Ordinary Meeting of Council

28 July 2021

UNDER SEPARATE COVER ATTACHMENTS

ITEMS 9.13 TO 9.15

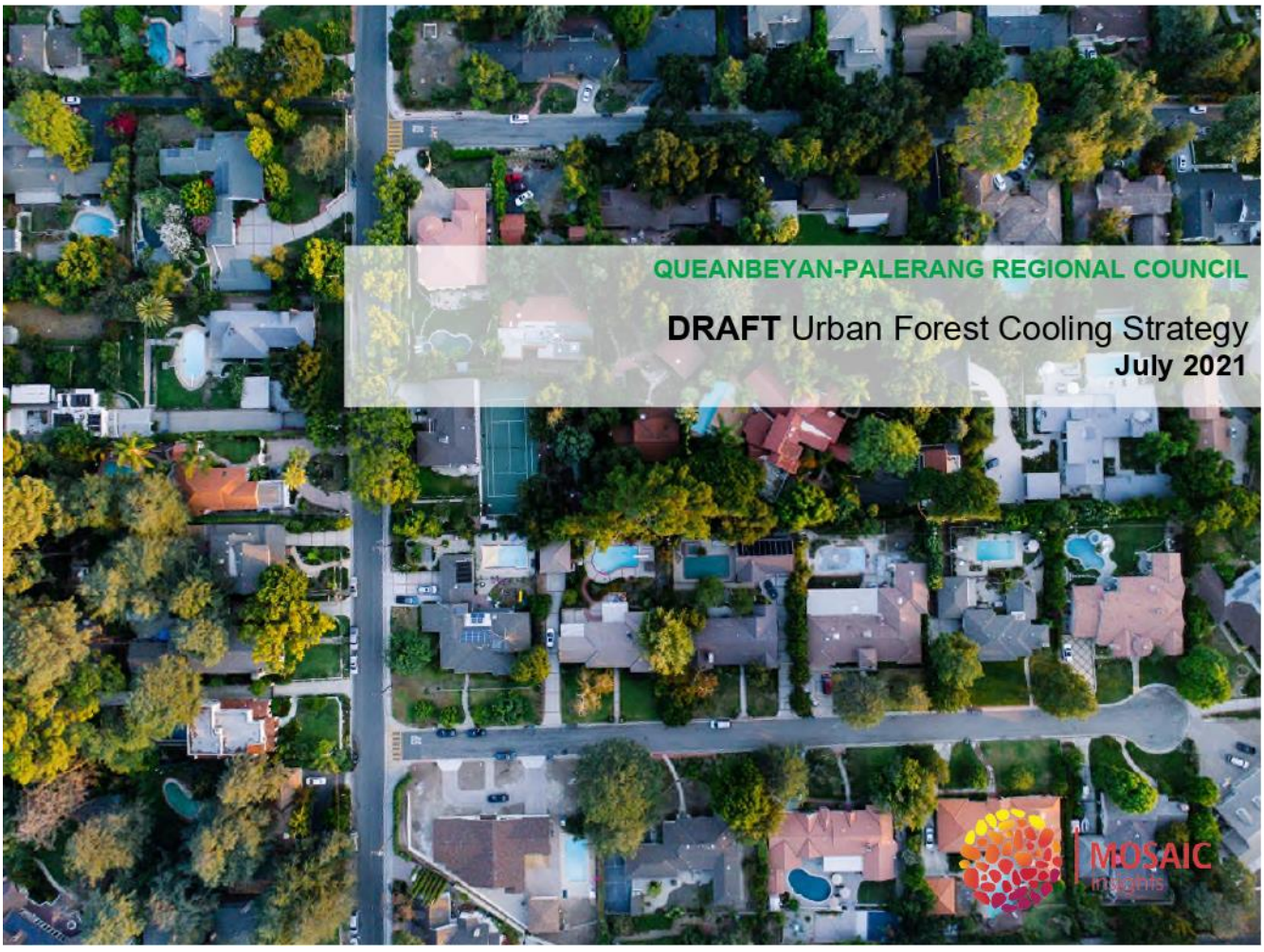
QUEANBEYAN-PALERANG REGIONAL COUNCIL

Council Meeting Attachment

28 JULY 2021

ITEM 9.13 EXHIBITION OF DRAFT QPRC URBAN FOREST COOLING STRATEGY

ATTACHMENT 1 DRAFT URBAN FOREST COOLING STRATEGY


QUEANBEYAN-PALERANG REGIONAL COUNCIL
DRAFT Urban Forest Cooling Strategy
July 2021
MOSAIC
insights

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Contents

Figures

Figures 5, 6 and 7 provided by Queanbeyan-Palerang Regional Council.

Tables

Council Message

[QPRC TO INSERT]

Acknowledgements

We pay our respect to the Traditional Custodians of the Queanbeyan-Palerang area on whose land we live and work. We acknowledge that these lands are Aboriginal lands and pay our respect and celebrate their ongoing cultural traditions and contributions to our surrounding region. We also acknowledge the many First Nations peoples from across Australia who have now made this area their home, and we pay respect and celebrate their cultures, diversity and contributions to the Queanbeyan-Palerang area and surrounding region.

We would like to thank members of the community and Council staff who contributed by providing feedback in engagement activities during development of this Strategy. We would also like to thank TreeiQ for their contribution in preparing this Strategy.

1 Introduction

This Urban Forest Cooling Strategy (the Strategy) has been written at a time when Queanbeyan-Palerang continues to experience significant population growth and urban expansion, particularly in its established urban centres of Queanbeyan, Bungendore and Braidwood and in emerging centres such as Googong. This Strategy has been developed to support Council to continue providing housing and infrastructure for our growing population while ensuring urban centres are healthy and attractive environments for residents and wildlife.

The Strategy's key drivers have come from current and emerging challenges and overarching goals set by the community in regional and local strategic plans and during engagement activities in 2021. These drivers are:

- A changing climate
- Population growth, urban development and the effects of urban heat
- Liveability and amenity of urban centres
- Protecting the natural environment and biodiversity
- Enabling a healthy, active lifestyle

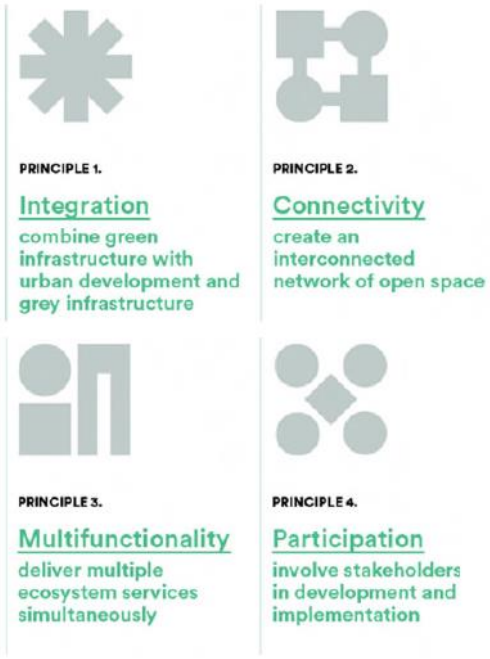
The Strategy has been prepared to provide Council with coordinated, local and practical actions to manage its urban forest. Management of the urban forest cuts across multiple sectors, roles and responsibilities within Council and many different agencies, organisations and groups in the community. Effective management requires a localised understanding of impacts, resource constraints and strategic priorities for Council and our community. After engaging with the community and Council staff, we have developed a Strategy that will:

1. Deliver on the community vision for urban greening and cooling in our urban centres:

Council, businesses and the community value and actively care for an urban forest that is resilient and fairly distributed, and provides a cooler, healthier environment for people and wildlife.

2. To achieve the following goals:
   - A resilient urban forest
   - A fairly distributed urban forest
   - A cooler, greener urban environment
   - Increased biodiversity and tree canopy
   - An actively managed urban forest

The Strategy has adopted the four principles of Greener Places, a green infrastructure framework developed by the Government Architect of NSW (2020a), to inspire and inform Council's approach to urban greening, these are:



2 What is an urban forest and why do we need it?

The urban forest can be defined as "all trees and other vegetation within [an urban area] and the soil and water that supports it" (202020 Vision 2014). The urban forest includes all vegetation within urban areas – from street trees to backyard lawns, from weeds in footpaths to remnant bushland. It is the vegetation in our streets, parks, gardens, along creeks, rivers and railway corridors, in public spaces and places, on our roofs and balconies.

All the vegetation in our urban forest relies on water (sourced from rainfall, groundwater or irrigation) and healthy soils as its foundation. A thriving urban forest is vital to healthy urban communities and needs to be well-designed, planned and managed to create cooler, greener environments for people and wildlife. Trees are fundamental to the urban forest and perform a myriad of functions for people and the environment. Trees survive amongst the built infrastructure of towns and cities (the roads, footpaths, powerlines and pipes) and can only thrive in this environment if given what they need, including adequate water, careful maintenance and attention in the early stages of establishment.

Trees cool the air and ground with shade and evaporative cooling. They can slow water from rain and storms, and protect land and built features from extreme weather events. Trees can catch pollutants from vehicles and move stagnant air that would otherwise be trapped in urban spaces. Many of the benefits provided by trees can be increased through planting and management of other vegetation. The urban forest is a critical asset that, when integrated in the planning and design of our urban environments, can create healthy, resilient, equitable and responsive places.

The GANSW Greener Places framework describes the urban forest as green infrastructure, 'the network of green spaces, natural systems, and semi-natural systems that support sustainable communities…'. The framework sets the expectation that green infrastructure is integral to our urban environments and must be designed in coordination with other infrastructure such as transport, cultural and communications to create multi-functional assets that contribute to broader community, liveability, resilience and economic benefits.

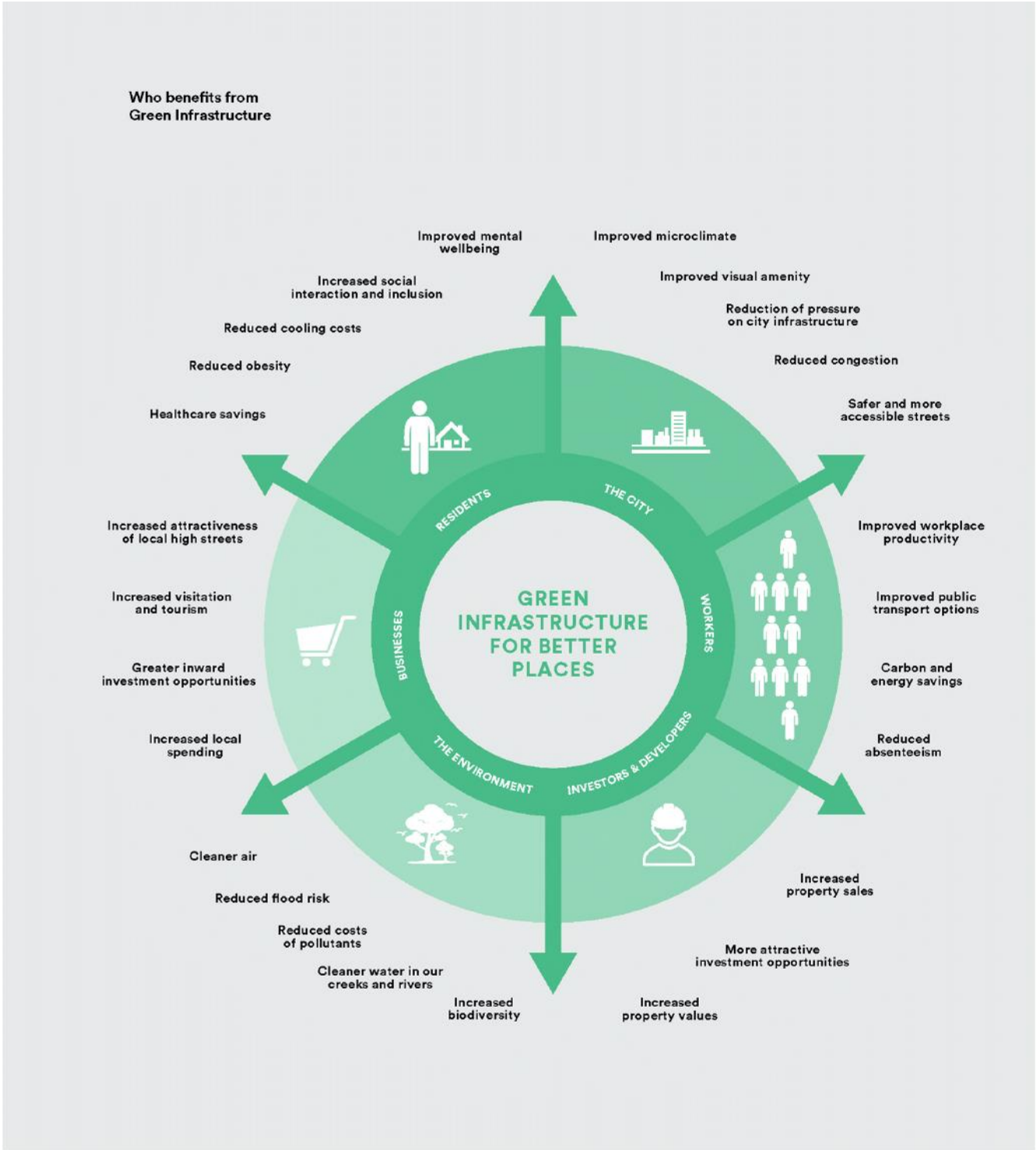


Figure 1 Benefits of Green Infrastructure (GANSW 2020a)

3 Policy context

This Strategy sits within Council's broader policy context, complementing community goals for climate change adaptation and resilience, planning and development, transport, biodiversity and environmental conservation.

3.1 Community aspirations

The Community Strategic Plan sets out long term aspirations of the community by identifying priorities for the future and strategies for achieving them. The plan is driven by five strategic pillars, four of which are supported by this Strategy:

- **Community**: A safe community with opportunities for an active healthy lifestyle
- **Character**: Consider environmental impacts of future development, sound resource conservation and good environmental practice and sustainable management of the region.
- **Connection**: Promote better social connection and access for the community
- **Capability**: Enable Council activities to work towards the goals and aspirations set out under the strategic pillars.

3.2 Regional planning

The South East and Tablelands Regional Plan 2016-2036 is a 20-year blueprint for the future of our region. The document sets four goals and 28 directions to achieve a vision for a 'borderless region in Australia's most geographically diverse natural environment with the nation's capital at its heart'. Four directions, in particular, are relevant to this Strategy:

- Direction 15: Enhance biodiversity connections
- Direction 17: Mitigate and adapt to climate change
- Direction 18: Secure water resources
- Direction 22: Build socially inclusive, safe and healthy communities

Figure 2 Policy context

3.3 Local planning

Our Local Strategic Planning Statement (LSPS), *Towards 2040*, provides Council with a roadmap for land use planning over the next 20 years, aligned to the community's long-term vision and aspirations identified in the Community Strategic Plan. This Strategy provides a pathway for delivering several high-level actions of the LSPS.

The planning vision includes several key themes that are of particular relevance to this Strategy:

Natural environment
The vision for land-use in Queanbeyan-Palerang includes protection and management of the natural environment and its biodiversity. This is articulated through actions to increase natural and green spaces, establish formal wildlife corridors, protect significant heritage trees and proactively conserve high quality environmental vegetation.

Lifestyle
The LSPS seeks to provide a safe and relaxed lifestyle for our community enabled through passive and active enjoyment of the natural and built environment. Key actions to achieve

this include promoting interconnected green spaces, increasing the number of homes within 10-minute walking distance to green, open and public space, providing shade, both natural and build, and designing spaces that are healthy to live in, to work in and to visit.

Climate change
A climate change adaptation approach to planning is embedded in the LSPS and commits Council to considering the impacts of climate change in all planning decisions. Specific actions to support this include establishing adaptation strategies, employing urban design to minimise heat and encouraging new developments to be early adopters of sustainable approaches to reducing energy and water consumption.

3.4 Transport

The Integrated Transport Strategy (ITS) guides investment and direction for all types of transport including walking, cycling and public transport. The ITS has three goals specifically relevant to the Strategy:

- Social and economic inclusion: Align accessibility of transport to needs of the community and economy, better connected communities and more travel choices for residents and visitors. Reduce obstacles to accessibility for disadvantaged groups.
- Safety, health and wellbeing: Design, construct and maintain transport infrastructure to meet acceptable standards and utilise a safe system approach to maximise the safety and security of all users of the transport system.
- Environmental sustainability: Minimise the impact of transport on the environment by supporting growth in public transport, walking and cycling for trips in the region

The ITS recognises the strong link between active transport and health and promotes sustainable transport methods such as walking, cycling and public transport for their social, economic and environmental benefits. This Strategy aligns actions with these goals by encouraging the planting and maintenance of green infrastructure along active travel routes to provide shade, visual amenity and access to nature as well as develop a network of linked green spaces and places.

3.5 Climate change

Council continues to recognise that climate change is a serious and significant issue and we are committed to supporting the community in addressing it through a local response. We have developed two action plans to address climate change, the Council Operations Action Plan, which focuses on greenhouse gas emissions reduction, and the Community Action Plan. Many of the actions under both plans are interlinked with the benefits of an urban forest, in particular cooling and climate resilience. The Council Climate Change Action Plan specifically calls for the development of a heat adaptation and urban forest strategy as a key action (CO 7.1.8) as well as expansion of the QPRC Street Tree Planting Strategy. This Strategy focuses on the urban forest, recognising the important role it plays in responding to climate change alongside the various other climate change mitigation and adaptation efforts.

4 Relevant legislation and planning regulations

Vegetation SEPP
The Vegetation State Environmental Planning Policy (SEPP) commenced in August 2017 and provides the mechanism to regulate the clearing of vegetation not linked to development on non-rural lands (including E zones, RU5 and urban and residential zones). The Vegetation SEPP applies to clearing of native vegetation, either:

- above the Biodiversity Offsets Scheme (BOS) threshold specified in the Biodiversity Conservation Regulation 2017
- below the BOS threshold, if the native or non-native vegetation is identified in council's Development Control Plan (DCP)

For the clearing of native vegetation on non-rural land that exceeds the BOS threshold, an approval is required from the Native Vegetation Panel, whether or not the vegetation is declared in a council's DCP.

If the vegetation clearing does not exceed the BOS threshold, is not identified in a DCP and is not linked to development requiring consent, it can be cleared without a council permit or authorisation under the Vegetation SEPP. While an authorisation is not required under the Vegetation SEPP, other legislative requirements may still apply to the proposed clearing. For example, if the proposed vegetation to be cleared is threatened species habitat, a listed threatened species or threatened ecological community, clearing can only occur with a valid Biodiversity Conservation Licence from the Department of Planning, Industry and Environment.

Permits
For Council to regulate the management of vegetation that is below the BOS threshold, the vegetation needs to be identified in a DCP. Council can require a permit for clearing based on conditions set out in the DCP.

Development consent
Clearing that is ancillary to development which requires consent is assessed as part of the development assessment process and may also require further assessment and approval under the *Biodiversity Conservation Act 2016*.

In addition, development consent is required for the clearing of vegetation that is a heritage item or that is located in a heritage conservation area, as well as vegetation that is an Aboriginal object or that is located in an Aboriginal place of heritage significance.

5 The need for urban greening and cooling

Urban greening is recognised globally as a key contributor to the liveability and climate resilience of urban areas (Ordóñez 2020). The natural landscape is highly valued by our community and valuable to the local economy. In a survey conducted as part of developing this Strategy, local residents named amenity and health benefits as the most valued attributes of the urban forest.

We held two community workshops and an online survey to understand community priorities and values, and to develop a shared vision for the future of the urban forest. The survey found that the vast majority (more than 95%) of respondents agreed that the urban forest should be increased, while respondents tended to disagree that the urban forest was equally distributed and were more likely to disagree than agree that the urban forest is healthy.

The following section outlines the key drivers informing this Strategy, including climate change, increased urbanisation, liveability and amenity of its urban centres, protecting the natural environment and biodiversity and enabling a healthy, active lifestyle for our citizens.

5.1 A changing climate

The majority of our urban areas, including Queanbeyan, Googong, and Bungendore, fall within the hotter, north-west section of the municipality. The south-east area has lower surface temperatures, in part driven by a cool corridor influenced by Tallaganda National Park. The Braidwood urban area falls within this cooler section (QPRC 2020a). Appendix A provides a map of the urban areas analysed.

Climate change is already affecting Australia, with a higher frequency and severity of extreme weather events including fire and heavy rainfall, an increase in extreme daily heat events, a decrease in extremely cold days and nights and increases in global GHG concentrations (CSIRO 2020). For Queanbeyan-Palerang, a business-as-usual approach will see a hotter municipality with more intense heat waves, increasing risk of flash floods, high intensity storms, fire and drought. There will be more hot days and fewer cold nights (OEH 2014a, OEH 2014b).

These general changes in climate and temperature will exacerbate the urban heat island effect in our town centres and have greater impact on the health and wellbeing of residents, electricity demand, resilience and health of local flora and fauna and broader economic and social impacts. As the climate changes, extreme weather patterns will place pressure on our urban forest at the same time as increasing its role in reducing heat, providing shade and bolstering resilience.

To respond to a changing climate, we will need to create a resilient urban forest through appropriate selection of trees that can adapt to the future climate. Providing equitable access to the urban forest and therefore shade, cool environments and protection from the heat will be critical to reducing urban heat inequality, especially when accommodating medium- and high-density housing that has limited available space for tree canopy.

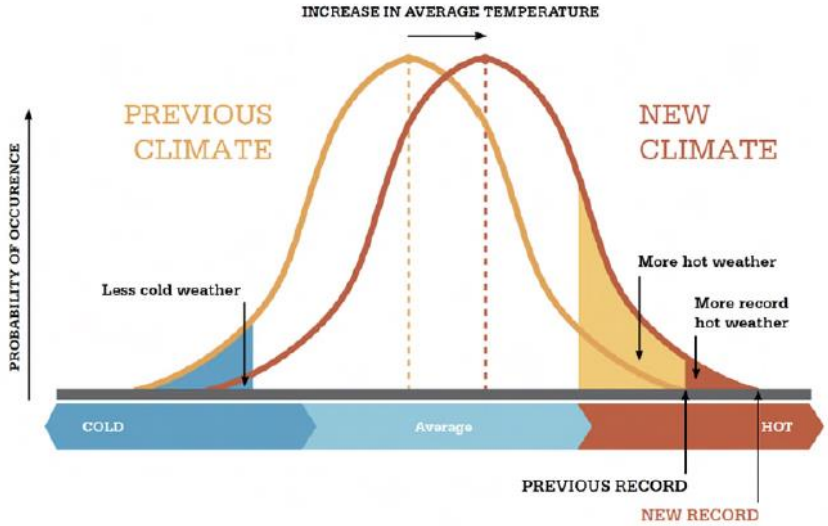


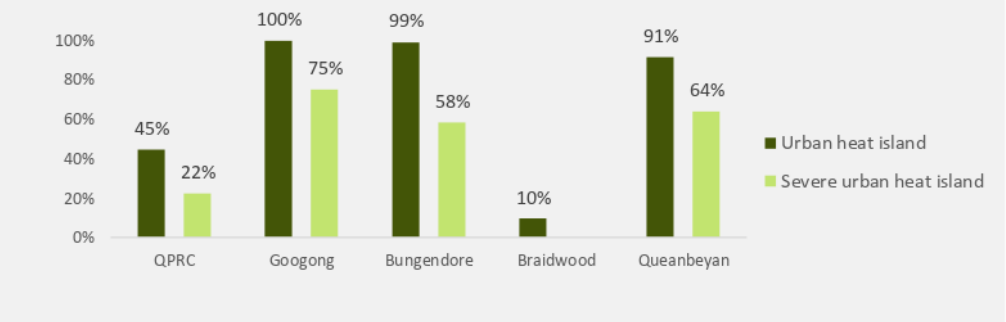
Figure 3 Relationship between temperature averages and extremes, showing the potential role for urban cooling and greening strategies (from Climate Commission 2013 modified from IPCC 2007)

5.1.1 Urban heat

Increasing heat is a significant issue in urban areas, where changing and intensifying land uses lead to more hard surfaces and less green cover. These surfaces absorb, store and radiate heat to create microclimates of significantly warmer areas. Human activity generates additional heat, adding to this effect. While smaller areas create pockets of heat, as land uses and human activities intensify, contiguous areas of retained heat create heat traps, leading to urban heat islands. These urban heat islands have significant impacts on the health, infrastructure, economy and environment of urban areas (UNSW 2015)

A Surface Heat Mapping Report (QPRC 2020a) for our urban centres prepared last year found that Googong and Bungendore classified entirely as a heat island, with most of Queanbeyan also classifying as a heat island (Figure 4 **Percent area classified as an urban heat island or severe urban heat island in QPRC urban areas (QPRC 2020a)** and Appendix A).

The Surface Heat Mapping Report identifies urban greening as the key action to mitigating urban heat island effect in the four urban centres. In particular, the report identified trees as offering the best cooling outcomes due to direct shading and evapotranspiration.



Heat vulnerability
The stress caused by urban heat can pose a significant risk to public health (Hsu 2021). Vulnerability to heat is not equally distributed across a population. There are several factors that contribute to a person's ability to cope with heat:

- Exposure: To what extent is a population exposed due to local weather patterns, climatic conditions and characteristics of the built environment.
- Sensitivity: Certain socio-economic characteristics can increase a population's vulnerability to heat, including age, health and wealth. Heat vulnerability can be highest in low-income areas, areas with an aging population, and for members of the population with chronic illness.
- Adaptive capacity: To what extent can a population adapt to the impacts of urban heat, both within their homes and in external environments. For example, are people able to change their transport mode to better adapt during a heatwave.

5.2 Increased urbanisation

Our policy and planning aim to balance urban growth and provision of opportunities for new housing with protection of the existing character and amenity of established residential areas.

Proximity to Canberra is a key growth and economic driver for our Council, with approximately 18,500 residents travelling west to the ACT for work, education and other services. Approximately 5,000 residents of the Australian Capital Territory (ACT) travel east into Queanbeyan-Palerang for work and other purposes. The South East and Tablelands Regional Plan notes that 70 percent of the region's population growth to 2036 is projected to occur in the areas that share a border with the ACT.

Queanbeyan-Palerang is expected to see moderate to strong growth over the next 15 years, with an average growth rate of 2.19% (.idcommunity 2021a). This growth is largely based around planned infill and greenfield development to meet demand in our urban centres.

The housing typology in the Queanbeyan urban centre differs from the rest of Queanbeyan-Palerang due to its proximity to the ACT (QPRC 2020b). Much of Queanbeyan's housing stock services workers from the nation's capital, resulting in a higher number of medium- and high-density housing and catering to a larger number of lone person households (more than 40% of the population) (.idcommunity 2021a). A general decline in average household sizes will also see a need for additional dwellings and likely increased density in established suburbs such as Queanbeyan East, Queanbeyan and Crestwood. The LSPS includes actions to investigate opportunities for infill and mixed use development and allow higher density development in certain areas.

As density increases and urban areas expand to accommodate future residents, the impact of increasing land use types that retain heat, intensity of human activity producing heat will increase the urban heat island effect.

Without suitable controls and recognition of the role the urban forest plays in greening and cooling, the infill associated with urbanisation will continue to reduce vegetation and canopy in our urban areas.

Urbanisation and the urban forest can grow in tandem, as long as there are robust mechanisms in place to ensure appropriate conditions to protect vegetation and provide the conditions that will allow it to thrive (Julian & Sweeney 2020). In particular, public land presents a significant opportunity to increase urban tree canopy whether in parks, street verges or underutilised spaces such a carparks. Parks in urban areas that are treed and well-irrigated can have much greater cooling benefits for surrounding land and provide cooling for areas that can't maintain their own trees. Alternative green infrastructure, such as green roofs and walls can provide cooling where there is insufficient space for trees. With careful, coordinated and considered planning and active input from the community, increased urbanisation in our town centres can be balanced with innovative greening solutions to enable a cooler, pleasant urban environment.

5.3 Liveability and amenity of urban centres

The liveability and amenity of our urban centres is a key factor driving business and investment in the region. Improving the attractiveness and amenity of main streets in towns and villages while retaining rural ambience is identified as a priority for Queanbeyan-Palerang in the South East andTablelands Regional Plan. Revitalisation of the main town centres presents opportunities for enhancing liveability through protecting and growing the urban forest. In particular, recognising and building on the proximity of some of our urban centres to the natural landscape by considering opportunities for ecological enhancement and extending biodiversity corridors. Opportunities also exist to bring the natural landscape into urban centres through increased tree planting, water sensitive urban design, green roofs and walls and linking existing open spaces to create an interconnected green network.

The Queanbeyan CBD Place Plan identifies interventions to improve Queanbeyan's CBD including a 'green strategy', utilising paving to reduce urban heat island effect and building an understanding of microclimate to increase climate resilience and adaptation of the CBD. Trees and vegetation are critical to urban amenity. Revitalisation of the Queanbeyan, Braidwood and Bungendore town centres should consider opportunities to maximise shade, amenity and health benefits through:

- Designing public spaces, streetscapes and open space to ensure adequate space both above and below ground to support tree growth and vegetation that minimises impacts on other services. Reviewing planning controls to support heat mitigation and tree planting
- Integrating passive watering and water sensitive urban design measures for improved tree health, increased cooling, and management ease.
- Selecting trees for planting should aspire to keeping 'rural ambience', though they need also be resistant to urban constraints, and resilient to climate change and urban heat.

5.4 Protecting the natural environment and biodiversity

There is a strong sense of community pride and value in the natural environment within and surrounding our towns. The LSPS vision for Queanbeyan-Palerang is a 'place offering a wonderful lifestyle for residents, families and visitors, a lifestyle created in large part by passive and active enjoyment of the natural and built environment. The lifestyle is friendly, safe and relaxed – the result of living in an environmental haven, with clean and pristine waterways and bushland, well maintained public spaces and a commitment to sustainable energy and waste'.

Through our strategic documents, Council has committed to the protection and management of the natural environment and its biodiversity, including specific goals such as:

- Designing to mitigate impacts on water including through water sensitive urban design
- Maintaining and enhancing ecological connectivity and establishing wildlife corridors
- Reviewing opportunities for high quality environmental vegetation to conserve
- Protection of significant heritage trees

5.5 Enabling a healthy, active lifestyle

Enabling a healthy, active lifestyle for residents, workers and visitors is a key priority in many of our strategic documents. In particular, integrating walking and cycling networks, encouraging active transport and providing opportunities for people to enjoy the outdoors for exercise, recreation, socialising and access to nature. Provision of shade via urban tree canopy, cooling through vegetation and water and designing shade into buildings and transport networks are some of the ways in which this Strategy supports a healthy, active lifestyle.

The network of green spaces and linear parks in urban areas are critical to the community's health and wellbeing. If well-designed and maintained, green active transport corridors can have the dual benefit of making continuous cool spaces that support an actively lifestyle for residents and visitors, while supporting local flora and fauna movement and biodiversity.

6 QPRCs urban forest

6.1 History of the urban forest

The Ngambri-Ngunnawal people are the traditional custodians of the land and waters that we now recognise as the Queanbeyan, Bungendore and Googong urban centres and the Walbunja people the traditional custodians of the region surrounding Braidwood. Their connection to the lands and waters, tangible and intangible cultural practices, knowledge and relationships have supported the health and wellbeing of Country, including the urban forest, over tens of thousands of years. This custodianship and connection continues today, despite the impacts of colonisation. (GANSW 2020b)

Early Europeans described the area as "a most beautiful forest as far as we could see, thinly wooded by Gums and Bastard Box, the tops of the Hills stony and stone sand, but in the valleys a fine Rich Soil" (ABS 2012).

Prospecting in the early 19th century led to the construction of homesteads, cattle runs, inns and other development, eventually leading to the establishment of Queanbeyan the township in 1838 (Queanbeyan Museum 2021). As agriculture and urbanisation activities increased, the Eucalypt woodland including brittle gum, snow gum, ironbark and stringybark trees was heavily impacted (Benson and Howell 1990), such that the area was decreed 'Devoid of Timber' in records in 1915 (artefact 2020). Remnants of the Natural Temperate Grassland and Box-Gum Woodland are retained within the Queanbeyan Nature Reserve.

Figure 6 Monaro Street 1926 (Queanbeyan)- Queanbeyan and Braidwood Museum Collection

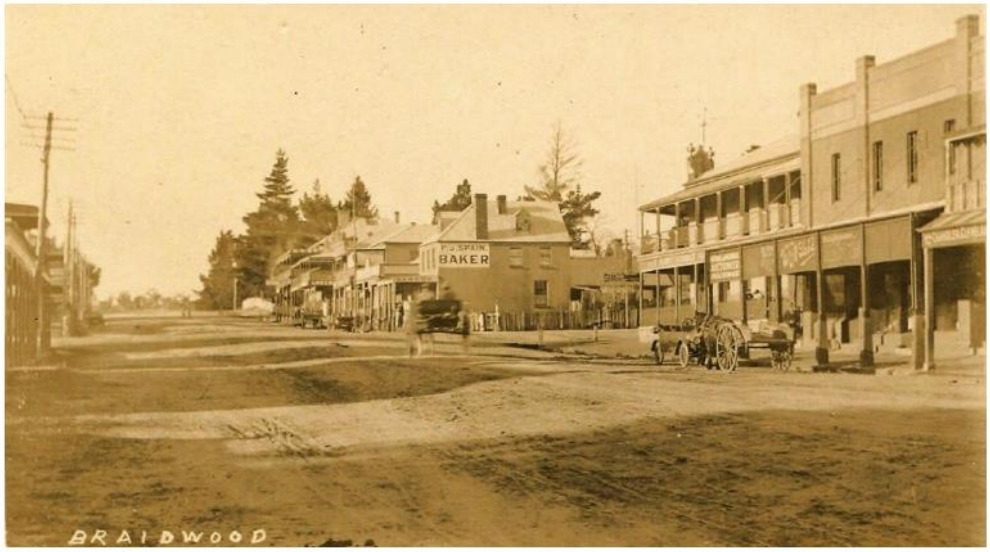


Figure 7 Wallace Street Braidwood 1920-30 (source unknown)

Street tree planting expanded through the mid to late 19th Century, beginning in Sydney and expanding to other NSW towns. Species were selected and prescribed through botanical gardens based on conditions of the receiving landscape, success in planting trials and features of growth form (e.g. capacity to shade, canopy density, shape uniformity) as well as prestige and fashion (Maiden 1917).

In Queanbyena-Palerang, commemorative plantings introduced rows of Fraxinus sp., pin oaks and other species to in the mid-1930s and 40s (Australian Garden History Society 2018). Though Canberra's greening in the 19th and early 20th centuries was influenced by manicured City Beautiful and Garden City movements (Davison & Kirkpatrick 2014), early shots of our main streets (Figures 4, 5 and 6) show limited greening, at least within commercial precincts (Norris 2003).

Figure 8 Monaro Street 1905 vs 2013 (Queanbeyan)- Queanbeyan and District Historical Museum

6.2 The urban forest today

6.2.1 Tree canopy cover

One of the most common measures of an urban forest is the amount of coverage provided by tree canopy. This measure can help quantify benefits such as shade, stormwater filtration and carbon sequestration.

This Strategy used light detection and ranging (LiDAR) data to map canopy cover in our urban areas of trees greater than two metres tall. The following information and maps provide a general sense of the urban forest to support decision-making and action setting for the Strategy. We are currently undertaking several other actions to better understand the existing urban forest, including a review of species and trial of a tree inventory for Braidwood. Understanding the current health, status and characteristics of trees, vegetation, soil and water is critical to management and future planning of our urban forest. This Strategy sets several priority actions related to monitoring and data collection to support longer term objectives.

The average canopy cover in LGAs across Australia is 39 percent (Jacobs 2014). The GANSW Greener Places Design Guide provides an indicative canopy cover target of greater than 25 percent for medium to high-density areas and greater than 40 percent for low density areas. This is, of course, subject to the specific conditions of an area including climatic and land use patterns. In Queanbeyan-Palerang, tree canopy cover across our four urban centres varies from just over three percent in Googong to 31 percent canopy cover in Queanbeyan.

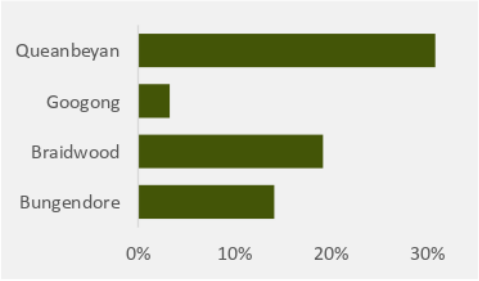


Figure 9 Overall tree canopy cover in urban centres

The significant difference in canopy cover in Googong is due to the majority of trees having only recently been established and therefore not reaching the height requirements to be detected by the LiDAR analysis. What this suggests is that Googong will have significant issues without provision of shade and other benefits from canopy trees over the next few years, and depending on subsequent planting regimes, maintenance and ongoing management, will continue to impact urban heat in the area over the long term. Queanbeyan, on the other hand, has the highest canopy cover generally due to the density of trees within the Jerrabomberra Mountain Reserve and Greenleigh residential area.

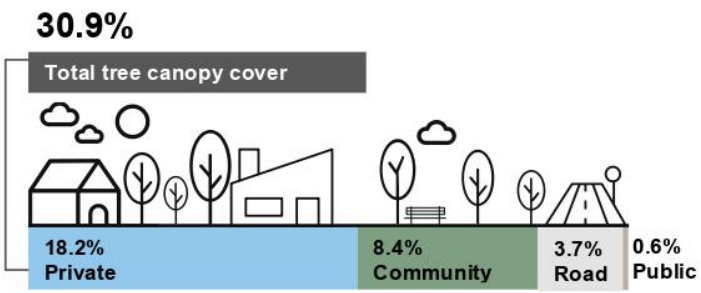
Measuring the urban forest

Tree canopy is just one way to measure the urban forest, other characteristics that support urban forest management include:

- age (young, mature, old, life-expectancy variation)
- species – variety in species, genera and family
- features (leaf shape and size, plant height, flower size, shape, colour etc)
- soil health
- climate data
- prevalence of pests and disease

This Strategy sets actions for Council to assess and continue monitoring various aspects of the urban forest to determine its overall condition and related risks. This will allow integration of green infrastructure with capital works and support future planning through budgeting, succession planning and scheduled maintenance.

Queanbeyan



Queabeyan has approximately 30.9 percent canopy cover across its urban area, which includes the suburbs of Queanbeyan East, Crestwood, Greenleigh, Karabar, Jerrabomberra, Queanbeyan West and Queanbeyan. Community-purpose public land has the highest amount of treed space, with more than half of the land covered by tree canopy. However, this land makes up only 19 percent of the overall urban area and therefore only 27 percent of Queanbeyan's urban forest. The Queanbeyan urban area comprises 58 percent private land, which has a lower canopy cover at 29 percent but makes up 59 percent of the overall urban forest.

Opportunities to increase planting exist along streets and within public parks, with trees located along only 20 percent of land reserved for roads. In particular, there is a significant opportunity to increase planting in industrial lands and on commercial/business lands such as the Jerrabomberra and Karabar town centres and Queanbeyan East commercial precinct along Ellerton Drive.

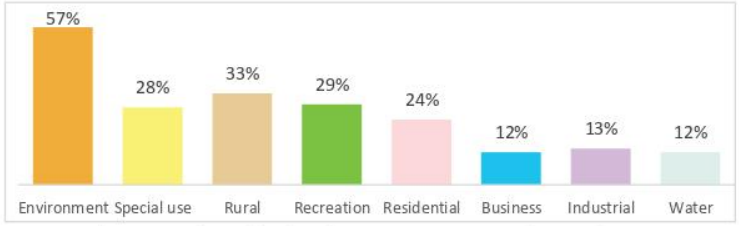


Figure 10 The percent of zoned land with canopy cover in Queanbeyan urban area

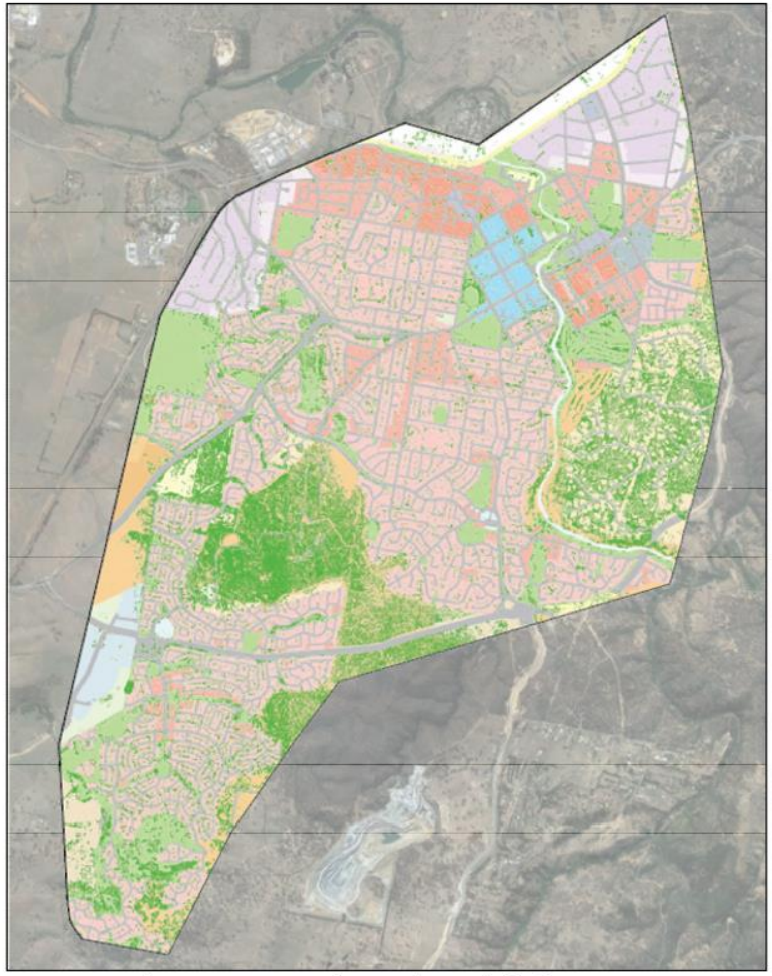
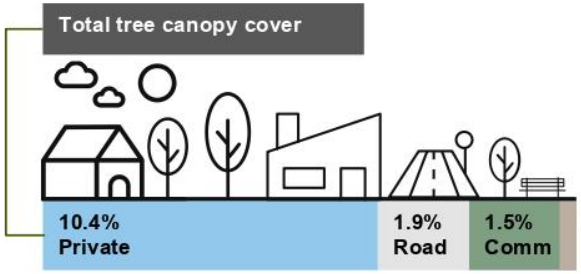


Figure 11 Map of canopy cover in Queanbeyan urban area by land use zone

Bungendore

14.2%



Bungendore has an overall canopy cover of 14.2 percent, the majority of which is located on private land. Private property makes up 67 percent of land within Bungendore's urban centre and contains almost three quarters of the urban forest (74%). In contrast to Queanbeyan, land zoned for Business has the highest canopy cover of all land use zones at 22 percent. The canopy in the commercial centre is represented predominantly by trees within residential properties surrounding the commercial strip along Kings Highway and Ellendon Street, which themselves are moderately treed.

The tree lined Tarago Road to the north and canopy along the Turallo Creek make up a large portion of the urban forest in the residential and recreation zones, respectively. Rural zoned land has the lowest canopy cover at two percent, characterised by cleared grazing and farming land. Planting additional street trees and increasing canopy within the industrial zone present two opportunities to improve canopy cover in Bungendore.

Figure 12 Percent canopy cover by land use zone

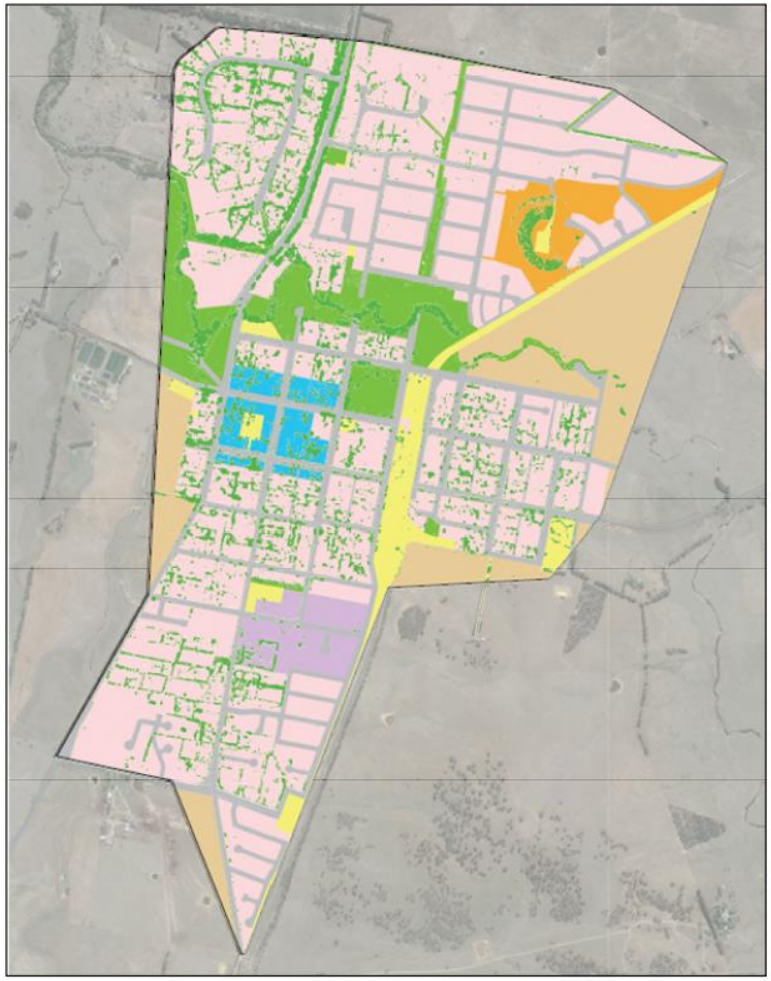
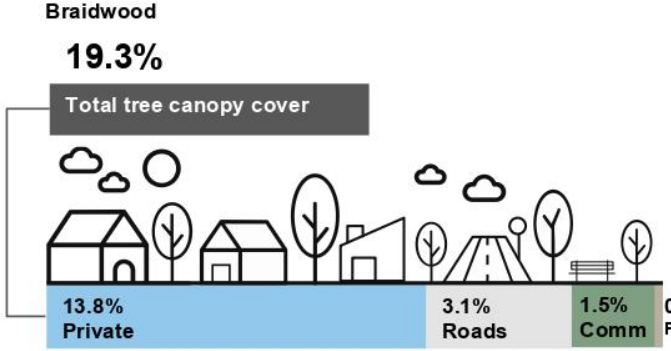


Figure 13 Map of canopy cover in Bungendore urban area by land use zone

Braidwood



Braidwood has an overall canopy cover of 19.3 percent. Private land makes up two thirds of the overall urban area (66%) and accounts for 72 percent of the urban forest. The remainder of the urban forest is mostly found within road reserves (16 percent) with only two percent of the overall tree canopy found in community-purpose public land.

Trees along the Gillamatong Creek, Flood Creek and Recreation Ground Creek provide the majority of canopy cover within land zoned for recreational use, along with trees within parks and reserves. While Figure 13 illustrates a very low canopy in industrial land, there is only a small portion of land zoned for that purpose at the south-western urban boundary. Opportunities exist to increase tree planting in residential areas and along road reserves.

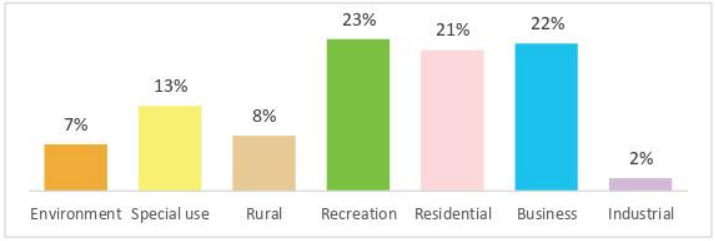


Figure 14 Percent canopy cover by land use zone

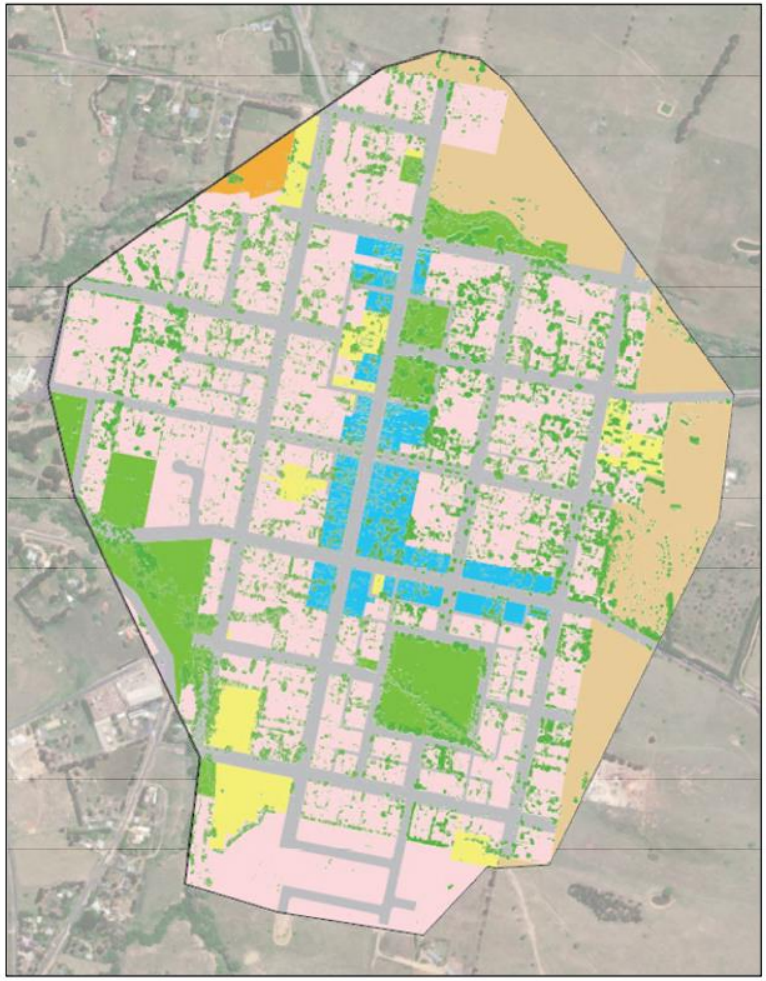


Figure 15 Map of canopy cover in Braidwood urban area by land use zone

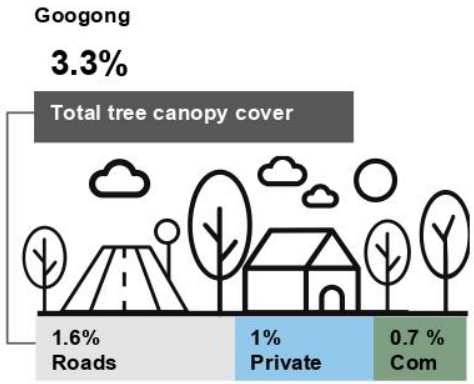


Figure 17 demonstrates the lack of existing tree canopy cover in Googong. Overall, Googong's tree canopy covers only 3.3 percent of land, the majority of which is found in road reserves. As discussed, this is largely due to the relatively recent development in Googong resulting in an absence of mature canopy trees. This absence of trees means the urban heat island effect will continue to effect residents in the coming years, particularly as the extent of impervious area across residential development provides little opportunity to plant trees for shade and cooling.

Land zoned for recreation has the highest canopy cover at seven percent, with business and residential the lowest at two and three percent, respectively. Opportunities for tree planting exist across the entire area including additional street tree planting and planting within parks and commercial centres.

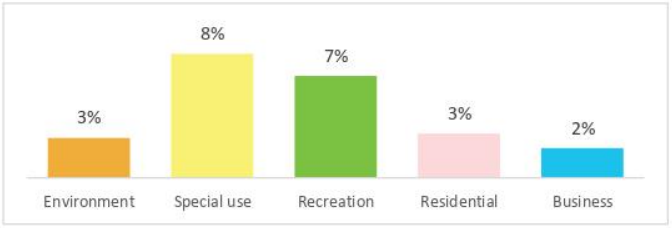


Figure 16 Percent canopy cover by land use zone

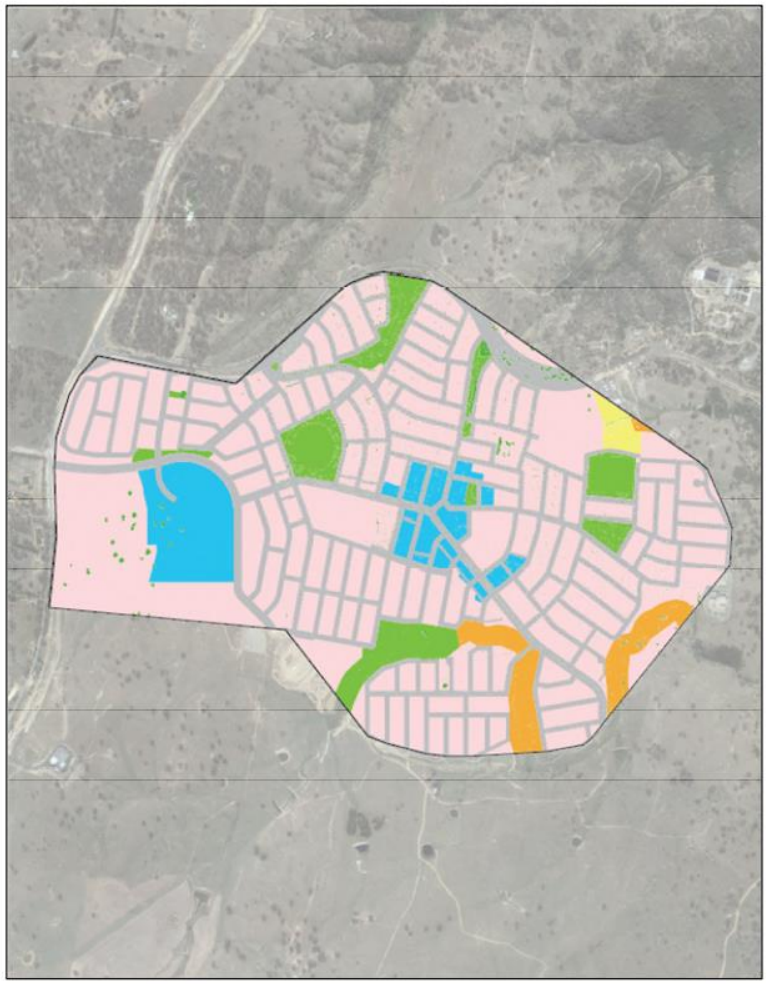


Figure 17 Map of canopy cover in Googong urban area by land use zone

6.3 Threats to the urban forest

This section summarises the key challenges facing our urban forest that this Strategy seeks to address.

Climate change and urban heat
Our future climate is predicted to include warmer summers, less rain and longer and more frequent heatwaves. Climate change will have implications for the cost of and approaches to maintaining urban green space. While tree canopy is effective in reducing urban heat it will also be affected by changes to climate including trunk scorch, shifts in tree habitat suitability and increase susceptibility to pests and disease as well as impacts on tree habitat including soil. Increasing heat due to climate change paired with trapped heat from human activities in urban areas will affect which tree species can survive in urban spaces (Norton 2015).

Urban densification
As our urban areas continue to grow and densify, there will be an increasing competition for space, in particular decreasing private open space in new developments and the need for urban infrastructure reducing opportunities for street tree planting. Unless planning and design controls are put in place to protect and enhance tree planting, resilience and maintenance there will be continued removal and replacement of trees and pervious surfaces with buildings and paved surfaces.

Loss of habitat
Increased densification impacts not only urban trees but all manner of flora and fauna, which can lead to biodiversity loss. Without holistic planning and management, urban growth can lead to fragmentation of flora and fauna habitat and reduce connectivity, preventing the movement and dispersal of native flora and fauna and increased competition from invasive and exotic species.

Governance and resourcing
Management of the urban forest crosses multiple jurisdictions and disciplinary boundaries, including:

- Asset and project management
- Sustainability
- Biodiversity
- Design
- Development assessment
- Strategic planning
- Open space and recreation
- Stormwater and flooding
- Environmental management
- Maintenance
- Learning and Development
- Community Engagement
- Community Services
- Property

This leaves the urban forest and its monitoring and management split across different responsibilities and areas of interest within Council. A lack of strategic governance and coordination will often impact resourcing and funding potential for related activities, in turn limiting Council's capacity to provide adequate management of the urban forest. Setting clear goals and identifying roles and responsibilities can support coordination and integration of green infrastructure across planning and delivery. Other local governments have responded to this gap by introducing specific positions responsible for coordinating actions across teams and building organisational capacity.

Community understanding
Community and landowner acceptance and understanding is critical to the success of the urban forest (Ordóñez 2020). Without this, issues such as illegal tree removal, vegetation clearing and vandalism will continue to occur in urban areas. Responding to community concerns and establishing clear, documented information to build awareness and engage in a dialogue will support our ongoing greening efforts.

6.4 Priority tree planting locations

The 2020 Surface Heat Mapping Report identified priority areas for tree planting to mitigate heat based on the mapping of severe urban heat islands, including:

- Googong (whole area)
- Queanbeyan
  - Riverside Plaza;
  - some high-density residential areas south of Ellerton Drive;
  - Queanbeyan East
  - Crestwood
  - Queanbeyan West
  - some of the high-density residential areas in Karabar
  - Jerrabomberra
- Bungendore:
  - north-east corner, east of Tarago Road and north of McMahon Drive
  - south-east areas
  - residential area between Ellendon Street and Truckling Yard Lane along Finch Street
- Braidwood
  - far east of the suburbs, south of Wilson Street/Little River Road and east of Monkittee Street (appears to align with the hospital a new high-density residential development with minimal green infrastructure)
  - central north-south residential corridor just west of Wallace Street
  - intersection of Lascelles and Elrington Streets

While this is a good starting point, further investigation using the following criteria along with completing monitoring and data collection activities outlined in the action plan will develop a clearer agenda for tree planting:

- Areas undergoing revitalisation or as development controls are reviewed (e.g. Braidwood, Bungendore and Queanbeyan town centres)
- Areas where additional tree canopy cover will have the greatest community benefit, that is areas with low canopy cover, significantly impacted by urban heat and where vulnerability to heat is high.
- Vacant sites on public land that present opportunities for additional tree planting.
- High pedestrian volume and movement areas such as playgrounds, public transport stops, public plazas, parks and community facilities as well as key cycling and pedestrian corridors as identified in Pedestrian and Mobility Plans.
- Areas zoned for increased residential density and greenfield development.

7 The way forward

Our vision is that Council, business and community value and actively care for an urban forest that is resilient and fairly distributed providing a cooler, healthier environment for people and wildlife.

7.1 Our goals

This vision is articulated through five goals and underpinned by the principles established in the GANSW Greener Places. They are:

- **A resilient urban forest:** The urban forest is diverse, healthy and responsive to future conditions.
- **A fairly distributed urban forest:** The urban forest provides benefits to all citizens. Canopy cover is priorities in areas where it is currently lacking, particularly in areas where there are high concentrations of vulnerable communities.
- **A cooler, greener urban environment:** Planning and design of our urban areas supports a thriving urban forest in the public and private realm that enables greener, cooler spaces and places for residents, workers and visitors.
- **Increased biodiversity and tree canopy:** A connected, strategically managed urban forest protects, maintains and enhances biodiversity and tree canopy in urban areas.
- **An actively managed urban forest:** Council, residents and the business community understand the benefits of the urban forest, are knowledgeable and are partners in managing the urban forest.

7.2 Strategies and actions

The actions have been grouped into five key strategies to support Council and community prioritise, manage and implement this Strategy.

Strategy 1: Build awareness and encourage participation in urban greening

We must continue to build understanding of the benefits of the urban forest and share this information with others. This may involve partnering with organisations, business and the community to support urban greening.

Access to nature and open spaces are a cherished aspect of Queanbeyan-Palerang's landscape setting. Biodiversity protection and sustainable management of natural landscapes and water resources are priorities identified through strategic documents co-developed with the community.

Demonstrating to our community how the urban forest can enhance these lifestyle and amenity aspects of urban areas as well as informing people of the many benefits will increase support for urban greening and cooling efforts. A more informed and engaged community will also be able to actively care for and manage the urban forest by understand what trees need to survive and what actions might cause harm. A comprehensive, ongoing program of education and engagement will be essential to keeping the community informed about their role in enhancing and protecting the urban forest.

A coordinated engagement strategy will also keep the community up to date with specific activities and opportunities to be involved and partner with us in planning for the urban forest.

Our Council has an active community of volunteers engaged in caring for the natural environment (.idcommunity 2021b) , including participating in existing programs that support the urban forest such as National Tree Day planting activities.

Volunteers provide an invaluable service to our community, one that is increasingly being recognised (Volunteering Australia 2020). To support the vision of this Strategy it is necessary to take a coordinated approach to volunteer efforts to ensure volunteer time and energy is effectively spent and maximised.

Council may also wish to consider re-establishing a local nursery as a strategic and meaningful partnership between Council and the local community.

Actions

1.1. Continue to manage and promote existing programs (National Tree Day, Environment Week).

1.2. Regularly demonstrate and communicate successes in urban greening and cooling to the community.

1.3. Include the community in future landscape and planning projects.

1.4. Prepare and deliver a coordinated, ongoing community education and communication campaign across the LGA. This may include:

- Signage and interpretation information
- A community champions program
- A coordinated, well-resourced and promoted program of events
- Community input on tree planting program and high-value areas
- Education resources on greening and cooling in private spaces including building design, tree planting, maintenance and selection methods

1.5. Establish an Urban Greening Volunteer Program to coordinate community and Council efforts for tree planting and support more impactful initiatives.

1.6. Actively partner with existing conservation groups, Local Aboriginal Land Councils, local Landcare, Friends of Groups and other organisations to deliver urban greening and cooling education and outreach programs and events.

1.7. Develop partnerships with universities, research institutes and other regional organisations to support knowledge sharing and understanding of best-practice management and maintenance of the urban forest.

1.8. Work with developers and business owners to deliver greening particularly in industrial areas, new release areas and as part of urban renewal projects.

Strategy 2: Expand data collection and monitoring of the urban forest

Council bears the responsibility for caring for public trees in streets and parks. Canopy mapping is a valuable tool, however alone it does not provide sufficient information to support robust management of tree assets.

We must expand our monitoring and evaluation of the urban forest to support evidence-based decision-making for tree maintenance, replacement, removal and planting programs.

In 2015, following the death of a child in a Bendigo Council park, the Victorian Coroner provided eight recommendations for LGAs to follow when managing trees under their responsibility (Victoria Courts 2015). These recommendations have been incorporated into the actions under this Strategy, with the exception of the two recommendations noted below. These should be noted and considered by Council when implementing tree monitoring and maintenance:

- In any tree inspection, tree assessment or risk assessment, it should be noted that the anatomy of a branch and of an epicormic shoot are quite different. The term "branch" should only be applied to tree structures that have a proper branch anatomy and epicormic shoots should be clearly identified as such in any assessment or inspection procedures.
- All local government agencies should have a computer-based risk assessment system that is applied to all trees contained within the tree inventory. Such a system may incorporate the use of systems such as QTRA or TRAQ, which are widely and readily available or another system which embodies the principles of risk assessment specified in the relevant Australian Standard.
- All inspections must be undertaken by a qualified (Level 4 or above) arborist. We are generally of the view that a level 5 qualification or above is preferred, but this may not be applicable to all council-based situations at present.

Actions

2.1. Incorporate the Braidwood tree inventory into Council's existing asset management system to enable recording of details (date, what was done and why) of all future and ongoing maintenance and inspection operations.

2.2. Expand the tree inventory to all urban areas and integrate with asset management. At a minimum this inventory must identify tree species and location but will ideally include age and height and other characteristics to support risk management and forward planning.

2.3. Review/develop tree inspection and risk assessment protocols to:

- record the purpose and form of inspection (e.g. walk-by, any technological aids)
- record whether inspection is ground-based or from above
- record date of inspection and indication of timelines for next inspection
- record whether any additional arboriculturally works are recommended, when they should be undertaken and the reason for recommending the works
- ensure the use of relevant criteria to assess the trunk and canopy components at the time of inspection

2.4. Improve record keeping of tree complaints and referrals and link to asset management.

2.5. Undertake an audit of overall tree canopy loss and gains every two years, to determine impact of urban greening and cooling actions to support business cases for continued urban forest management funding and inclusion in operational plans.

2.6. Investigate and map dieback, areas of high biodiversity value, endangered ecosystems and vegetation, existing vegetation corridors across the LGA to inform planning and prioritisation of further greening actions.

Strategy 3: Coordinate tree and vegetation planting and management

Council currently delivers a public tree planting program of 1,200 trees each year. Preparing a tree planting plan for public areas at the precinct scale will guide implementation of this Strategy and coordinate efforts to ensure planting occurs in areas of highest priority and need.

A program will also provide a central source of information to coordinate efforts across different levels of administration, planning and delivery and support collaboration between the various disciplines in Council.

Early planning is essential to support planting the right tree in the right place and coordinating green infrastructure with broader urban planning and design.

While not a direct action of this Strategy, it is recommended that Council pursue development of a comprehensive vegetation management plan that considers blue/green/grey infrastructure at the precinct scale and makes recommendations on linking, connecting and enhancing waterways, drainage assets, vegetation, bushland reserves and open space network for broader ecosystem, recreation and cooling benefits. An integrated precinct planning approach would direct planning, funding and resourcing across open space, tree planting, WSUD, active transport, biodiversity, vegetation and asset management.

Actions

3.1. Once tree inventories have been established, set tree canopy targets for precincts and incorporate these into planning documents.

3.2. Finalise the recommended tree species list and set tree species diversity targets. Incorporate these into planning documents.

3.3. Develop, resource and implement a coordinated tree planting program and precinct plans that:

- supports integration of tree planting with asset and infrastructure planning and capital works programs
- identifies vacant tree sites and areas with low canopy cover
- Identifies priority areas for planting at the precinct scale
- provides a tailored appropriate tree species lists for precincts based on character, tree function, climate (current and future), soil conditions, lifecycle costs and diversity requirements
- considers succession planting

3.4. Develop technical guidelines for urban vegetation management that includes relevant policy documents, a summary of statutory tools, Council processes and standards for design, management, maintenance, compliance and reporting. Make this available to all staff and integrate its use in core business.

Strategy 4: Review planning policy and development controls

A review of Council's planning policy and development controls has identified several gaps and inconsistencies that should be resolved to support better management of the urban forest and support integration of green infrastructure in planning and development.

In particular, consolidation of DCP requirements relating to tree planting and management will support consistent application of planning controls. This will support our staff and make planning requirements clear to community and developers. An updated DCP should reference current acts and planning instruments such as the Biodiversity Conservation Act 2016, Vegetation SEPP, and Australian Standards such as AS 4970 Protection of Trees on Development Sites (2009), AS 4373 Pruning of Amenity Trees (2007), AS 2303 Tree Stock for Landscape Use (2015).

Council's draft Significant Tree Policy performs the same function as a 'Significant Tree Register', setting out roles and responsibilities of Council, residents and landowners relating to the identification, nomination, registration and maintenance of Significant trees.

Council's Tree & Vegetation Vandalism Directive – draft outlines our strong opposition to public tree and vegetation vandalism and provides a framework for consistent management and response to acts of tree and vegetation vandalism.

Action 4.4 recommends development of a Tree Management Policy, in which the Significant Tree Policy and Tree & Vegetation Vandalism Directive could form chapters. New chapters are also recommended covering tree protection, planting, pruning, removal, asset management, community consultation and engagement. The Queanbeyan Tree Management Directive 2016 would become redundant and any relevant information incorporated into the new Tree Management Policy.

Actions

4.1. Include urban forest principles and targets in urban renewal and new release area planning documents.

4.2. Develop a single Tree and Vegetation Management DCP that provides consistent controls across QPRC.

4.3. Review and refine planning instruments:

- To support multifunctionality of blue, grey and green infrastructure, particularly WSUD integration opportunities.
- To provide tree requirements for public open space in new developments.
- To ensure sufficient information is provided for tree maintenance, planting and location in handover documents.
- To promote tree planting and retention in new developments.
- To support alternative greening including green walls and roofs

4.4. Establish a Tree Management Policy that provides a framework for consistent decision making, documentation and standardisation of processes of tree management and maintenance issues

4.5. Investigate policy and planning controls that incentivises additional planting and retention of trees, including:

- A tree trust for development on private and public land
- Rate reductions for residents and businesses that retain large canopy trees
- Incentives for planting in existing areas or new developments that provide green infrastructure beyond the minimum requirement.

4.6. Develop/review design guidelines and standard engineering details to support and enhance tree growth and health in public and private spaces including passive watering, setbacks, deep soils and pervious paving.

4.7. Update the Street Verge Maintenance Policy to include standard setbacks to street trees for the construction of driveway and kerb crossings based on AS 4970 Protection of Trees on Development Sites (2009) and opportunities to improve integrated street tree outcomes.

Strategy 5: Increase Council capacity in urban forest management

Sustainable urban forestry is supported by institutional capacity and embedding evidence-based decision-making and collaboration in Council practices (Ordóñez 2020).

One important way of achieving this is providing appropriate training to build staff skills and knowledge related to urban greening and cooling. It is also important to encourage and normalise collaboration and working across disciplines to integrate green infrastructure planning with broader urban planning processes.

Council should encourage greening and cooling champions at all levels within its organisation. This gives a voice to staff and supports advocacy and action at the project level while also establishing representatives in senior and executive management positions that have the power to institutionalise new practice and push an urban greening and cooling agenda at the whole-of-Council level.

Engaging with the community on urban greening and cooling and demonstrating on-ground outcomes through trial and demonstration projects builds trust and confidence in Council's capacity to deliver. This strategy can be supported through Council's continued achievement of sustainability certifications for community assets and projects, which include measures relating to urban greening and cooling.

Actions

5.1. Establish a cross-departmental working group to take ownership of this Strategy, promote and coordinate action across Council as well as ensure alignment with the Climate Change Action Plans, Resilience Plan, asset management and maintenance plans and other relevant policy and strategies.

5.2. Include relevant urban forest actions and objectives for all relevant Council teams in the Delivery Program and Operational Plans.

5.3. Improve Council capacity and capability through filling skill gaps including:

- Biodiversity officer for DA assessment and compliance integration and knowledge proliferation
- Tree management/compliance officer
- Increasing resourcing off staff to allow for increased tree inspections and monitoring

5.4. Educate and provide tools to ensure good pruning practices across QPRC works to promote healthy growth, pride in landscape appearance, prolong life of trees and demonstrate good maintenance practices to the community

5.5. Provide training for relevant staff on benefits of green infrastructure, integrating blue/green/grey infrastructure and managing trees to support the urban forest and minimise perceived and actual conflicts with development.

5.6. Include urban forest impacts as an item in Council reporting/decision-making templates and tools.

5.7. Set up internal referral and coordination protocols to ensure collaboration and integration of infrastructure needs prior to planning approval.

8 Implementation

Opportunities for greening and cooling can be divided into low cost, 'quick-win' actions that can be implemented within current budgets and work programs, and those where more significant funding will be required for implementation over a longer period of time. The plan on the following pages breaks the actions into short-, medium- and longer-term actions and identifies responsibilities and alignment with the Strategy goals.

Resourcing and implementation of this Strategy will need to be considered as part of Council's Integrated Planning and Reporting program. The vision, goals and strategies in this Strategy need to be considered in the next review of the Community Strategic Plan. Actions listed for each of the strategies should be considered and included in the development of the next four-year Delivery Program planning process and the annual Operational Plan.

8.1 Priority actions

The following priority actions must be accomplished initially to provide the necessary framework and information to enable Council to move towards best practice management of the urban forest.

- Identify and leverage funding opportunities to implement actions
- Incorporate the recent Braidwood tree inventory into Council's existing asset management system and pilot use for monitoring and maintaining the urban forest.
- Establish a cross-departmental working group to champion and implement the Urban Forest Cooling Strategy

8.2 Action plan

Table 1 Immediate actions (quick wins)

Ref	Action	Responsibility
1.1	Continue to manage and promote existing programs (National Tree Day, Environment Week)	Natural Landscapes and Health
1.2	Regularly demonstrate and communicate successes in urban greening and cooling to the community.	Communications and Engagement
1.3	Include the community to be directly involved in future landscape and planning projects.	Organisational
1.6	Investigate opportunities to partner with existing conservation groups, Local Aboriginal Land Councils, local Landcare, Friends of Groups and other organisations to deliver urban greening and cooling education and outreach programs and events.	Organisational
1.8	Work with developers and business owners to deliver greening particularly in industrial areas, new release areas and as part of urban renewal projects.	Urban Landscapes, Development, Contracts and Projects, Land-use Planning
2.1.	Incorporate the Braidwood tree inventory into Council's existing asset management system to enable recording of details (date, what was done and why) of all future and ongoing maintenance and inspection operations.	Urban Landscapes
2.3	Review/develop tree inspection and risk assessment protocols to: • record the purpose and form of inspection (e.g. walk-by, any technological aids) • record whether inspection is ground-based or from above • record date of inspection and indication of timelines for next inspection • record whether any additional arboriculturally works are recommended, when they should be undertaken and the reason for recommending the works • ensure the use of relevant criteria to assess the trunk and canopy components at the time of inspection	Urban Landscapes
2.4	Improve record keeping of tree complaints and referrals and link to asset management.	Urban Landscapes
3.2	Finalise the recommended tree species list and set tree species diversity targets. Incorporate these into planning documents.	Natural Landscapes and Health, Urban Landscapes

4.7	Update the Street Verge Maintenance Policy to include standard setbacks to street trees for the construction of driveway and kerb crossings based on AS 4970 Protection of Trees on Development Sites (2009) and opportunities to improve integrated street tree outcomes.	Urban Landscapes
5.1	Establish a cross-departmental working group to take ownership of this Strategy, promote and coordinate action across Council as well as ensure alignment with the Climate Change Action Plans, Resilience Plan, asset management and maintenance plans and other relevant policy and strategies	Natural Landscapes and Health
5.6	Include urban forest impacts as an item in Council reporting/decision-making templates and tools.	Finance, Executive
5.7	Set up internal referral and coordination protocols to ensure collaboration and integration of infrastructure needs prior to planning approval.	Development

Table 2 Medium-term actions (1-3 years)

Ref	Action	Responsibility
1.4	Prepare and deliver a coordinated, ongoing community education and communication campaign across the LGA. This may include: • Signage and interpretation information • A community champions program • A coordinated, well-resourced and promoted program of events • Community input on tree planting program and high-value areas Education resources on greening and cooling in private spaces including building design, tree planting, maintenance and selection methods	Communications and Engagement
1.5	Establish an Urban Greening Volunteer Program to coordinate community and Council efforts for tree planting and support more impactful initiatives.	Recreation and Culture, Urban Landscpaes
1.7	Develop partnerships with universities, research institutes and other regional organisations to support knowledge sharing and understanding of best-practice management and maintenance of the urban forest.	Urban Landscapes

2.2	Expand the tree inventory to all urban areas and integrate with asset management. At a minimum this inventory must identify tree species and location but will ideally include age and height and other characteristics to support risk management and forward planning.	Urban Landscapes
2.5	Undertake an audit of overall tree canopy loss and gains every two years, to determine impact of urban greening and cooling actions to support business cases for continued urban forest management funding and inclusion in operational plans.	Natural Landscpaes and Health
2.6	Investigate and map dieback, areas of high biodiversity value, endangered ecosystems and vegetation, existing vegetation corridors across the LGA to inform planning and prioritisation of further greening actions	Natural Landscpaes and Health
3.1	Once tree inventories have been established, set tree canopy targets for precincts and incorporate these into planning documents	Urban Landscpaes
3.3	Develop, resource and implement a coordinated tree planting program and precinct plans that: • supports integration of tree planting with asset and infrastructure planning and capital works programs • identifies vacant tree sites and areas with low canopy cover • identifies priority areas for planting at the precinct scale • provides a tailored appropriate tree species lists for precincts based on character, tree function, climate (current and future), soil conditions, lifecycle costs and diversity requirements • considers succession planting	Urban Landscpaes, Natural Landscapes and Health
3.4	Develop technical guidelines for urban vegetation management that includes relevant policy documents, a summary of statutory tools, Council processes and standards for design, management, maintenance, compliance and reporting. Make this available to all staff and integrate its use in core business.	Urban Landscpaes
4.1	Include urban forest principles and targets in urban renewal and new release area planning documents.	Land-Use Planning, Development
4.2	Develop a single Tree and Vegetation Management DCP that provides consistent controls across QPRC.	Land-Use Planning
4.3	Review and refine planning instruments to: • To support multifunctionality of blue, grey and green infrastructure, particularly WSUD integration opportunities. • Provide tree requirements for public open space in new developments.	Land-Use Planning, Development

	• Ensure sufficient information is provided for tree maintenance, planting and location in handover documents. • Promote tree planting and retention in new developments. • Support alternative greening including green walls and roofs	
4.4	Establish a Tree Management Policy that provides a framework for consistent decision making, documentation and standardisation of processes of tree management and maintenance issues	Urban Landscapes
4.6	Develop/review design guidelines and standard engineering details to better support and enhance tree growth and health in public and private spaces including passive watering, setbacks, deep soils and pervious paving	Development, Contracts and Projects, Urban Landscapes
5.2	Include relevant urban forest actions and objectives for all relevant Council teams in the Delivery Program and Operational Plans. (*repeated in longer-term actions for Delivery Program planning*)	Organisational
5.3	Improve Council capacity and capability through filling skill gaps including: • Biodiversity officer for DA assessment and compliance integration and knowledge proliferation • Tree management/compliance officer • Increasing resourcing off staff to allow for increased tree inspections and monitoring	Executive
5.4	Educate and provide tools to ensure good pruning practices across QPRC works to promote healthy growth, pride in landscape appearance, prolong life of trees and demonstrate good maintenance practices to the community	Urban Landscapes
5.5	Provide training for relevant staff on benefits of green infrastructure, integrating blue/green/grey infrastructure and managing trees to support the urban forest and minimise perceived and actual conflicts with development.	Natural Landscapes and Health

Table 3 Longer-term actions (3+ years)

Ref	Action	Responsibility
4.5	Investigate policy and planning controls that incentivises additional planting and retention of trees, including: • A tree trust for development on private and public land • Rate reductions for residents and businesses that retain large canopy trees	Land-Use Planning, Urban Landscapes, Finance, Development

	• Incentives for planting in existing areas or new developments that provide green infrastructure beyond the minimum requirement.	
5.2	Include relevant urban forest actions and objectives for all relevant Council teams in the Delivery Program and Operational Plans. (*repeated in medium term actions for Operational Plans*)	Organisational

Appendix A
Surface Heat Mapping

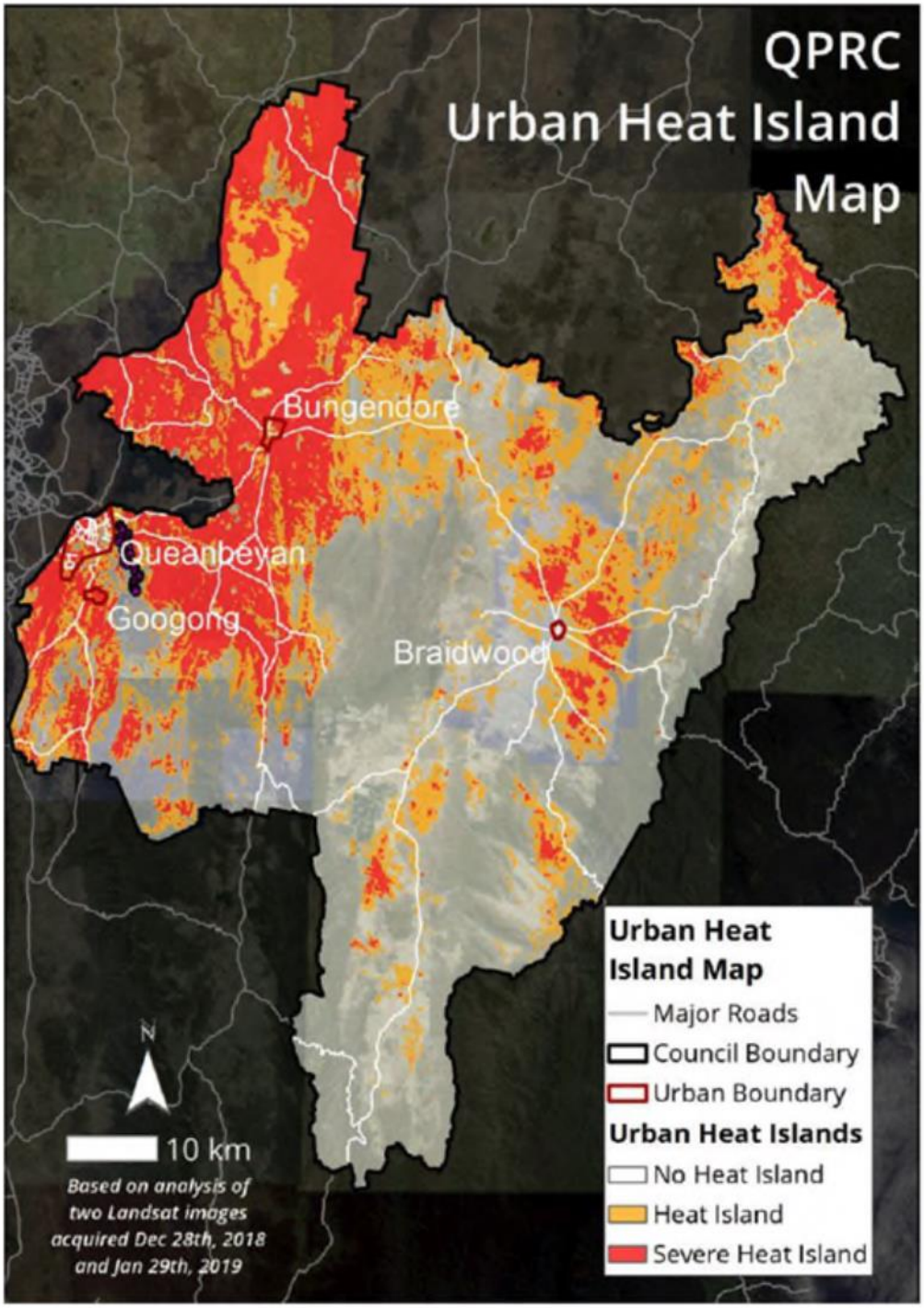


Figure 18 Surface heat mapping for the Queanbeyan-Palerang municipality (QPRC 2020a)

Appendix B
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QUEANBEYAN-PALERANG REGIONAL COUNCIL

Council Meeting Attachment

28 JULY 2021

ITEM 9.13 EXHIBITION OF DRAFT QPRC URBAN FOREST COOLING STRATEGY

ATTACHMENT 2 URBAN FOREST COOLING STRATEGY- COMMUNITY CONSULTATION WORKSHOPS- SUMMARY REPORT

QPRC

QPRC Urban Forest Cooling Strategy

Community Consultation Workshops-Summary Report

Ref: 1350910

QPRC

UFCS- Community Consultation Workshops Summary Report

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QPRC

UFCS- Community Consultation Workshops Summary Report

Introduction

This report summarises the findings and public opinion from two community consultation workshops regarding the development of Council's Urban Forest Cooling Strategy (UFCS). The consultation was undertaken by Mosaic Insights (engaged consultants) and QPRC to discuss the Strategy's vision, identify priority actions and gain insight from community members about the region's current urban forest and cooling infrastructure.

About the Urban Forest Cooling Strategy

Queanbeyan Palerang Regional Council is currently developing an Urban Forest Cooling Strategy for its major urban centres of Queanbeyan, Bungendore, Braidwood and Googong. This follows on from the results of the QPRC Surface Heat Mapping study which found that over 85% of urban land in the region fell within an urban heat island (2 degrees hotter than surrounding natural areas).

The Urban Forest Cooling Strategy will aim to:

- Lessen the impacts of extreme hot days and heat waves by reducing urban heat islands in urban (built up) areas.
- Ensure a healthy, resilient and sustainable urban forest.
- Increase and diversify urban biodiversity.
- Develop infrastructure to support the urban forest and urban cooling.
- Engage the community.
- Support adaptation actions throughout our urban centres.
- Mitigate climate change by storing carbon

Workshops

Two online community consultation sessions (workshops) were held on the 8th and 9th June 2021 with a total of 10 participants. Council's social media and sustainability mailing list along with emails to UFCS survey participants were used to promote the workshops. Participants registered through Eventbrite with information and the Zoom link sent to the registered email addresses.

The workshops were held during the morning and evening on separate days to encourage attendance. Despite this, only small numbers of attendees were recorded. Attendance at the workshops was recorded as follows:

Workshop	Date	Time	Venue	Participants
Weekday Worksop	Tuesday 8th June 2021	10-11.30am	Online	5
Evening Workshop	Wednesday 9th June 2021	6-7.30pm	Online	5

Methodology

Background information, survey results and initial analysis findings were distributed to participants two days prior to the workshops to ensure that the objectives of the workshops

were met and to encourage further community input. This allowed participants to understand the current urban forest/cooling infrastructure and think about what they might want to contribute.

During the workshops, participants were initially briefed on the background information, preliminary analysis findings (tree canopy cover), survey results and key challenges through a PowerPoint presentation.

Participants were then asked to consider and respond to a number of questions/statements in three separate discussions. For the discussions, participants were split into two separate groups in breakout rooms facilitated by Mosaic Insights and Council. Mural Boards and written notes were used to gather data and information.

Representation

The views collected in this report cannot be said to be statistically valid because of the small number of participants that attended the workshop. Nevertheless, an important snapshot of the community was obtained.

Participants

The community workshops were open to all residents of Queanbeyan-Palerang and interested parties (e.g. business, visitors). The workshop sessions were facilitated by Mosaic Insights and Council staff.

At the conclusion of the workshop session, participants were asked to provide feedback.

Objectives

Workshop sessions can build a sense of community and are a useful tool for in-depth insight into the opinions of a small group, allowing many contributions. Unlike a survey, they enable the discussion of complex issues and underlying concerns and allow for deliberation and the brainstorming of ideas. Key objectives of the workshops were to:

- Engage the community in the development of the strategy and provide ownership.
- Gain insight into key issues within the community.
- Gain insight from community members into the regions current urban forest and cooling infrastructure.
- Enable the community to provide input and advice into the background information and initial analytical findings.
- Develop a draft vision.
- Discuss and prioritise actions and focus areas.

Findings

Discussions

During the workshop's participants were asked to consider and respond to a number of questions/statements in three separate discussions.

- Discussion one (5 minutes): What are your thoughts on the background information, analysis findings, survey results and key challenges, did anything surprise you? Do you agree with the findings? What do you believe are some of the key issues in your area? Is There anything more you would like to know about the urban forest? What do you do to care for the urban forest? What could you do?

- Discussion two (10 minutes): Read the vision and write down one thing you like and don't like about it. As a group review the vision and identify any missing words or themes. Vision *'A cooler, greener Queanbeyan-Palerang is a city without urban heat islands with a healthy, equitably distributed urban forest that encourages people to enjoy the outdoors and connect with nature. Council and community understand the importance of urban cooling and actively care for the urban forest.'*

- Discussion three (15 minutes): Brainstorm as many ideas as you can and then as a team discuss and select five focus areas to enable Council and community to achieve its vision.

Discussion one (5 minutes): What are your thoughts on the background information, analysis findings, survey results and key challenges, did anything surprise you? Do you agree with the findings? What do you believe are some of the key issues in your area? Is There anything more you would like to know about the urban forest? What do you do to care for the urban forest? What could you do?

Grouping	Response
Issues or inaccuracies with the findings	• Need to understand what the baseline is, what is normal, so we know what we are working towards/working from. • Bungendore – 1000 new houses planned for the area, re-look at population numbers. • Wallace Street (Braidwood) has no street trees, however the analysis (LIDAR) indicated that there is, need to re-look at this.
Agreeance with findings	• Overall, most participants noted that the findings did not really surprise them, especially with regards to tree canopy cover and lack thereof in some locations.
Key issues with regards to the urban forest and cooling in their area	• QPRC has no street tree planting program or overarching policy. • There are many disincentives for planting trees, how do we respond to those. • Braidwood – no trees in the local centre (Wallace Street), this is a sensitive heritage issue. • Planning mechanisms are currently not being utilised to mandate building design requirements (e.g. shade on western walls) or tree canopy cover. • In appropriate material selections when designing and building houses (e.g. dark roofs). • Current urban forest in Braidwood is aging significantly even with recent plantings by Council. • Public/private interface is important and a key issue. • Little to no recognition of significant historic trees.
Other	• Individuals should be planting in private spaces but if there is no space then it is not possible – no use having a goal for private tree planting (e.g. Googong) • Trees are not the only option to avoid urban heat islands, what about other infrastructure? (solar panels

UFCS- Community Consultation Workshops Summary Report

	are seen as good for the environment, but do they increase urban heat?). • LGA wide tree register. Braidwood Garden Club currently uses and engages with the National Significant Tree Register.

Discussion two (10 minutes): Read the vision and write down one thing you like and don't like about it. As a group review the vision and identify any missing words or themes. Vision *'A cooler, greener Queanbeyan-Palerang is a city without urban heat islands with a healthy, equitably distributed urban forest that encourages people to enjoy the outdoors and connect with nature. Council and community understand the importance of urban cooling and actively care for the urban forest.'*

Grouping	Response
What do you like	• Focuses on a connection with nature and enjoying the outdoors. focusing on more than just cooling opportunities. • Intention for equality across the LGA. • Coverage of all aspects/practices is there. Captures where we want to be and is generally pretty good. • Goal or commitment to no (or reducing) heat islands by Council.
What do you not like	• Should be stronger and shorter. The vision seems a bit convoluted. • 'No heat islands' appears to be a bit negative and hard to reach. Maybe 'reduced' is a better word. • Does not include wildlife or biodiversity. • Does not include a commitment to managing and caring for the forest. • Use of the word 'city'. • No mention of shade. • There is no time imperative. • Queanbeyan-Palerang is an odd phrase for most residents. • Missing people, what about businesses? • Outdoors is great but what about our indoor climate. Could address the built environment as well. • Community is a bit bland. • No mention of limits to what can be done. • Does not encourage people who are anti-trees to get on board. • Equitably distributed might not work if we want diversity of landscapes.
What do you want to change	• Change 'understand' to 'value'. • Include healthy environment for wildlife. • Change without urban heat islands to 'free' or 'reduced'. • Remove the word city and replace with a more inclusive term. • Including refuges from heat.

UFCS- Community Consultation Workshops Summary Report

	• Capture urgency. • Use 'fairly' instead of 'equitably'. • Improve the conditions of the indoor climate. • Use the word 'place'- potential connection with indigenous owners. • Utilise phrases such as protect, enhance and healthy.

Discussion three (15 minutes): Select five focus areas to enable Council and community to achieve its vision. Brainstorm as many ideas as you can.

Grouping	Response
What actions do you want to see in the next year (prioritised)	• **High:** DCP to require tree plantings as mandatory and/or permeable pavements. DCP restrictions or bans on certain building materials e.g. dark coloured roofs or alternatively incentives for appropriate designs. • **High:** Plant trees in under used areas. • **High:** Establish targets and report annually. • **High:** Maintain protect and improve existing stock of trees. E.g. retain a certain % or number of existing trees in new developments. • **High**: Trail permeable pavements. • **High:** Education, make benefits clear. Basic toolkits. Engage and inspire people to get involved. • **High:** Partnerships with existing groups e.g. Landcare, however, also look into establishing a dedicated urban tree working group. Empower local groups to engage in the process. • **High:** Free trees or tree giveaways, preferably from a community or Council run nursery. Perhaps free trees for new properties. • **High:** Planning to maximise retention of green spaces. • **High:** Look at incentives for tree planting and disincentives for tree removal. • **High:** Succession planting and planning or growth over the longer term. • **High:** Vegetation shading on western walls, vertical/rooftop gardens- a need for uptake by businesses in CBDs. • **Medium:** Multi-pronged approach across the area- process to engage Intention for equality across the LGA. • **Medium:** Provide expert advice to the community on the right tree and the right place. • **Medium**: Learn from best practices councils and communities in other parts of the world. • **Medium:** Sustainable homes or household garden tours • **Medium**: Local or street tree champions. • **Medium:** Water rate increases in the LGA a real issue and needs to be revised. • **Medium:** Ban astro turf in private spaces. • **Medium:** Larger stock trees when plantings (quicker time to fully establish).

	• **Medium:** Include water in public spaces e.g. fountains, ponds. • **Medium:** Change site requirements from floorspaces to root footprint. Include alfresco areas. • **Medium:** Report current heat emissions per landholder. • **Medium:** Leverage state resources. • **Medium:** Assessments tree health. • **Medium**: Community tree planting days. • **Low:** Build up not out. • **Low:** Prioritise approach to climate change actions to mitigate emissions reduction. • **Low:** Deep soil provision in private sites and in the street scape. • **Low:** Map constraints on Council to act e.g. policy settings.

QUEANBEYAN-PALERANG REGIONAL COUNCIL

Council Meeting Attachment

28 JULY 2021

ITEM 9.13 EXHIBITION OF DRAFT QPRC URBAN FOREST COOLING STRATEGY

ATTACHMENT 3 URBAN FOREST COOLING STRATEGY- SURVEY RESULTS

QPRC Urban Forest Cooling Strategy

Survey Results

Ref: 1350905

UFCS Survey Results

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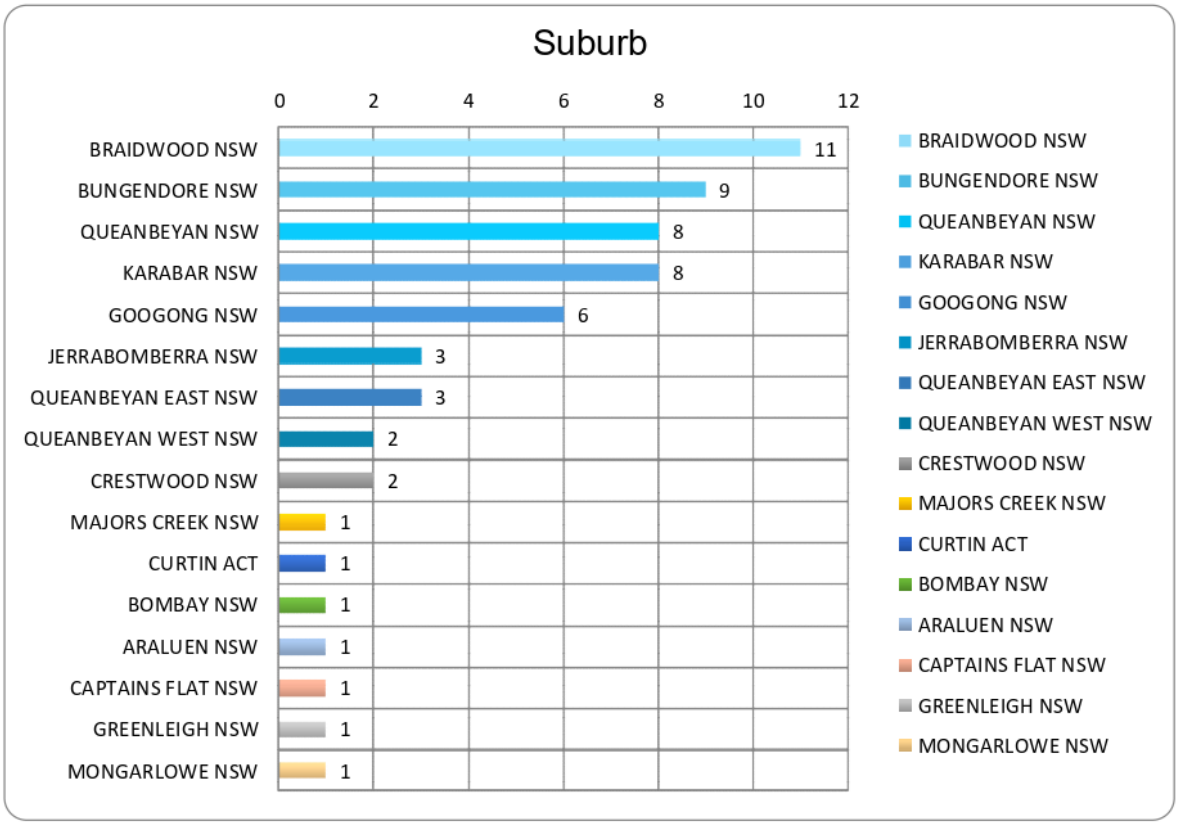
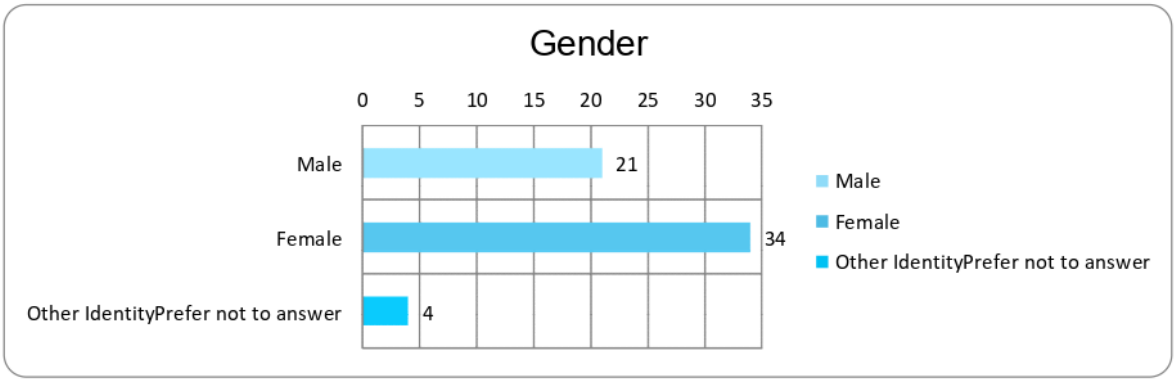
UFCS Survey Results

Total respondents: 59

Demographics





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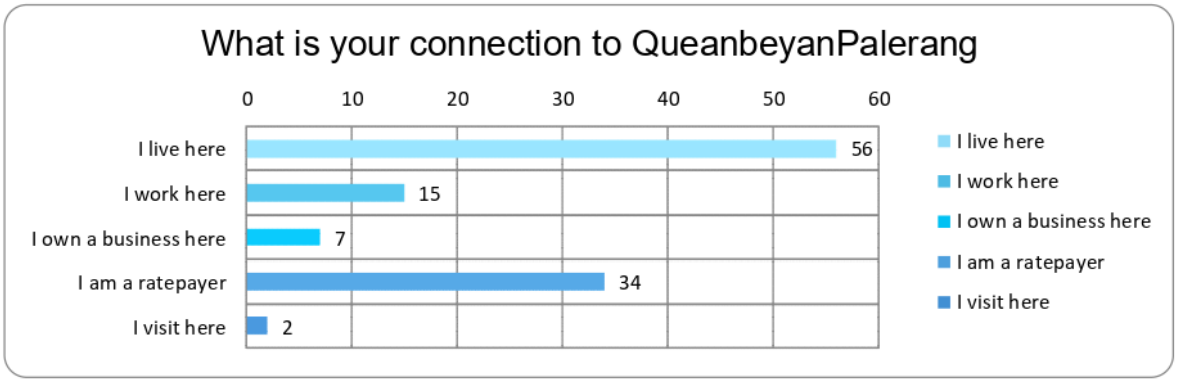
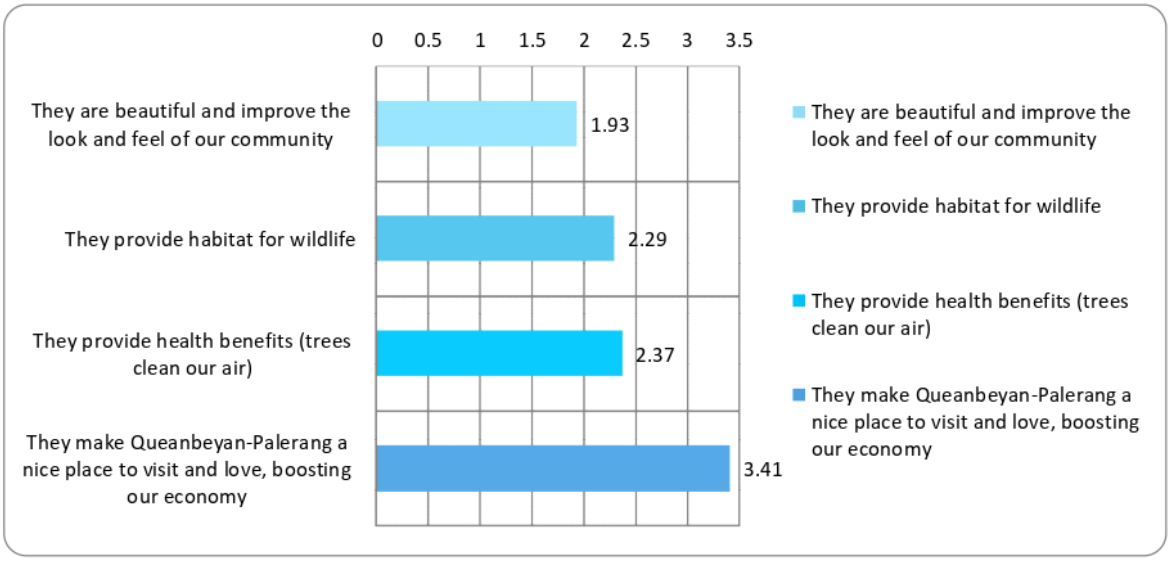
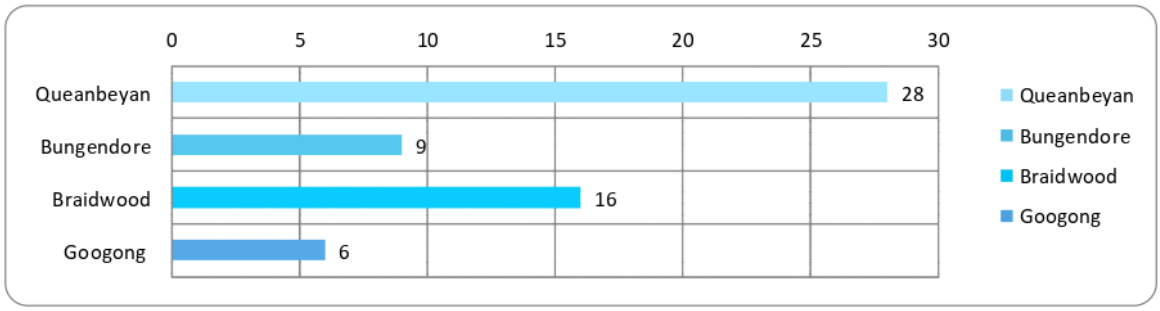
UFCS Survey Results



Question 1: What do you value most about Queanbeyan-Palerang's urban trees? Rank from most important.



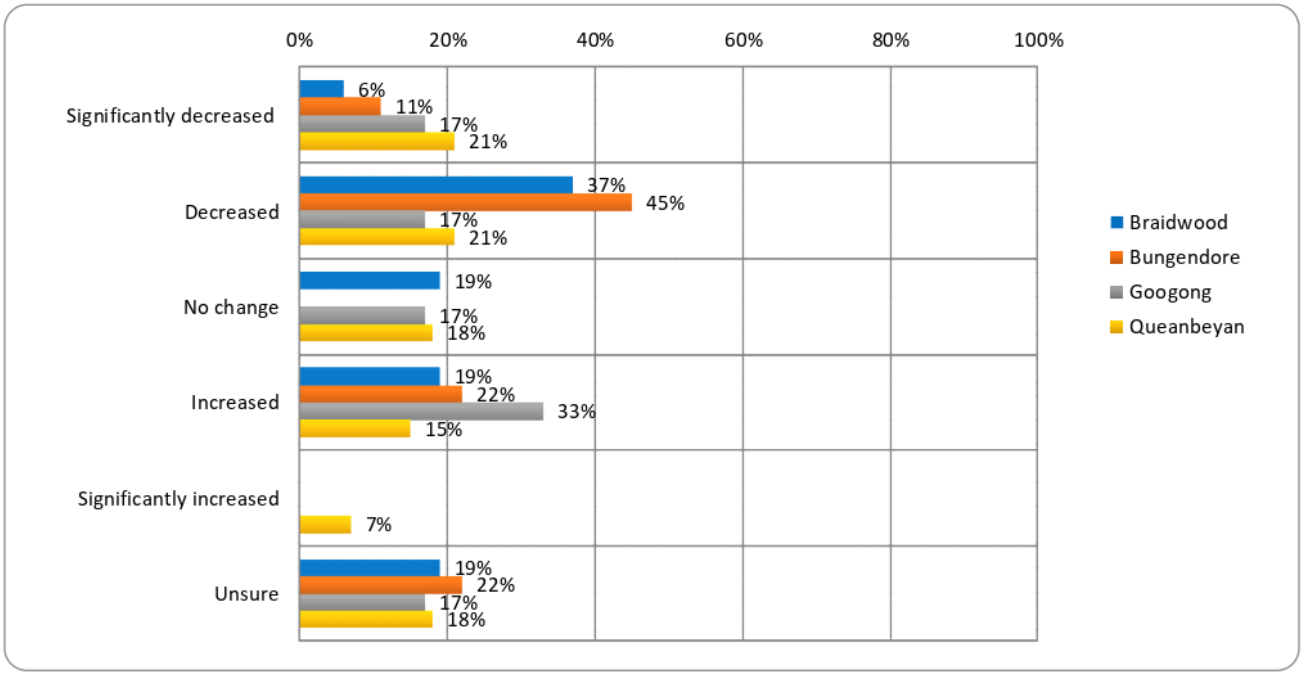
Question 2: Select your urban area (if you live in a rural area this maybe the urban area you visit the most)



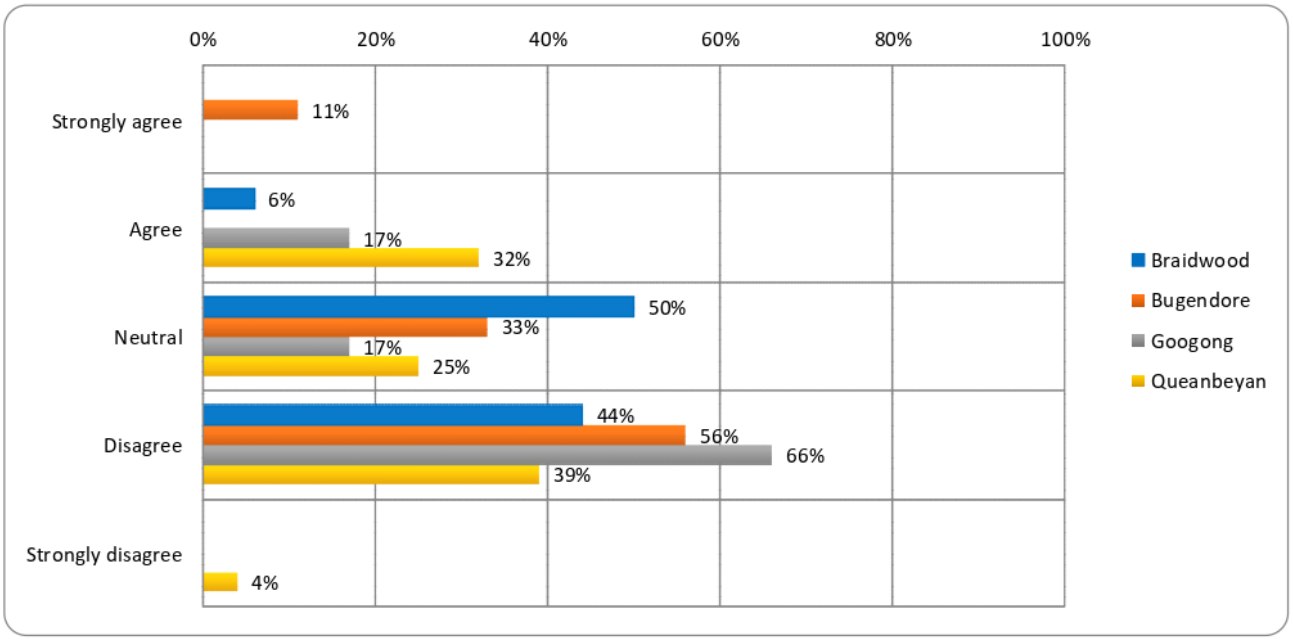
QPRC

UFCS Survey Results

Q2 A. How has the tree canopy cover changer over the past ten years in your urban area?



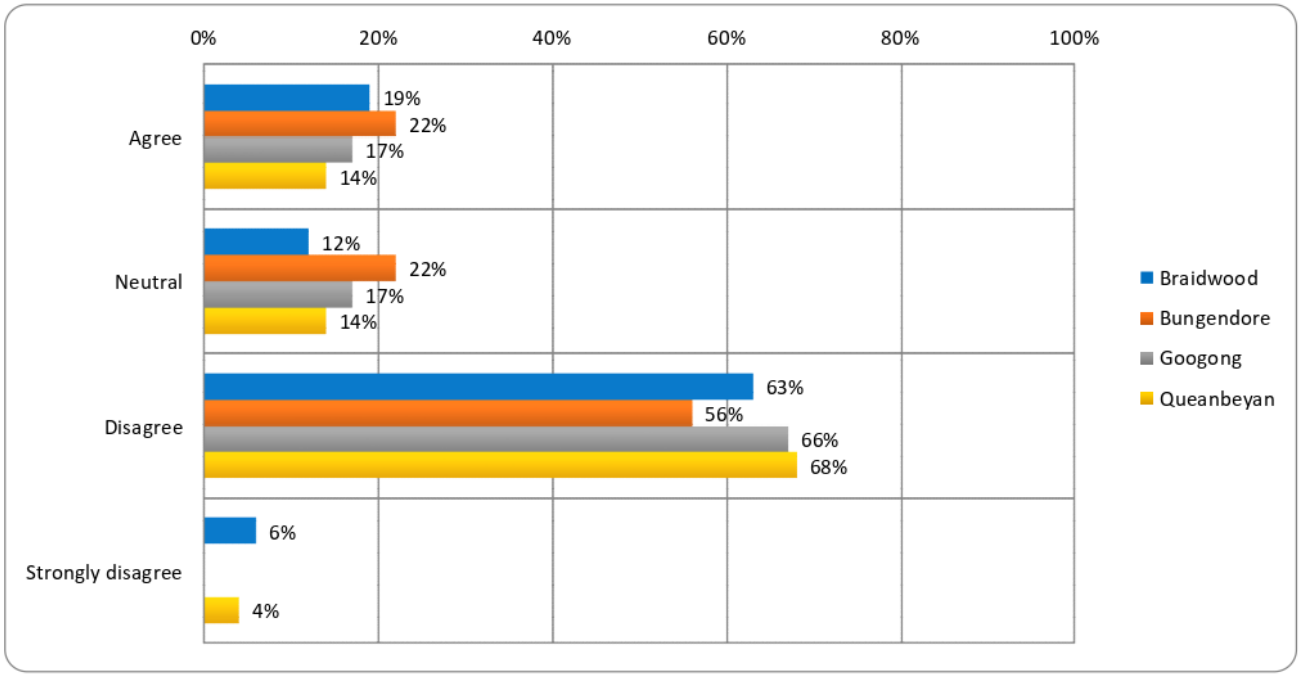
Q2 B. Our urban forest is healthy



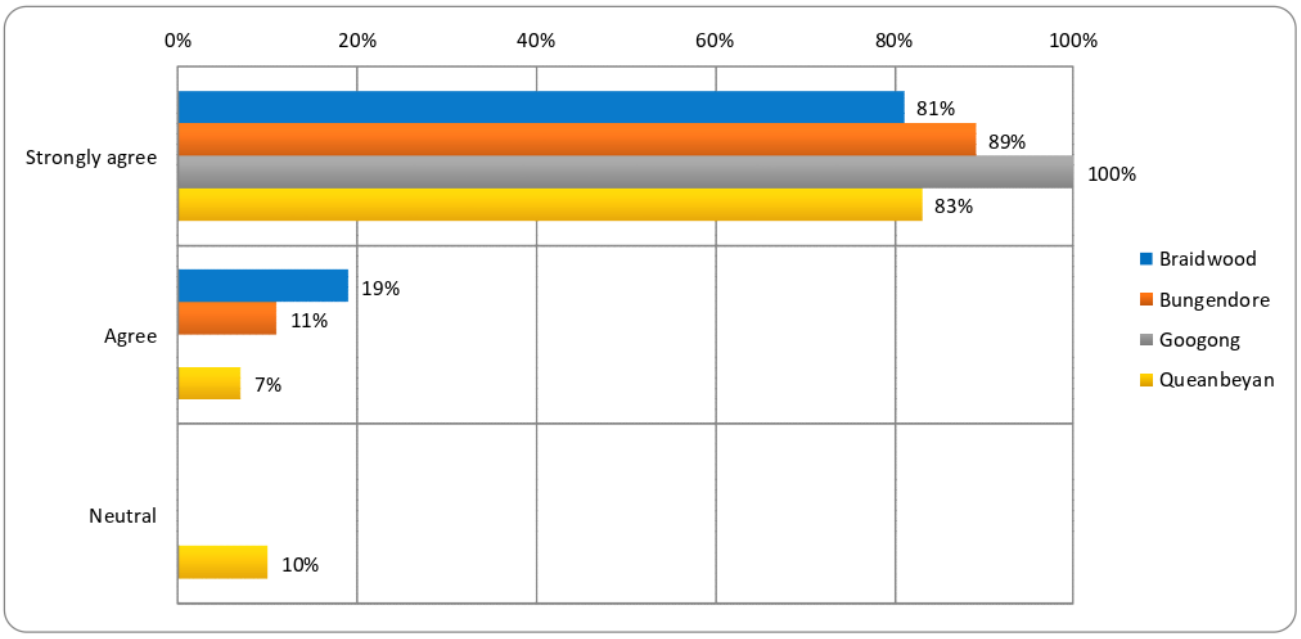
QPRC

UFCS Survey Results

Q2 C. Our urban forest is equally distributed



Q2 D. Our urban forest should be increased



QPRC

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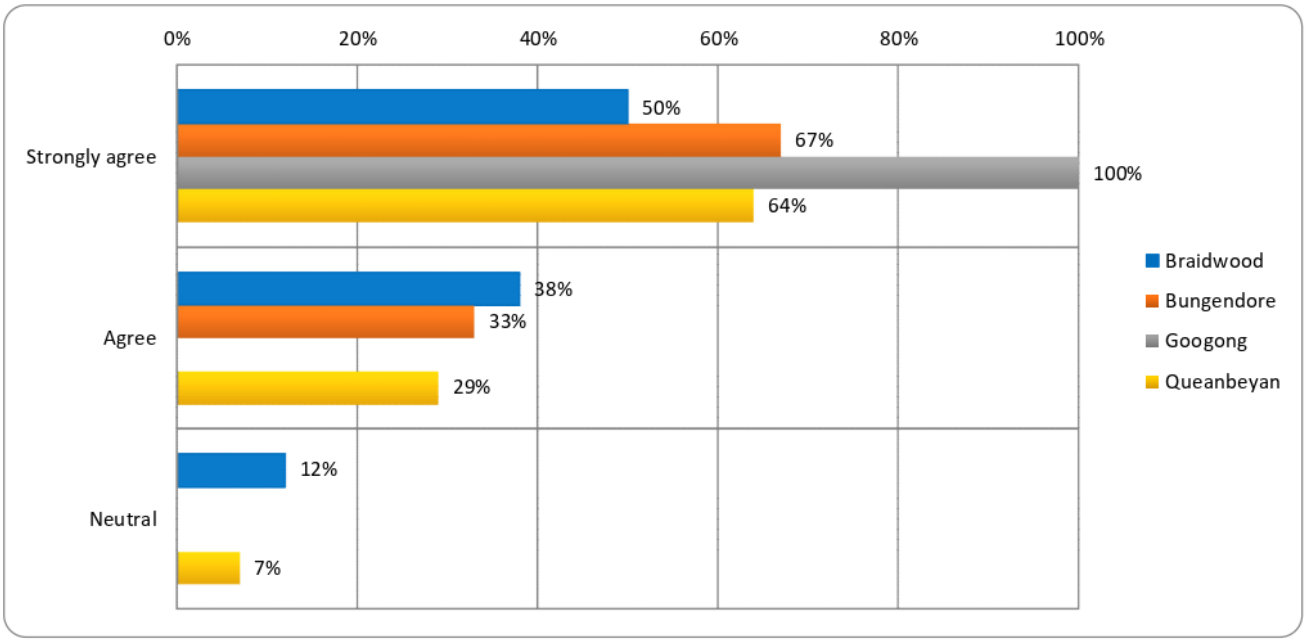
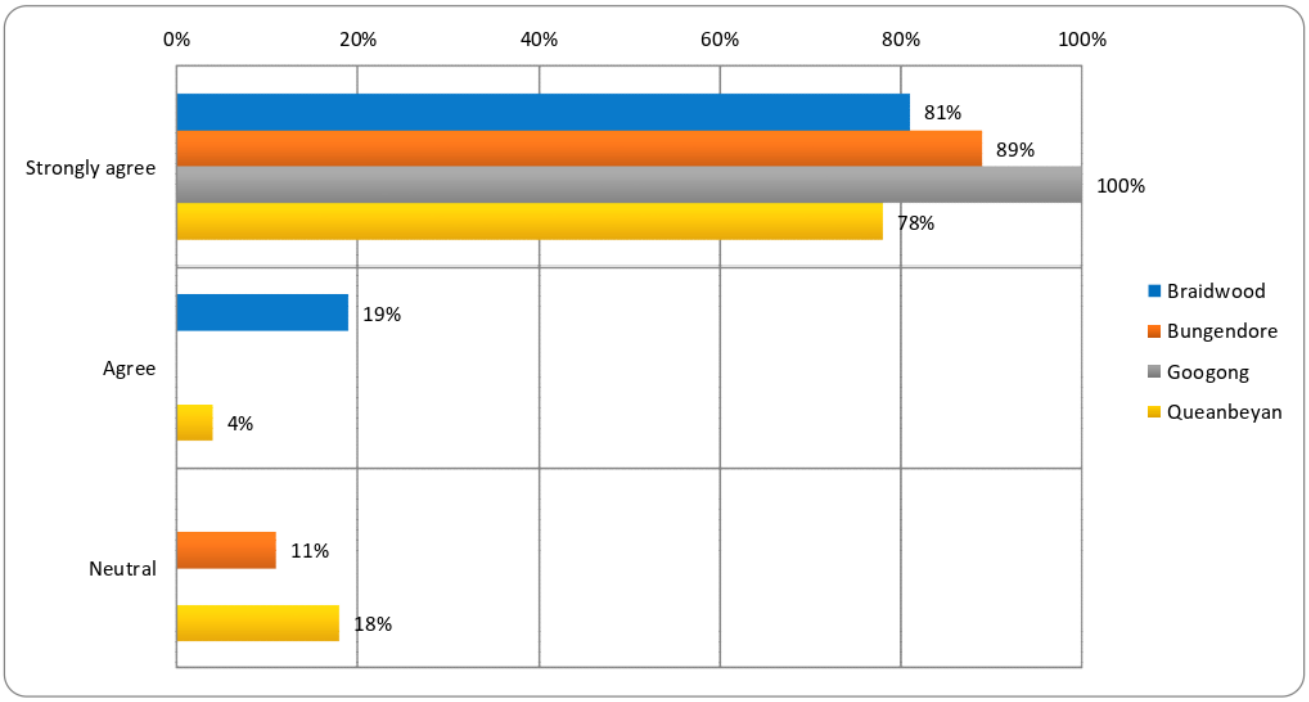
UFCS Survey Results

Q2 E. Our urban forest is important as habitat for local fauna



Q2 F. Our urban forest is important for human health and wellbeing

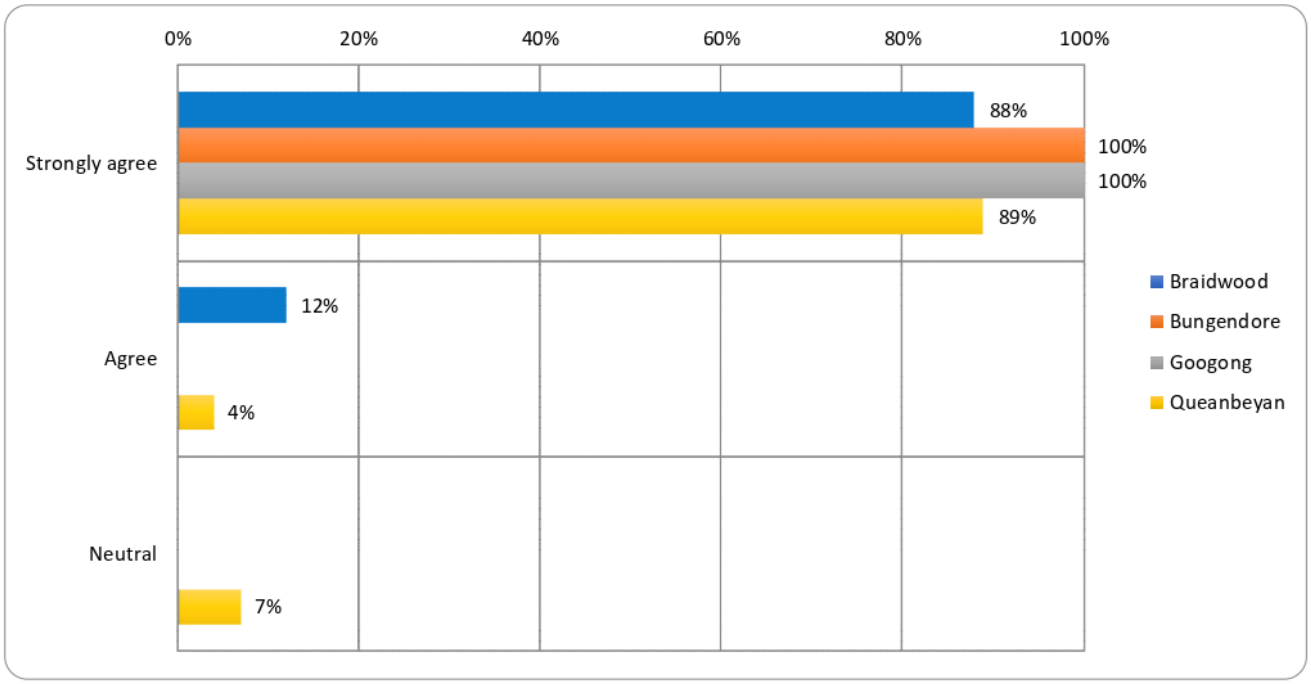


QPRC

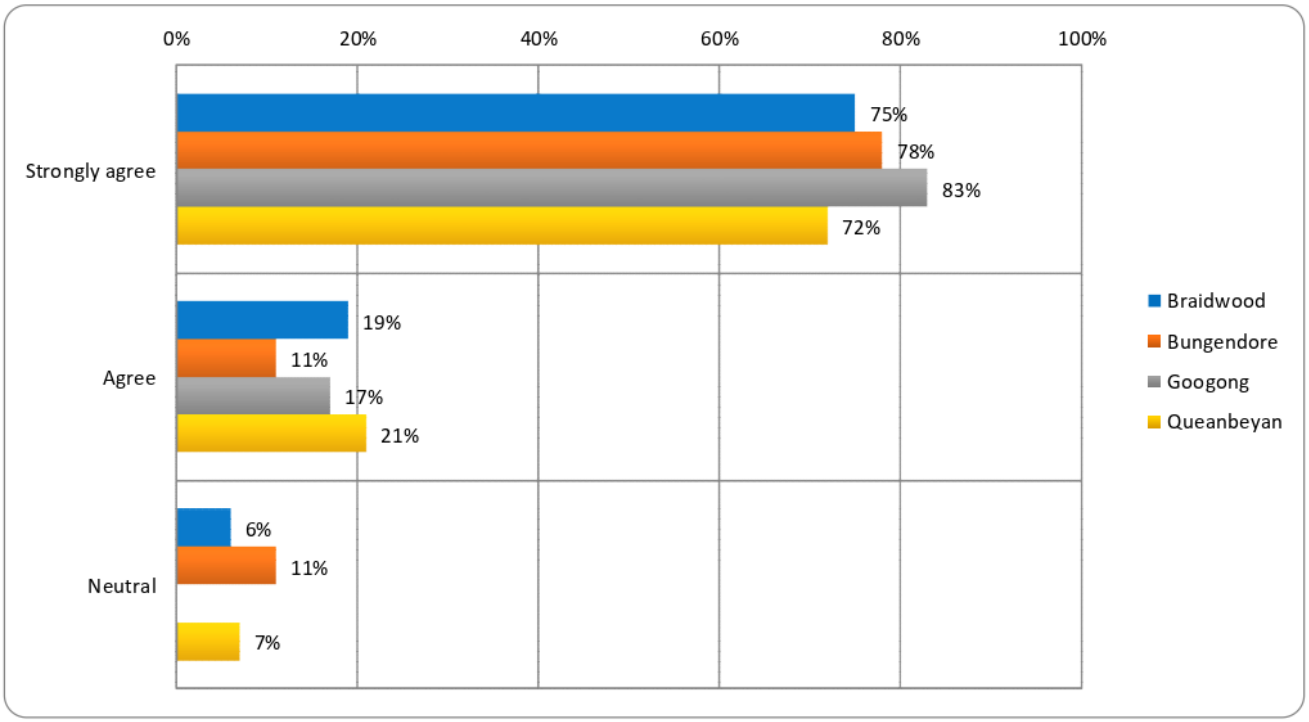
7

UFCS Survey Results

Q2 G. Our urban forest is important for liveability



Q2 H. Our urban forest is important for resilience



QPRC

8

Q3 A 2020 study of QPRC found that 85% of our urban areas experience urban heat island effects. Other than trees, what other cooling strategies or infrastructure might help us cool our towns and cities?

Summary of key themes from most popular to least popular
Reduce impermeable surfaces
Cool roofs (light coloured)
Increase green spaces (Inc. native grasses and shrubs)
Sustainable/heat mitigating building design
Increase parks and sportsfields (irrigated grass)
Shade structures or covered areas
Green roofs and vertical gardens
Create wetlands similar to the ACT
Road/pavement surface colour
Water features throughout the urban setting
Protecting riparian zones
Ban over a certain percentage of synthetic turf, pebbles or gravel in nature strips
Underground or shaded carparks
Increase garden beds
Minimum green space requirements
Appropriate housing sizes to allow for green spaces
Portable planter boxes
Reduce traffic in CBD areas and reclaim carparks for greenery
Heat pumps
Shading with solar panels
Misting fans
Education
Mandate or set requirements for utilities to be placed underground

QPRC

UFCS Survey Results

Responses
Less concrete. Local native perennial grasses on nature strips like Canberra. Great for lizards. DONT CHOP DOWN TREES over 10 years old when building new developments. 20 years till they come back. Offsets at the very least. Green roof strategies. 'Groofs' underway in Melbourne. Employ more urban park managers with proper local wildlife habitat bush regeneration credentials not just arborists and horticulturalists. Things like mistletoe are excellent at cooling and proving food and refuge in heat for birds and arboreal animals. Just need management by paid staff with proper training.
Wetlands in parks.
Less use of concrete, soft underplanting's, more grassed areas.
House/building sizes that better match the lot. Minimum green space rules
Green walls and green roofs
Additional grassed areas, shade parking areas with shade sails, vegetate traffic islands with native species, allow lighter/reflective roof coverings and discourage new buildings from having dark coloured roofs.
Unfortunately, only trees
Permeable surfaces e.g. footpaths
Shade sails, water gardens, turf and other plant cover, moveable planters
Less ground surface locked under bitumen and concrete. More parks and gardens. Protected and rehabilitated riparian zones so creeks and rivers suffer less evaporation.
more research on roof materials to reduce heat sink ban synthetic turf building design!! to reduce need for air con etc extend urban forest idea into the suburbs so area is enlarged - at present far too many Queanbeyan trees are being cut down
3/4 of the urban centres in QPRC see significant vehicle traffic (Canberra to coast) especially during the hotter months. Strategies to funnel this flow of traffic away from the hotter areas would help, though it must be balanced with economic needs. Eg: Reclaim some parking space in the city centres to support more urban greenery and establish shaded, natural-surfaced car parks in the periphery & on green strips would reduce the number of hot cars soaking and radiating heat in the centres. Smart/porous pavements that promote water retention and evaporative cooling would help too, especially in Braidwood where the main street floods in heavy rain events. Water retention in the city centre supports more urban greenery with less reliance on irrigation (see above suggestion about reclaiming some parking spots in main streets). Designing new developments with improving air flows in mind.

UFCS Survey Results

Improve building isolation at every opportunity, to provide more options for taking refuge from the heat without relying on energy-intensive solutions like A/C. Explore the use of heat pumps for heating/cooling needs (some egs from Europe at various scales: https://www.ehpa.org/fileadmin/red/03._Media/03.02_Studies_and_reports/Large_heat_pumps_in_Europe_MDN_II_final4_small.pdf)
If there is ever off-street parking developed in Braidwood, I would love to see it shaded with solar panels to power nearby buildings (they do this in Western Australia). Having healthy weed free waterways also helps- there are a few creeks through town that could provide cooling and microclimates, as well as lovely recreational areas but are very congested with weeds.
Mister on the verandas of main street, terraces Open public buildings for refuges
Minimising reflective hard surfaces, green roofs on all new building
Shrub and grass cover as well as trees, linked to replacing hard, impervious ground surfaces with pervious, vegetated surfaces (see ACT plants for hotter future report and list by Cris Brack and others from ANU for good recommendations). Shade provided via eaves, external structures, etc around dwellings, along with passive cooling design for dwellings and other buildings. Fine scale planning to ensure air/wind movement in built-up areas.
Reduce large areas of concrete and paving
Change in the colour of the road surface and roof tiles. Reduction in hardscape areas of new buildings.
If you mean outdoors, shade sails in playgrounds etc.
Stop planning from allowing dark coloured rooves!!!! Reduce bitumen and hard dark surfaces.
Reduce reflective surfaces Build better/smart buildings which reduce heat effect Reduce city car parks. Car parks are high heat absorbing materials (increase more public transport, or undercover car parks
Green spaces
Not running out of water. Creation of wetlands in surrounding rural areas
Green walls on buildings. Garden beds in public areas. Water features in public areas.
Refer to your Surface Heat Mapping Report, e.g. encourage green roofs on commercial buildings (where PV panels are not present), green walls on larger multi-unit developments, lighter colouring for roofs and pavement, develop stormwater wetlands (see ACT examples), selective installation of fountains, covered pavements (more verandas over footpaths and even pergola-like structures, especially with vegetation, over walkways), and reduced expanses of open car parking.
Shade structures in public areas. Sprinkler systems on open parks. Misters. Designing for the environment - passive solar and cross ventilation air flow.
Stop using concrete, especially large central car parks. Bungendore is a very good example currently, cancel that plan.

UFCS Survey Results

I think the best approach is a combination of trees and revitalising disused infrastructure. The report overlooks the use of man-made materials, such as shade cloths.
Minimise the use of dark coloured paving tiles and bitumen where possible... They suck in the Sun's heat; I favour the use of light colour tinted paths and pavers. Where possible replace thirsty grass lawns with hardy ground cover plants.
Ban black roofs and black walls which receive significant sunlight on hot days these act as heat banks, especially tiles and bricks or concrete walls.
Less hard surfaces, more reflective rather than heat retaining structures, reduced traffic
Less paved area where it isn't necessary. Grass/other vegetation instead of concrete
Replace front lawn with native vegetation Reduce open air car park and/or shade them Require buildings to have cross ventilation and shade
Reduction of concrete and changes to bitumen used to reduce heat retention and increase in plantings along roadways.
reduce road widths / lanes - create more urban green space.
Lighter coloured roofing?
The types of buildings and construction materials in future development. Roof top or balcony gardens and vertical gardens
Less concrete paving, pathways, wider nature strips, better aircon units that don't pump hot air out.
Ban dark roofs (grey colour) and focus on albedo generating housing (white).
Setting goals on reflection capacity of new buildings Water features in urban settings
Try and space out the massive car parks everywhere. I drive and walk but Queanbeyan is a really crappy place to get around in on foot, so often you have to walk across big car parks to get to a location
Underground car parks
There are too many black roofs. Ban black roofs and black walls which receive significant sunlight on hot days. They act as heat banks, especially tiles and bricks or concrete walls. The local concrete paths (lightly coloured) are relatively cool on hot days. When we built, there were certain bricks at the brick place that were noticeably cooler in the direct sun (possibly denser bricks?).
Aside from trees, shrubberies, hedges, grasses both lawns and native plantings, other groundcovers, all have a critical role in cooling. Planning regulations need to work so as to reduce concrete in driveways, living areas and replace with softer materials, vegetation,

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paving. Seek bitumen with lighter shades and similar. Buildings can have more reflective outer skins to reflect solar radiation.
Googong is an example of poor town planning. Look at Google satellite maps to note the sea of grey roofs. No wonder it is a heat trap. All proposed buildings should have shading impacts noted and addressed via available software apps.
More gardens and grass, rather than concrete and bitumen. Light coloured roads and carparks.
More grass Less concrete Green buildings and rooftops
Any green in the landscape (apart from plastic grass) will help, meaning gardens and lawns as well as trees and shrubs; deciduous plants are the best choice in this climate for that job. Severely restricting the use of concrete and bitumen, and replacing with other surfaces that are permeable and allow plants to grow in between will help. One example is the use of concrete or paved tracks for driveways rather than concrete slabs. The colour of buildings is important too: the current fashion for black or grey roofs is not good for keeping urban areas cool and Council should mandate against that choice of colour. Another fashion, for using pebbles or gravel instead of plants on nature strips, is also a problem that Council could solve. Even footpaths and gutters could be redesigned to be heat reflectors instead of heat retainers in towns.
Light coloured roofs, air flow and ventilation, water for heat sinks may perhaps assist
Reduce heat retention of land surfaces through e.g. reflectivity.
Large to medium bodies of water. Reducing emissions on a larger scale via a conversion to electric transport.
Use white roofs, roads, vehicles or anything white to reflect heat away. NASA has said that if all of the world's roofs were white there would be no global warming! But still retain and plant trees!
'- QPRC/NSW should treat 'heat emissions' under a pollution strategy, whereby an externality of one entity negatively impacts other non-related entity(s). This might enable use of many more robust instruments to shape behaviours of private, commercial and public actors. - QPRC needs to amend their processes to consider permeable area of individual approvals and works within their local context. Take Googong as an example - how have we approved the building of a suburb in the 2010s with such poor heat island performance metrics? This effect is also occurring on a smaller scale. Take for example the new river walk footpath along Trinculo Place in Queanbeyan. I regularly use this path and thought it was a wonderful job by Council, but if we stand back, what we have actually done is nibble away at the river corridor...only by 1-2m...but it all adds up over time. What we could have done is absorb the footpath into the existing roadway - or ideally remove the road and other footpath gaining permeable area by then only needing 1-2 m of paving in total. I would be surprised if the land value of nearby apartments didn't rise as a result, assuming vehicle access was addressed.

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- More pressure should be placed on utility companies to put phone and electricity underground in established suburbs. Above ground they obviously reduce tree canopy - we are effectively having to pay people to heat our cities by having them trim the trees. This is a perverse decision driven by short term economics which don't account for externalities. - Information is of course always important, so the Council has a role in 'packaging' information to support decision making. For example, I was unaware of the 'carbon sink forest offset' from the ATO. I wonder how many other programs are already available for various actors. This would require development of 12-15 'personas' and matching incentives/disincentives to the desired behaviours. And Council could take an active role in feeding back why these initiatives are not being adopted by citizens of the QPRC region. - Lastly, I would urge QPRC, the Local Government Council Association and/or the State Government to collaboratively rely on "expert" advice. While I have my opinions, I know a lot of research has already been done in this area. We should pool our expertise for this work.
Unsure. My thoughts are that shade provided by tress, along with the transpiration would be the best (and cheapest?) way to cool a streetscape.
Action to reduce carbon emissions to zero by 2030 by councils, state and federal governments as well as by individuals. Plus, more wetland areas, ponds, fountains, verandas, awnings and replacing concrete and bitumen paths and drives with less heat absorbing materials. Fix up council regulations for building houses - ban dark rooves, black/charcoal bricks, concrete driveways. Mass tree planting on public land. Planting of good shade trees on every street in Bungendore. Enforce developers to tree up 30% of land developed for housing estates. Conservation policy to protect existing trees. I have witnessed hundreds of trees destroyed during the last 15 years in Bungendore.
The "2020 study" by Edge Environment is a bogus report describing problems that simply doesn't exist. I hope that council hasn't paid them any money for that rubbish. Bungendore is not an "urban heat island" at all. Quite the contrary, Bungendore township day temperatures are lower than the surrounding farmland and natural bushland as clearly shown in Figures 1, 6, 12 and 15. The maps also indicate that Queanbeyan and Googong are no worse than the surrounding countryside. Trees are nice, but the 2020 report is by no means a valid document upon which to base council planning decisions.

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Q4 During a heatwave and/or extreme hot day, how do you currently take refuge from the heat? For example, in an air-conditioned shopping centre, a park, or at home.

Summary of key themes from most popular to least popular
Stay at home with air cooling system on
Stay at home (other e.g. passive cooling)
Go for a swim in the river or local pool
Visit air conditioned business and attractions
Sit in the shade (under a tree, shade structure)
Visit the local Library
Escape to cooler climates e.g. the mountains or the coast

Responses
Cool house with cold towel around my neck and fan. Air con in office
Sit in the shade.
Stay indoors at home or find a shady spot under a tree
At home with air conditioning
Stay inside, at home, air-condition and go for swim
Air-conditioned shopping centre/movie theatre, stay at home and hide from the heat.
Stay indoors in our house.
At home

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Evaporative cooling at home, during humid days when the evap does not work we close up the house, adjust our activities to be quiet during hottest times, sit on the tile floor, feet in a bucket etc. We do not usually go out.
I usually stay at home or go out to the river.
at home or park def not shopping centre
Usually at home with low-energy solutions (evaporative cooling with a wet towel and a fan). In more extreme cases, use of air conditioning (at home or in a public space)
I go inside the oldest part of my 160-year house, which is stone. I do not really go outside. In the morning of a hot day I might go to the Shoalhaven river at Bombay. But I like to stay near home so I can check on animals and water plants as needed.
If at home inside
In Monga national park In the library a/c
Mostly at home (which is not air conditioned)
Minimise reliance on air conditioning by active management of dwelling, eg opening house at night to cool, use of thermal curtains, blocking sunlight entry during heat of day.
At home
stay inside with the house all closed up and an air conditioner running intermittently.
At home
At home, where I shut the house down with curtains drawn closed and then open the house up at night to cool down. I have also planted shade trees in my garden.
Stay at home, go to an air-conditioned shopping centre. Stay in shade
At home
I go to places where there is water and there is deciduous trees. Swim in the river.
At home
Have done all three on various occasions, but they would be the main ways. Have also less frequently chosen to escape to cooler areas like the coast or mountains for a reprieve.

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At home or at a pool
Keep away from urban centres with large areas of concrete and tar. We have very good cool areas in our garden thanks to thick deciduous tree cover. This is a no brainer.
At home. Our home is naturally cool without air-conditioning due to the verandas.
I have roller shutters and magnetite retro fitted double glazing at home to shut out the extreme Summer heat or Winter nights cold. In Summer I mostly just reduce activity and have lots of ice-cold drinks, fans on low and South facing front door is open wide, I have solar skylights and don't need to switch on lights. When I go to town I go early and come home before it gets too hot. My transport is a bicycle.
Air-conditioned house. Visit the Pool.
Air-conditioned business, shady park
Stay home inside.
I don't have air conditioning, so I close all the windows and curtains If extreme I go to the art gallery in Canberra
to the large Queanbeyan park late afternoon for respite once the house is too hot
In a well-insulated, well-built home that we actively cool at night with the Easterly winds. I do also like Dickson pool. The tree canopy there is very effective
home or Queanbeyan pool
Stay home in air conditioning
At home
At home- large garden, sunblock blinds, house closed during the day and opened at night.
Lock up the house, shut blinds.
At home, downstairs where it is cooler
stay at home

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Air conditioning at home or work
We rely on our air conditioned house. Sometimes we head down to the local creek or visit the cinema or shopping centre.
air -conditioning in home (retired) or resting in shaded gardens, parks .
If at home, inside. We have no air conditioning as we built a double glazed home that was orientated to benefit from changing solar position and wind direction.
At home.
At home In the shade outside e.g. Town Park
Our home is an old stone house which stays cool except in heatwave conditions, when we used fans to cool off a bit. The house is also surrounded by mature deciduous trees which provide brilliant shade and a cool refuge from the hot sun, while letting the sun in to warm the house through the winter. We planted the trees ourselves 4 decades ago because we recognised the importance of creating a microclimate around our house.
Under a tree outside or inside at home
In a cool part of the house. Nowadays we have air-conditioning too.
At home now we have aircon!
Under a tree or Home.
We stay inside and manage the house. We have planted more than 35 trees on our urban block and have installed a range of passive (awnings, double glazing) and active (evaporative) cooling. We are yet to 'lighten' our roof (due to cost), but plan to do so in the future.
Stay indoors with the fan on. Stay off the main street of Braidwood where the bitumen road absolutely bakes.
I work from home and stay inside which is air conditioned (by solar panels).
Palerang shire rarely has days hot enough to warrant seeking refuge. Use of words like "heatwave" and "extreme hot day" is an exaggeration. That being said, refuge from any unpleasant weather is usually taken at home when not at work.

UFCS Survey Results

Q5 In 10 years' time, if Queanbeyan-Palerang has a healthy urban forests and cool urban centres, what would you see in your area? Provide up to three phrases or sentences to describe your vision

Responses
Native perennial grassland cover to protect soil from drying out heat. Use of local native shrubs and willows to ensure we are a haven for woodland birds as we are in their habitat. Every street frontage enabled to grow shade trees that endure drought. No awful photinias.
Look at Googong, what a disaster. It wasn't there 10 years ago and now it's the most heat affected area. Are the planners so unaware, has heat mapping just been invented? Stop building such dense green less expanses of dark roofed, fence to fence mansions.
Greater birdlife in urban areas More people spending time outdoors in summer Overall mental health benefits
More greenery, more people enjoying outdoors
No comment
Healthy established neighbourhood trees in available council land (retention basins) and vegetated road islands that use indigenous native species. Dark roofs would also be discouraged to reduce heat absorption into homes/buildings.
As we live on a rural block, probably not much difference, but our trees will be larger. Every available space would be planted with trees.
More trees and vegetation throughout Braidwood, including Wallace Street.
More green and shady places as I walk around. Less exposed dirt and places for weeds to thrive. Lots more people outside enjoying a more hospitable environment.
Far more tree cover throughout the electorate, particularly focused on wildlife corridors and riparian zones. Large deciduous trees down the Main Street of Braidwood and along all roads (not just the highway) leading out of Braidwood. Revegetation of areas of any size throughout the Braidwood urban area that can be planted up, whether road verges (such as Bombay Rd), picnic areas (such as Archer Picnic Area), or commons (such as Hassell Reserve).
as much urban forest as possible with the best town planning and building design to work with the urban forest
Urban centres that are greener, more shaded and less congested with traffic. An integrated mix of natural and technological solutions for trapping and harnessing heat and regulating moisture.
We would see more kids and adults playing and walking around enjoying our lovely streets. More tourists enjoying our town. More diverse populations of birds and insects.
More native trees throughout the shire to create healthy habitats for wildlife and for humans Also some nice deciduous trees to make the area a destination for tourists

QPRC

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Shade trees complemented by shrubbery and ground cover Green roofs on all council buildings and new builds
Enhanced management of vegetation along river corridor and urban creek/drainage corridors; greater use of local tree and shrub species, especially dwarf varieties of main local eucalypt species and kurrajong for drought reliance; long term plan for replacement of mature trees, including wildlife breeding hollows.
Street trees with a spreading canopy under which you could walk and park your car. More grasslands and less concrete. Covered outdoor seating areas e.g. Umbrellas and shade sails.
A connected community. Healthy people and places. A liveable city.
Lots of shady deciduous trees in all town streets, along pathways and in public spaces
Why are the leafy suburb the desirable wealthy ones? Poor suburbs could be leafy and desirable too and make our lives richer in every way, even if not in money terms.
Green/Cool/shady outdoor places to be with family Less cars in the centre of town. Lots of big green drought tolerant trees lining our streets
Much more green space and more trees
We would have restored the soil, vegetation and waterways as much as possible. We would have water security, natural in-place fire breaks, and productive landscapes. Mostly this would happen on the fringes of the urban areas.
Queanbeyan's urban areas coolest in Australia thanks to the intense tree planting over the past 10 years. There's not a street in Queanbeyan that isn't amassed in trees. The streets are so cool as the trees shade the road pavement.
Streets and outdoor areas with shady tree cover. Cool, shady oases with water features that allow sitting in a cooling breeze.
1. Flourishing wildlife by creating conservation areas and thoughtfully constructed corridors for wildlife. 2. An abundance of flourishing green spaces to everyone to enjoy and connect with nature 3. Healthy ecosystems for flora & fauna to flourish & clean air and water for us
A proper tree protection plan (currently council does not seem to place higher value on existing trees than on the seedling that may be planted to replace it. The best time to plant a tree is 20 years ago, a freshly planted seedling will not have a positive effect for a long time, protect what is already there.) Proper community consultation on all issues pertaining to the removal of trees. Phase out concrete as the main material used in car parks. Encourage Bungendore residents to use bicycles and walk so that we don't need as many car parks.

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Tree lined streets. Currently there are few trees. The streetscape in old suburbs, such as Kingston in the ACT are significantly cooler and more attractive than those in newer suburbs such as the developed areas of Bungendore. While this takes many years to establish, hopefully in 10 years time the main work to developing a robust canopy would be completed.
I love urban infill and detest urban sprawl. Give me more neighbours in buildings that have trees on the rooves, plants growing up the outside walls. Safe balconies large enough for people to have young children playing in the fresh air, not confined inside and to be able to grow vegetables and decorative plants. I don't like the way we are having to travel further each year before we find natural countryside and native bushland. More places close to home for people to take the children to play. Parklets should be within easy walking distance.
More urban forests, with lots of large indigenous trees for shade and habitat. More trees in parking areas such as schools and shops. House development which allows more trees on each block.
I would like to see large trees that provide ample shade. Native birds nesting. Currently we have a massive problem with myna birds which wouldn't be so bad with more native flora/fauna.
Birds More walking
The streets are lined with large native canopy trees and shrubs. The green spaces and parklands that are currently under planted are now growing larger locally native trees that are vital to native animals. Increase in animal activity and more people walking around because it's a more much pleasant place to explore.
I would love to see something like the trees at Dickson pool at Bungendore pool and park or green spaces. It is also lovely to walk along tree canopy places
Very well shaded footpaths and walking tracks, specifically around the entire bridge-to-bridge loop in Qbn. Qbn CBD children's parks (including Japanese sister park in Qbn East) have heavy shade and CBD streets share similar urban tree coverage and pedestrian space as Crawford street near Royal Hotel.
Kids able to play in outdoor spaces. Increase wildlife and healthy habitats. A heathy lush environment with minimal pollution.
Increased street planting; cheaper water to encourage gardening
No extra large roads, focus on cycling and small paths, and better public transport connections, especially to Canberra. This includes allowances for eScooters and bikes on buses.
A predominantly native urban forest with plants selected to fill three levels - canopy, bush layer and ground cover. An urban forest which has continuity with natural areas such as parks to provide continuous foraging habitat for native animals including hollow-dwellers. An urban forest which is cared for by local residents, who understand the importance of habitat and carbon uptake as well as cooling effects of trees and plants
Leafy, Pedestrian friendly, progressive

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Improved liveability
More urban forests, with lots of large indigenous trees with good canopy cover for shade and habitat. More trees in parking areas such as schools and shops to provide shade for vehicles. More large trees in public areas such as parks, playgrounds.
Broad and elongated vegetated areas that have dense segments for habitat, segments for human movement, to reduce heating and slow drying winds. Some of these vegetated areas can comprise sustainable fruit orchards, eg figs, nuts, quince, various berries, various plums, olives.... Some of these vegetated areas can provide new community gardens. A number of larger taller buildings will have rooftop gardens, plantings.
More space between residences. Subject future building proposals to rigorous solar passive design principals. Treat each major urban area separately as they each have unique microclimates - one design philosophy won't suit all locations.
Public buildings built with sustainable practises and materials, eg roofs covered in plants. Native trees and grasslands acting as corridors for wildlife. Lots of houses with solar panels on their roofs.
Green buildings and rooftops Urban parks with vegetation cover A lot more street trees
I would definitely hesitate to make any predictions about what we will see in our area in 10 years' time, given the melting of ice caps and glaciers, the warming of oceans and the consequent rapid change in climatic conditions, especially in Australia. Much of Australia may be unfit for human habitation by then, given the rate global heating is progressing, and extreme weather events are making huge changes to landscapes and will only have accelerated by that time. However what I'd like to see is a town-scape dominated by vegetation, which I gather is what this strategy is about, rather than what we have now, which is a very human-dominated landscape.
More comfortable and pleasant place to be on hot summer days Green surrounds are good for mental health Tree corridors link in with regional vegetation belts as habitat and climate-influencers
Shady trees over car-parks in the city centre. More street trees.
A beautiful place to live that we can be proud of and our children can love to grow up in. A cooler and more charming town centre and suburbs.
Cool, pleasant, shaded areas, including street trees, provided Council waters them!
'The metrics would need to be refined, but:

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- Evapotranspiration within any urban statistical mesh block remain -2/+2 degrees of pre-settlement estimates on the coldest/hottest 24 hr period annually. - Total domestic and commercial energy and water usage (even on extreme days) remain within (a range) based on long term annual (as opposed to seasonal) averages. - Outdoor activity by citizens remains the same or increases on extreme days. That is, people seek out public spaces for relief rather than needing to retreat into private spaces. (An historical example is where groups planned picnics at swimming spots during heatwaves)
Shade trees for the main street of Braidwood. Additional shade trees throughout the town.
Community solar farm enabling people to keep cool in summer. Complete overhaul of council regulations regarding developers' and householder responsibilities. Increase in wildlife -and fewer species on the endangered or threatened list.
We don't need any wordy phrases to explain what we want here. Just more trees please, particularly along roadsides and in parks. Maybe some more shrubs and grass too. It's not rocket science.

Q6 Are there any other ideas, feedback, or comments you would like to make in relation to the Urban Forest and Cooling Strategy that is currently being developed?

Responses
Stop cutting back every living thing 3m from the edge of the road. If you plant low lying strong native perennial wildflowers like billy buttons you can exclude weeds and not have to spray or slash. Spraying all the roadside creates dead vegetable matter that is a fire risk too. And it certainly makes the roads HOTTER. Better to slow traffic down than kill the trees. Roadside trees are some of the biggest and most important habitat trees because they have not been historically cleared for agriculture.
Look at Googong ... then look at the plans for Tralee, North Bungendore et al and draw the bloody dots.
I would love to see council support the growing of fruit trees and vegetable gardens on nature strips. It's important to have shade and habitat but to include food forests as part of the plan would be a significant improvement, particularly for low income families who would benefit from the fresh free food.
Please ensure more natives are planted, not exotics
Yes. Please consider safety in relation to roads, sight distances, intersection, vision of vulnerable road users such as motorcyclists, pedestrians and cyclists when considering urban forests. The trees in Queanbeyan are amazing, but want

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to ensure no safety risks and hazards are introduced that compromise safety of people navigating Queanbeyan because they are obscured by trees.
Revegetation of traffic islands (Cooma St and Southbar Rd are good examples) with native indigenous species. At the moment, small isolated cement cut outs act as de facto plant beds that are filled with unattractive plants that provide no sheltering canopy. This project provides a good opportunity to improve the ascetics of these strips and also provides habitat and food sources to insects and birds. Water management will also need to be thought through as debris has been washed over the roads in the past.
Stop allowing developers to built ghettos that have no space on each building block to plant trees either on the block or on the sides of the streets!
We should be looking at more moveable shade options for the city centre. Along Crawford street it can be baking hot in summer - large semi-mobile tree planters with under planting would improve the amenity of this space which is relatively flat and smooth. I think they have done something similar in Sydney (featured in michael mobbs' sustainable house book?). Milkwood permaculture have used this idea to good effect in their rooftop garden project in Sydney too - details and plans on their website.
Support and education for landowners/farmers to encourage tree planting and holistic land management. There is incredible work being done in this region by Mulloon Creek Natural Farms and others - we need to showcase the benefits of farming and grazing in this way so that Queanbeyan/Palerang becomes a centre for regenerative agriculture, which has been shown to draw down carbon, build soil, hold moisture and drought-proof our land. That's the best cooling strategy I think we have.
extend it out into the suburbs!!!
More street planting in Braidwood. Develop the old D and S site as an off street car park with more trees and solar panels. Clear out and maintain the waterways through town. Encourage land owners to develop beautiful verge gardens instead of boring grass or gravel.
I really think more native trees and shrubs are a must to help our natural environment
Integrate urban vegetation planning and establishment with biodiversity conservation: most public plantings do not have wildlife habitat value.
A comprehensive street tree planting program for all of Braidwood, with trees having a spreading habit. Trees under powerlines can be pruned as in the ACT.
I would really love to see a green fund that builders/developers/tree removalists etc could pay into when clearing vegetation. It is not always appropriate to replace a tree in the same location and often replaced trees are not cared for adequately. If Council managed a green fund they could plant trees in public places and then nurture the trees to maturity. The funds could also go to public education, green experiments, habitat enhancement etc.
Please plant lots of shade trees, preferably deciduous. Native trees often don't provide good shade and are a fire hazard.

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Just get on with it!!!! I have been asking for the last 5 years for trees to be planted along Cooma Road! And plant proper tall shade trees, of all sorts, not just Chinese Pears!
You are promoting urban forest for climate control and yet you plan to take much of our only park to put large buildings to further distress our environment
We have destroyed 95% of the soil, vegetation, and waterway function. We are on the last 5%. Therefore we are having the problems with drought, fire and flooding. We have working models of how landscape repair can solve these symptoms of damaged landscapes. All the experiments are done, and the scientists are modelling it. It is now up to government at all levels to make it happen.
Keep up the good work. I hope you receive the funding to implement all your ideas.
Long overdue, given the time it will take for trees to mature. A possible side benefit of more tree-lined streets is drivers will slow down. The strategy should be complemented by an overall planning strategy more consistent with achieving greater liveability, sustainability and climate resilience.
If council is taking this issue seriously, they must not build the car park in Bungendore (and learn the obvious lessons this process can tell). The area proposed to demolish for a car park is currently already an urban forest. There will be significant urban warming in Bungendore's heart if it goes ahead. If it does, we will know you are not serious about this issue.
I have concern that periods of drought will be poorly accounted for. Irrigated areas, such as grassed ovals may be difficult to maintain in periods of drought. Additionally, they may provide the perception to the community that conserving water is not a priority. Therefore, I think drought proof cooling should be a target. I am strongly in favour of an increased canopy over irrigated open spaces. Fruit trees should be incorporated for the duel benefit of also nourishing the community. Deciduous trees should be considered as they bring nutrients to the surface as they drop their leaves, which in turn increases biodiversity. They also may protect from heat in the summer and allow warmth during the colder months. Additionally, they are also attractive such as the streets of Kingston in the ACT and the entrance to Tarago (which is a popular location for filming commercials. The approval of new developments should include a minimum tree per distance on the side of new roads so these initiatives are not required by Council. New common areas (such as the Bungendore sports hub) should include trees to provide shelter for spectators in the long term. Local businesses, and possibly residents, should be given the option to offset their carbon footprint by funding local tree

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planting. If this was implemented, it should be ensured that funding actually goes to additional tree planting in the local area.
Thank you for the opportunity to have a say.
More light-coloured roofs, to reduce solar heat gain on hot days and high R value roof insulation for winter, eg R6.3- R.7 to reduce heating costs.
The blocks in new development areas are way too small. They're all house - gutters sometimes touching. There is minimal room for trees and vegetation on the tiny blocks.
I would like residents to be supported to plant vegetation in front lawns to reduce watering requirement and provide better habitat for animals
I'm in full support of this initiative. Please consider choosing experienced consultants who choose endemic plants and consult with the local Indigenous community to embed their cultural connections into the plans.
Fantastic to hear.
Offer each Household in QBN 1 or 2 free trees selected by QPRC for pickup and planting on their property or on their nature strip. Use this as basis for establishing a QBN plant nursery. Replicate success in the ACT using Yarralumla nursery to create a garden city - decades of tree handouts allowing residents to plant and take ownership of their street scapes.
Encouragement for the community to also improve and grow their own trees and gardens to add to the urban greening.
Trial a temperate climate version of the Arbor being trialled in Cavanagh St in Darwin on Monaro St and Crawford St.
The community needs to be kept informed about progress towards meeting objectives and to be encouraged to participate - so Council needs clear targets and a clear enunciation of how neighbourhoods will benefit. Find places which are currently waste land and work out how to make them into forested areas - the areas either side of the railway come to mind - Council should negotiate with railway owners to enhance habitat e.g. make a planted walking corridor on the disused part of the rail line to Cooma. Encourage industrial area owners/renters to green their land - don't just limit the strategy to Council owned lands. Make sure it is not dominated by non-native trees (need education on value of natives). City of Melbourne has some good ideas https://www.melbourne.vic.gov.au/SiteCollectionDocuments/urban-forest-infographic.pdf and particularly re community involvement (individual tree data): http://melbourneurbanforestvisual.com.au/
I love that there is a strategy being developed, I hope you get given enough teeth and funding to pull it off. Would make a big difference to the area.
Avoid large Eucalypts in public areas, they drop dangerous limbs and poison the soil. The Plane trees on Rutledge Street are ideal.
More light coloured roofs, to reduce solar heat gain on hot days and high R value roof insulation for winter, eg R6.3- R.7 to reduce heating costs.

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Less restriction over grass verges. Allow us to plant drought resistant natives that demand less water usage than grass. Googong claims to be sustainable but only allowing grass is clear and blatant and unforgiving water wastage.
More creek lines in the city and nearby be revegetated with native regional species for biodiversity.
PA Yeomans "The City Forest" published 1971 should be mandatory reading for every urban planner/engineer applying for a position with QPRC. This 50 year old book predicts the inadequacy of contemporary urban design as demonstrated so tellingly by QPRC's approval of Googong
Climate change as well as human activity has produced urban heating. In order to combat climate change we must do a variety of actions now. QPRC could be a leader in this area, but unfortunately doesn't have the necessary determination or understanding to act. Things like motivating people to get solar power, use less water and gas, or to change to electric vehicles could easily be undertaken by the Council. Sadly, they are not interested.
The fact a strategy is being developed is a positive move my council.
I'm glad that Council has this strategy but at the same time the Council is approving and encouraging huge development plans which will only exacerbate the problems the strategy is supposed to be solving. I hope that when new councillors are elected in September, the direction of Council's policies will change towards real sustainability and away from development that benefits the pockets of developers and destroys amenity for residents.
Tree species selection is important - should be able to handle droughts/ low water demand, but also low bushfire risk. Deciduous species good to allow sunshine in during winter... if there are such species out there! Layout for public safety (low risk of falling branches, safe to walk in at night etc) is also important
I think it's an excellent idea. Although native trees are great please also consider big deciduous trees such as elms and oaks which provide vast shade and beauty.
Please STOP knocking down established trees. They are so hard to nurture. Council has bulldozed them at the new sports area in Bungendore and presumably will in the new car park. And when you do plant trees WATER them for some years. After the debacle of uprooting the hardly ever watered London Plane Trees from Molonglo St, replanting them on Frogs Hollow and again initially not watering them, you didn't water the replacement trees sufficiently so that the three most westerly ones were in dire straits at the end of summer.
'- The report did not describe the difference from baseline (e.g. pre-settlement). This will be essential to tell us where to target effort and how much effort is required. - The report included rural areas. It would be preferable if the urban and rural strategy/performance were separate. This is not because they are not connected, but because it's likely action in the rural areas will be easier than acting in the urban areas. Planting "a million trees" (only on farms), while admirable, won't address the urban heat island effect, which is what will proportionately impact people. - The data is not granular enough to support policy making. It doesn't tell us the greatest contributors (Council, State or

UFCS Survey Results

Private or particular infrastructure such as dark roofs/solar panels!) This doesn't have to be from the QPRC area but could leverage comparable work already done. https://researchdata.edu.au/search/#!/rows=100/sort=score%20desc/class=collection/p=1/q=heat%20island/) https://aurin.org.au/data-playground-for-research-students/ - Googong should be a case study into the interaction of QPRC/NSW/National planning and approval processes as well as incentives/influences contributing to unsustainable suburbs.
Two years ago, in the lead-up to the bushfires I stepped out on to Wallace Street to speak to a friend in his parked car. The temperature was 38 degrees on that day but standing on the bitumen road surface was considerably hotter and so unbearable I had to leave - immediately! It was a furnace and with no tree cover these summer temperatures will kill all daytime foot traffic in town. It is extremely unpleasant, and yet shade trees could change this with the added benefit of providing beautiful leaf colour in Autumn.
In my opinion the methods for implementing this strategy are the same as the methods for implementing urban beautification strategies. Trees, shrubs, and grass look good.

QUEANBEYAN-PALERANG REGIONAL COUNCIL

Council Meeting Attachment

28 JULY 2021

ITEM 9.14 PUBLIC PLACE ELECTRIC VEHICLE CHARGING INFRASTRUCTURE - MODELS OF OWNERSHIP AND PROCUREMENT

ATTACHMENT 1 PUBLIC PLACE ELECTRIC VEHICLE CHARGING REPORT- MODELS OF OWNERSHIP AND PROCUREMENT

Public Place Electric Vehicle Charging Infrastructure Report:

Procurement and Models of Ownerships

Ref: 1339671

Public Place Electric Vehicle Charging Infrastructure Report

Offices: Council headquarters – 256 Crawford St
Bungendore Office – 10 Majara St
Braidwood Office – 144 Wallace St

Contact: **P:** 1300 735 025
E: council@qprc.nsw.gov.au
W: www.qprc.nsw.gov.au

QPRC

Public Place Electric Vehicle Charging Infrastructure Report

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Public Place Electric Vehicle Charging Infrastructure Report

1 Introduction/background

Public place electric vehicle (EV) charging infrastructure has been identified by both the community and all levels of government as critical infrastructure which is required to help facilitate and drive the uptake of electric vehicles in Australia.

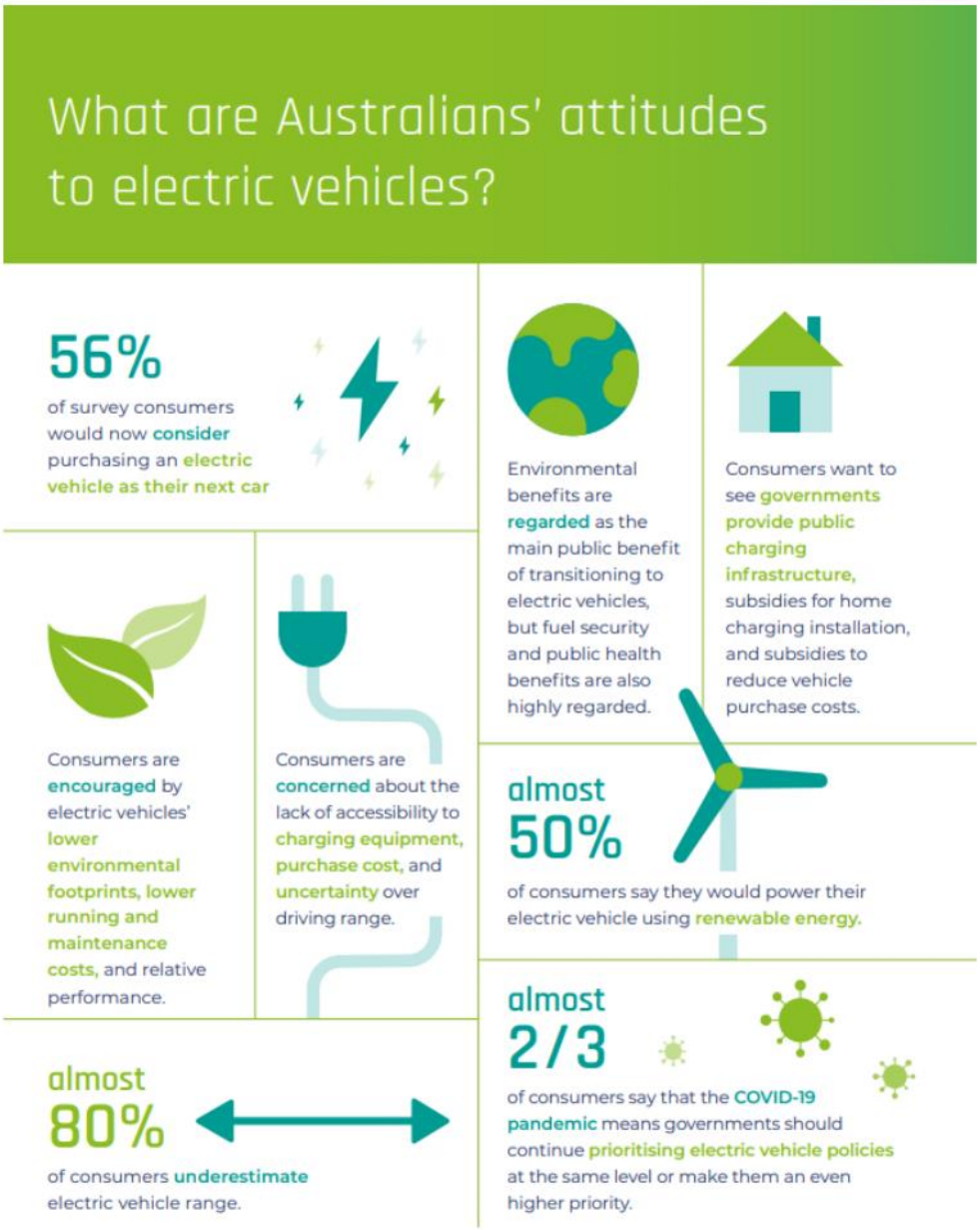
EV's are a proven technology with a number of strong environmental, economic and social benefits for the individual, the community and the planet. These benefits include a vast improvement in air quality in our cities, a reduction in health costs caused by air pollution, less noise pollution and zero tailpipe greenhouse gas emissions. EV's are also much cheaper to run and require minimal servicing.

Whilst there are 11 million EV's on the road globally, only 0.6% (6700) of all cars sold in Australia in 2020 were EV's. However, EV's are still anticipated to make up well over 25% of new car sales by 2030. Furthermore, many automotive companies such as General Motors have committed to phasing out petroleum-powered cars and trucks and sell only vehicles that have zero tailpipe emissions by 2035.

A lack of recharging infrastructure and associated range 'anxiety' has been identified as a major barrier in the uptake of electric vehicles in Australia. By acknowledging the inevitability and desirability of electric vehicle adoption and by providing or facilitating public place EV charging, Council has the opportunity to demonstrate innovative leadership in this area.

Additionally, with the increasing number of car park and CBD developments in Queanbeyan-Palerang and the growing interest from third party public place EV charging infrastructure providers, it is timely to discuss community EV charging infrastructure, including procurement and models of ownership. Furthermore, Council is in the process of developing a 'Fleet and Plant Decarbonisation' report and EV suitability transition tool for its fleet, and accordingly the strategic placement of EV chargers will also support this.

Public Place Electric Vehicle Charging Infrastructure Report



Source: Electric Vehicle Council- Local Government Resource Pack

2 Strategic overview

There are a number of benefits associated with Council supporting the provision of EV charging infrastructure, including:

- Demonstrating leadership and support for innovative low emission EV's.
- Drawing attention and raising awareness of EV's and low emission transport.
- Reducing the "range anxiety" associated with EV's in the community.
- Achieving strategic priorities set out in a number of Council strategies and action plans.
- Potential revenue stream.

Community Strategic Plan
Strategic priorities: 'adoption of sustainable and renewable energy, the protection of the natural environment and the implementation of good environmental practices.'

QPRC Community Climate Change Action Plan
• Action 6.2.2- Facilitate installation of electric car recharging points
• Action 6.2.14- Advocate for incentives for low to zero emission vehicle users

Community consultation and comments
Council received a number of comments during the 2019 Climate Change Action survey and Community Climate Change Action Plan community consultation workshops to facilitate installation of public place EV chargers. For example, the following statement from the 2019 Climate Change Action survey, 'transport is the area where I have not taken action, without sufficient charging points
electric cars are not yet an option'

3 Purpose of the Report

This report has been prepared to identify procurement options and models of ownership including opportunities, costs, benefits and risks for facilitating and installing EV charging infrastructure in Queanbeyan-Palerang.

Models of ownership, include:

- EV Charging infrastructure (stations) owned and operated by Council or operated by a third party.
- Co-investment between Council and a third party, operated through the third party.
- Owned and operated by a third party, lease agreement with Council for car parking space(s).
- Lease and subscription.

Procurement options, include:

- Tenders or requests for quotes
- Accepting current proposal(s) from third parties
- Await further proposals from third parties

4 Plug types and charging stations

Plug Types

It is true that EV's from different manufacturers may have different plugs. However, the EV industry has addressed this issue in Australia by standardising the range of plugs that should be used on vehicles available in Australia. The Federal Chamber of Automotive Industries (FCAI) endorses the Type 2 (Mennekes) plug for AC charging and both the CCS and ChaDeMo for DC charging- **highlighted in table 1**. All passenger EV's available in Australia are now compliant with this endorsement. However, many older EV's (mostly older Tesla versions, pre-2019) are not compliant with this standard.

Table 1. *Analysis of plug types*

Plug Type	AC: Type 1 (J1772)	AC: Type 2 (Mennekes)	AC: GB/T	AC: Type 2 (Tesla)	DC: CCS 1	DC: CCS 2	DC: CHAdeMO	DC: Chaoji	DC-GB/T	DC- Telsa Super Charger
Plug Structure										
Usage	Standard plug type used in North America and Japan for AC charging. In Australia this plug standard is still used by the Mitsubishi Outlander (PHEV) and most other pre-2018 (first generation) EV's	Standard plug type used in Australia and Europe for AC charging. Within the Australian market this is now used by most EV manufacturers including Tesla	Standard plug used in China for AC charging. Similar to type 2 plug but with additional male connectors. Not used in Australia	Pre 2019 (Australia) plug standard used by Tesla for AC charging	Standard plug type used in North America and South Korea for DC charging. Uncommon in Australia. Can be used for AC charging as well	Standard plug type used in Australia and Europe for DC charging. Within the Australian market this is now used by most EV manufacturers including Tesla. Can be used for AC charging as well	Standard plug type used in Australia and Japan for DC charging. Not as common in Australia as CCS 2. The Nissan Leaf has both Type 2 and CHAdeMO sockets and the Tesla Model S and Model X can use a CHAdeMO via an adapter	Next generation of CHAdeMO plugs which integrate with GB/T plugs. Will become the standard plug type in China/Japan and possibly Australia. CCS charging via an adapter	Standard plug used in China for DC charging. Not used in Australia	Pre 2019 (Australia) plug standard used by Tesla for DC charging

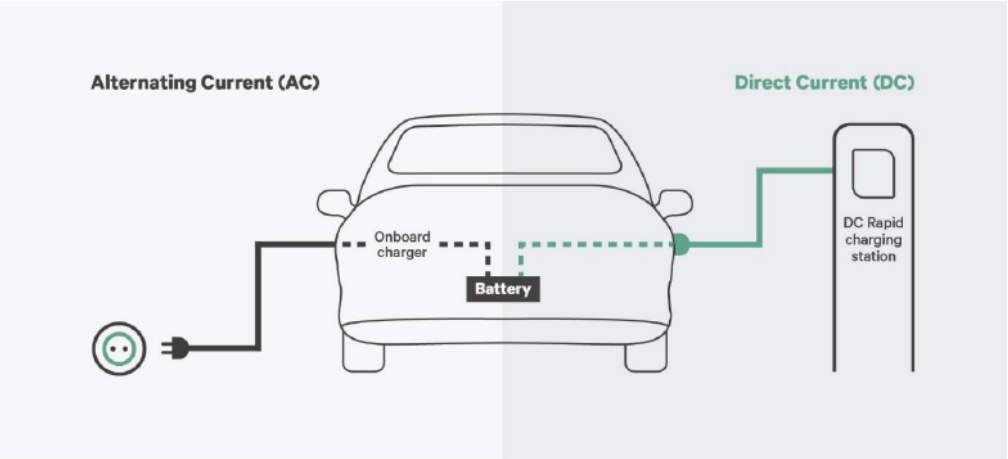
Public Place Electric Vehicle Charging Infrastructure Report

AC vs DC

When it comes to electric mobility, two separate electrical currents can be used to fuel an EV—AC (alternating current) and DC (direct current). The main difference between AC and DC charging is where the conversion from AC to DC happens. No matter whether an EV uses an AC or DC charging station, the EV's battery will still only store DC energy.

When you use a DC charging station, the conversion from AC (from the grid) to DC happens within the charging station—allowing DC power to flow directly from the station and into the battery. Because the conversion process happens inside the more spacious charging station and not the EV, larger converters can be used to convert AC power from the grid very quickly. As a result, some DC stations can provide up to 350 kW of power and fully charge an EV in 10 minutes. When it comes to AC, the converter is built inside the car. It is called the "onboard charger" though it really is a converter. It converts power from AC to DC and then feeds it into the car's battery.

Another key difference between AC and DC charging is the charging curve. With AC charging, the power flowing to an EV represents a flat line. This is due to the relatively small onboard charger that can only receive a limited power spread over longer periods. DC charging, on the other hand, forms a degrading charging curve. This is due to the EV's battery initially accepting a quicker flow of power but gradually asking for less as it reaches full capacity.



Source: Wallbox- EV Charging Current: What's the difference Between AC and DC?
https://wallbox.com/en_catalog/faqs-difference-ac-dc

Charging stations

Most EV charging stations are compatible with Australian plug standards. Some older charging stations still however use older plug types, mostly type 1 and tesla, although many are in the process of being retrofitted to current Australian plug standards. Older EV models which are non-compliant with Australia plug standards (most first generation EVs before 2019) are still able to use CCS2, CHAdeMO or Type 2 plugs via an adapter.

Nearly all EV charging stations are available to all models of EVs. Tesla DC Superchargers are the exception to this rule. While they use CCS 2 plugs, they are only accessible by Tesla vehicles. To further complicate matters, Tesla also make AC "Destination" chargers which use type 2 plugs but may be accessible to non-Teslas if the station manager has enabled legacy mode. The below table demonstrates the different levels of both AC and DC charging stations.

Public Place Electric Vehicle Charging Infrastructure Report

Table 2. *Charging station analysis*

	Level 1	Level 2		Level 3		
Charging Type	**AC-** Household power point and adapter	**AC**- Household power point/wall charger	**AC**- 5 pin power point/wall or post charger	**DC**-Fast charger	**DC** Fast charger	DC- Ultra fast charger
Usual Location	Household garages	Household garages	'Destinations': shopping centres, carparks, accommodation, restaurants, pubs	CBD carparks, highways or main thoroughfares, takeaway restaurants	Highways	Major highways, motorways
Image						
kW (up to)	2.3kW	7.4kW	22kW	50kW	120kW	350kW
Range added per 10 minutes charging	4km	7km	22km	49km	115km	343kms

5 Current charging infrastructure in the region

Whilst most EV charging will ultimately be done at home or at the workplace, investment in public EV charging stations will help to further support uptake and provide confidence to mitigate range anxiety. As of August 2020, there are 2307 public charging stations across Australia, 357 of which are fast chargers. In Queanbeyan-Palerang, three public EV charging stations are currently available or under construction, further details can be found in the below table and map.

Table 3. *Details of public EV charging stations in Queanbeyan-Palerang*

Location	Owner/Operator	Type	Number of Stations & ChargePoint's
Googong Netball Courts: 13-17 Heazlett Street, Googong (under construction)	PEET/Village Centre?	Type 2- 22kW	2 Stations -4 Charging Point's
810 Norton Road, Wamboin	Contentious Character (winery)	Type 1- 2.3 kW (destination)	2 Stations -2 Charging Point's
21 Malbon Street, Bungendore	The Carrington Inn	Tesla- 6 kW (destination)	2 Stations -2 Charging Point's

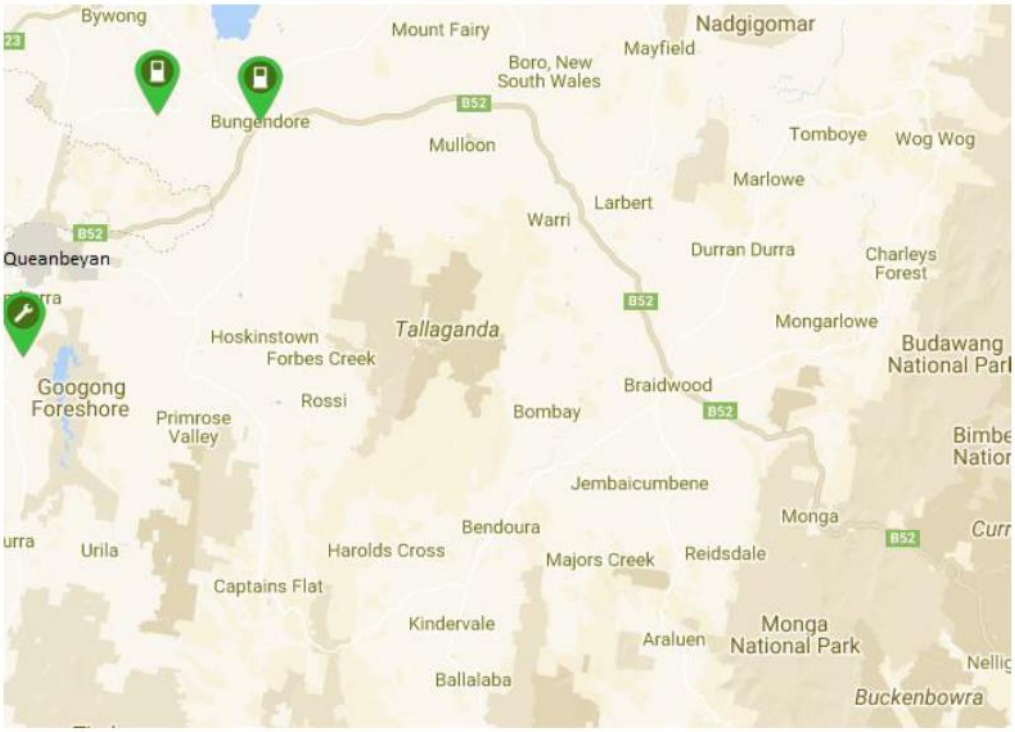


Figure 1. *Map of public EV charging stations in Queanbeyan-Palerang. Source PlugShare* https://www.plugshare.com/

6 Available infrastructure for EV charging

There are a number of organisations that provide Electric Vehicle Service Equipment – EVSE and support infrastructure and software. The following are listed on the Electric Vehicle Council website. Some provide EV charging equipment, and some provide EV charging software support (charging station bookings, accounting pre-pay, tracking use etc) and some provide both.

- **eGo Dock**

E-station aim is to serve the emerging Electric Vehicle market in Australia by providing low cost plug in charge points to cities, local councils and private operator.

- **Everty**

Everty provides turnkey solutions for EV charging including a cloud-based, hardware-agnostic charging management platform for private, public and commercial use.

- **EVSE**

ChargePoint is a network operator of public and private charging stations providing the full scope of charging requirements.

- **JET Charge**

JET Charge has developed sophisticated and affordable EV charging solutions for residential premises, apartment complexes, workplaces and public charging stations.

- **Keba**

Keba provide holistic infrastructure solution for electromobility. Charging stations that are easy to install and operate.

- **NHP Electric Engineering**

With 50 years of electrical industry experience and 17 branches across Australia, NHP is well placed to meet EV infrastructure requirements.

- **Schneider Electrical**

Schneider Electric, the world leader in energy management, offers a variety of solutions, installation and maintenance services for charging electric cars with EVlink.

- **Tritium**

Tritium has developed a product portfolio of world-leading technologies that have been used in numerous solar car, electric vehicle and renewable energy projects globally.

- **Chargefox**

Chargefox is Australia's largest and fastest growing electric vehicle charging network.

- **Evie**

Evie Networks was founded in 2017 to build Australia's largest electric vehicle fast charging network.

- **ChargePoint**

ChargePoint is the world's largest network of electric vehicle (EV) charging stations. 100 ChargePoint units exist in Australia with the majority centred around Melbourne, Sydney and Brisbane.

7 NSW Government Electric Vehicle Strategy

The NSW Government is investing almost half a billion dollars in tax cuts and incentives to drive uptake and reduce barriers for EV purchases over the next four years. Below is a snapshot of key actions under the Strategy which will support the uptake of electric vehicles and associated infrastructure.

Rebates for new electric vehicle purchases
From 1 September 2021, the NSW Government will provide rebates of $3000 for the first 25,000 EVs sold for under $68,750. These rebates are designed to encourage EV uptake and are targeted to the cars more people can afford.

Phase out of stamp duty for electric vehicle purchases
The NSW Government will remove stamp duty from EVs under $78,000 purchased from 1 September 2021 and from all other EVs and plug-in hybrids from 1 July 2027 or when EVs make up at least 30% of new car sales, at which time a road user charge will also be introduced.

Fleet incentives to help local councils and businesses buy electric vehicles
As previously committed under the NSW Net Zero Plan: 2020-2030, the NSW Government will offer incentives to support medium to large sized fleets, such as local councils, car leasing companies and car share companies, to purchase battery or hydrogen fuel cell EVs. The incentives will be offered through a reverse auction process, ensuring the Government maximises value for money and uptake of EVs in New South Wales.

Building a world-class electric vehicle charging network
The NSW Government will invest $171 million over the next four years to ensure widespread, world-class EV charging coverage so current and future EV drivers can be confident they can drive their vehicles whenever and wherever they need to.

Making it easy to drive an electric vehicle with access to transit lanes
The NSW Government will update policies and legislation to allow EV drivers to use T2 and T3 transit lanes for a limited time to encourage EV uptake.

Regional tourism benefits
The NSW Government will roll out 'EV Tourist Drives' across New South Wales to ensure regional communities share in the benefits of EV's. The NSW Government is co-investing in rolling out ultra-fast chargers at 100 km intervals across all major highways in New South Wales to make it easier for city-based and regional EV drivers to travel in regional areas.
The NSW Government will also provide grants to regional businesses to install charging points for their guests to attract EV drivers to explore the State.

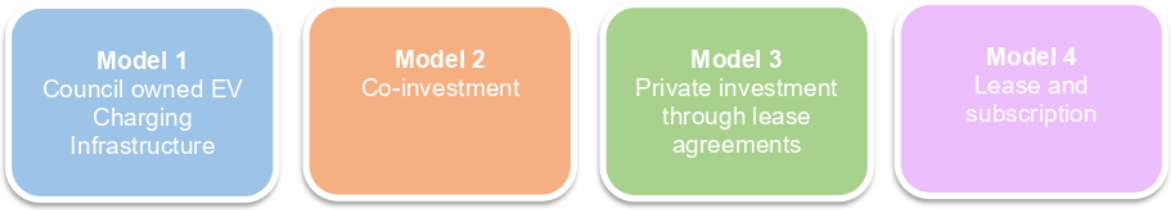
NSW GOVERNMENT

QPRC

Public Place Electric Vehicle Charging Infrastructure Report

8 Models of ownerships

There are a number of options available to Council for the provision of public place EV charging, ranging from provision and ownership to third party lease agreements. For public place EV charging, level 2 destination chargers (22kW) and level 3 fast chargers (50-120kW) are recommended.



Model 1: Council owned EV charging infrastructure
Council allocates budget to own, install and maintain EV charging infrastructure. Operation to be by staff or a third party.

Operation by a third party may include: handling of transactions, access to call centres and driver support, detailed reporting and analysis on charger uses, monitoring of the chargers data feed for faults and maintenance, reconciliation of billing each month and payment to Council as well as the charges appearing on the operators app and platform.

***Table 4**. Council owner EV charging infrastructure summary*

What is required	Benefits	Risks	Costs *indicative	ROI/10 Year Savings* Indicative	Examples
• Provision of EV charging infrastructure • Installation including electricity network upgrades if necessary • Provision and operation of EV charging software (monitoring, payment, operations) • Ongoing maintenance • Painting of car parking spaces and signage • Monitoring and enforcement of charging	• Council sets terms and conditions of charging including costs • No long term contracts • Potential for revenue particularly in the later third of the decade	• Significant capital and maintenance costs to Council • Vandalism, damage, or loss of installed chargers • No observed users of installed EV chargers, may invite criticism from sceptics • Uptake in EV's is lower than forecasted • ROI may exceed warranties • Lithium batteries and chargers are as yet, untested over 10 to 12 years	**22kW AC charger (Council Operated)** Capex: $5000-$13,500 Opex: $900-$1600 p.a. **22kW AC charger (Third Party Operated)** Capex: $4000-$8500 Opex: $1100-$2000 p.a. **50kW-120kW DC charger (Council Operated)** Capex: $68,000-$127,000 (may exceed $200,000) Opex: $900-$2100 p.a. **50kW-120kW DC charger (Third Party Operated)** Capex: $67,000-$122,000 (may exceed $200,000) Opex: $1500-$4500 p.a.	**22kW charger Council Operated** ROI: 8+ years 10 year savings: $4000-$5000 **22kW charger Third Party Operated** ROI: 8+ years 10 years savings: $3000-$4000 **50kW charger Council Operated** ROI: 8-9+ years 10 year savings: $10,000-$15,000 **50kW charger Third Party Operated** ROI: 8-9+ years 10 year savings: $5,000-$10,000	• Moreland City Council • City of Adelaide • Tri Councils (Randwick, Waverly, Woollahra)

*Assumptions: Medium *200 charges 1st year increasing 30% every year, *fast 250 charges 1st year increasing 35% every year *45mins charging per use.*

Public Place Electric Vehicle Charging Infrastructure Report

Model 2: Co-Investment

Council and a third party co-invest to purchase and install EV charging infrastructure with the operation and maintenance conducted by the third party. Income split between Council and the third party as per the co-investment agreement.

***Table 5**. Co-Investment summary*

What is required	Benefits	Risks	Costs *indicative	ROI/10 Year Savings* Indicative
• Provision of EV charging infrastructure • Installation including electricity network upgrades if necessary • Painting of car parking spaces and signage • Monitoring and enforcement of charging	• Reduced capital costs • Reduced operational and maintenance costs • Potential for revenue particularly in the later third of the decade	• Significant capital costs to Council still remain • Vandalism, damage, or loss of installed chargers • No observed users of installed EV chargers, may invite criticism from sceptics • Uptake in EV's is lower than forecasted • Two parties involved in the contact- Council may not be able to set and adjust the conditions of charging • ROI may exceed warranties • Lithium batteries and chargers are as yet, untested over 10 to 12 years	**22kW AC charger** Capex: $2000-$4500 Opex: $200-$250 p.a. **50kW-120kW DC charger** Capex: $35,000-$65,000 (may exceed $100,000) Opex: $300-$400 p.a.	**22kW charger** ROI: 7+ years 10 year savings: $3000-$3500 **50kW charger** ROI: 9+ years 10 years savings: $2500-$5000

*Assumptions: Medium *200 charges 1st year increasing 30% every year, *fast 250 charges 1st year increasing 35% every year *45mins charging per use.*

Model 3: Enabling private investment through lease agreements

Facilitated by Council via access to public land i.e. carparks for EV charging in return for a lease/licence fee*. Council would not be responsible or bear the costs of purchasing, installing, operating and maintaining the EV charging infrastructure.

*Only if the company stands to make profit.

***Table 6**. Lease agreement summary*

What is required	Benefits	Risks	Costs *indicative	ROI/10 Year Savings* Indicative	Examples
• Long term lease agreement or contract • Potential painting of car parking spaces and signage • Potential monitoring and enforcement of charging	• No ongoing costs to Council i.e. maintenance, operations • No or limited capital costs to Council • Potential for revenue • Limited current and future risks to Council	• Long term contract or agreement • Potential exclusivity clauses • Council cannot set terms and conditions of charging including costs	N/A	$1-$200 a month per carparking space	• Wollongong City Council • Hornsby Shire Council • North Beaches Council • Shoalhaven City Council

Possible Model 4: Lease and subscription
The lease and subscription option is a new service being offered in Australia. In this option, Council would pay a lease or subscription fee for use. Terms, conditions and contractual agreements will vary, for example whether installation costs are included or excluded, whether ownership of hardware remains with the provider or with council at the end of the term and whether profit from charging is attributed to Council or leasing provider.

9 NRMA letter of Intent and current proposals

NRMA non-binding letter of intent
At the Council meeting of the 18th December 2018, Council resolved to sign a non-binding letter of intent with the NRMA for charging station(s) at the proposed Braidwood CBD off street carpark.

The key commercial terms of the agreement which has been agreed in principle, include:

- **Term:** the term for the licence to occupy will be a 5 year minimum period with an option for a further 5 year period.
- **Rent:** NRMA will be charged a peppercorn rent for the licence to occupy.
- **Capital and fit out:** NRMA will be responsible for installation and will pay for and own the chargers including painting/marking of parking bays(s) with EV parking symbols, any permits or payments and design and preparing plans.
- **Maintenance:** NRMA will be responsible for maintaining the chargers while QPRC will be responsible for maintaining the car parking spaces.
- **Branding:** the charger will be co-branded by NRMA and QPRC.
- **Charging costs:** initially charging will be free to the public, however, overtime it will evolve to only be free to NRMA members. Non-members will still be able to use the charging stations but at a cost.
- **Revenue**: NRMA will be entitled to 100% of any revenue. It is likely that payment will occur via an NRMA app, which NRMA will develop.
- **Access:** chargers will be accessible to the general public 24 hours a day 365 days a year.
- **Safety:** QPRC will ensure adequate site lighting.

Other EV charging proposals
Council has received an EV charging network proposal from Actew AGL/EVIE. Their proposal can be found in Appendix 1 of this report. Council also received a proposal from Chargefox, however unfortunately this was withdrawn due to the proponents being unable to secure grant funding to obtain the EV charging infrastructure and the associated lease agreement.

10 Procurement

Depending on the preferred model of ownership, Council may wish to go to tender or invite requests for quotes for the provision of EV charging infrastructure or for proposals to lease out Council owned car parking spaces for EV charging. Contrastingly Alternatively, Council may wish to explore current proposals further or await future voluntary submissions or proposals from third parties.

11 References

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EV Box, EV charging, the difference between AC and DC: https://blog.evbox.com/difference-between-ac-and-dc

PlugShare: https://www.plugshare.com/

NSW Government Electric Vehicle Strategy: https://www.nsw.gov.au/initiative/nsw-governments-electric-vehicle-strategy

Canterbury Bankstown Business Case, Changing Ahead, Provision of Public Place Electric Vehicle Charging Points in the City of Canterbury Bankstown: https://citiespowerpartnership.org.au/wp-content/uploads/2019/02/Electric-Vehicle-Business-Case-Charging-Ahead-City-of-Canterbury-Bankstown-web.pdf

Northern Beaches, Electric vehicle charging infrastructure plan (draft): https://yoursay.northernbeaches.nsw.gov.au/electric-vehicle-charging-infrastructure-plan

Public Place Electric Vehicle Charging Infrastructure Report

Appendix 1

***Table 7**. Indicative EV charging infrastructure costs*

	AC 22kW Destination Charger		50kW Fast Chargers	
Provision of EV charging infrastructure	$1500-$3000		$35,000-$60,000	
Installation including DA	$500-$3500		$30,000-$60,000 (can be up to $200,000)	
Provision of charging software	**Operated by Council** $1000-$5000	**Operated by third party** No cost	**Operated by Council** $1000-$5000	**Operated by third party** No cost
Operation	$400-$600 p.a. plus any staff costs	$600-$1000 p.a. and % (5) of transaction clip	$400-$600 p.a. plus any staff costs	$1000-$3000 p.a. and % (5) of transaction clip
Maintenance	$500-1000 p.a.	$500-1000 p.a.	$500-$1500 p.a.	$500-$1500 p.a.
Painting of car parking spaces and signage	$2000	$2000	$2000	$2000
Total	**Capex**: $5000-$13,500 **Opex**: $900-1600	**Capex:** $4000-$8500 **Opex**: $1100-$2000	**Capex:** $68,000-$127,000 **Opex**: $900-$2100	**Capex:** $60,000-$122,000 **Opex**: $1500-$4500

QUEANBEYAN-PALERANG REGIONAL COUNCIL

Council Meeting Attachment

28 JULY 2021

ITEM 9.15 SUSTAINABLE GARAGE REPAIR CAFE PROPOSAL - 88 WALLACE STREET, BRAIDWOOD

ATTACHMENT 1 INFORMATION ON HOW A COMMUNITY REPAIR SHOP MIGHT WORK

Repair Café

Toss it? No way!

INFORMATION PACKAGE

Organise your own Repair Café

www.repaircafe.org

Acknowledgements

Publication: Repair Café Netherlands Foundation
Text and photos: Martine Postma (photo page 7 (middle), 19, 27: Ilvy Njiokiktjien)

Disclaimer

No rights can be derived from the information in this package. The Repair Café Netherlands Foundation cannot be held liable for any damages arising from carrying out the advice contained in this package. Local organisers must cover potential risks themselves and they are responsible for safety in their Repair Café.

Dear local organiser,

We are really pleased you are enthusiastic about Repair Café! And that you wish to get a Repair Café up and running in the place where you live. A Repair Café is urgently needed because far too many things get thrown away unnecessarily, even where you live. People with practical knowledge often stand unwillingly on the sidelines.

That can change! By setting up a Repair Café in your town or city, you can actively contribute to a more sustainable society. You can help create a society where everyone can find a place, where repair expertise is cherished and passed on, and where valuable raw materials are used in a responsible way.

The Repair Café Netherlands Foundation will happily help you get started. This information package contains all sorts of practical tips to assist in setting up a structured Repair Café where you live. If possible, we will support the launch of your local Repair Café through publicity by using an international network of repair fanatics and other interested people. Moreover, every day from our Amsterdam head office we try and develop ways of supporting Repair Cafés everywhere. We'll keep you up to date!

You have to comply with a few conditions in order to receive our support: your local initiative must bear the name of Repair Café, all publicity must use the Repair Café logo and must always refer to the website www.repaircafe.org. This is how we can build up an international chain of active and recognizable Repair Cafés, using the motto: 'Toss it? No way!'

I wish you good luck on behalf of the Repair Café Netherlands Foundation – and, what's more, have fun with repairs!

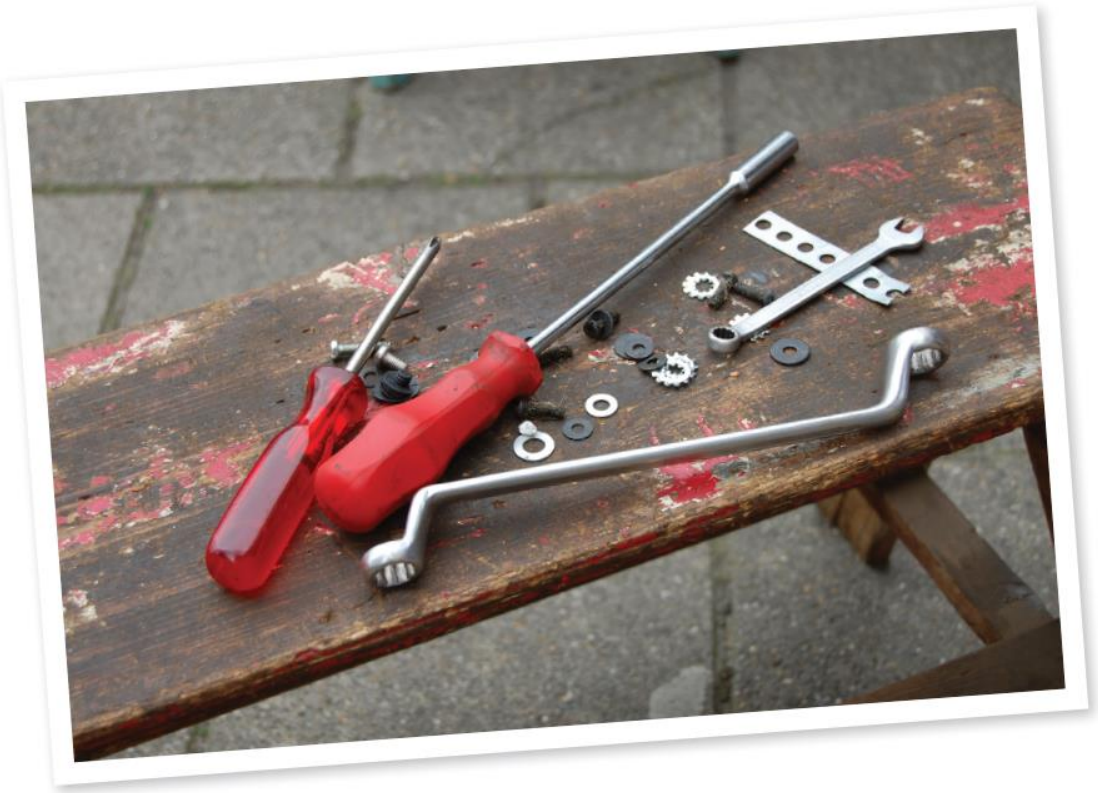
Best wishes,

Martine Postma
Director Repair Café Netherlands Foundation

PS. Do you have any comments on the information in this package or would you like to add anything? Please tell us! Your suggestions can help make this information package even more complete.

'I look forward to seeing Repair Cafés being set up every-where in the world. Fantastic news!'

You will find responses like the above throughout the entire information package. They were made by visitors to Repair Cafés and the website www.repaircafe.nl.



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The origins of Repair Café

The Repair Café concept was formulated in 2009 by Amsterdam-based journalist/publicist Martine Postma and Peter van Vliet, sustainability accelerator in Groningen, the Netherlands. They hit on the idea of setting up low-key meeting places nationwide where neighbours could repair their broken items themselves supported by specialists and in a relaxed atmosphere.

The very first Repair Café was held in Amsterdam on 18 October 2009. Dozens of neighbours and interested people from further afield showed up at the foyer of the Fijnhout Theatre that Sunday, where a host of repair experts were at the ready with tools and materials. The afternoon was a great success; the initiative had obviously tapped into a clear need.

This prompted the initiators to continue and broaden their activities. The Repair Café Netherlands Foundation was officially set up on 2 March 2010. This foundation organised approximately ten Repair Café gatherings in 2010, all of which took place in Amsterdam. Since January 2011, the foundation has provided support to local groups in the Netherlands and other countries wishing to start their own Repair Café.

The Repair Café Netherlands Foundation has the following goals:
a) to bring back repairing into local society in a modern way;
b) to maintain repair expertise and to spread this knowledge;
c) to promote social cohesion in the local community by connecting neighbours from very different backgrounds and with different motives with each other through an inspiring and low-key event.

The foundation has an executive committee comprising three persons, namely:

- Marleen van Duijnhoven (director of Stichting Gered Gereedschap), chair
- Peter van Vliet (chair of Stichting iNSnet, a communications network that aims at a sustainable world), secretary
- Tim Stok (treasurer of The Hunger Project), treasurer.

Director Martine Postma is in charge of the day-to-day running.

Contact:
info@repaircafe.org
www.repaircafe.org

Why a Repair Café?

Western society revolves round consumption. We increasingly buy more things and throw away more than ever. We use the luxury items we own for shorter times. As soon as these items show the slightest defects – such as a stool with a wobbly leg, a CD player with a lid that won't open or a woollen jumper with a hole in the elbow – we throw them away and buy a new product. Many things get thrown away within the space of one year.

Very few people even think about the possibility of repairing the old product. Most people no longer know how to repair things. This type of knowledge is noticeably on the decline. People still in possession of this practical know-how (such as craftspeople, the elderly and non-skilled workers) are often not adequately appreciated by society and even find themselves standing on the sidelines against their will. Their know-how is never used, or hardly ever. Yet it is these people who could greatly contribute towards making our society more sustainable.

By using them as supervisors during repair meetings, many positive effects can be achieved at the same time. People who might otherwise be sidelined are involved again. Valuable practical knowledge is passed on. The volume of raw materials and energy needed to make new products is reduced. Furthermore, repairing instead of throwing away helps to cut CO_2 emissions; manufacturing new products and recycling old ones causes CO_2 to be released.

Repair Café teaches people to see their possessions in a new light. And, once again, to appreciate their value. Repair Café helps change people's mindset. This is essential to kindle their enthusiasm for a sustainable society.

But above all, Repair Café just wants to show how much fun repairing things can be, and how easy it often is. Why don't you give it a go?

Start your own Repair Café

People in towns and cities everywhere are becoming increasingly enthusiastic about Repair Café. And this leads to the wish to start one locally as well. In this information package, we give you a rundown of what is involved in organising your own Repair Café.

We suggest how to find a suitable site, how to accumulate enough expertise to help make repairs, tools and repair materials, how to generate publicity, how to attract visitors and, of course, how to get financial backing. We also deal with ensuring continuity and improving your local Repair Café through evaluation.

The ideas we put your way can readily be translated to best suit the situation in your town or city. After all, every town or city council has their own way of organising things. You know the situation in the place you live better than anyone else.

Site

Repair Café is an activity both for and by neighbours. Which is why it is better to choose a site that is lowkey, easily accessible and in the heart of a residential area. Think, for instance, of a community centre or a neighbourhood centre.

The site has to be big enough to accommodate a large number of tables, where various repair experts can sit. These tables must not be too small, because each expert will need room for his or her tools. In addition, you need work space for the broken items visitors will bring along. It would be best if visitors also had a place to sit, such as on the other side of the table. After all, visitors will get down to work jointly with the experts, in the hope they too will learn something. Make sure there are enough chairs for visitors who are still waiting their turn.

Moreover, it's pleasant if catering facilities are available. In other words, that tea and coffee can be made for volunteers and visitors. In an ideal situation, there should also be enough room for a separate table where visitors can sit and drink tea or coffee. Because Repair Café, besides being an afternoon for making repairs, also gives visitors the opportunity to meet their neighbours and to make new contacts.

Plan

In the lead-up to each Repair Café meeting, lots of things have to be done and organised. We have itemised all these one-off and recurring activities below. The following pages give more information on how and why and what as regards all these points.

Orientation stage

- look for co-organisers
- hold orientation meetings with potential partners/ financial backers: do they think the plan can work and are they able and willing to make a contribution?

'An amazing initiative. Keep up the good work'

Preparatory stage

- fix a date – preferably a few months in advance
- fix a site
- consult Repair Café Netherlands Foundation: what support is required?
- allocate tasks within the organising group
- look for volunteers
- organise tools and materials

One month in advance

- check whether sufficient staff have been found and the tools have been provided
- start by getting Repair Café known and publicised, e.g. via own website, Facebook, Twitter and LinkedIn (for follow-ups: first email announcement to freshly built-up email list of people interested)
- compile a list of email addresses of newspaper, radio and TV editorial staff and websites you want to send a press release to
- compile a list of email addresses of contacts at participating organisations, who also should receive a press release
- make a list of relevant (events) websites where you can post an announcement

Two weeks in advance

- hang up posters and distribute flyers in central places in the neighbourhood
- take posters and flyers to participating organisations
- mail press release to (local and regional) newspapers, broadcasting companies and websites and people on contact list – follow-up publicity: include an interesting photo of the last meeting
- place announcement on event sites and what's-onguides
- send a second announcement mail to email network of interested people

One week in advance

- ring up all the volunteers to reconfirm agreements and to pass on the latest messages
- phone press contacts again (e.g. to ask whether they need any more information)
- send forwarding mail to friends, acquaintances and other people who may be interested
- post brief updates on Twitter/Facebook etc.

A few days in advance

- do shopping (non-perishables) for catering for volunteers/guests
- run through checklist and provide what is still missing

One day in advance

- do shopping (perishables) for catering for volunteers/guests

- post last update on Twitter/Facebook etc.
- have required things ready

On the actual day

- be on site several hours before the opening to set up
- make sure, throughout the Repair Café, that everything goes as planned
- take photos of lots of different situations in your Repair Café

The following day

- send a thank you email to all volunteers, and include a nice photo if possible. Ask for comments and criticisms with respect to evaluation
- send a short report (+ photo) to participating organisations
- post report and photos on your own website
- add newly compiled email addresses to email network
- mail email network to point out online report

A few days later

- process the evaluation forms from visitors as well as the remarks from volunteers
- evaluate good points with participating organisations and see where there is room for improvement
- process all this information in a plan for the next time

'Great! My favourite straw bag has been repaired with part of a bike inner tube.'

Additional materials

The Repair Café Netherlands Foundation has made the following (publicity) material electronically available for local organisers:

- Repair Café logo
- Announcement poster (A3)
- Announcement flyer (A5)
- Posters to hang on the walls of the Repair Café (A3)
- Poster to put next to the tip jar (A3)
- Signs with names of basis stations
- Evaluation form (A5)
- Registration form and house rules (A5 and A6)
- Standard press release
- Background information on Repair Café

Publicity and visitors

When you organise your first Repair Café it's very important that enough people show up. The first gathering sets the tone – not just for the visitors and the financial backers, but for the volunteer staff too. Try and make sure it's a well-attended event that calls for more.

You can attract visitors by making sure the initiative gets lots of publicity. Post info on the website www.repaircafe.org to tell us about your initiative and give the date of your Repair Café. Use social media as well. It's easy to create a Twitter and Facebook account. You can, for example, send a reminder via Facebook or Twitter just before your repair gathering is about to be held.

Press release

You have to take care of local publicity yourself. Send a press release to local and regional newspapers,

radio stations, TV channels and websites that will broadcast your activities in the community (including your council's own website). The Repair Café Netherlands Foundation provides a standard press release, where all you have to fill in are a few details such as the name of your organisation, and the location and date of the Repair Café. It goes without saying you can write your own press release. Give a clear explanation of what will happen on the day in question. Please include information from the checklist below.

You can also send the press release to the local offices of political parties or departments of organisations involved in sustainability and the environment, wellness and community work or reintegration. And, of course, you can send it to your contacts at participating organisations; perhaps they can post it on their own website or publish it in a newsletter. Don't forget, you should include an in-depth article about Repair Café on your own website, or on the website of the group you are co-organising the event with.

What do you need to include in a press release?

- ☐ the date
- ☐ the site (address, telephone number, website)
- ☐ the exact time
- ☐ the fact that the event highlights repairing things
- ☐ the fact that tools, materials and specialist help will all be available in the Repair Café
- ☐ the fact that visitors should bring along their broken items
- ☐ the fact that people are expected to make their own repairs or in any case to watch how repairs can be made
- ☐ an explanation of why it is necessary that making repairs becomes part and parcel of logical behaviour in everyday life
- ☐ the names of companies/institutions that helped get your event up and running, including the Repair Café Netherlands Foundation
- ☐ the name and telephone number of a contact who can provide more information about this local initiative, and, if possible, a link to the website of the local Repair Café
- ☐ the Repair Café logo
- ☐ the link to the Repair Café website: www.repaircafe.org

'Wonderful initiative! A great step on the road to sustainability'

Posters and flyers

In addition, it is useful to hang up posters announcing the event in busy places that can reach many people such as libraries, community centres, local government offices, schools, day care nurseries, cafés, recycling/second-hand shops etc. Take posters to participating organisations as well. The Repair Café Netherlands Foundation provides posters where all you have to fill in is the local information.

Flyers are another good way of spreading the word about your event. The Repair Café Netherlands Foundation provides flyers in A5 format. Leave piles of flyers in places where groups of people meet – post them door-to-door in the neighbourhood where the Repair Café will be held or hand them out at the local market or in a busy shopping high street one week before the event.

You can also attract visitors by email. Compose a mail with all the relevant information and send it to your friends and acquaintances – ask them to forward it to other people who may be interested.

Invited guests

Invite a few local key persons to the first Repair Café in your neighbourhood. These could include: councillors for the environment (because of the initiative's sustainability issues) and social services (because of the social aspect), council members, the director of a local welfare organisation, the director of a recycling shop, members of the local Lions Club or Rotary Club, the chair of a volunteer centre, the director of a vocational training programme, a journalist and a photographer from a local newspaper, radio or TV station. This is how you can ensure that enough people will attend the very first Repair Café and at the same time create broad support among various local organisations for the follow-up.

Basis stations

On the basis of supply and demand, you can invite a whole range of craftspeople to act as experts in the Repair Café. Time will have to tell, of course, what kinds of repairs are needed most in your Repair Café. In general, however, a Repair Café will have several basis stations, most of which will be manned by a few basis specialists. You can see below what stations these are and what happens there. There is a list in the frames giving suggestions for basic materials for each station.

Reception table

Visitors entering the Repair Café need a certain degree of guidance. For many, it is their first visit, and they don't yet know their way around a Repair Café. This is why it is handy to have a person sitting at a table near the entrance to welcome each visitor. Depending on what item the visitor has brought along, this person can tell them which station they should go to.

If it is very busy, it helps to use a number system. The receptionist hands out a number so visitors don't have to worry about queue jumpers.

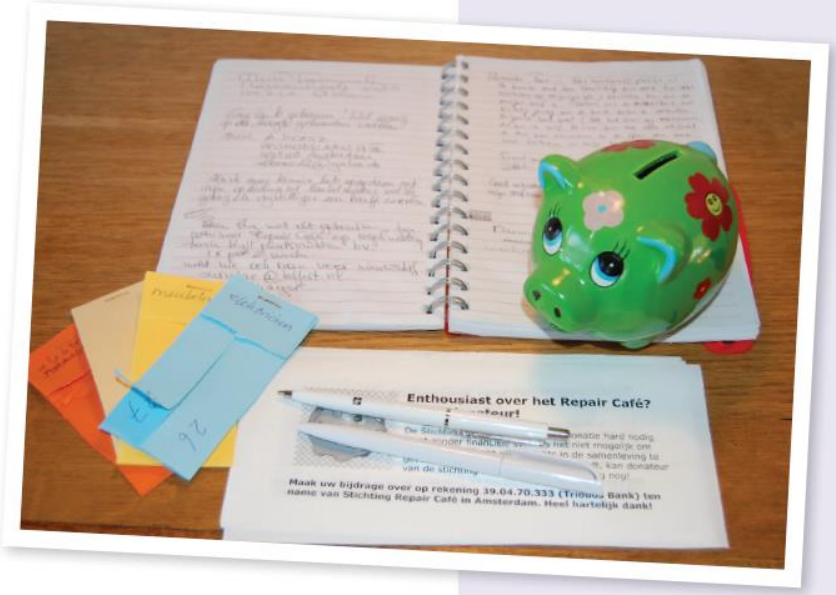
The receptionist informs visitors of the house rules in the Repair Café and makes sure they fill in the registration form properly. This form contains import-

ant information such as name, email address and the type of repair. The receptionist notes later on whether the repair was successful and collects the registration forms. The registration form gives insight in important data. The visitors' email addresses are useful for building up a network of interested locals. It also provides evidence that Repair Café is meeting a demand in the area where you live. You can use this evidence when trying to raise funds to financially support your local Repair Café. The bigger your network becomes, the stronger the local position of Repair Café will be. What's more, it will become increasingly easier to arrange publicity for up-and-coming meetings.

Materials (guideline)

Reception table

- ☐ Registration forms
- ☐ Pens
- ☐ Numbered ticket books in various colours (each station has a different colour)
- ☐ Flyer with information about the next Repair Café
- ☐ Flyer with information about donating/sponsoring
- ☐ An eye-catching tip jar
- ☐ Guest book (may be placed on reading table)
- ☐ Digital camera



Electrical appliances

This table in Repair Café is usually the busiest of all. Which isn't surprising: small electrical appliances such as toasters, hand blenders and lamps are easy to take along to a Repair Café. Moreover, it is almost impossible to repair these types of appliances elsewhere or to get them repaired, whilst they frequently break because they are used the most often or the quality leaves much to be desired. In this respect, Repair Café offers a unique solution for lots of people. You'll see that reflected in the numbers of visitors.

Experience has shown that one electrician cannot keep up with demand. Please make sure there are at least two experts at the table for electrical appliances. There is often more than enough work for three or even four experts. It also means that people have to wait less. In addition, the various electricians can pool their knowledge: what the one expert can't fix, the other expert possibly can.

Materials (guideline)

Electrical appliances

- ☐ Set of screwdrivers in assorted sizes, cross-head as well as flat-head
- ☐ Set of precision screwdrivers
- ☐ Voltage tester
- ☐ Handgrip 1/4" for bits
- ☐ Set of bits in box, torques
- ☐ Set of bits in special sizes
- ☐ Drill
- ☐ Hammer 400 gr and 100 gr
- ☐ Soft-faced hammer
- ☐ Small bench vice, so-called clamping vice
- ☐ Water pump pliers
- ☐ Electrician's pliers
- ☐ Side-cutting pliers
- ☐ Wire stripper
- ☐ Pointed pliers in assorted sizes
- ☐ Multi plug extension lead
- ☐ Spare parts tray
- ☐ Universal measuring instrument
- ☐ Solderer + solder + grease
- ☐ Soldering iron 60W + solder
- ☐ Soldering iron 15W
- ☐ Loose plugs
- ☐ Plugs with hook-up lead (with and without switch)
- ☐ Loose switches (small)
- ☐ Connectors
- ☐ Telephone lead (connection as well as mouthpiece)
- ☐ Telephone plugs
- ☐ Loose lead to connect to appliances (+ earth)
- ☐ Universal lubricant
- ☐ Kitchen paper
- ☐ Alcohol for cleaning purposes
- ☐ Cleaning rag
- ☐ Box with remaining screws
- ☐ Duct tape
- ☐ Insulation tape

(see next page)

- ☐ Cable ties
- ☐ Pieces of VD wire
- ☐ Table lamp (to illuminate delicate work)

Materials (guideline)

Clothing

- ☐ Two sewing machines
- ☐ Spools with thread of all colours
- ☐ Sewing machine spools prepared with different coloured thread
- ☐ Sewing needles (for machine and by hand)
- ☐ Darning needles
- ☐ Pins
- ☐ Scissors
- ☐ Buttons in all shapes and sizes
- ☐ Denim jeans buttons
- ☐ Press-studs
- ☐ Zips in all shapes and sizes
- ☐ Appliqués
- ☐ Iron-on fabric
- ☐ Elbow and knee patches
- ☐ Ironing board
- ☐ Iron
- ☐ Crochet needle
- ☐ Hook and loop fastener
- ☐ Elastic
- ☐ Patches of (strong) fabric in various colours
- ☐ Patches of felt in various colours
- ☐ Bias binding in various colours
- ☐ Darning wool in various colours
- ☐ Punch machine (not strictly necessary) to repair holes in woollen clothing (if there is no punch machine:) foam rubber pin cushions for wool repairs
- ☐ Felt needles
- ☐ Merino wool in various colours

Clothing

The sewing table can often get extremely busy as well. Visitors bring all sorts of small things to be repaired to Repair Café: a torn-off zip, a burst seam, a hole in the knee of a child's pair of denims or in the elbow of a woollen jumper. But it's not just clothing that people bring. Visitors will turn up with sewing jobs for handbags, table cloths, decorative cushions, stuffed animals etc. It nearly always concerns jobs that are too insignificant or too unattractive to take to a professional seamstress. Or even work that has been rejected by a seamstress.

One seamstress at the sewing table is the minimum, two is much better. This fits in better with the broad range of jobs people want done. The chance that a visitor can be helped by someone who feels affinity for a certain type of repair is much greater this way. You can also try to find one seamstress for actual repairs and a second one for giving clothes and accessories a new lease of life or refreshing and improving them.

'When will you come to Oxford?'

Furniture, toys and other wireless items

Visits to this station – and the items people bring – vary considerably. Visitors bring (relatively small) chairs and stools, but dolls' furniture, photo frames and wooden toys as well. A lot of people simply ask questions, about a much larger piece of furniture they are unable to bring along, for instance. Some visitors bring a photo of a larger object to show.

One expert at this station is enough in the main. Ideally it should be a person who knows about wood and glueing: a furniture maker, a carpenter or an allround DIYer. Because visitors to this table don't always have their item for repair with them, it's more practical for the expert to have a few common repair examples at hand. Such as a chair with a wonky leg to show visitors how to set about repairing it. Or a couple of bits of wood to demonstrate how to make a mortise joint.

On the whole, most carpenters will be able to find something to bring from home to demonstrate. But a stroll through the neighbourhood on the day the bin men collect the rubbish is bound to result in a useful repair example or two.

Materials (guideline)

Furniture, toys and other wireless items

- ☐ Joiner's bench
- ☐ Saw
- ☐ Fretsaw
- ☐ Drill + drill heads
- ☐ Hammer
- ☐ Pincers
- ☐ Water pump pliers
- ☐ Screwdrivers (cross-head and flat-head) in various sizes
- ☐ Stanley knife
- ☐ Several glueing clamps
- ☐ Assorted sandpaper
- ☐ Liquid wood
- ☐ Penetrating oil
- ☐ Screws in various shapes and sizes
- ☐ Nails in various shapes and sizes
- ☐ Dowels in various thicknesses (e.g. 6 mm and 8 mm)
- ☐ Construction adhesive
- ☐ Wood glue
- ☐ Panel adhesive
- ☐ Pencils
- ☐ Tape measure

Bicycles

Visits to the bicycle station also vary greatly. Experience shows that visitors have to get used to the idea they can use Repair Café for their bicycles as well. Once they have absorbed the fact, they happily bring along their bikes.

Similar to the clothing station, the jobs carried out at the bicycle repair station are usually not the large repairs which you would go to a 'real' bicycle repair shop for. Instead, they tend to be smaller jobs that people could do at home but never get round to because they just don't get the tool kit out of the shed. For example: cleaning the tight-fitting cycle stand and lubricating it again, raising the saddle of a child's bike, fixing a loose reflector. Or mending a tyre.

It comes in handy to have a few bikes ready at the bicycle station as examples. To practise mending a tyre, for instance. Spare parts can be useful too. Such as a wheel where the hub can be opened and re-assembled.

One person usually suffices to man the bicycle station. However, once it gets busy we recommend two people.

Materials (guideline)

Bicycles

- ☐ Tyre levers
- ☐ Solution
- ☐ Sandpaper
- ☐ Rubber patches
- ☐ Bicycle workbench
- ☐ Set of ring spanners
- ☐ Set of open-end spanners
- ☐ Set of box spanners
- ☐ Pedal spanner
- ☐ Screwdrivers
- ☐ Various pliers
- ☐ Spoke adjuster
- ☐ Fork disengager
- ☐ Chain punch
- ☐ Adjustable wrench
- ☐ Bicycle pump
- ☐ Hand drill + drill heads
- ☐ Spare parts for repairing lighting: leads, connectors, cable ties, light bulbs
- ☐ Volt gauge to test light bulbs
- ☐ 6 V-battery to test lighting
- ☐ Degreaser (green soap)
- ☐ Old rags
- ☐ Grease
- ☐ Brush for applying grease
- ☐ Duct tape
- ☐ Wire
- ☐ A few buckets and trays
- ☐ A bike to practise on or use as an example
- ☐ A single wheel, by way of example
- ☐ Tray with old screws, nuts and other small spare parts

Glue, string and tape table

If you have enough room, it can come in handy to have a separate glue, string and tape table. This is the spot where the simplest repairs can be carried out, which don't fit in to any specific category. An assortment of glue is on the table (such as wood glue, construction adhesive and super glue), besides balls of string and various types of tape (duct tape is particularly useful). Cable ties often come in handy as well.

Visitors to the glue, string and tape table can glue together their broken porcelain vase, repair the tear in their plastic laundry basket with a cable tie, or wrap the burst hose of their vacuum cleaner with tape. In most cases, visitors to this station get along fine without any assistance. However, should an all-round DIYer wish to lend a helping hand at this station, it can be regarded as an extra service.

Another option is to place the glue, string and tape table close to the furniture station. The specialist there frequently uses glue and can give advice to visitors to the glue, string and tape table whenever necessary.

Materials (guideline)

Glue, string and tape table

- ☐ Wood glue
- ☐ Panel adhesive
- ☐ Construction adhesive
- ☐ Bison kit/Velpon or the like
- ☐ Degreaser
- ☐ Lubricant
- ☐ String in various thicknesses
- ☐ Cable ties in a range of colours and sizes
- ☐ Wire
- ☐ Wire-cutters
- ☐ A pair of scissors
- ☐ Filling knife
- ☐ Duct tape
- ☐ Other tape in various colours
- ☐ Double-sided adhesive tape

Reading table

Visitors can draw inspiration about repairs and home DIY at the reading table. You can supply a range of books on this subject for people to leaf through. Buy them cheaply at charity, recycling or second-hand shops. In addition, you can place flyers and brochures on the table which publicise local initiatives focusing on recycling, cutting down on waste, craftsmanship or sustainability. You can also put out a plastic business card holder so local craftspeople can leave their business cards.

Guest book

A guest book can be a valuable extra. Place it on the reading table and actively encourage visitors to leave a reaction in it. It's also a great way of showing the outside world that a Repair Café in your neighbourhood is valued and very necessary!

Materials (guideline)

Reading table

- ☐ Books about making repairs
- ☐ Books on DIY at home
- ☐ Books/magazines on recycling, reducing waste, craftsmanship and the like
- ☐ Brochures and flyers on local initiatives concerning sustainability
- ☐ Flyer with information about the next Repair Cafés
- ☐ Flyer with information about donating/sponsoring
- ☐ Plastic business card holder for business cards
- ☐ Guest book + pen

'There would be great interest in a Repair Café in Newcastle'

Specialists

How can you find the right experts to lend a hand making repairs in your Repair Café? One basic piece of advice is, of course, to start asking round in your own network. Everybody knows a handy neighbour or a friend whose wife has DIY know-how. Or an acquaintance who has a brother who always does all the repairs at home. Via via you can go quite a long way in manning all the basis stations in the Repair Café.

Furthermore, you can try and find people through volunteer networks such as the local volunteer club, charity shop or recycling shop. Or you can approach local associations like a carpentry club or computer club. Or else try the community centres, which often have a large network of local residents who are interested.

Get in touch with coordinators of reintegration projects. Councils frequently have projects to help people who have been unemployed for a long time, for whatever reason, to get back into a job or in any case back into a daily routine. People in these projects often work with their hands: they give bicycles or old computers a new lease of life or do carpentry or sewing. In short, many of these reintegration projects are occupied precisely with the sort of practical handiwork carried out in the Repair Café. Participants in these reintegration projects often thoroughly enjoy getting involved in Repair Café. By getting these projects involved in Repair Café you immediately increase support for the initiative within the local council. And, in turn, that has a positive effect on getting it financed.

Pay a visit to craftspeople in the neighbourhood as well. You never know, a furniture maker might like to attend Repair Café as a carpenter (and advertise his own furniture workshop at the same time). Or perhaps the sewing atelier round the corner knows of a retired tailor's cutter with some spare time on her hands. Get in touch with institutes for professional education. By taking part in Repair Café, students on various courses (technology, woodwork, fashion design) could gain additional practical experience.

Post notices in neighbourhood centres, libraries and supermarkets. Place a notice on the community centre's website. Send a press release to the editorial staff of the local newspaper. Talk about your plans to as many different people as possible. And put a notice on websites of volunteer clubs etc.

Once you have found the specialists you need, bear in mind that these people have all volunteered to give up their spare time and will only continue to do so if they thoroughly enjoy what they are doing. So make sure you regularly keep in touch with these volunteers. See to it personally that they have tea, coffee and sandwiches and the like on the day itself. When-ever possible, make sure they are properly thanked afterwards. And listen to suggestions or critical comments made by volunteers.

'Great initiative! Good luck and hope to see you again soon'

How to get hold of all the things you need

You have seen from the lists on the previous pages that a Repair Café needs a considerable amount of tools and materials. How can you get your hands on all you need? Some things you will just have to buy, but not everything. Many items can be acquired in other ways. Perhaps your town or city has a sewing machine shop or haberdashery that would be willing to lend two sewing machines and/or sewing things in exchange for advertising (shop name in press release).

Furthermore, many specialists have their own tools at home or in their workplace. They probably would have no objection whatsoever in bringing items along in a bag or a box – preferably with a name tag or something similar attached.

'Too many things get thrown away'

Decorating the space

It is best to decorate the space where the Repair Café is held in Repair Café style. The Repair Café Netherlands Foundation can supply posters electronically with photos of people repairing things and the Repair Café logo. You can print these posters yourself and have them laminated so they are re-usable.

The foundation also supplies signs with the names of the various basis stations. See the list of additional material on page 10 for a complete overview.

If the venue is not immediately visible from the street, it may be a good idea to have a sandwich board, a folding blackboard or suchlike to point out where the Repair Café is being held.

Safety and liability

Local organisers often ask the Repair Café Netherlands Foundation about issues surrounding safety and liability. How do you prevent accidents happening in the Repair Café, or things getting damaged? And in the event of something like that happening, how can you, the organiser, make sure that you are not held liable?

The first piece of advice is obviously to remind everyone - volunteers and visitors alike - of their own responsibility, and to discourage people from starting on things they're not certain of without proper supervision or help. Your local authority can help with information on insurance cover for volunteers. Many local authorities have insurance cover for volunteers. Exactly what is covered by this limited insurance cover differs from local authority to local authority and is under no circumstances intended as a way to circumvent insurance policies that an organisation can take out itself. For more information on this point, look on your own local authority's website.

Private liability insurance policies also often offer secondary cover for damage sustained by third parties caused by volunteers. The nature of this also differs from insurer to insurer, and not everyone has private liability insurance. Make sure you discuss this issue with your volunteers in good time.

Apart from the volunteers, you must also consider the people visiting the Repair Cafés. In terms of personal injury, it stands to reason that they are covered by their own insurance policy. In order to prevent visitors holding you, the Repair Café organiser, liable for damage that is the result, whether directly or indirectly, of activities in the Repair Café, the Repair Café Foundation applies an 'opt-in' system, whereby visitors must first confirm agreement with the house rules of the Repair Café.

The house rules explain that everything done in the name of Repair Café is done voluntarily, and that the organisers and repairers are not liable for damage. By printing out the house rules on the reverse of the registration forms, getting visitors to confirm agreement to them with their signature, and collecting and storing these forms, organisers should have no problem with liability issues.

The Repair Café Netherlands Foundation recommends that local organisers who need more certainty in the field of safety and liability take out their own personal liability and accident insurance. In this case, however, the organiser must be a legal entity, such as a charitable trust/foundation.

Ensuring continuity

Organising a Repair Café takes up a lot of time and energy. If possible, you won't want to spend all your energy on a one-off event, but will try and turn it into a long-term venture. To help increase your Repair Café's chance of survival, it's better to get enough people involved in organising it and to share out all the various tasks from the very beginning. This will prevent the initiative from falling apart if one person drops out and at the same time helps to reduce the chance that someone will drop out because they have too much on their plate.

It is good for continuity if you can arrange for at least one person to carry out work for Repair Café as part of their job or as a work placement. Think, for instance, of an employee or a trainee in a neighbourhood centre. It can come in handy if this person takes on coordinating tasks such as maintaining contact and making agreements with participating organisations, recruiting volunteers and keeping updates of everything that has been done and that still needs doing.

To safeguard continuity it is a good idea to create broad support for Repair Café among different organisations. So don't limit yourself to environmental and sustainability organisations, but spread the net further to include organisations that help reintegration of the 'core jobless' with a view to social sustainability. This might include ethnic minorities too, for example, and schools wishing to provide young people with additional educational practical skills. Try and think of as many different types of organisations that could support their own goals by getting involved in Repair Café. By drumming up support for the initiative through these organisations, you can achieve the goal of getting people from all walks of life involved in ongoing Repair Café events. You therefore have a stronger chance of giving Repair Café a permanent place in your community.

Evaluation

On the day of the first Repair Café you will notice that some things will not go as planned, no matter how well prepared you are. You might find out that there aren't enough of some experts and too many of other experts, that an essential tool is missing or that you have forgotten to arrange one final thing. We advise you to write down these experiences immediately after the event so things can run more smoothly next time. What's more, after the Repair Café is over, it

can be useful to document the data you collected via the registration form and to store it in a file. This will give you an instantaneous record of statistics on the gatherings (how many repairs, what types, successful/not successful).

Volunteers will also have observations made in hindsight, and the same holds for the visitors. The latter can leave suggestions in the guest book, but the Repair Café Netherlands Foundation also provides evaluation forms in A5 format, which you can hand out to visitors. You can put a letterbox or tray next to the exit where people can leave their filled-in forms. You can easily email the volunteers with questions about their experiences during the Repair Café day itself, asking for comments and suggestions.

By collecting remarks from a wide range of people and by acting on them, you can gear your Repair Café to better meet the wishes and expectations of visitors and volunteer staff alike. And that can only serve to consolidate the feasibility of your initiative.

Financial support

As local organiser you are responsible for getting financial support for your Repair Café. Fortunately, organisational costs are reasonably limited each time, especially if you work entirely with volunteers. Or if you can find a civil servant, a social worker or a work placement trainee who is willing to carry out certain coordinating activities in the context of a job or work placement.

It's impossible to say exactly how much a Repair Café gathering will cost; the situation varies considerably from place to place. Some local groups have free access to a space where they can hold a Repair Café, others have to rent a venue. There are dozens of things that can vary per site. If you include all items that could cost money, you will approximately arrive at the budget on the next page for the first Repair Café.

Perhaps you would like to give the volunteers a thank-you gift such as a gift token, a bottle of wine or something else. In that case, the costs will come out higher each time.

Cost estimate

Description	Cost
Renting a venue	€ 100,00
Purchasing repair materials to be used (glue, string, tape, nails, screws, sandpaper, darning wool, thread, zips, etc.)	€ 150,00
Catering volunteers and invited people	€ 50,00
Printing publicity material + re-usable material to decorate the venue (posters, flyers)	€ 75,00
Total	**€ 375,00**

For follow-up gatherings you should take the following costs into account each time:

Renting venue	€ 100,00
Catering volunteers	€ 25,00
Printing publicity material (posters, flyers)	€ 50,00
Stocking up on materials	€ 25,00
Total	**€ 200,00**

Town or city council

How can you raise money to cover costs? There are various options available to get financial support for your Repair Café. Perhaps your town or city council would be willing to financially back the initial stages of a local Repair Café. After all, the costs are not astronomical and Repair Café wishes to achieve goals that the council also finds very important. In fact, every council would like to teach its residents about the importance of adopting a sustainable lifestyle, to reduce non-recyclable waste, to improve social cohesion in neighbourhoods and to get groups of citizens who are unwillingly marginalised involved in community activities. In other words, make sure you approach your local council with your plans.

'Making repairs is often easier than you think'

Sponsors

Besides applying for a subsidy from the council you should try and find local sponsors. Get in touch with the local Lions Club or Rotary Club, a DIY store or a spare parts shop. To convince sponsors about the value of a Repair Café in your neighbourhood, and hence a good reason to sponsor the initiative, it's useful to keep tally of how many visitors there have been from the very first gathering, how many items were repaired and what they were, as well as visitors'

reactions. Point out the guest book to people and encourage them to leave their email address behind. When you have a visible following of enthusiastic fellow neighbours you have a much more powerful story to tell your potential sponsors. Don't forget to take photos! Photos of people repairing things, tables strewn with tools and happy visitors displaying their repaired items give an instantly convincing picture of the initiative to potential sponsors.

You can trawl the internet to gain inspiration in finding possible financial backers. Use Google or Wikipedia, for example, to find out about raising funds in your local council, borough or country.

Tip jar

You can also raise money during Repair Café gatherings. Actively point out the tip jar to visitors and tell them that their voluntary contribution is highly appreciated because the Repair Café cannot exist without funding. The Repair Café Netherlands Foundation supplies posters you can hang near the tip jar. These posters encourage visitors who have received proper help to support the Repair Café by donating 5 euros. As it turns out, this suggestion works well in practice. Many visitors enjoy being able to show their appreciation and enthusiasm by donating money. They also appreciate being given a guideline on how much they should give. By specifying an amount, you place a value on the help offered. That's not a bad thing; some people see 'free' as being equal to 'rubbish', and you want to avoid that idea at all cost. It also prevents your Repair Café from being 'hijacked' by people who have no interest whatsoever in social sustainability, but simply want to get something for nothing.

Donors

Besides the tip jar, you can point out to visitors that they can become a donor to Repair Café. Design a flyer carrying this message and put it on the tables. Make sure you include the number of the bank account where people can transfer their donation to.

Entrance fee or no entrance fee?

Local organisers sometimes ask the Repair Café Netherlands Foundation whether they can charge an entrance fee. Each local group is free to ask for a small entrance fee of 2 euros, for example. The disadvantage is that you create a barrier for people who have little money. But you also might put people off from just coming to have a look and finding out what a Repair Café is all about. Furthermore, you might ask yourself whether it goes against the grain of one of Repair Café's goals – to act as a meeting place. In short: the Repair Café Netherlands Foundation discourages local organisers to charge entrance fees. Up until now, no local organiser has decided to do so.

QUEANBEYAN-PALERANG REGIONAL COUNCIL

Council Meeting Attachment

28 JULY 2021

ITEM 9.15 SUSTAINABLE GARAGE REPAIR CAFE PROPOSAL - 88 WALLACE STREET, BRAIDWOOD

ATTACHMENT 2 REPAIR GARAGE/SUSTAINABLE GARAGE LETTER TO COUNCIL

Peter Tegart
General Manager
Queanbeyan Palerang Regional Council
PO Box 90,
Queanbeyan NSW 2620

25 May 2021

Dear Mr Tegart,

Following discussions with Council's Sustainability Officer and Service Manager, Natasha Abbott, we're thrilled that Council may be interested in supporting the concept we are proposing of a 'Sustainability Garage' to be held in the forecourt of the council owned property at 88 Wallace St Braidwood adjacent to and to coincide with Saturday Farmers Markets.

Two requests are made for council consideration:

a) The use of the forecourt of 88 Wallace St Braidwood on Saturdays from September and
b) Insurance cover of volunteers and the public.

The details so far in order to assist your decision-making are:

Who are we:
A coalition of local groups in the sustainability field including: Sustainable Braidwood, Braidwood Clean Energy, Upper Shoalhaven Landcare and other interested individuals. Braidwood is rich in artisan, natural land management and solar/clean energy expertise.

What are we planning to do:
To build on successful local community efforts towards sustainable living in our community, energised by tough times experienced by so many locals recently, we aim to provide a repair/repurpose, information and learning service to promote the reduce-reuse-recycle message and living for a sustainable environment.
At this stage these may include:

1. Sustainable living

eg., Repair shop - both for getting something repaired/repurposed/cleaned/sharpened or learning how to repair/repurpose; e.g. bicycle repairs, how to darn your socks, fix that toy, engaging the creative & innovative local experience & skills,

2. Energy lessen

eg., Ideas/ models/ advice re household energy use minimisation and clean energy alternatives, how to plant wisely for water/light efficiency, how to get the most out of recycling investigate use of electric vehicles,

3. Nature's gift

e.g. info/ ideas/demonstrations & participation in natural heritage custodianship & climate change mitigation , restoring and maintaining native vegetation, local expertise on regenerative farming practices.

The services will be provided free of charge; the repair/repurpose service operating along the lines of the guide provided by Cameron Pensini.

When:
Each Saturday that coincides with the Farmers Market in Braidwood, commencing in September 2021. Hours of operation are likely to be 9:00am – 3:00pm.

Where:
In the forecourt of council-owned property "D&S Garage" at 88 Wallace St, Braidwood.
We seek your approval to use this outdoor space.

Insurance:
We acknowledge the need for insurance cover, especially public liability and volunteers. In the first instance we are seeking cover by council. Should council choose not to provide cover we will seek an auspicing entity.

If you would like to discuss this proposal in more detail, please contact [redacted]