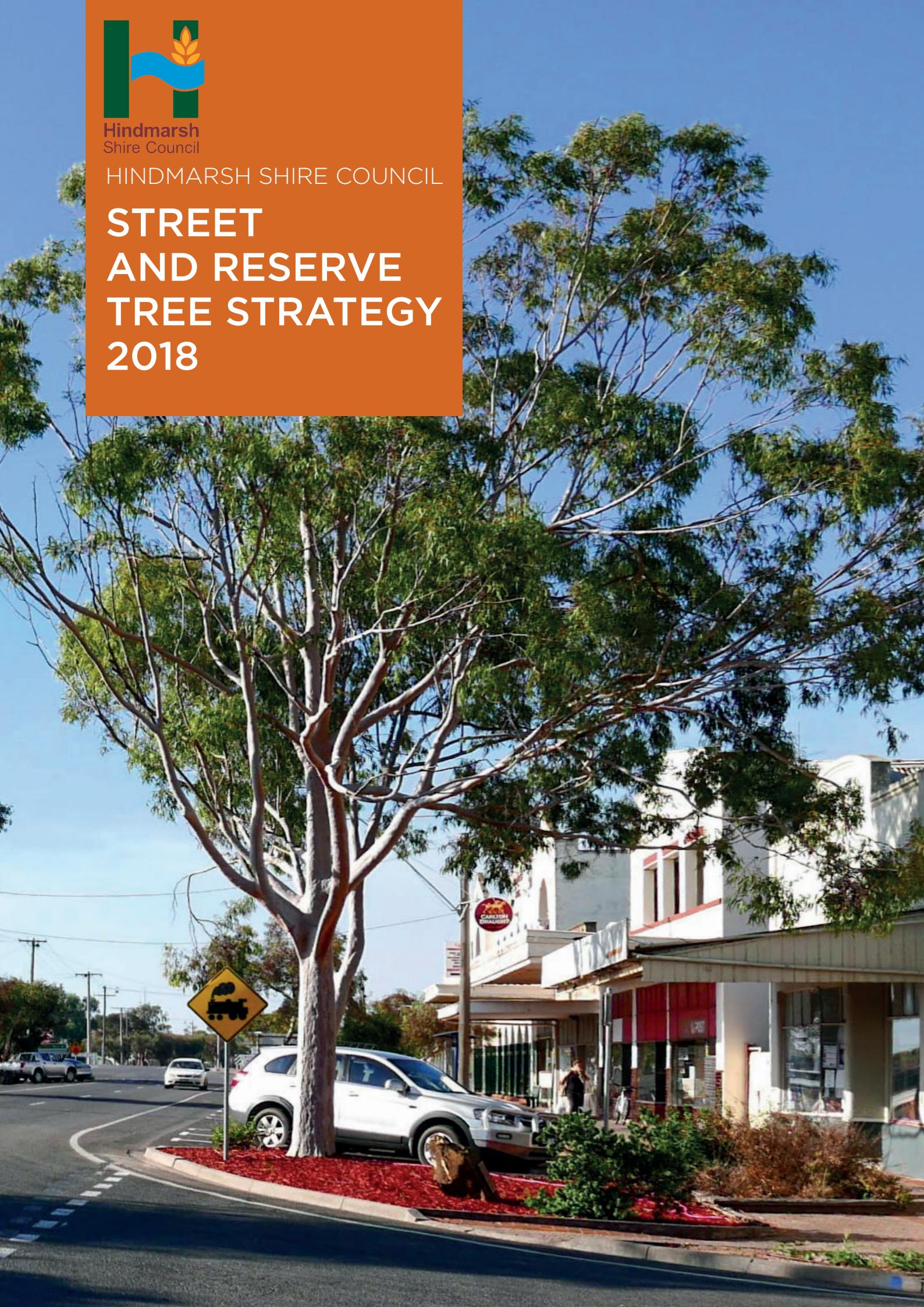




Hindmarsh  
Shire Council

HINDMARSH SHIRE COUNCIL

# STREET AND RESERVE TREE STRATEGY 2018





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# INTRODUCTION

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Hindmarsh Shire Council is home to a population of urban trees that provide a natural and green backdrop within each of its towns. These trees line township streets, they're in parks or reserves and others are within back and front yards of residents' properties. Within each town, these individual trees form part of a whole population that cumulatively provide a large range of benefits. These urban trees are important because they provide shade for people, they provide character and amenity within our streets and parks, they intercept rainfall and they are home to birds and other wildlife.



Council recognises that trees are fundamental in creating healthy urban environments and it is therefore important to manage and maintain these trees to ensure they are healthy, long lived and maximise the benefits they provide. Street trees in particular are crucial infrastructure assets and should be valued accordingly. Many people see trees as an important measure of the quality of their communities and the image of townships are positively influenced by the extent and health of its street tree population and overall canopy coverage. If trees are maintained well, they have the capacity to increase in value over time unlike other public assets such as roads and footpaths which decrease in value over time.

To date there has not been a forward plan in place to manage, renew and enhance the urban tree population. As a result, this Street and Reserve Tree Strategy is the first of its kind in Hindmarsh's history. It is intended to provide the basis for why trees are important in our towns, an assessment of the current status of the urban tree population and ideas and opportunities for both managing these trees better and encouraging the planting of new ones. It is a longer term strategy to help focus existing operational programs and to maximise Council's budgets with evidence based decision making.

Hindmarsh Shire has created a vision and some key objectives to guide all decision making with Council that relates to street and reserve trees.

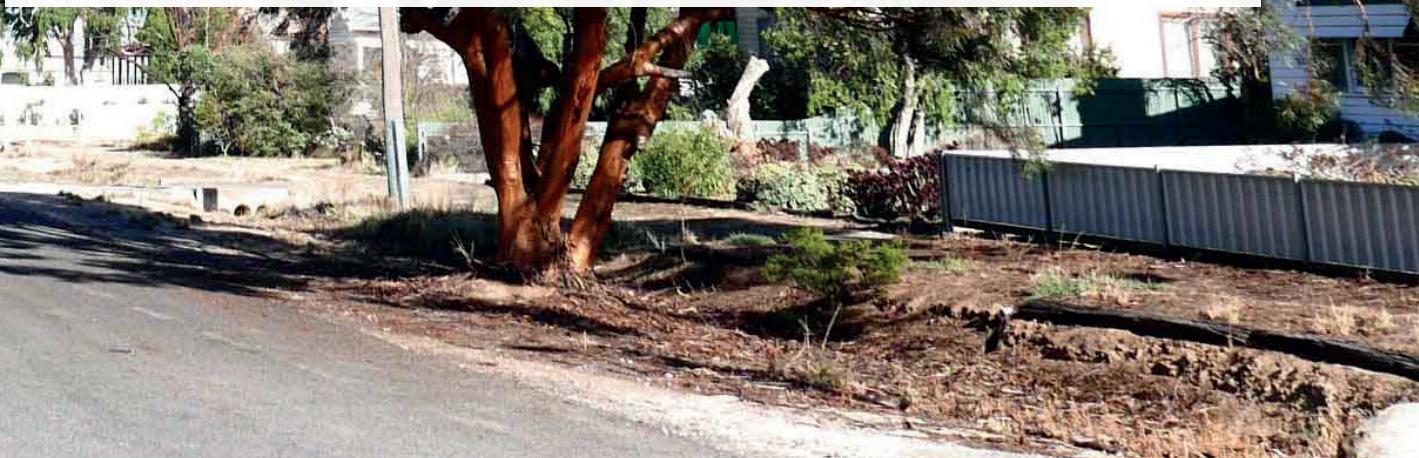
## VISION

Hindmarsh's streets and parks will be greener and shadier through the planting of the right trees in the right location.

## OBJECTIVES

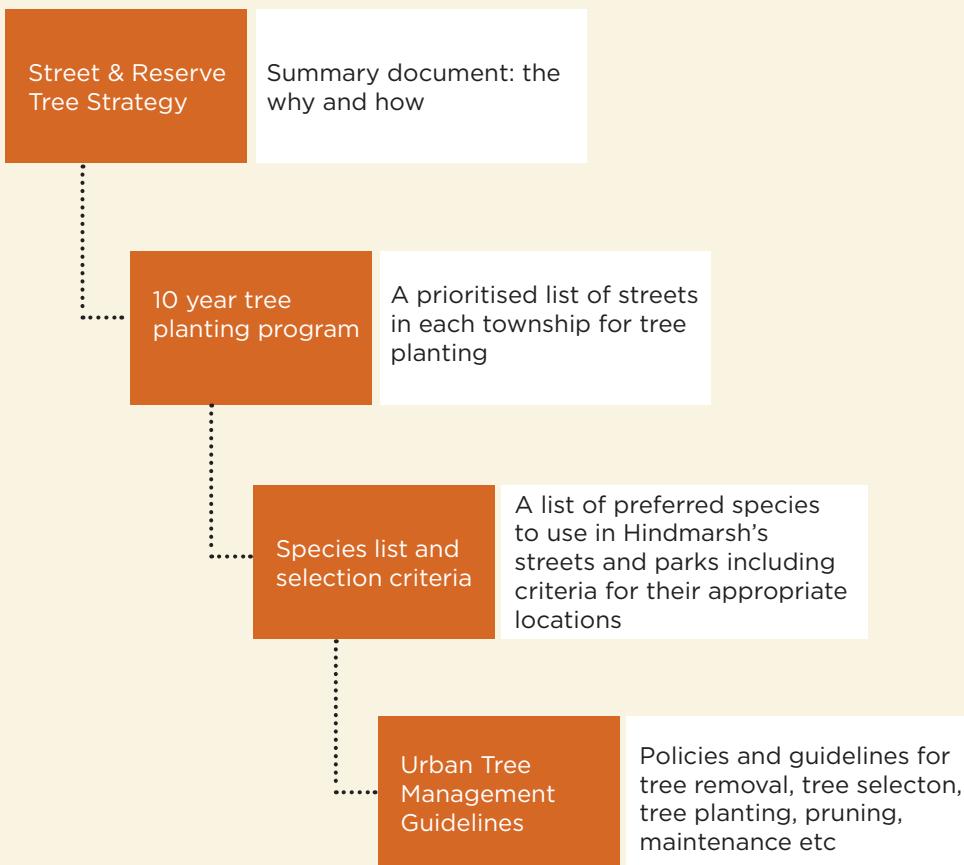
The primary objective of this Strategy is to put in place a robust decision making system for Council to transform poor streetscapes and develop significant avenues throughout the townships. Therefore the core aims of this Strategy are to:

1. Increase shade in areas of need
2. Improve the amenity and character of each town through tree planting
3. Implement and maintain a formalised urban tree management program



# CONTEXT

This Street and Reserve Tree Strategy is part of a broader suite of urban tree management tools that Council will use to make more informed decisions regarding the ongoing planning and management of our urban trees.



*Image 1: Flow chart of how Council's tree management documents work*



# BENEFITS OF TREES

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Trees are important for our towns because they provide many benefits. These include:

## HEALTH AND WELLBEING BENEFITS

- Provision of natural shade and shelter for people: Canopy trees reduce daytime surface temperatures by up to 20 degrees Celsius (Akbari et al., 1997; Livesley, 2010 )
- Improved amenity and desirability of a neighbourhood
- encourage people to walk down the street and spend time outdoors
- enhance the quality and usability of parks and open space
- avenue like plantings along streets encourage motorists to drive more slowly creating safer streets
- Reduce air, water and soil pollution



# BENEFITS OF TREES

## ENVIRONMENTAL BENEFITS

- Connecting biodiverse locations and provide localised biodiversity habitat (including understory)\*
- Help the Shire adapt to climate change by:
  - Providing urban cooling through shade and evapotranspiration
  - Sequestering carbon, particulate matter and other air pollutants \*
  - Reducing the severity of localised flooding by intercepting stormwater \*

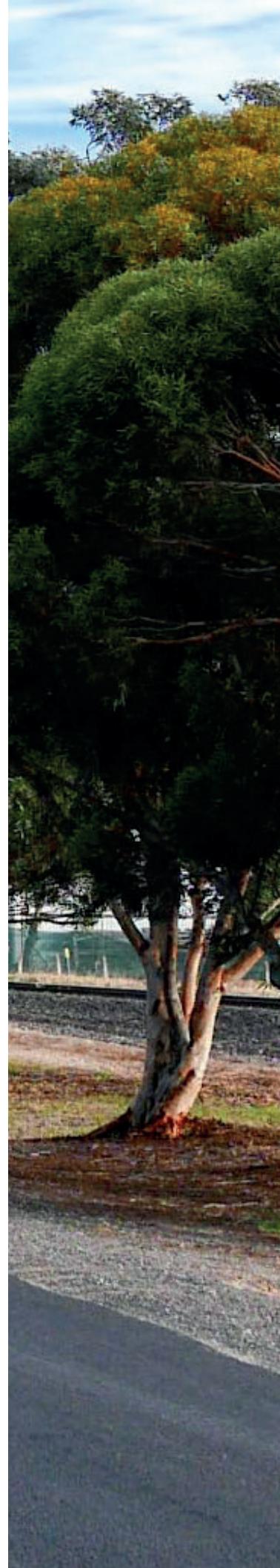
## ECONOMIC & AMENITY BENEFITS

- Improved township image and streetscape amenity
- Improved retail activity by up to 20%. Shoppers spend longer and more money in retail areas that are well treed and landscaped (Wolf, 2005)
- Increased house prices through the provision of higher streetscape amenity (Plant, 2016, Pandit 2013)
- Improved character, amenity, and brand of the region \*
- Reducing energy use in buildings: a 10% increase in deciduous tree cover can reduce heating and cooling costs in houses by 5-10% ( Simpson and McPherson, 1996; Akbari et al., 2001)

(\*All referenced from Mullaney, 2014)



Image 2: Urban trees provide an array of benefits





CANOPY TREES REDUCE  
DAYTIME SURFACE  
TEMPERATURES BY UP TO

**20°**



**10%**

INCREASE IN DECIDUOUS  
TREE COVER CAN REDUCE  
HEATING AND COOLING  
COSTS IN HOUSES BY  
5-10%

# HINDMARSH TREES

A street assessment was undertaken by Tree Logic Pty Ltd assessing the quality of trees in each street, the dominant species, vacant sites and opportunities. The whole street assessment considered rates of vacant tree sites, inappropriate or declining trees and street character suitable for planting to create a hierarchy of streets most in need of a tree planting plan.

	NHILL	JEPARIT	RAINBOW	DIMBOOLA	TOTAL
No of Streets assessed	54	20	20	38	132
Approx. no. of street trees	2338	424	751	1579	5092
No of vacant sites	806	270	252	755	2083

Table 1: Breakdown of existing trees and vacant tree planting sites in each town

Considering then both the approximate number of existing street trees plus number of vacant sites, Hindmarsh has the opportunity to house approximately 7,175 street trees.

Vacant sites constitute 29% of the total potential sites.

The most common tree species observed during the assessment were Bottlebrush (*Callistemon* spp.). Bottlebrush were found to be the dominant species in 83 of the 132 streets and/or sections.

## OTHER COMMON SPECIES:

- Gum trees (*Eucalyptus* spp.) (Also dominated in the wide medians found in Nelson Street, Nhill and McDonald Street, Dimboola)
- Desert Ash (*Fraxinus angustifolia* subsp. *angustifolia*)
- White Cedar (*Melia azedarach*)
- Norfolk Island hibiscus (*Lagunaria patersonia*). Also known as 'Pyramid Tree'.

## OTHER NOTABLE SPECIES:

- Weeping Myall (*Acacia pendula*)
- Kurrajong (*Brachychiton populneus*)

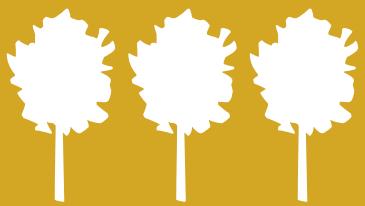
The assessment shows that there are too many Callistemons within the urban tree population. No one species should represent more than 10% of the entire urban population. One or two dominant species affects the overall diversity of the population, increasing risk of pest and disease attack or other. Secondly, the Callistemon

is only a small tree that doesn't necessarily provide the environmental benefits such as shade or amenity required for Hindmarsh. It is a strong recommendation to plant species other than *Callistemon* within vacant sites to improve the overall diversity of the tree population.

## STREETSCAPE VALUES:

- 34 street and/or sections were considered to have fair value (aesthetics, percentage of vacant sites)
- 69 street and/or sections were considered to have fair to poor values
- 29 street and/or section were considered to have poor value (i.e. excessive vacant sites and/or inappropriate species).

Further to the street assessments, other "Opportunity sites" were identified for additional tree planting, such as in traffic treatments or medians that are not currently considered vacant sites. These sites will require a level of infrastructure works e.g. kerb outstands and so therefore should be considered for tree planting when any new asset or renewal works are being undertaken in these locations. These sites also include sections of open space where tree planting could reinforce the streetscape. There are seventy-one (71) such sites across Hindmarsh's towns that were identified and most were located within road reserves, medians, or nature strips. These are in addition to the 2,083 vacant sites.



**29%**

OF ALL TREE PLANTING  
SITES IN STREETS ARE  
VACANT



BOTTLEBRUSH WERE  
FOUND TO BE THE  
DOMINANT SPECIES IN

**83**

OF THE

**132**

STREETS AND/OR  
SECTIONS.



## ASSESSMENT RESULTS

### STREET TREES

This street tree data was then used to develop a hierarchy of streets for Council to focus their tree planting program. Recommendations have been made as to which streets could be planted first and then ongoing for a 10 year period and were based on the number of vacant sites, profile of street/road and existing tree stock. The results also show where the 71 “opportunity sites” are located.



## Nhill



Image 3: Streets selected in Nhill for tree planting works based on arboricultural assessment

## Jeparit

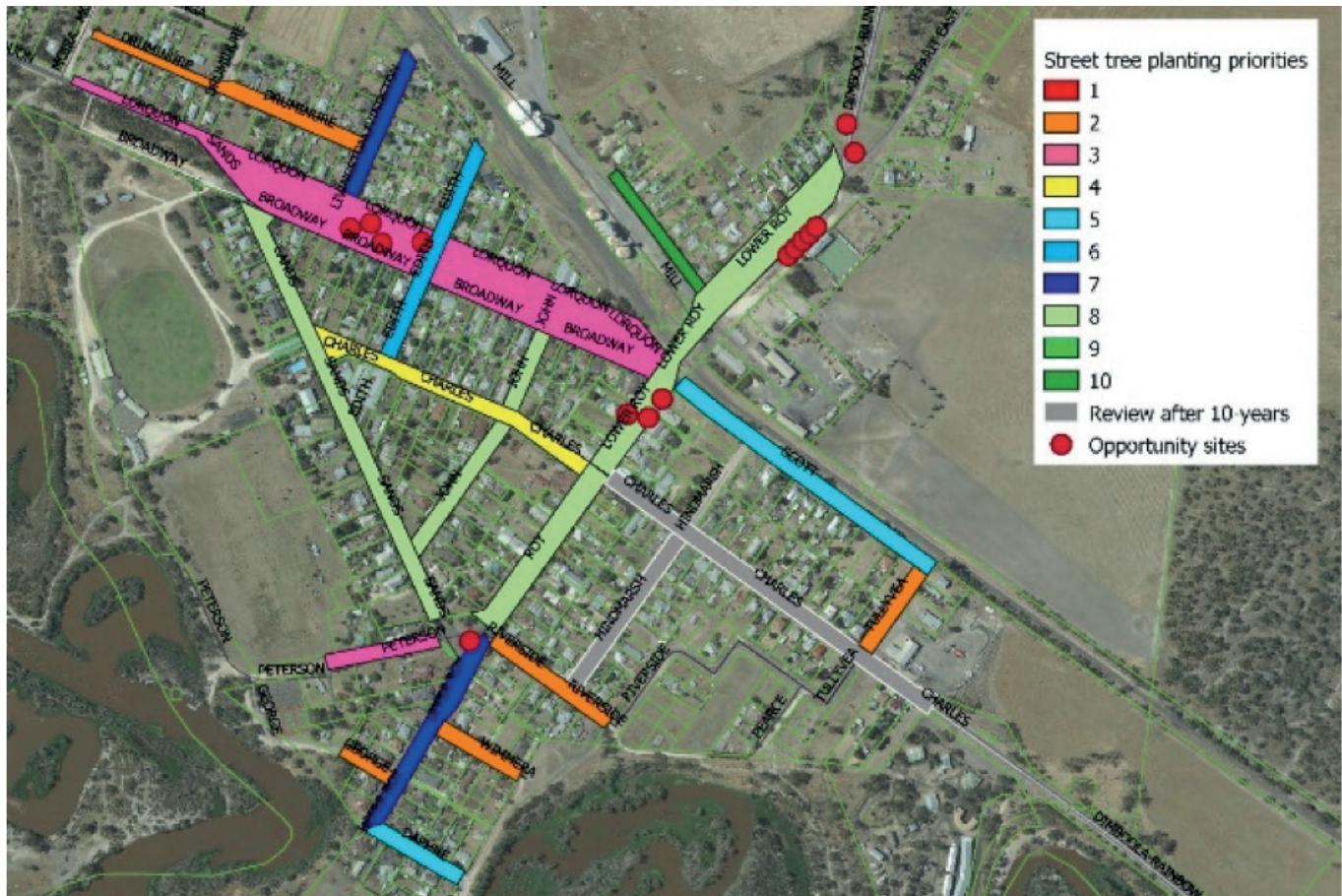


Image 4: Streets selected in Jeparit for tree planting works based on arboricultural assessment.

## Dimboola



Image 5: Streets selected in Dimboola for tree planting works based on arboricultural assessment

## Rainbow

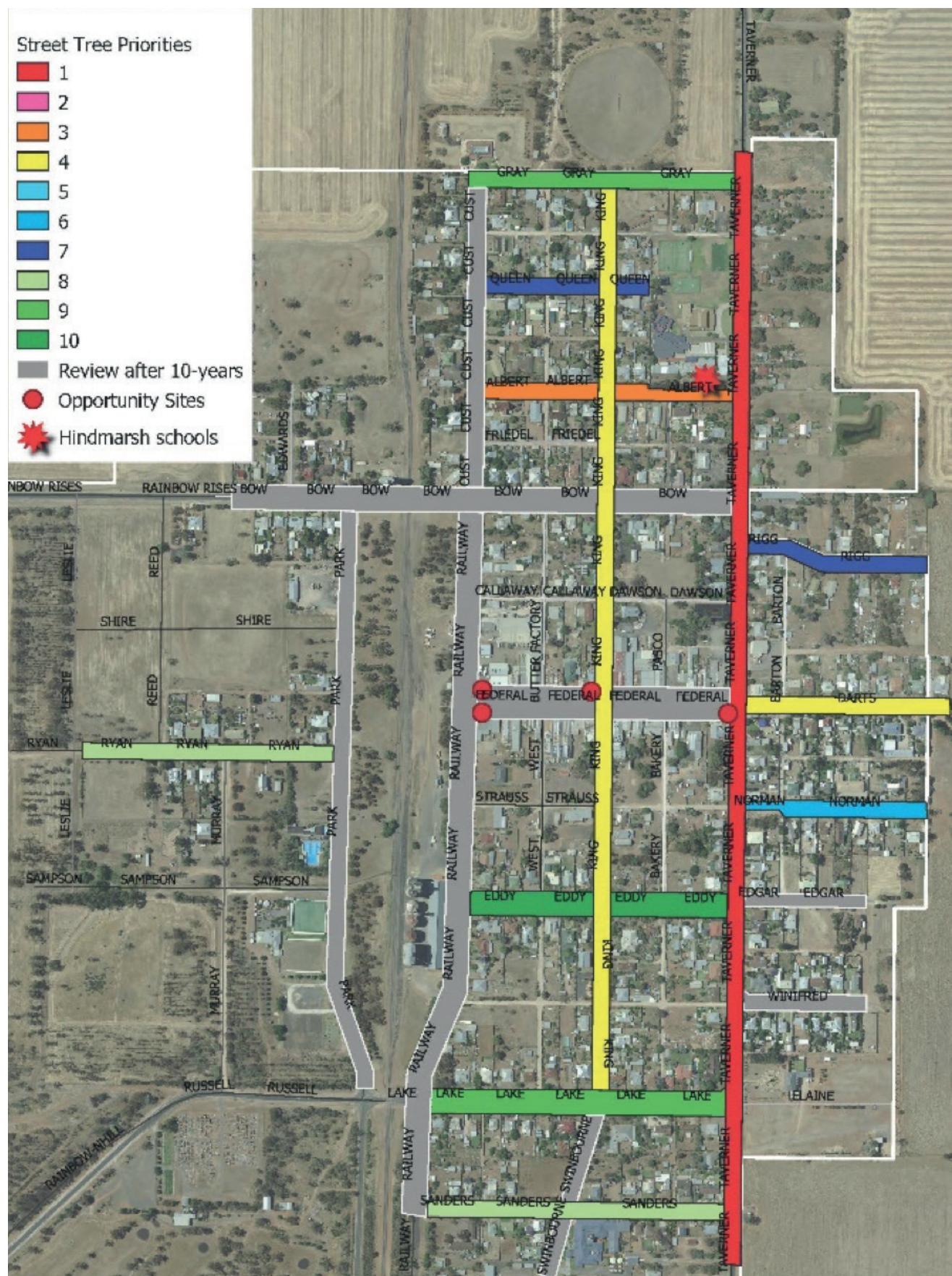


Image 6: Streets selected in Rainbow for tree planting works based on arboricultural assessment



# ASSESSMENT RESULTS

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## PARKS AND RESERVES

Hindmarsh's main parks and reserves were assessed not primarily for tree planting but for overall master planning, of which tree planting should be a core outcome. Those reserves and parks in red are those deemed most in need of overall master planning to consider functionality, usability and future needs whilst also considering the need for improved amenity and shade through the provision of trees. Whilst this Plan will not require Council to commit to these Masterplans, it is instead a flag to consider greater tree planting in the red and blue ones where possible.

## PARKS AND RESERVES

### Nhill



Image 7: Priority parks for master planning in Nhill

### Jeparit

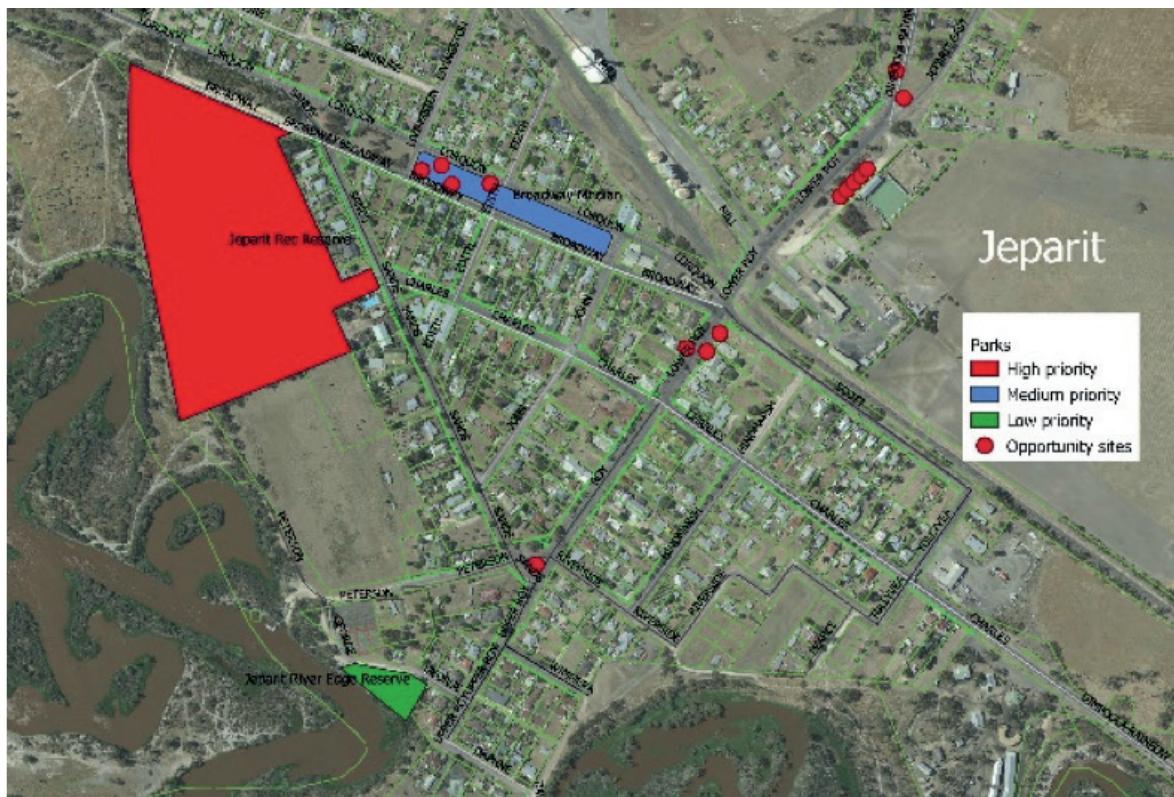


Image 8: Priority parks for master planning in Jeparit

### Rainbow



Image 9: Priority parks for master planning in Rainbow

# Dimboola

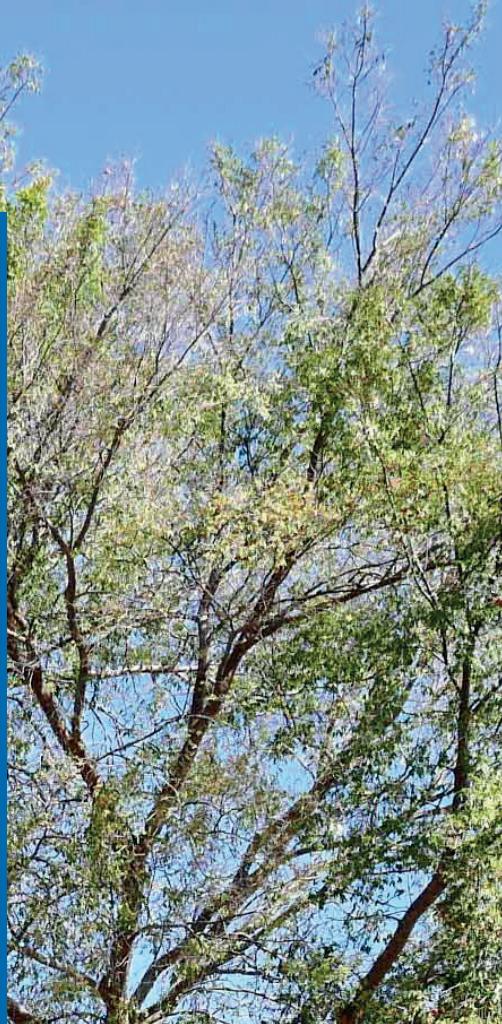


*Image 10: Priority parks for master planning in Dimboola*

# COMMUNITY PRIORITIES

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A series of community workshops were held during May 2018 to discuss the vision and opportunities for a tree planting program in each township. The aim of these workshops was to identify a theme or character type for each town and identify opportunity sites for tree planting. There was also the opportunity to identify issues or challenges that Council should be made aware of in consideration of urban tree planting.





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**Overwhelmingly, residents across Hindmarsh see the opportunity for much greater shade across their towns using tree canopy. At each workshop it was the preferred character type above colour, biodiversity and main street amenity, though each of these character types were found to be favoured in specific locations within each town. Biodiversity was identified as a key factor in species selection for street and reserve trees as was the ability to create a unique character for each town through the planting of specific trees in specific locations.**

The main idea for each town, with general consensus from attendees at each workshop, is as follows:

1. Nhill: Planting up the two major entranceways into town being Nelson Street from Melbourne and Victoria Street out to Adelaide and connecting them through the main thoroughfare of town to create a positive driving experience and gateway into town.
2. Jeparit: Enhance the native and biodiversity character of the town and connecting the urban area to the surrounding river area through street trees.
3. Rainbow: Improve the look and amenity of Taverner Street, noting existing footpath installations and existence of overhead powerlines as one of the major entrances into town and consider shade trees in kerb outstands to enhance the existing plantings in Federal Street.
4. Dimboola: Extend the exotic avenue along Lloyd Street each way from the shopping strip and improve the biodiversity link up Wimmera Street from the River.

Some broader opportunities identified by various residents were:

- Improve all entrances to town, including off the highway (though managed by VicRoads)
- Enhance some parks/and reserves through more shade trees
- Work with utilities and other land holders: VicRoads, Powercor, Schools, private landholders to have trees planted and managed on their land
- Communicate well with the community to keep momentum given the long time span of this plan
- Work with residents to encourage complementary plantings in private gardens
- Incorporate trees and tree benefits into Council's existing policy and planning framework e.g. Climate Change Action Plan, Environment Strategy, Council Plan.



# RESULTS OF WORKSHOPS

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## Nhill

Both the arboricultural survey and the community groups identified priorities and opportunities for greater shade for both entry roads into town and along the two main streets, Nelson and Victoria Streets. It was agreed that these should take priority for tree planting in Nhill.

Whilst there were many similarities between the assessment and community ideas, the community did however place higher priority on Whitehead Street to provide some shade for school children to walk along. Whitehead Street however presents a range of challenges: powerlines and heavy truck access so species selection will be important.

### COMMUNITY PRIORITIES

- Dimboola Road entrance and avenue: use trees to screen dust and noise from Grain site and create more of avenue into town
- Hospital: More trees needed in carpark and outside hospital
- Nelson Street: Plant trees in commercial carpark and more natives clumped in median
- Victoria Street: Opportunity for high impact avenue into town
- Whitehead Street: needs shade for children to walk to school
- Western Highway: needs an avenue into town
- Truck trailer exchange, race course and showgrounds needs more trees
- Queen and Park streets: needs trees
- Belcher and Clark: need trees and more biodiversity
- Plant trees along A&P Society fence

### ISSUES OR CHALLENGES TO CONSIDER

- Nelson (out of town from William) has narrow footpaths
- Whitehead Avenue has many challenges for planting trees: trucks and powerlines
- Powerlines mean can only plant 2.8m high trees
- McPherson Street has narrow nature strips
- Need to manage trees and fire truck access into swamp which some of which is privately owned
- Tree diversity is needed around the lake, some land of which is privately owned
- Need species suitable for Hindmarsh climate



## Jeparit

Jeparit residents identified sites that were also highlighted as opportunity sites in the assessment. Druminure Street was also a common site for planting. Native trees were preferred so as to further settle the town into its connection and proximity to the river.

### COMMUNITY PRIORITIES

- The entranceway from Rainbow where the bowling club and depot had very strong support for greater shade and screening using trees = Lower Roy
- Plant more shade trees in median and park along Broadway
- Druminure Street needs more shade
- Peterson Ave: plant natives up this street from the river
- Charles Street: as another entranceway into town should be planted with natives
- There is potential for more revegetation along the river front and in the horse paddock. Though it is unclear who owns this land.
- Use floodway (between Riverside Street and river) as tree reserve
- Recreation Reserve could do with improved amenity between field and track. Needs more trees and shade plus BBQ facilities for families during footy.
- Lemon scented gums to be planted in reserve near swimming hole

### ISSUES OR CHALLENGES TO CONSIDER

- Jeparit Rec Reserve needs a clean-up and planting of trees
- The Ash trees in Charles Street drop leaves and look unsightly and there are powerlines to consider
- The trees outside the bank need to be replaced as they are unsightly and messy
- Lower Roy out to Rainbow desperately needs trees
- Mill Street needs trees to replace the dead and removed ones



## Rainbow

Rainbow has recently upgraded the central median of the main street, Federal Street which includes new tree plantings. There are some clear opportunities which were supported by the community to plant more shade trees in the roadway along Federal Street to enhance the existing works. These however would require further infrastructure works to create new kerb outstands and so require additional funding for infrastructure works.

The residents of Rainbow, however, identified Taverner Street as the key priority for street tree planting as the main entrance into town. There are currently road footpath upgrades continuing along Taverner so there is a good opportunity to align tree planting with footpath works.

### COMMUNITY PRIORITIES:

- Taverner Street should be highest priority. Due to powerlines on one side, consider planting smaller species underneath powerlines and larger species on the other side
- Need shade trees in front of hospital - Sanders Street
- Ryan Street could have some large canopy trees planted along it
- Park street between Queen and Bow where there are very few trees
- Bow Street to Endaro Street, trees are needed.

### ISSUES OR CHALLENGES TO CONSIDER

- Soil types vary across town making tree selection more challenging – there is limestone and clay in some areas
- More shade is needed right across town
- Taverner Street: powerlines, sight lines, new footpaths and kerbing, drainage
- Railway Street – gumnut mess
- Sightline at Eddy and Railway Streets needs considering
- Melias (White cedars) drop mess in Eddy Street



## Dimboola

The main retail strip of Lloyd Street has already had some significant street tree planting. It does not however extend beyond the shopping strip and as a main entry into town, the community believes it has a greater need for more trees. Hindmarsh Street, identified as the top priority in the arboricultural assessment will be planted out with Crepe Myrtles in Winter 2018.

### COMMUNITY PRIORITIES

- Anderson Street is currently being reconstructed and when finished needs an avenue of trees
- Wimmera Street should link much better with the river by using native trees as an avenue.
- School Street needs trees
- George street needs trees and understory plantings to buffer residents from railway corridor
- Nhill Road could use more trees to enhance existing ones
- Lloyd Street: extend the avenue either side of retail strip to enhance character (deciduous) using water sensitive urban design, such as swales or passive stormwater kerb inlets.

### ISSUES OR CHALLENGES TO CONSIDER

- Lloyd Street may need roadside sealing at some point which may damage newly planted trees. Though Council has suggested the swales are kept as drainage and plant canopy trees to retain the rural township feel.
- Kerb and channelling not yet done on Lloyd Street - might need to be one day impacting trees (see above for potential solution)
- Powercor contractors heavily prune trees to obtain legislated clear zones around powerlines
- Old Weir Lane has flood potential
- Olive trees are a weed species and shouldn't be planted
- Powerlines need to be considered across town
- Soil types change a lot over the town
- Railway corridor is bare providing no protection from cold SW winds
- Front of historic railway station is ugly
- Tree roots on unmade footpaths become trip hazards
- Some species are weedy along the river (Ash trees)
- Pines trees next to Recreation Reserve are ugly and should be cut down

# CHALLENGES

Street and reserve tree planting within Hindmarsh faces some challenges that need to be accommodated when planning for and managing these trees. These include:

Conflict with infrastructure: urban environments come with a range of hard infrastructure to help towns function e.g. roads, drainage, electricity powerlines, kerb and channel. Often there are risks associated with trees interfering with the function of this infrastructure e.g. branches growing into powerlines and so trees must be managed to reduce this risk. Careful consideration must be given to select the right tree species for the right location so as to minimise conflict with infrastructure where possible.

## CLIMATE AND WATER:

Hindmarsh has extreme seasons with hot dry summers and cold crisp winters. Water is a limited resource that must be used and considered sustainably. As a result, the species selected to grow in Hindmarsh's streets must be able to not only survive these extremes, but also thrive. Climate predictions highlight that these extremes are likely to get worse placing further importance on selecting species for the Shire that will grow well into the future. This also creates a need to explore integrated water management principles for Hindmarsh including the use of water sensitive urban design where possible and implement a robust tree establishment watering program.

## SOILS:

Each town has a mix of soil types and some are harder for trees to grow in than others. Heavy clay soils and limestone can provide difficult growing conditions for some trees. Testing and ameliorating soils is a very expensive exercise and should only be done

when completely necessary. Instead, species selection plays a critical role in ensuring longevity and health of planted trees.

## RESOURCES:

Street and reserve trees are currently managed in each town by the Parks and Gardens Team. This team of six staff is not only responsible for trees but also maintenance of public facilities, lawn and grass mowing, street sweeping, litter and maintenance of street furniture. To actively manage a growing urban tree population will require adequate resources to inspect, maintain, remove, renew and plant all trees under the proposed 5-year planting program. Boosting the existing resources with a level of horticultural knowledge will help to ensure best practice tree management.

## EXISTING TREES – INHERITED LEGACY:

It is recognised that many urban trees planted in and around Hindmarsh are problematic. Some are weedy such as the Desert Ash trees, some are too big for their location and some have not thrived under the existing climatic conditions. Whatever the reason, there is no proposal to remove all of these trees within a 10 year program as this would lead to significant landscape amenity loss as well as a heavy burden on the existing resources. Instead, ongoing management of these poorly selected trees is critical alongside a broader and long term removal and replacement program that accompanies a vacant site tree planting program. A gradual transition to a healthier and longer-lived urban tree population is a far more sensible and cost effective approach for Hindmarsh.

## **PESTS AND DISEASES:**

The predicted climatic changes are likely to inflict stresses on urban trees and other plants, and this may increase their susceptibility to certain pests and diseases. Climate change may alter patterns of disturbance from pathogens and herbivorous insects through physiological changes in the host plant. The expected changes in temperature and moisture availability will also directly affect the development and survival of the pests and pathogens, and their natural enemies, competitors and vectors. This may alter the impact of native pests and diseases and increase the populations of some species, including non-native species, not currently recognized as pests to epidemic proportions.

## **COMMUNITY PERCEPTIONS OF TREES:**

In general, street trees are highly valued elements of the urban environment and their benefits far outweigh their annoyances. Some people however, have a general fear of trees or consider them a nuisance factor. Things such as fear of native trees dropping limbs, notions of trees being 'messy' or doing damage to adjacent infrastructure and thoughts that resources would be better spent on other community assets are common perceptions of trees. There is also a strong association of native trees with bushfires. However most of these fears can be alleviated by good communication and knowledge as well as ongoing best practice urban tree management that aims to mitigate risk.



# COUNCIL BUDGET AND RESOURCES

Currently, Council has \$30,000 annually budgeted for tree planting. A further budget for town maintenance includes tree maintenance such as pruning, tree removal, branch removal and street sweeping.

\$30,000 allows for a maximum of 60 street trees to be planted each year. This includes purchase of the tree stock, planting and three years watering and formative pruning.

The existing Parks and Gardens staff conduct all manner of tree works. They are currently able to resource the planting of 15 trees in each town per year, plus the ongoing watering and pruning requirements.

As per below diagram, the arboricultural assessment identifies far more than 60 vacant sites per year to be filled. Each priority year as demonstrated has at least 150 trees to be planted across the 4 towns each year.

PRIORITY	NO. STREETS/SECTIONS	NO. VACANT SITES
1	4	176
2	7	200
3	13	175
4	10	169
5	9	170
6	10	194
7	10	191
8	11	181
9	10	159
10	12	159

Table 2: Results of assessment for planting out in vacant sites

## ADDITIONAL COSTS

Planting trees in more engineered solutions such as kerb outstands in Rainbow's main street, redesigning drainage or using back of kerb inlets for passive stormwater flows will bring greater benefits to the tree yet comes at additional costs, including potentially higher maintenance costs.

Any additional tree planting identified as an opportunity site is to be encouraged as part of broader infrastructure upgrades by either Council, VicRoads or utility service providers so that budgets can be leveraged. Business cases may also be made for external funding streams to contribute to the cost of works.

## CAPITAL WORKS

Water Sensitive Urban Design (WSUD) should be considered as part of all footpath and kerb construction projects and where possible, trees included and funded as part of the project budget.

**Water Sensitive Urban Design  
(WSUD) should be considered as  
part of all footpath and kerb  
construction projects**





# HINDMARSH STREET TREE PLANTING PLAN

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By taking into account the arboricultural assessment, the community's ideas, the identified challenges and the existing budget constraints, the following 5 year planting plan has been identified. Given that the number of opportunities far outweigh both budgets and resources, if further funding for resourcing became available then Council could increase its tree planting quota per year in identified streets. This Strategy should be used in both budget and capital works planning discussions as a business case for increased tree planting and management funding where possible.

Priority streets and roads have been given a 1-4 year timeframe. Others have been allocated within a 5-10 year period and others are to be reviewed after 10 years. It is noted that not every vacant site identified within a chosen street will be planted within the year they have been allocated based primarily due to budget constraints. If additional resources were to be made available there is already a plan for where to plant additional trees. Council should review the program after year 4 to determine the extent of planting undertaken and decide to continue with new streets or complete the gaps in others.

A species type has been recommended for each street. When selecting the right species for each street, Council will consider the assessment results, the species palette suitable for Hindmarsh, availability of stock and the preference of residents as gauged from consultation.

## NHILL

### Street Tree Planting Priorities

	STREET	NO OF VACANT SITES	TREES PLANTED	SPECIES TYPE	NOTES
Year 1 2019	Nelson Street	38	15	Median: evergreen, tall Eucalypts, Acacia	Need to align with footpath works. Opportunity sites in median.
Year 2 2020	Victoria Street	36	15	Non P/l side: large ornamental/deciduous	Main entranceway. Focus on western extent and central median.
Year 3 2021	Whitehead Ave	28	15	Under p/l: small ornamental Non p/l: small to medium ornamental	Need to consider powerlines and truck access. Smaller trees will need to be used
Year 4	Dimboola Rd	25	15	Under p/l: Small evergreen Non p/l: small to medium evergreen	Reinforce outer separator planting, screen silos

Review ready for 5-10 year planting plan



Image 11: Nhill's priority streets for tree planting 2019-2022

## NHILL

### Street Tree Planting



Image 12: Nhill Truckstop currently



Image 13: An example of Nhill Truckstop with trees planted

## NHILL

### Opportunity sites



Image 14: Nhill's opportunity sites

Uniquely, many of Nhill's opportunity sites fall within the priority streets in the first two years of the program. As a result, these opportunity sites should be filled as part of the tree planting program.

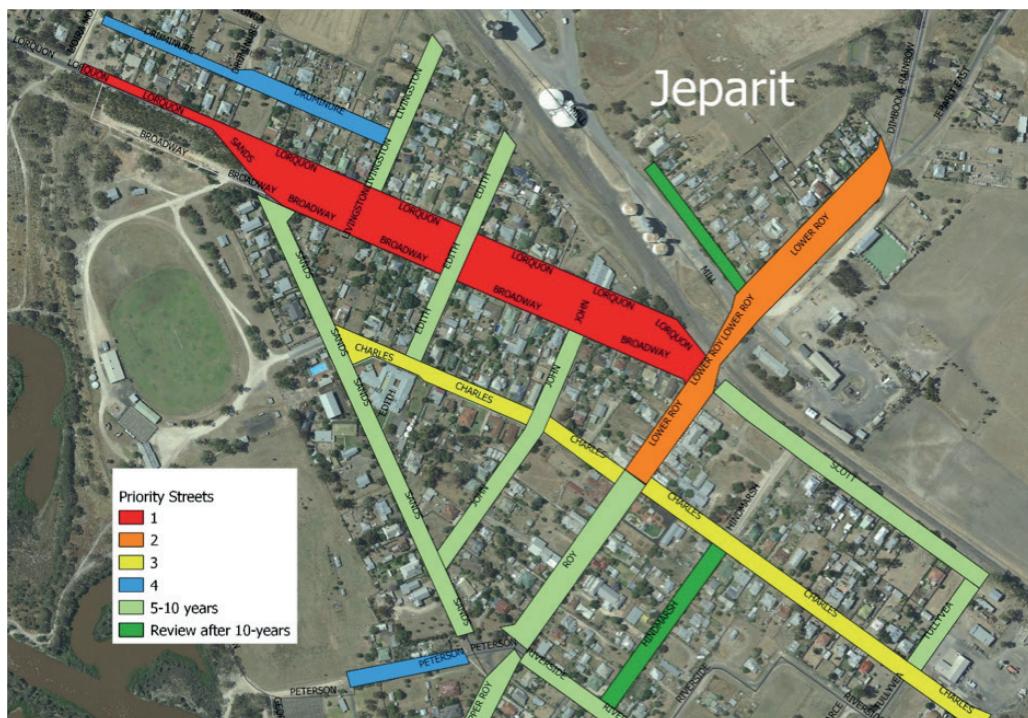
STREET	LOCATION	NOTES
Victoria Street (corner of Pine Street)	Traffic Islands	No powerlines. Space for a large tree.
Nelson Street	Both median and Nature Strip	Wide space, no powerlines. Space for large trees.
Dimboola Road	Median	Entrance into town, wide, no powerlines, space for large trees e.g. Corymbia maculata (spotted gums)



JEPARIT

## Street Tree Planting Priorities

	STREET	NO OF VACANT SITES	TREES PLANTED	SUGGESTED SPECIES	NOTES
Year 1 2019	Broadway	41	15	Median: Large native signature trees Footpath: Both sides small narrow upright form. Evergreen or deciduous.	Opportunity sites in median. Use small trees in nature strip Take into account any upcoming footpath works.
Year 2 2020	Lower Roy	8+	8	Large Eucalypts	Main entranceway into town. Bowls club and depot could be screened with large Eucalypts Outside retail area is an opportunity for trees in planter boxes.
Year 3 2021	Charles Street	34	15	Form an avenue with signature deciduous species	High priority entrance into town and right through. Consider removing Ash trees. Note upcoming kerb and channel replacement in 19/20.
Year 4	Druminure Street	20	15	Non P/l: medium tree (consider Jacaranda) Under p/l: small deciduous trees	Don't plant western section. Remove Ash trees. Small tree under power-lines and larger tree on other side of road.



*Image 15: Jeparit priority streets for tree planting 2019-2022*

## JEPARIT

### Street Tree Planting



*Image 16: Broadway, Jeparit currently*



*Image 17: An example of Broadway, Jeparit with trees planted*

## Opportunity sites



Image 18: Jeparit opportunity sites

STREET	LOCATION	NOTES
Broadway	Median, park and playground	No powerlines. Wide median.
Lower Roy	Park/reserve, median and planters	Entrance into town. Consider signature species: Brachychiton, Geijera or Red Flowering Gum
Dimboola Rainbow Road	Nature Strip	Entrance into town. Could plant row of 3-5 trees possibly Eucalypts

# RAINBOW

## Street Tree Planting Priorities

	STREET	NO OF VACANT SITES	TREES PLANTED	SUGGESTED SPECIES	NOTES
Year 1 2019	Taverner Street	72	15	P/l side: small, narrow upright form: Consider Olea, Lagerstroemia, Prunus Non P/l: med tree	Major entrance into town. Consider footpath upgrades, truck access and powerlines. Small tree under powerlines and larger tree on other side of road.
Year 2 2020	Ryan Street	11	15 altogether	P/l Side: small shade providing tree Non P/l: Med tree	Hospital needs shade out the front Remove Lagunarias
	Sanders Street	12			
Year 3 2021	Albert Street	12	12	Small to medium Eucalypts	Proximity to school and consider footpath renewal.
Year 4	Darts Ave King Street	10 31	15	Non P/l: medium tree (consider Jacaranda) Under p/l: small deciduous trees	Use larger species on non-OHP side Replace Ash. Consider footpath renewal & taking out melias and ash

Review ready for 5-10 year planting plan

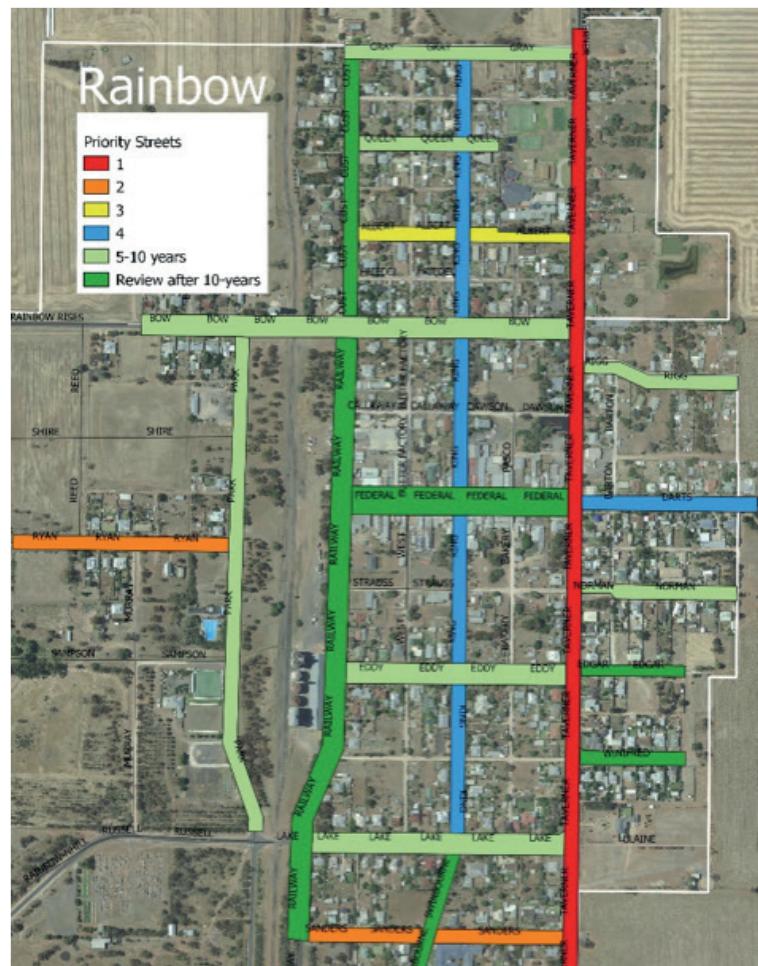


Image 19: Rainbow priority streets for tree planting 2019-2022

## RAINBOW

### Street Tree Planting



*Image 20: Taverner, Rainbow currently*



*Image 21: An example of Taverner, Rainbow with trees planted*

# RAINBOW

## Opportunity sites



Image 22: Rainbows opportunity sites

STREET	LOCATION	NOTES
Federal Street	Kerb outstand	Opportunity for larger canopy tree, possibly to match exotic character. Will need to construct planter box.



# DIMBOOLA

## Street Tree Planting Priorities

	STREET	NO OF VACANT SITES	TREES PLANTED	SUGGESTED SPECIES	NOTES
Year 1 2019	Anderson Street	53	15	Median: narrow upright tree deciduous Footpath: small tree under P/L. Deciduous	Is currently under reconstruction. Underground growing conditions should be improved for new trees. Remove ash under P/L
Year 2 2020	Lloyd Street	63	15	Select species to match Pyrus. Either extend or similar species	Extend from retail strip, work alongside underground kerb and channel
Year 3 2021	Wimmera Street	52	15	Evergreen/Eucalypts to extend towards river	Prioritise area closest to shopping area and river first
Year 4	Nhill Rd Normanby Rd	16 25	15	P/L: small evergreen Non P/I side: medium evergreen	Enhance existing plantings to improve entrance Replace poorly performing Pyrus

Review ready for 5-10 year planting plan



Image 23: Dimboola's priority planting streets 2019-2022

## DIMBOOLA

### Street Tree Planting



*Image 24: Anderson, Dimboola currently*



*Image 25: An example of Anderson, Dimboola with trees planted*

# DIMBOOLA

## Opportunity sites



Image 26: Opportunity sites in Dimboola

STREET	LOCATION	NOTES
High Street	Traffic Islands and Nature Strips	Already constructed just need trees and would make high profile entrance
Wimmera Street	Traffic Island in kerb outstands (between Lloyd and Victoria)	Already constructed just need trees. Clean trunk species to allow for visibility
Horsham Road (near railway line)	Nature strip	No powerlines, entrance into town, could use large canopy trees for great effect
Lowan Street (corner Ellerman)	Traffic Island	No powerlines and enough space for a large canopy tree.



# FURTHER ACTIONS FOR COUNCIL

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## IMPROVE OPERATIONAL DECISION MAKING

- Implement 5 year tree planning program: plan at end of winter for following year considering extra opportunities in each town, ensure procurement of required stock and aim to plant late Autumn early winter to allow trees to establish
- Implement technical tree management guidelines, including tree removal policy
- Implement establishment period for every street and reserve tree: 3 years dedicated watering over summer and autumn (if needed) and formative pruning
- Implement a regular tree inspection program (every two years)
- Include all tree policies on Council website to improve transparency
- Include the vision, objectives and benefits of trees in other relevant Council documentation as it is reviewed e.g. Council or regional Climate Change Adaptation Plan, Environment Strategy, open space masterplan or strategy.

## PARTNERSHIPS

- Work together with other Council departments to include trees wherever possible in road, footpath and kerb and channel upgrades.
- Engage and partner with VicRoads to explore planting entrances to each town, particularly off Adelaide-Melbourne highway
- Work with local schools to encourage tree planting and maintenance on their own grounds for increased shade
- Encourage and educate residents to plant and maintain trees on their own private property
- Communicate with residents about street tree planting within their streets via letter drop
- Organise and run community tree planting days in conjunction with Landcare in each township.
- Demonstrate strong Council leadership on urban tree management and tree planting program
- Ensure tree planting schemes undertaken in new estates by developers are aligned with Council's policies.

# FURTHER ACTIONS FOR COUNCIL

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## INNOVATION AND IMPROVEMENT

- Explore significant tree species within the region to understand suitability as street or reserve trees
- Ensure that Water Sensitive Urban Design (WSUD) is considered in the planning of all footpath and kerb construction projects and where possible, trees included and funded as part of the project budget.

Good examples of WSUD guidelines can be found at Melbourne Water and City of Melbourne:

- <https://www.melbournewater.com.au/planning-and-building/stormwater-management/options-treating-stormwater/swales>
- <http://urbanwater.melbourne.vic.gov.au/melbournes-water-story/water-sensitive-urban-design-wsud/>

- Continue to align the Integrated Water Management Plan with tree planting
- Continue to utilise the Local Government Infrastructure Design Manual (IDM) - Sustainable infrastructure guidelines
  - Clause 5 – Integrated Water Management to encourage the trialling of water sensitive urban design where appropriate



# REFERENCES

- Akbari, H., D. M. Kurn, et al. (1997). "Peak power and cooling energy savings of shade trees." *Energy and Buildings* 25 (2): 139-148.
- Akbari, H., M. Pomerantz, et al. (2001). "Cool surfaces and shade trees to reduce energy use and improve air quality in urban areas." *Solar Energy* 70 (3): 295-310.
- Clark J.R., N.P. Matheny, G. Cross and V. Wake, 1997. A model of urban forest sustainability. *Journal of Arboriculture*. 23(1):17-30.
- Dunn, J. (2016) Improved neighbourhoods generate higher property prices. *Australian Financial Review*, 5 Feb. <http://www.afr.com/news/special-reports/202020-vision/generating-higher-property-prices-through-improved-neighbourhoods-20160204-gmlsxfs>
- Gill, S., Handley, J., Ennos, R., & Pauleit, S. (2007). Adapting cities for climate change: the role of the green infrastructure. *Built Environment* 33(1): 115-133.
- Livesley, S. (2010). Energy saving benefits of shade trees in relation to water use. *TREENET Proceedings of the 10th National Street Tree Symposium* September 2010.
- Miller, R. W., Hauer, R. J., & Werner, L. P. (2015). *Urban forestry. Planning and managing urban greenspaces*. Third edition. Waveland Press, Inc.
- Mullaney J, Lucke T, Trueman SJ (2015) A review of benefits and challenges in growing street trees in paved urban environments. *Landscape and Urban Planning* 134 157-166
- Norton, B., Bosomworth K, Coutts A, Williams N, Livesley S, Trundle A, Harris R, McEvoy D (2013). Planning for a Cooler Future: Green Infrastructure to Reduce Urban Heat, Victorian Centre for Climate Change Adaptation Research
- Nowak, David & Crane, Daniel & C. Stevens, Jack. (2006). Air Pollution Removal by Urban Trees and Shrubs in the United States. *Urban Forestry & Urban Greening*. 4. 115-123. 10.
- Nowak, D.J., and D.E. Crane, Stevens, J.C., Hoehn, R.E., Walton, J.T., and Bond, J., 2008. A Ground-Based Method of Assessing Urban Forest Structure and Ecosystem Services. *Arboriculture & Urban Forestry* 34(6): November 2008. International Society of Arboriculture.
- Pandit, R, Polyakov, M., Tapsuwan, S., Moran, T. (2013) The effect of street trees on property value in Perth, Western Australia. *Landscape and Urban Planning*. Volume 110, February 2013, Pages 134-142
- Plant, L. (2016) The economic value of greenspace. *Real Green – The Brisbane Experience Case Studies*
- Richards, N.A., (1993). Reasonable guidelines for street tree diversity. *Journal of Arboriculture* 19(6). 344-350.
- Rickards, L., Hughes, L. and Steffen, W. (2016). On the frontline: Climate Change and rural communities. Climate Change website, <https://www.climatecouncil.org.au/ruralreport>. Accessed 16 August 2017
- Simpson, J. R. and E. G. McPherson (1996). "Potential of tree shade for reducing residential energy use in California". *Journal of Arboriculture* 22 (1): 10-18.
- Santamour, Frank S., Jr. (1990). *Trees for Urban Planting: Diversity, Uniformity, and Common Sense*. Conference Proceedings 7th. Metropolitan Tree Improvement Alliance (METRIA) 7:57-65.
- van Wassenaer, P. J. E., Satel, A. L., Kenney, W. A., & Ursic, M. (2011). A framework for strategic urban forest management planning and monitoring. *Trees, people and the built environment. Proceedings of the Urban Trees Research Conference* 13-14 April 2011.
- Wolf, K. L. (2005). "Business district streetscapes, trees and consumer response." *Journal of Forestry* 103 (8): 396-400.

# GLOSSARY FOR HINDMARSH

**Biodiversity:** The variety of all life forms on earth: the different plants, animals and micro-organisms and the ecosystems in which they are a part

**Canopy cover:** the measure of the area of tree canopy when viewed from above, and is recorded as a percentage of total land area

**Deciduous:** trees that shed or lose all of their leaves for part of the year, usually over winter

**Ecosystem:** A community of organisms interacting with each other in their environment

**Inappropriate species:** species that have not performed well within their planted site e.g. have grown too big, have allergenic properties, have poor structure, required more water than they had access to etc.

**Integrated water management:** a holistic approach to water that promotes the sustainable use of all available water resources in ways that best deliver multiple community objectives

**Liveability:** An assessment of what a place is like to live in, taking into account environmental quality, crime and safety, education and health provision, access to shops and services, recreational facilities and cultural activities.

**Operational program:** the Council program of delivering tree planting, management and maintenance.

**Stormwater interception:** the halt or reduced flow of stormwater into the drainage system for re-use

**Street trees:** trees within road reserves, on nature strips and in medians.

**Urban:** a characteristic of a town or city e.g. density and development as opposed to rural

**Urban Forest:** the sum of all urban trees including those on public and private land

**Vacant sites:** sites within streets that could house a street tree but are currently vacant due to tree removal, vandalism or because a tree had never been planted.

**Water sensitive urban design:** is the integration of the water cycle into urban planning and design by recognising all water streams in the urban environment as a potential resource e.g. rainwater, stormwater, grey water and blackwater. WSUD is often used to describe the infrastructure built to capture and reuse stormwater



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