

ITEM 10 PROJECT REPORTS

(1) CHARGING THE HUME REGION

The Goulburn Broken Greenhouse Alliance is a formal alliance of the thirteen councils across the Goulburn Broken and North East regions of Victoria, committed to delivering actions to achieve climate change mitigation and adaptation and sharing projects that support sustainable, low carbon communities.

This brief sets out the need and means for regional action that positions the Hume region to capitalise on tourism and community opportunities joined with increasing electric vehicle use.

The electric vehicle (EV) industry is growing at a rapid rate. Purchase of EVs will accelerate as they approach price parity with conventional vehicles – expected around 2023-25. EV charge stations are being installed in the Melbourne metropolitan area and State governments have installed fast chargers on major highway routes. This encourages EV users to stay close to Melbourne or transit through our region, without visiting. Regional growth could be disadvantaged in the long term if EV technology is not available (Infrastructure Victoria study).

EV charge stations in the Hume region are the missing piece to retain and attract tourists as they move to the use of EVs. Failure to realise a regional network of EV charge stations will incur a cost to local economies through lost visitation due to a real (or perceived) inability to visit the regions. Regional communities also need infrastructure support to join the transition to low carbon transport.

The Goulburn Broken Greenhouse Alliance and Central Victorian Greenhouse Alliance initiated 'Charging The Regions' – to plan a comprehensive charge station network for EVs in regional Victoria. With consultant NDEV, 55 councils joined to examine options to realise a vision of a charging network. This has laid out feasible options. The Victorian Alliances have been presenting to the Victorian government the benefits of government investment in a statewide network of charges (see attached).

In August 2020, the Victorian government awarded \$630,000 for a charging network in western Victoria, signalling the possibility of investment in other regions. (see attached case study). In September, the federal government committed \$57 million to encourage the transition to electric vehicle (Future Technologies Fund).

The development of chargers in western Victoria and southern NSW leaves north east Victoria as a stark gap in the regional EV charging network. (source ABC news 6/10/2020)



Benefits – Business Case

'Charging the Regions' business case analysis shows most benefits are community based:

- Economic benefit related to EV tourism
- EV users will stop at suitable charge stations for 30-60 minutes to use local business
- Health benefits from the changeover to non-polluting EVs and reduction in noise pollution (fossil fuel transport emissions caused around 1700 deaths in Australia in 2016 – higher than road toll of 1200)
- Normalises the local transition to electric vehicles, which are expected to reach price parity within the next 3-5 years. Several GBGA councils are including EVs in their fleets.
- Income from EV charging will increase as EV numbers increase, but this is not the key benefit in early years

Regional Action is Needed

ATTRACT EV TOURISTS	EV use is increasing. Chargefox (network developer) states an EV uses their network every 7 mins. Estimated that EVs should be above 27% of new car sales by 2030, & up to 60% (1)	Most EV drivers charge at a public charge station for about an hour to 'top-up' charge and use local businesses and facilities (1)	ACTION A dense charging network to attract EV users
EV Tourism could be worth \$258 million in Victoria in 10 years to 2030 (1)			
RETAIN & GROW TOURIST BENEFIT	Growth in the Visitor Economy in Hume region exceeded state growth with strong ongoing performance expected (2)	Tourism in the Hume region value-adds about 45 cents of every dollar generated – significant income to local economies (3)	ACTION Promote EV tourism opportunity

(1) NDEVR report 'Charging the Regions' for 55 Victorian Councils (2020)

(2) Hume RDA Hume Regional Growth and Change Analysis

(3) REMPLAN data (Hume region)

Attracting Funding to the Hume Region for a Charge Station Network

The Central Victorian Greenhouse Alliance and western Victorian councils have shown the benefits of regional partnership to deliver a network of chargers away from major routes.

There may be opportunities for government funding associated with

- Stimulus funds available for recovery (as allocated in the CVGA region)
- Potential funds associated with the state policy "Zero Emissions Transport" released late 2020
- The federal government investment in the Future Technologies Fund includes \$57 million to boost electric vehicle sales (17 September 2020)
- Integrating a charge station into a large public development to include it when sourcing funding. This could include non-Council sites such as hospitals.
- Partnership with vehicle companies and businesses to assist siting and supply of chargers

Most of these options would use a public site to secure a long term site with high accessibility.

IN NSW, the NRMA is working with the NSW government to add 25 further chargers to an existing network of 38 highway chargers. The RACV worked with the Victorian government in the Hume highway chargers. The RACV has already stated it will not develop any chargers except on main highway routes.

Establishing a Charge Station Network for Electric Transport in the Hume Region

A regional approach is needed to achieve a coherent charging network in the Hume region and prepare attractive options for state and federal funding opportunities.

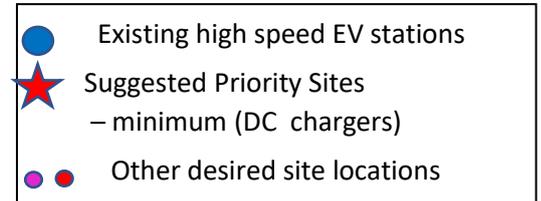
The charging of EVs is very different to the fuelling of combustion vehicles. For local owners, 90% of EV charging will occur at home. The main users of public chargers are visitors to the region. Users will stop for a full charge at the ultra-fast chargers on the Hume Freeway and top-up charge at tourist stops. Maintaining visitation in the Hume region depends on an attractive charging network. "Charging the Regions" indicated EV users could generate \$258 million in tourism spend over 10 years. The visibility of EV chargers will also encourage our communities to embrace this technology and not be left behind in the transition to electric transport.

EV users will decide their travel routes based on the match of charging type to their visitor trip. An attractive network uses a mix of DC fast chargers and AC slower chargers in a fit-for purpose network (see page 6 for more detail about DC and AC chargers):

- Day visitors will seek out DC fast charging to tour round the area in a day. Users 'top-up' charge for the next 100km of travel in about 40-60 minutes while they lunch and shop.
- Overnight visitors can use slower AC chargers at their accommodation, taking more than 3 hours for a 100km charge.
- Visitors to key day visit attractions, for example regional museums and art galleries, may be OK with slower AC chargers at these sites. This can be checked by stay time data.

Regions with a dense network of fast chargers will be more attractive, as people decide how to maximise tourism time and flexibility and not have it used up by hours of charging. Conventional EV (non-Tesla) charging coverage in the regions is poor. Ideally each municipality would have one or more fast chargers in a regional network.

'Charging The Regions' planned the minimum regional layout, with DC charge stations located on key routes to encourage travel off the fast charge route on the Hume Highway. DC or AC chargers should be planned in other towns. Chargers are located with a 50km spacing, up to 100km.



Case Study – Western Victoria

Councils in western Victoria joined in a regional charge network project, with success in government stimulus funding of \$630,000 for DC charge stations in a project managed by the Central Victorian Greenhouse Alliance (CVGA).

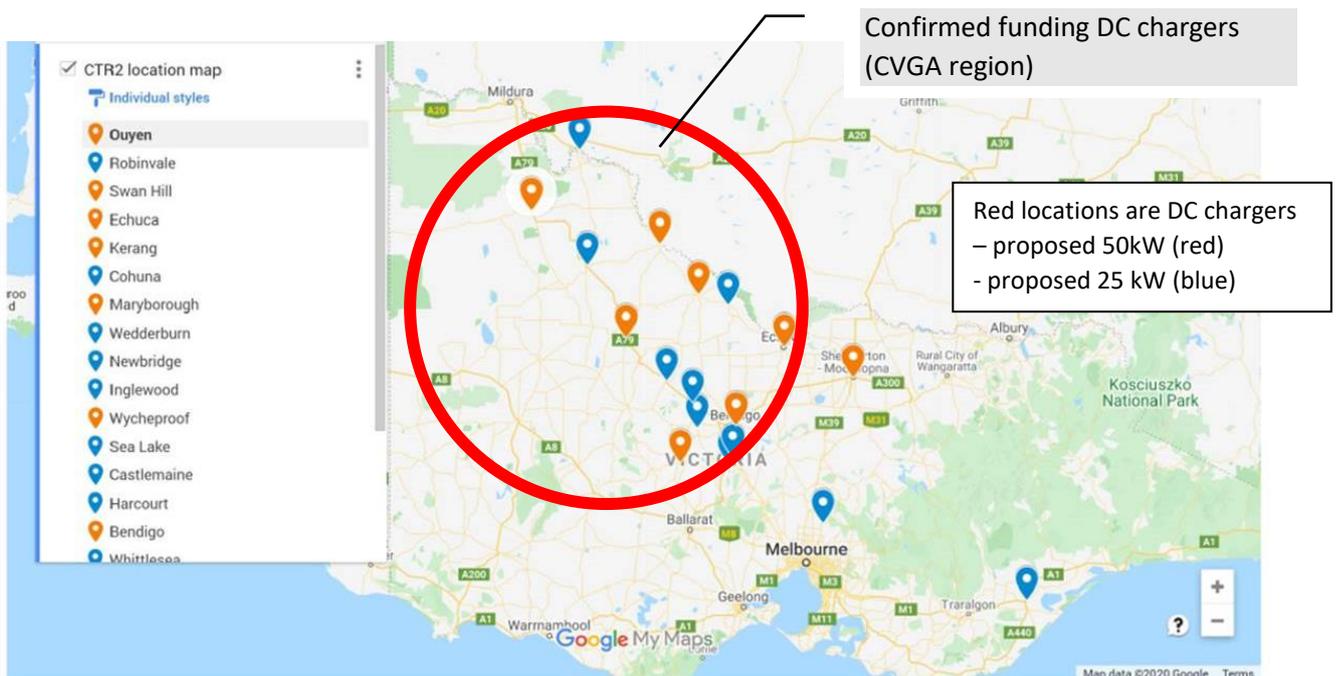
<https://www.lilydambrosio.com.au/media-releases/new-electric-vehicle-charge-stations-for-north-west-victoria/>

The funding is largely COVID stimulus funding and some council investment.

This western Victoria charging network will be based on:

- Mixture of 50kw and 25kw DC chargers in 10 councils
- Council owned and managed infrastructure
- Preferred supplier selected by tender to manage whole installation
- Common software billing platform managed by the supplier – each council to have access and set its own rates individually
- Shared maintenance contract run by the successful supplier - Minimum of 2 years maintenance contract with 24hr/7 day hotline network
- Installation by February 2021

The CVGA will complete this project in 7 months and the project provides a template approach to regional collaborative purchasing and installation.



Potential Funding

It seems likely that funding will become available in 2021, through a combination of funds from the Victorian government and Federal ARENA funding (Future Fuels fund).

Other options are

- Local Roads and Community Infrastructure Program funding
- Building Better Regions (BBR) – targeted to tourism activity – not yet released but likely in 2021

The conditions of these funds are not yet known.

(2) Growing Cooler Green Urban Spaces

Growing Cooler Green Urban Spaces is a collaborative council based project coordinated through the Goulburn Broken Greenhouse Alliance. GBGA is a formal alliance of the thirteen councils and two Catchment Management Authorities across the Goulburn Broken and North East regions of Victoria, committed to delivering actions to achieve climate change mitigation and adaptation and sharing initiatives that support sustainable, low carbon communities.

The member councils are Alpine, Benalla, Campaspe, Indigo, Mansfield, Mitchell, Moira, Murrindindi, Shepparton, Strathbogrie, Towong, Wangaratta, and Wodonga, partnering with the Goulburn Broken Catchment Management Authority and the North East Catchment Management Authority.

As our climate is heating, with each decade hotter than the last, urban areas need to respond to continue as sustainable, liveable areas for their communities.

World Health Organisation (WHO) studies in 2016 indicate that urban green space is a necessary component for delivering healthy, sustainable, and liveable urban environments.

“Interventions to increase or improve urban green space can deliver positive health, social and environmental outcomes for all population groups, particularly among lower socioeconomic status groups. There are very few, if any, other public health interventions that can achieve all of this”.

The project will develop information and approaches to enable councils to systematically plan street tree and vegetation programs to achieve the multiple benefits of cooler urban greening and respond to climate change. This will examine both strategic and operational components needed to ensure implementation continues for the decades needed to grow a mature urban forest. The project will consider different scales and budgets for the diverse councils across the region.

The legacy of improved and sustained urban greening are diverse.

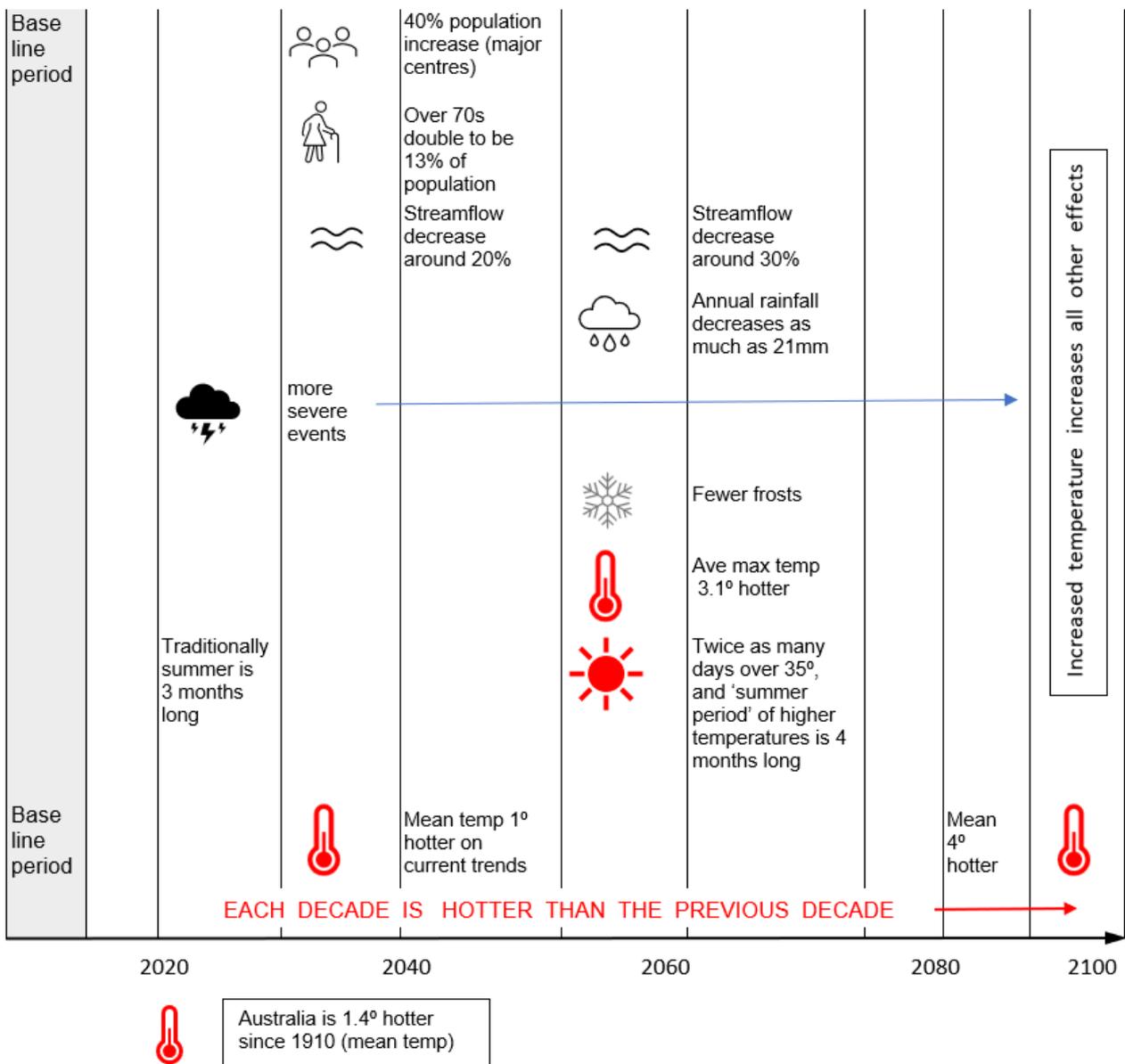
Greener urban spaces have been demonstrated in studies to improve community benefits:

- Recreation, Wellbeing and Activity – outdoor activity encouraged in local and retail areas; increased feeling of wellbeing
- Climate Regulation – reduced daytime temperatures
- Biodiversity – urban ecology increases
- Water Sensitive Urban Design – improved canopy intercept rainfall and slow runoff
- Health – exercise continues in summer, increased mental and general health
- Economic – treed streets encourage longer stay and usage of retail areas and improved property values.

Background

The region faces a warming and drying future climate. The average temperature increase from 1910 to 2020 of 1.4 degrees is associated with greater frequency of very hot days. Future heating will impact our region as shown in figure 1. Regional studies show the number of days over 35 degrees and nights over 22 degrees will increase significantly by the 2050s, to potentially double the number of hot days and nights, compared with today (DELWP, CSIRO, 2019 Climate Projections). Modelling by the North East Catchment Management Management Authority shows that historic summer temperatures will regularly extend over an extra month after 2030. Hotter urban areas, retaining heat during hot nights, are associated with higher hospitalisations, especially for aging and vulnerable members of our communities. These sections of our community are increasing in the future. Other vulnerable sectors are the very young and households that have fewer resources to reduce effects due to lower economic and housing resource.

Figure 1 Hume Region Future Challenges – Vulnerable Groups and Climate (for references see end notes)



Cooling strategies will be essential for the liveability of urban areas and residents. The widespread use of green elements is one of the most cost effective and efficient mechanisms for reducing urban heat.

Growing Cooler Green Urban Spaces

Goals and Benefits of the Project

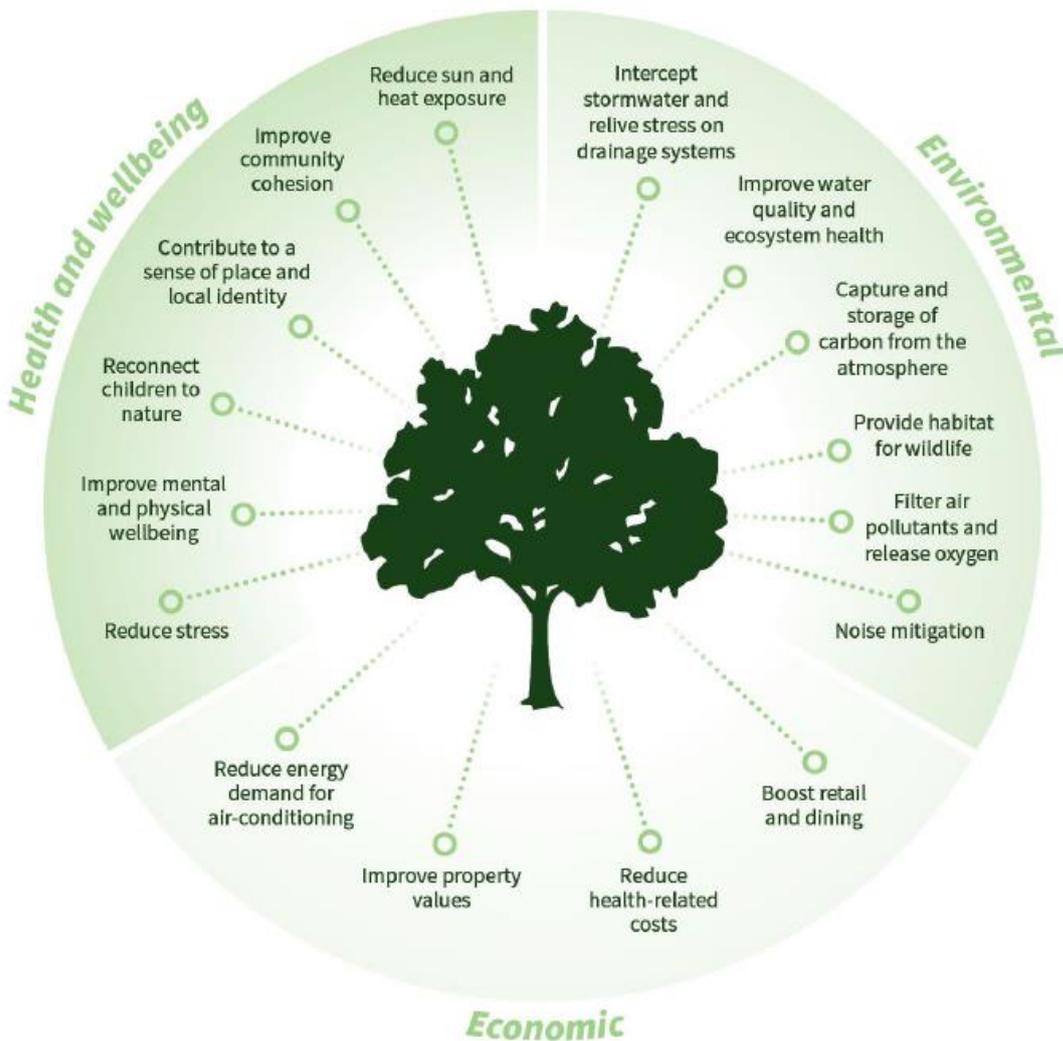
This project aims to assist councils to achieve the co-benefits of greener urban environments by working in the three domains of natural resources, community and health, and built environment.

Green shady urban spaces have long term and multiple community and environmental benefits, delivered by programs to grow green infrastructure in trees, parks and sporting reserves (grass) and biodiversity areas. Street trees contribute to urban liveability for decades and biodiversity areas often contain trees that are generations old. This vegetation frames the urban area, encouraging active use by residents.

Vegetation will also be affected by the projected changes in climate. An example is a longer hotter summer that will stress vegetation and require increased operational watering. Regional climate data allows the choice of trees and vegetation that are resilient to future conditions.

The City of Greater Bendigo has conducted multiple studies to develop its draft strategy and action plan “Greening Greater Bendigo”. The report summarises the co-benefits of urban greening in figure 2.

Figure 2 Critical Urban Infrastructure – the many benefits of urban trees



To reap these diverse benefits, Councils will need to plan and invest in increased and appropriate canopy tree planting and maintenance. In many councils the age of existing trees and inadequate replacement programs means canopy trees are disappearing in local towns.

Exploring the Domains of the Project

STRATEGIC	Urban greening intersects with multiple strategic plans which should include high level goals <ul style="list-style-type: none"> • Council Plan Goals • Public Health and Wellbeing Plan • Municipal Strategic Statement • Regional Catchment Strategy (CMAs) Eg GSCC Urban Forest Strategy “Greater Shepparton will be an attractive, vibrant and liveable region with well-connected green spaces that are valued by the community.”		
Urban Dimension	Natural Resources Street trees, green spaces, Vegetation corridors	Community & Health	Built Environment and Operational (I/S=infrastructure)
Objectives	Sustainable urban green areas for future climate Local biodiversity connections	Long term urban liveability Equity of access Attractive and safe to use Active use encouraged	Climate adapted built environment that serves community needs eg walkability
Issues	Urban shade trees numbers decreasing Biodiversity areas not connected Trees types may not be resilient to future climatic conditions Suitable trees in subdivisions?	Walking paths are not shaded Shade corridors are not continuous In hotter conditions, people deterred from active use	Grey I/S absorbs heat in urban areas and radiates overnight Street trees can be degraded by nearby infrastructure Passive watering not included in streetscapes
Actions and measures needed in practice	<ul style="list-style-type: none"> - Overall canopy cover targets – quantum and methods? Eg direct measurement or inferred by location/type/size (A) - Tree selection for expected climate conditions (B) - Biodiversity corridor connections (C) - Natural corridors for walkability (C) 	<ul style="list-style-type: none"> - Outcome that takes account of vulnerable sectors including age and SEIFA (D) - Cool areas at key services (E) - Summer walk choices (F) 	<ul style="list-style-type: none"> - Reduce heat in key areas(E) - Connected and liveable streets/paths (F) & green vegetated parks - Water adapted I/S (J) - Tree adapted I/S (J) - Winter sun access – tree - location & type (B) - Trees watered and maintained for longevity (G)(H)
Information Needed from Project Investigations	(A) Recommend suitable canopy targets * (A) Mapping options and methods to determine canopy cover * (B) Understanding existing tree species and databases * Tree selection research * Using NECMA climate tool (C) Methods to ID and map exotic and native urban corridors, connectivity gaps and connection to external environments *	(D) Mapping “SEIFA” “Housing Density/Lot size” “public housing” “age distribution” ** (E) Key Services – use map “access to services for older people” (medical, retail centres, libraries, care facilities, POS, transport) ** (F) Walking routes to key destinations with tree cover, do local consultation about route choices **	(G) Practical watering systems – kerb water diversions, possible low pressure watering system * (H) Assign \$\$ value to urban tree forest (eg Bendigo Council work) to encourage sustainable operations budget and demonstrate Benefit:cost * (J) Infrastructure Design Manual content and application
Project Stages	* This project ** This project will identify mapping methods ** All detailed mapping would be part of other projects		

Project Elements and Outputs

The project will develop information and approaches to enable councils to systematically plan street tree and vegetation programs to achieve the multiple benefits of cooler urban greening as the climate heats.

The project will consider to the different scales and budgets for the diverse councils across the region.

1. *Element One Existing Practice - Understand GBGA members' existing green planning, status, operational and maintenance approaches and issues*

Strategic Planning – compile GBGA members' existing strategic practice to plan greening programs for street shade, greening/cooling and biodiversity.

Existing knowledge, status and operational practice - examine operational and maintenance practice for each member and issues. Also, current use of databases and GIS for information and monitoring. Also status of operations for biodiversity corridors and areas. Councils to provide maps from existing data to define existing density, shade potential and age of existing street trees; also, SEIFA and social mapping. In some cases, the consultant will assist in mapping. Conduct gap analysis and benchmarking.

2. *Element Two Knowledge Building - Develop capacity for township based planning to improve cool street and public spaces, using increased shade and climate adapted trees, with equity in community benefits and broader environmental benefits*

Identify a range of methods applicable for small and large shires, and regional cities. Through investigation of urban greening projects for methods, mapping approaches, recommended targets, and monitoring, including social, environmental, arboricultural and infrastructure factors.

Assess the performance of street tree species for the future climate, using regionally specific data (NECMA Climate Explorer).

Identify methods for passive watering of street trees during longer, hotter summer periods. Examine the additional active watering task and costs involved, as well as the costs of alternative approaches.

OUTPUTS from Elements 1 and 2 to be considered and reviewed during Element 3

Report summary and analysis of existing members strategic, operational and monitoring practice.

Report of response of identified tree species to future climate conditions

Report of range of methods used to include social, environmental, arboricultural and infrastructure factors in the planning of urban greening projects, including cost information

3. *Element Three- Capacity Building and Consultation*

Information and capacity building in forums with the multiple internal Council disciplines that contribute to achieving the co-benefits of green urban spaces. Forums will show the cross disciplinary benefits of greening urban areas, and planning to achieve this, drawing on local and external expertise to build understanding and communication. Share interim information and findings to discuss ideas and improvements to feed into stage 4.

OUTPUTS Element 3

Report - Results from consultation to use during Element 4

4. *Element Four - Produce a framework to assist councils in formal long term plans for planting to progressively improve canopy cover in urban streets/spaces that considers vulnerable sectors and council capacity (the plan itself and the planting is outside scope of this project).*

Develop a framework tool of approaches and options for long term planning. This tool can be used by councils to develop long term planting plans to cool urban areas, prioritise vulnerable sectors, maintain urban liveability in the future and improve urban biodiversity. Incorporate monitoring criteria using tree registers and metrics of the Sustainable Subdivisions Framework 2020. It is intended to present options suitable for a range of resource capacity.

OUTPUTS Element 4

Practical framework for the planning of urban greening projects, to encapsulate information from this study, and supporting information.