of the Water NSW Upper Canal by investigating opportunities to make use of the space along the canal for recreation spaces, urban greening and as an active transport corridor.

> 7. Develop a circuit and network of pedestrian paths lined with trees and vegetation (local 'Green Grid' loops) in established suburbs rather than linear corridors.

8. Retain and restore vegetation around South Creek and Kemps Creek when planning for development.

9. Connect key destinations within towns by planting trees along new roads, active transport routes (e.g. walking and cycling tracks), near future railway stations and near community and retail centres to create a series of local 'green grid' loops.

> 10. Use rivers and creeks as the main structure for the local Green Grid, promoting the Nepean River and South Creek as strong 'Blue Grid' connections.

> > 12.

Investigate ways

to retain water in

the environment by

incorporating Water

Sensitive Urban Design

(WSUD) into new builds,

public domain projects

and during the master

planning for new

suburbs.

11. Protect and restore bushland.

16. Use infrastructure 'Grev Grid' corridors such as The Northern Road and other key roads to extend recreation opportunities, active transport corridors and tree

canopy cover.

'greenery' into the established urban areas by planting more trees and vegetation along streets, creeks and wetlands. 14. Return

13.

Reintroduce

state. 15. Connect (both physically and visually) the river towns of Camden Town and Spring Farm to the Nepean River and Leppington and Oran Park to South Creek.

Floating Wetlands at Harrington Park Lake

Council installed a floating wetland raft in Harrington Park Wetland, upstream of Harrington Park Lake. The wetland is designed to improve water quality entering the lake by removing pollutants including nutrients, metals, sediment and some hydrocarbons and has a range of plant species planted into the floating raft. The plants act to remove pollutants through biofilms that live on the submerged roots and leaves. Floating wetlands also create habitat for essential water bugs, fish, waterbirds, turtles and eels.



Our Aspirations

Our aspiration is that the Camden LGA will become a place where:



People can walk to shops, schools, bus stops and future train stations under tree lined shaded pathways.



Waterways are healthier and the air is cleaner.



There is local wildlife for people to watch and interact with.



People can visit a lake or river to exercise, relax and enjoy spending time with family and friends.



People can play in green open spaces, at playgrounds and sporting fields that have enough trees to provide shade and shelter.



The impacts of heat waves and extreme weather events on the community are reduced

To achieve this aspiration, Green and Blue Grid projects should seek to:

- 1. **Maintain, repair, and protect** existing natural water corridors, wetlands, farm dams, rivers and lakes, trees, riparian areas, rural land, bushland and green open spaces;
- 2. Manage, improve and rejuvenate the quality of existing waterways and vegetation and their adapt ability to urban heat, drought, and other environmental changes; or
- 3. Add to and enhance the local Green and Blue Grid by prioritising initiatives that positively contribute to completing the missing links within the network and reintegrate nature into urban areas.

Waterway Walks at Kolombo Creek, Oran Park and Narellan Creek, Harrington Park

Council has developed guided Waterway Walks at Kolombo Creek, Oran Park and Narellan Creek, Harrington Park. The guides provide information about the natural and constructed features that help keep our creeks clean and healthy and points out features as you complete the easy loop walks. The paths are wheelchair and pram-friendly.



2



Aspirational long-term goals

The Analysis acknowledged transforming Camden's Green and Blue Grid will take time. It includes the following broad long-term goals for Council and the community to aim for:

- 1. Remnant vegetation, particularly along waterways, is improved and retained.
- 2. Biodiversity corridors are reconnected and protected.
- 3. The biodiversity links to the Nepean River and other key waterways are improved.
- 4. Recreational trails (bushwalking, mountain biking, horse riding) are provided through bushland.
- 5. New urban areas have east-west (cross) and northwest-southeast (diagonal) green links to promote cycling and walking.
- 6. Flood prone land and electricity easements are used as green open recreational spaces.
- 7. Most neighbourhood streets, town centres, public spaces and active transport routes have native trees planted for shading.
- 8. Broken green links are completed in negotiation with private landowners.
- 9. River walks are provided along the Nepean River, South Creek, Cobbitty Creek and Bringelly Creek.
- 10. The use of Water Sensitive Urban Design (WSUD) principles is promoted, monitored and enhanced.

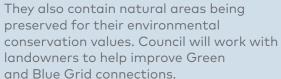
Aspirations for each settlement area

In establishing the way forward for the Camden Green and Blue Grid, the Analysis considered the unique landscape characteristics of four distinct settlement areas (Rural, Established Urban, New Urban and Future Urban). These areas are at different stages of urban development and growth, which present both opportunities and challenges for delivering a healthy, connected, accessible and sustainable local Green and Blue Grid. A summary of the Green and Blue Grid priorities for each area is outlined in **Table 1**. Notably, urban development and residential growth will be achieved within urban areas in order to protect, maintain and enhance Camden's Metropolitan Rural Area (MRA).

Table 1: Green and Blue Grid priorities by area

Rural

Rural Areas are characterised by large agricultural land holdings used for farming operations and rural living.



The priority for Green and Blue Grid projects within the Rural Area is to protect and enhance existing trees and farm dams and to reconnect fragmented vegetation and biodiversity corridors along creeks and within bushland. Investigating the possibility of better connecting the Nepean River to rural and agricultural land in the north-west portion of the Camden LGA will also be important.

There is opportunity to enhance the community's access to the Green and Blue Grids in Rural Areas by providing key recreation activities such as bush walking and mountain bike trails through bushland and a riverside walk along the Nepean River.

Established Urban

Suburbs such as Mount Annan, Narellan, Narellan Vale, Harrington Park, Camden South and Camden form the Established Urban Area of Camden LGA. They typically include suburbs with low and medium density housing with established retail shopping centres, sporting fields, schools, community centres and parks.



The Established Urban Areas tend to have established urban Town Centres with varying degrees of tree canopy cover, gardens and landscaped areas. The Green and Blue Grids within the Established Urban Area over time has been modified in the absence of a strategic and holistic approach to managing the network, creating fragmentation and a lack of connectivity.

Established Urban Areas would benefit from a significant reintroduction of the Green and Blue Grid. This could include incorporating urban forests, tree-lined streets, and working to improve the health of rivers, creeks, lakes and other bodies of water. A focus on reinstating the natural flow of water and linkages between river and creek systems, returning them to a more natural state, will enhance waterway health. It will also increase opportunities for the community to connect with these waterways, seeing and physically interacting with rivers and creeks from new vantage points. Equally, it will be important to protect and retain existing bushland and open spaces within the established areas.

There are opportunities to create a continuous open space corridor along the Nepean River to provide new recreational opportunities for the community. Camden and Narellan Town Centres can be better connected to the areas immediately surrounding them by creating more tree lined paths and streets. This will deliver a series of loops and links from the places people live and work to shops, schools and public transport connections and offer people multiple travel routes to key destinations. Ultimately, the goal will be to improve the east and west green links between the Nepean River and South Creek and the green links between commercial and residential areas and Town Centres.

New Urban

Since the early 2000's, Camden LGA has been experiencing rapid housing growth. This has resulted in the creation of several new suburbs including Harrington Park (and Harrington Grove Estate), Elderslie, Spring Farm, Emerald Hills, Gledswood Hills, Gregory Hills, Catherine Park Estate and Oran Park.



These areas generally have adopted a more strategic and holistic approach to managing the Green and Blue Grid when compared to established suburbs. During the planning of these new suburbs, Council worked with developers to deliver high quality and well design green open spaces for the community.

The benefits of tree canopy cover in newer suburbs will be felt in years to come when the existing trees reach maturity. Council and developers can continue working together to identify new opportunities to enhance, refine and add to the existing Green Grid by monitoring tree health and canopy cover. This will extend the green grid along streets, parks, open spaces and creeks. Council and developers can also initiate new stormwater management projects such as installing rain gardens to capture and retain water in the urban environment and using Water Sensitive Urban Design (WSUD).

There is an opportunity to better connect Oran Park Town Centre with South Creek. This can be achieved by developing local green loops – a series of tree-lined paths in, and around, the town centre that will link people to everyday destinations such as shops, schools, the future train station, office buildings and employment areas. The green link should extend to follow the alignment of South Creek.

Future Urban

Part of the Camden LGA has been identified for future growth. There is increased possibility to strategically locate trees and set higher standards for the delivery of greener open spaces and Town Centres and water features such as lakes and ponds at the master planning stage before people move into these new communities.



Future Urban Areas will benefit from keeping and restoring the existing bushland, farm dams and waterways and incorporating these into the design of new neighbourhoods.

Council will work with the State Government and developers to ensure there is sufficient green connectivity between new parks, shopping centres and commercial buildings to enable people to move around their new community under shaded trees. This will assist people to live healthier lifestyles as well as support people to meet others in their neighbourhood, form friendships and feel more settled in their new community.

Future development in Leppington should focus on providing opportunities for people to see and undertake recreational activities along South Creek and form new green connections between Rileys Creek, Kemps Creek and the Water NSW Upper Canal. A series of local green loops between the future Leppington Town Centre and surrounding area will assist to link key destinations such as the train station, employment hubs, schools and retail precincts.

Visionary projects



Guiding principles for Green and Blue Grid Projects

Seven guiding principles have been established for Green and Blue Grid projects as shown in **Figure 3**. When Council and the other stakeholders plan a Green and Blue Grid initiative, they are encouraged to make sure the project is relevant to the unique characteristics of the place. This means considering the existing landscape, whether the project is in a town centre, rural setting or residential neighbourhood, and how people use or could use the place in their everyday lives.

The projects should also contribute to Green and Blue Grid at different scales - the neighbourhood, local and district networks. We recognise there are opportunities to think differently and innovatively about how places are designed and managed to incorporate water, trees and vegetation into open spaces, commercial centres and on private and public land, which will make the Camden area greener, more beautiful and welcoming for all to enjoy.

Despite the scale of the project or who is implementing the initiative, local Green and Blue Grid projects should embrace caring for and designing with Country principles. For tens of thousands of years Aboriginal people have cared for, and managed, the land. Trees, waterways and natural landscapes are deeply connected to Aboriginal cultural practices, spirituality, and understanding of nature. Adopting a Country-centric approach and undertaking meaningful engagement with Aboriginal stakeholders will ensure the significance of trees, vegetation, waterways, scenic landscapes and natural systems in Aboriginal culture and heritage is better understood and considered in the design of place-based Green and Blue Grid projects. Figure 3 – Green and Blue Grid Project Principles



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Camden LGA Green and Blue Grid project opportunities

Project Opportunity*

- 1. South Creek Green Grid Priority Corridor Deliver a continuous green open space corridor along South Creek.
- 2. Kemps Creek green corridor Revegetate and restore native planting and create an active transport and green open space corridor along Kemps Creek connecting the Water NSW Upper Canal and Leppington Town Centre Precinct.
- 3. The Western Sydney Parkland green link Deliver regionally significant green open spaces connecting The Australian Botanic Garden Mount Annan to the Western Sydney Parkland through the Scenic Hills.

4. The Nepean River Great Walk Create a continuous active transport and green open space corridor along the Nepean River.

5. Rileys Creek Regional Biodiversity Corridor Create a north south green biodiversity corridor along Rileys Creek and linking to the adjoining regional public open space in Leppington.

6. Cobbitty Creek green corridor Create major east west green biodiversity corridor along Cobbitty Creek to connect the Nepean River to South Creek through Harrington Forest.

7. Narellan Creek green corridor

a. Create a series of local green links to connect shops, schools, public transport and employment land around Narellan Town Centre; and

b. Establish a new green grid connection along the Nepean River through Harrington Park, along Narellan Creek, through Smeaton Grange and into The Australian Botanic Garden Mount Annan.

8. Camden Town Centre green link connections Create a series of local green links to connect shops, schools, public transport and employment land around Camden Town Centre and to the Nepean River.

9. The Northern Road green boulevard Work with State agencies to transform The Northern Road into a green boulevard connecting Badgerys Creek through Camden to Penrith.

10. Camden Town Centre to Narellan Town Centre green link Upgrade shared paths and plant trees along a 4km active transport corridor between Camden and Narellan Town Centres.

11. Nepean River to South Creek green corridor Create an east-west green corridor between the Nepean River and South Creek.

12. Spring Farm green link connections Create a series of connected local green pedestrian and cycle paths around Spring Farm.

13. Revegetate the Lowes Creek riparian corridor Revegetate the riparian corridor along Lowes Creek.

14. Nepean River to Bringelly Creek green corridor Create a green corridor connecting the Nepean River to Bringelly Creek along the northern LGA boundary and along the Regional Biodiversity Corridor in Cobbitty.

15. Narellan Creek green corridor Connect the Nepean River (near Cobbitty) to Narellan Town Centre through John Oxley Reserve at Kirkham and the Narellan Sports Hub.

16. The Northern Road to Ron's Creek green link connection Create a green link from The Northern Road through Oran Park and along Ron's Creek.

17. Harrington Park to South Creek green link connection Create a new green corridor between Harrington Park through Harrington Forest and Kolombo Creek to South Creek.

18. Water NSW Upper Canal, Kemps Creek and Riley's Creek green link connection Create new green corridor to connect the Water NSW Upper Canal, Kemps Creek and Rileys Creek.

19. Oxley Rivulet green corridor Plant more trees along Oxley Rivulet and the adjoining green open spaces to connect tree canopy cover.

20. Howe Creek green corridor Plant more trees and vegetation along Howe Creek (including the adjoining pedestrian and cycle paths and green open spaces).

21. Thornleigh Creek green corridor Upgrade the Thornleigh Creek alignment and enhance the adjoining green open spaces and pedestrian and cycle paths by planting more trees and vegetation.

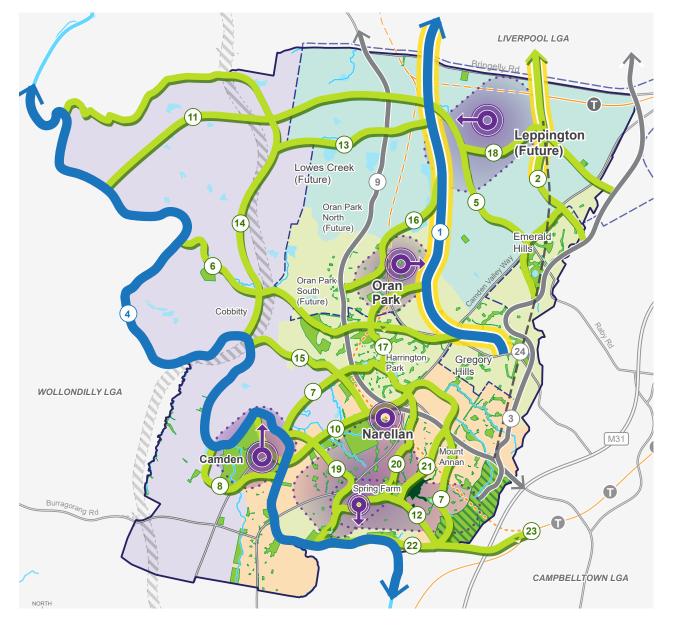
22. Spring Farm to Mount Annan green link connection Create an east west green link along the edge of the Nepean River to connect Spring Farm to Mount Annan.

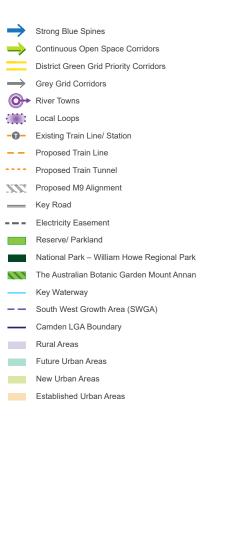
23. Macarthur Regional Recreational Trails green link connections Contribute to the Macarthur Regional Recreational Trails - an off road cycleway and shared pedestrian path connecting Camden to Macarthur Railway Station.

24. The Australian Botanic Garden Mount Annan to Leppington green link connection Revegetate the electricity easement along the eastern LGA boundary between The Australian Botanic Garden Mount Annan through Gledswood Hills to Leppington to create a green active transport and biodiversity corridor.

*These 24 Green and Blue Grid projects require further investigation and project planning by Council. Notably, not all projects may be achievable or may be varied to respond to planning and funding opportunities.

Figure 4 – Potential Green and Blue Grid linkages





Camden Council

Working Together to Deliver the Vision

A collaborative approach to delivering the Green and Blue Grid Vision

Precinct Planning

Council will:

- 1. Ensure street trees are prioritised in the master-planning of new areas and retain mature trees where possible.
- 2. Ensure an adequate amount of open space is identified to meet population growth in new areas.
- 3. Work with developers to restore local waterways and riparian vegetation.
- 4. Promote Biodiversity Stewardship Agreements and offset schemes and investigate the retention of water in the landscape.

Planning Controls and Development Assessment

Council will:

- 1. Review development controls for landscaped areas on residential blocks, private and communal open spaces, car parking areas, and streets.
- 2. Investigate development controls to promote environmentally sustainable buildings.
- 3. Require development to incorporate water sensitive urban design (WSUD) principles and opportunities to increase tree canopy cover.
- 4. Require developments to consider adverse impacts on native or endangered vegetation such as Cumberland Plain Woodland.

Community Tree Planting Initiatives

Council will:

- 1. Support volunteers interested in caring for local bushland.
- 2. Encourage the community to value urban trees and provide opportunities to participate in tree planting events, and plant give aways.
- 3. Provide opportunities for community members to plant additional trees in bushland areas and other public spaces.

Secure funding to implement Green and Blue Grid projects

Council will:

- 1. Apply for external funding such as the Metropolitan Green Space Grants to implement Green and Blue Grid projects.
- 2. Use Planning Agreements and developer contributions to provide trees and planting in open spaces and at community facilities, and to fund water sensitive urban design projects.
- 3. Continue to progress the annual Pedestrian Access and Mobility Plan footpath construction program.
- 4. Advocate for State Government to deliver and implement regional Green and Blue Grid projects.

Public domain Green and Blue Grid projects

Council will:

- 1. Incorporate Water Sensitive Urban Design (WSUD) principles in public domain projects whenever possible.
- $2.\ Plantmore trees and gardens along roads, and other 'grey' infrastructure.$
- 3. Incorporate an increased number of trees when master planning for recreation spaces and sporting fields.
- 4. Include the installation of mature trees in public domain projects to provide natural shade whenever possible.



Greening Our City Grants

Council has been successful in receiving six grants under the Greening Our City grants offered by the NSW Government. The following projects will be completed in 2022.

Project	Trees to be planted
Building Camden's Canopy – Every Tree Counts	1,000 trees across Camden LGA
Building Camden's Canopy – Parks and Reserves	700 canopy trees in parks and reserves across the Camden LGA
Canopy Enhancement – Ferguson's Land	2,000 native tubestock in the riparian area along Matahil Creek and 216 landscape trees at Camden Cricket Facility Ferguson's Land, Camden
Canopy Enhancement - Narellan Sports Hub	1,000 native tubestock and 528 landscape trees at Narellan Sports Hub, Narellan
Canopy Enhancement – Kirkham Park and Works Depot	100 canopy trees at Council's Work Depot in Narellan and 50 canopy trees at the Kirkham Park BMX Facility, Elderslie
Connecting Camden White Gum	500 threatened White Gums at Elizabeth Macarthur Reserve, Camden South



Council understands that we are likely to have a greater impact on improving the local area's Green and Blue Grid, and achieving our Vision, by working with a diverse group of local stakeholders.

Learn

• **Ongoing knowledge sharing** between Council, local Aboriginal land managers and the Camden community will help to create a resilient and sustainable Green and Blue Grid network.

Aboriginal and Torres Strait Islander People are the traditional custodians of Camden LGA's land and possess a unique knowledge and understanding of how to care for Country.

Residents, business owners and local community groups also have a critical role to play, as they too hold local knowledge.

Support

- **Capacity building** by supporting the community to contribute to the maintenance, protection, and enhancement of the local Green and Blue Grid on land within their ownership.
- **Raising awareness** about the value of trees and their social, economic and environmental benefits.
- **Empowering** the community by making it easy to make changes for example accepting a tree from a plant give-away and adopting a street tree outside their home.
- **Engaging** the community through events and programs for people to get actively involved in caring for the natural environment.
- **Guiding** landowners, builders and developers to build environmentally sustainable places through planning controls.

Partner

- **Collaborating** with government and nongovernment agencies¹⁴ on project ideas and opportunities can ensure Camden's local approaches are responsive and reflect bestpractice solutions and the latest research.
- **Partnering** with the community, State Government, landowners and developers to share responsibility, pool resources and cofund project delivery can accelerate physical changes to the natural environment.

14. Government and non-government agencies include Local Land Services, Greater Sydney Landcare Network, Camden Airport, Sydney Water, Water NSW, NSW Department of Planning and Environment (DPE), NSW Department of Primary Industries (DPI), Western Parkland City Authority, and neighbouring Councils

Nest Box Trail through Harrington Forest

Council has installed 10 nest boxes within mature Eucalypt trees in Harrington Forest as part of a restoration project. The nest boxes were decorated by students from a local primary school and childcare centres / preschools to create cosy homes for our wildlife. A nest box trail map was developed to allow the students, their families and the community to spot the nest boxes while enjoying a walk through Harrington Forest.

Nest boxes are important as tree hollows can take up to 100 years to form naturally in trees. Providing nest boxes until hollows can form is an important way to ensure that animals and birds have the habitat they need for shelter and to raise a family.



How to get involved!

Table 2: How the community can contribute to creating greener places and healthier waterways

ldeα		Who may like to get involved	How does this idea support the local Green and Blue Grid?
	Plant vegetation and suitable trees in your backyard no matter how small the space.	Private residents	Planting vegetation and suitable trees in backyards provide shade, important habitats for wildlife and also assist to reduce urban heat.
	Provide homes for local wildlife such as a frog jacuzzi and bee hotel.	Private residents	Research tells us that children and adults are healthier, happier and more creative when they have a connection to the natural environment. Creating habitat gardens such as a frog jacuzzi and bee garden can help the whole family discover what creatures are living in their backyards and provide important biodiversity habitats for native animals and wildlife. Check out inspirational videos and 'how to' guides on Council's website www.camden. nsw.gov.au
Wivenhoe Conservation Area	Suitable private landowners could consider entering into a Biodiversity Stewardship Agreement.	Private residents (who meet the criteria)	Eligible landowners can enter into a voluntary, in-perpetuity legal agreement to conserve and manage land to protect native vegetation and threatened species. The scheme works by enabling landowners to care for native vegetation on their land to generate credits which can be sold to developers seeking to off-set the impacts of their development, or to generate an annual income to undertake conservation management actions to improve the biodiversity values of their land. Biodiversity Stewardship Agreements (BSA) contribute to the protection of native vegetation. Local BSA sites can offer opportunities for trees removed to support housing growth and urban development to be replanted in the Camden LGA.
	Participate in community tree planting events and Bushcare.	All community members – private residents, schools and community groups	Light work takes many hands! Volunteering in Council coordinated tree planting events supports more native trees to be planted in natural bushland and open spaces to enhance the green grid. This will create greener, healthier and more sustainable environments for the community to enjoy and explore as well as restore critically endangered vegetation, provide habitats for local animals, support the health of waterways and reduce urban heat.

		Who may like to get involved	How does this idea support the local Green and Blue Grid?
PECA	Plant vegetation and gardens around new commercial buildings or install a green roof or vertical garden.	Business owners	Commercial buildings can lack trees and gardens that offer amenity for workers. Business owners are encouraged to build 'greenery' into their building designs to create more pleasant and cooler spaces for workers and create new 'green' connections in business, retail, and industrial areas.
	Talk to children about the importance of trees caring for the natural environment.	Parents/ carers, preschools and schools	Children will inherit the world we are creating today and will be responsible for caring for the natural environment in the future. Talking to children and engaging them in learning more about local threatened species and how to care for trees and waterways will equip children with the knowledge and skills to support the sustainability of the local Green and Blue Grids.
	Accept local native plant giveaways for local schools and preschools.	Preschools and schools	The distribution of plants to local schools and childcare centres helps create awareness and encourage local communities to contribute to enhancing local biodiversity.
	Take the pledge to 'Be the Solution to Stormwater Pollution' - reduce your impact on stormwater quality and be an advocate for urban trees.	All community members	By pledging to make small changes in our everyday lives to improve the quality of water that ends up in local waterways such as creeks and rivers and to care for natural environments can make the places we live and visit greener and waterways healthier.

Adopt the street tree outside your home!

Funded by the State Government's Greening Our City grant program, Camden residents have the opportunity to care and name their local street tree. Camden's residents have already come up with some creative names for their street trees including Treey McTreeFace, Peace, Brisky, Nell, Groot and Maca to name a few.

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To find out more, visit: camden.nsw.gov.au



Opportunities and challenges to realising the Vision

Table 3: Opportunities and Constraints to realising the future Green and Blue Grid

Opportunities	Challenges
Access to the Nepean River, bushland, and natural environments The Nepean River has been identified as a key natural landmark that needs protection and promotion. Pedestrian access to the Nepean River as well as other natural environments, open spaces and waterways was raised by the community as a local priority during the development of the Camden Local Strategic Planning Statement 2020. Improving the Green and Blue Grid will deliver on one of the community's local priorities.	Size, scale, and nature of Camden LGA's Green and Blue Grid The size of Camden LGA (approximately 17km north-south and 17km east-west) makes it challenging to coordinate green infrastructure projects. This challenge will be overcome by allocating resources to priority projects identified in the Green and Blue Grid Analysis. Approximately 96.5% of Camden's endangered plants and animals are located on private land ¹⁵ . It is important for Council to work with landowners to increase their understanding on how the vegetation and waterways on their land is connected to the broader Green and Blue Grid.
Agricultural land and farm dams Rural landscapes are considered among the most valuable in the LGA and are inherently tied to Camden's local identity. Retaining Camden's rural landscapes and green corridors will build upon what already makes Camden special and what residents love about living in Camden. The retention of farm dams can also provide a water source for a range of native animals as well as stock.	Land development's negative impacts on local habitats A large portion of Camden LGA's native vegetation has been cleared or altered by farming practices or to accommodate urban development in the South West Growth Area. This has fragmented habitats for local animals. Smaller lot sizes in new residential areas can also make planting larger trees on private land difficult. Enabling more trees to be planted, and incorporating creeks, lakes and ponds, in the design of future residential suburbs will help to overcome this challenge.
Healthy streets for cycling and walking There are several existing walking and cycling tracks in the Camden LGA including the Nepean River Cycleway (also known as Camden Bike Track), Miss Llewella Davies Pioneers Walkway at Camden Town Farm, Harrington Park Lake Loop, and the Harrington Forest walk. Investigating opportunities to increase shade over the walking and cycling tracks can increase their usage (particularly on warmer days) and create a safer, nicer place for people to live, visit and work.	Local Climate Change The Camden LGA experiences more temperature extremes and less rain than coastal areas of Sydney. Camden LGA's climate is changing with longer droughts, higher temperatures, and more days above 35 degrees celsius ¹⁶ . These changes impact on people's access to water, particularly when water restrictions are imposed during periods of extended drought. It can make living conditions uncomfortable and even potentially life threatening for vulnerable residents on hot days and during extreme heat events. The Green and Blue Grid will help to cool Camden and counteract some of these extreme weather events, helping to build community resilience to climate change impacts and deliver effective mitigation measures.
Creating Urban Habitat Connecting biodiversity corridors, trees and waterways serves to improve natural habitats for plants and animals and support wildlife to move between areas.	 Legislation that makes increasing local tree canopy cover challenging The enhancement of the Green and Blue Grid needs to consider the requirements of current legislation which may impede the ability to create urban habitat and increase tree canopy cover including: Wildlife buffer requirements under State Environmental Planning Policy (Precincts – Western Parkland City) 2021 – Chapter 4 Western Sydney Aerotroplis; Biocertification of native vegetation within the South West Growth Area under State Environmental Planning Policy (Precincts – Western Parkland City) 2021; and The ability to remove trees or vegetation under the State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 and the Rural Fires Act 1997.

15. Clouston Associates, 2020 – Camden Green and Blue Grid Analysis. 16. Camden Council, 2020 – Sustainability Strategy.

Camden Council

Action Plan

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Achieving our Vision requires a strategic and coordinated approach. It also relies upon Council identifying opportunities to enhance tree canopy cover and restore the health of waterways as part of the delivery of existing planned projects, for example installing additional trees during park and playground upgrades or along new pedestrian paths. Funding offered by State Government grant programs also provide opportunities to deliver our Vision.

The next steps for Council will be to undertake detailed project planning and prepare an Implementation Plan for the opportunities recommended by the Analysis. The Implementation Plan will:

- Consider the feasibility of individual projects;
- Prioritise LGA-scale project delivery into short (0-5 years), Medium (5 to 10 years) and Long-term (10+ years) timeframes; and
- Investigate potential funding sources including Council project funding or external grants.

This section summarises the actions Council will deliver to achieve the long-term aspirational vision in collaboration with the community. This Strategy uses short and medium timeframes that align with the Local Strategic Planning Statement and Community Strategic Plan.

• Short-term actions: 0-5 years

• Medium-term actions: 5-10 years

Action Plan Table 4 : Achieving Our Vision Action Table

	Draft Actions	Rationale	Outcomes	Timeframe			
Em	Embedding Green and Blue Grid principles within the land-use planning framework						
1	Review planning controls to deliver environmental sustainability outcomes.	Planning controls for environmental sustainability will support the translation of Green and Blue Grid principles.	Amendments to environmental planning instruments and DCPs.	Short-term			
2	Consider appropriate planning mechanisms to accommodate Green and Blue grid connections.	The planning system can support the implementation of Green and Blue Grid projects. For example, planning controls to encourage tree canopy cover, and identify land needed to deliver Green and Blue Grid connections.	Embed Green and Blue Grid principles within the planning framework.	Medium-term			
Del	vering Green and Blue Grid projects i	n the public domain					
3	Undertake project scoping and feasibility analysis for Green and Blue Grid projects.	This preliminary work will support detailed planning for Green and Blue Grid projects including setting priorities and timeframes for delivery.	Preparation of an Implementation Plan for Council-led Green and Blue Grid projects.	Short-term			
4	Include short-term and priority projects within Council's delivery program (following implementation of Action 3).	Including Green and Blue Grid projects within Council's delivery program supports funding allocation and delivery.	Green and Blue Grid projects are added to Council's delivery program.	Medium-term			
Wo	Working with the community to improve Green and Blue Grid connectivity						
5	Deliver community education and participation opportunities.	Enhancing the community's value of trees by promoting their social, economic and environmental benefits can contribute to improving green links on private and public land. This education and participation program is consistent with actions within the Camden Sustainability Strategy, Biodiversity Strategy and other relevant Council plans.	Community education and participation opportunities are frequently offered and accessed by the community.	Ongoing			

	Draft Actions	Rationale	Outcomes	Timeframe		
Securing funding and resources for local Green and Blue Grid projects						
6	Investigate opportunities to obtain grant funding to deliver Green and Blue Grid projects.	Grant funding can assist Council to deliver major Green and Blue Grid projects faster.	Grant funding opportunities are identified and an application made when appropriate.	Ongoing		
7	Consider place-based Green and Blue Grid priority projects when negotiating Planning Agreements.	The planning system can support the implementation of Green and Blue Grid projects. For example, planning controls to encourage tree canopy cover, and identify land needed to deliver Green and Blue Grid connections.	Embed Green and Blue Grid principles within the planning framework.	Medium-term		
8	Develop a framework for attributing an economic value to trees as assets to support Planning Agreement negotiations.	Quantifying the economic value of trees based on their environmental, social and economic benefits can support Planning Agreement negotiations. This action will ascertain a dollar value for trees as part of asset management plans.	A value framework is created for trees as assets.	Short/medium-term		
9	Review Development Contribution Plans to deliver Green and Blue Grid projects.	Development contributions can assist Council to fund Green and Blue Grid outcomes.	Development Contribution Plans are reviewed and updated, where appropriate.	Short/medium-term		
10	Advocate for the State Government to increase tree canopy cover on State owned-land within Camden LGA.	Advocating for the State Government to plant trees particularly along major road corridors and other State-owned infrastructure will contribute to enhancing the local Green and Blue Grid.	Tree canopy cover is improved on State Government owned assets within Camden LGA.	Ongoing		
Мо	nitoring Camden's Green and Blue Gri	d transformation				
11	Actively monitor the transformation of the Green and Blue Grid using data sources outlined in Table 5.	Knowledge gained from data analysis will support decision-making associated with funding allocation, project prioritisation and the strategic direction for Green and Blue Grid aspirations.	Decision-making for Green and Blue Grid strategic direction and project delivery is based on accurate and timely data.	Ongoing		
12	Investigate establishing a Tree Asset register within Council's Asset Management system that is integrated with GIS and spatial mapping software.	Understanding the number, and health of trees in the public domain supports urban tree canopy cover planning and decision-making.	Trees within the public domain are recognised as assets within Council's asset management system.	Short-term		



Monitoring and Review

Table 5: Monitoring the Green and Blue Grid transformation

Data	Data scale	Data Source	Comparison interval	Reported by:
Urban Heat Data and Maps	Western City District (District)	NSW Government	As data becomes available	LGA-wide
Tree Canopy Coverage Maps Western City Dist		NSW Government	As data becomes available	LGA-wide
Number of Biobanking/Biodiversity Stewardship Agreement sites and hectares protected Camden LGA (Local)		NSW Government	2 yearly review	LGA-wide
The amount of green open spaces (measured in sqm metres) in public ownership and bushland under active management	Camden LGA (Local)	Camden Council	4 yearly review	Settlement Area
eport card on the health and quality of Camden LGA (Loco Vaterways and Riparian Areas		Camden Council	Annual review (Waterways) 4 yearly review (Riparian Areas)	Individual locations
Threatened species distribution and habitat maps	Site specific	NSW Government	As data becomes available	Individual locations

Council will:

- Report on individual Green and Blue Grid project outputs and outcomes to the Council and the community in accordance with Council's Integrated Planning and Reporting Framework.
- Complete a five-yearly review of the Green and Blue Grid Vision against the broader aims of the Region and District Plans.
- Undertake a 10-yearly comprehensive review of the Green and Blue Grid Analysis.



Acknowledgements Council acknowledges and extends appreciation to all contributors.

Availability

The Draft Greener Places, Healthier Waterways: A Vision for Camden's Green and Blue Grid is available on Council's website: www.camden.nsw.gov.au

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Tell us your thoughts about the draft vision. Have we got it right? What have we missed? Visit: **yourvoice.camden.nsw.gov.au**

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