City of Casey

GREENING CASEY

A plan for building our climate resilience and creating places people love

Statement of Acknowledgement

The City of Casey proudly acknowledges the traditional owners, Casey's Aboriginal communities and their rich culture and pays respect to their Elders past, present and future. We acknowledge Aboriginal people as Australia's first peoples and as the traditional owners and custodians of the land on which we work and live.

Our Statement of Acknowledgement recognises that we value the unique status of Aboriginal peoples as the original owners and custodians of this land and waters. It is one step on the path to reconciliation.

Diversity Statement

The City of Casey is home to a remarkable diversity of cultures, languages, faiths, identities, landscapes, and stories. From our first Australians to our most recent arrivals and every wave between, the City of Casey welcomes and represents all community members and their respective ambitions to live healthy, rewarding, and happy lives. These intersecting and overlapping community stories form Casey's collective identity and contribute to its evolving, rich history. We recognise this diversity as our strength and we aim to share, nurture, and celebrate it.

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EXECUTIVE SUMMARY

At the City of Casey, we are committing to the creation of a more connected, bold and resilient community. To help us achieve this, we are building a more connected, bold and resilient urban forest and will work towards 'Greening Casey'.

Our urban forest is the sum of all our urban greening: trees, shrubs, grass, water and soil. It aids in protecting us from urban heat, filters our stormwater, supports our urban biodiversity and provides habitat, stores and sequesters carbon. More importantly it is the soft green fabric that interweaves between our neighbourhoods, schools, roads and parks to create a cool, shady and beautiful environment. Our urban forest is one of the most efficient and cost-effective tools for helping us adapt to climate change and so we believe it is worth protecting, enhancing and investing in.

Casey currently manage around 360,000 street and park trees and we estimate that there are around another 300,000 trees on private property. However, our tree canopy cover is low compared to other surrounding and metropolitan Melbourne Council areas. Further to this, private residential and agricultural land together contribute almost three times more tree canopy cover in m2 than parkland and streets combined. This means that trees and vegetation on our private properties are very important contributors to our urban forest. We know that we have a significant opportunity to care and look after our existing trees and vegetation and to plant many more on both public and private land.

In 2020 the City of Casey signed onto and endorsed Living Melbourne: Our Metropolitan Urban Forest to support the building of thriving, resilient communities that are connected to nature. We are now working alongside the other 31 Melbourne Councils to protect and enhance Melbourne's urban forest.

Whilst we have been planting and managing our trees over the last decade, we acknowledge that there are many things we can do to improve the way we manage our urban forest and to support our community and developers to care for trees and vegetation on private land. We have set an ambitious suite of targets and actions to help us and our community to build climate resilience and to create places that people love.

We have access to the right knowledge, skills and tools to pave the way for improvements and we look forward to working with our communities, developers and other agencies to create our connected, bold and resilient Green Casey.

GREENING CASEY

GROWING OUR URBAN FOREST

TO BECOME A MORE CONNECTED, BOLD AND RESILIENT COMMUNITY

Our community developed a shared vision for our region in 2021. Our urban forest, which is the sum of all urban vegetation such as trees, shrubs and gardens, plays a very important role in helping us achieve this vision and the key themes identified:

Aspiration to live in a truly safe place

- The urban forest creates welcoming, shady and cool spaces for our diverse community to recreate, gather and to connect in comfort and safety (Braubach, Dwyer et al 1992, JoA Sept 1992)
- well treed and landscaped neighbourhoods report less crime (Dwyer 1992, Wolf 2010)
- tree shade can reduce surface temperatures by up to 19 degrees Celsius helping to alleviate extreme heat conditions and the health impacts that come from heatwaves (Armson et.al. 2012 UFUG 11-245-255)
- Tree shade can improve energy efficiency in a home and reduce electricity consumption by up to 5-10% in summer (Pandit & Laband 2010 Eco Economics April 1324-1329)
- Motorists drive more slowly along treed streets and so trees are frequently used as traffic calming measures (Naderi et al, 2008)

Desire for greater social connection

- Green spaces improve mental health and wellbeing through greater social connection, physical activity and mental relaxation (Braubach, 2017)
- The urban forest is an important contributor to the amenity of our urban landscapes and through species diversity, influences of our unique character (Kendal 2016)
- We can recognise our recent and longer-term history through the presence of a diversity of trees within our landscape, in particular those valued by first nations peoples

Clean and Green public spaces

- Trees and vegetation are the core components of clean and green spaces
- The community has a direct desire for more trees, gardens and vegetation (Community UFS Survey 2021)
- Trees encourage people to connect with our public urban spaces by walking and cycling (Wolf et al, 2010)
- Provide shade and landscape amenity for disadvantaged in the community

Improve transport infrastructure

- Tree shade along pedestrian and cycling paths encourages more walking and cycling and improves overall landscape character (Nawarik et al 2019)
- Tree shade to, from and at public transport stops encourages people to use public transport (Lanza et al 2021)

Thriving and resilient local economy

- Retail and commercial shopping strips that are well treed and landscaped, record greater economic productivity by up to 20% as shoppers spend more time and therefore more money (Wolf, 2005)
- Arboriculture and horticulture are key industries within Melbourne and enhancing our urban forest will only further support local jobs and skills (NGIV, 2022)

Sustainable and resilient municipality

- The urban forest is one of the most effective and cost-efficient mechanisms for adapting cities to climate change through the ability to intercept stormwater and mitigate urban heat by providing shade and cooling to our local neighbourhoods (Braubach, 2017) (Gill, 2007)
- Trees absorb carbon dioxide and air pollution and produce oxygen, noting that large healthy trees absorb 60-70 times more air pollution than smaller trees (Nowak, 2007)
- The urban forest provides connectivity and habitat to support urban biodiversity (Kendal, 2016)

Rethinking urban growth

- Trees and vegetation contribute to more liveable neighbourhoods and define precinct character
- Research and innovation show us that trees can be effectively incorporated into any type of development to improve a range of health and environmental outcomes

Better and More Transparent Governance

- This Strategy provides clear direction and pathways for managing our urban forest more productively
- This Strategy contributes directly to and aligns with objectives and actions within the Council Plan, Community Vision Environment Strategy and helps to deliver on outcomes within the Domain Strategies, Infrastructure, Health and Wellbeing and Economic Development Strategies.

GREENING CASEY AIMS

Our Greening Casey plan provides a roadmap to achieve the commitments we've already made and will make to the community and our Council collaborators across Greater Melbourne with regard to the urban forest.

The City of Casey has signed on to Living Melbourne, Our Metropolitan Urban Forest, thereby making a commitment to the 6 key Actions to help to grow Greater Melbourne's urban forest:

1. Protect and restore species habitat and improve connectivity
2. Set targets and track progress
3. Scale up greening in the private realm
4. Collaborate across sectors and regions
5. Build a toolkit of resources to underpin implementation
6. Fund the protection and enhancement of the urban forest

Further to this, our Greening Casey plan provides detail behind some existing commitments we've already made to the community:

- Achieving a 15% tree canopy cover target throughout the whole City of Casey by 2030.
- Contributing to the 21% regional tree canopy cover target by 2030 for the Southern Region of Melbourne as documented in the Environment Strategy 2021 (Living Melbourne Southern Region Target).
- Delivering services equitably across the Municipality in line with Council's Diversity, Access and Inclusion Policy. Our investment in our urban forest must be equitable across the community so everyone can have access to its benefits.
- Delivering on the strategic objectives as set within Council Plan 2021-2025. We aim to ensure that our urban forest is recognised as a valuable asset that warrants sustainable and best practice asset management so we can deliver the maximum benefits to our community.

OUR COMMUNITY, OUR TREES

Council is committed to supporting our community to grow, maintain, and enhance our urban forest so we can all share in the benefits.

To understand what our community wants from a Greener Casey and the urban forest, we ran a community survey and a series of workshops. The overwhelming message was that people want more trees and shrubs planted in Casey. We want to grow the urban forest, and we want to grow it together. People are keen to participate in public tree planting events, planting local community-based food forests, planting trees and shrubs in backyards and gaining access to educational opportunities.

A summary of our urban forest community survey revealed the following insights:

- 95% of respondents supported more trees being planted in the City of Casey, with 78% wanting a lot more trees and 17% wanting a few more trees
- 95% of respondents would like Council to invest more in street and park trees
- The community strongly supports trees that are resilient to climate change
- Respondents felt that the environmental benefits of trees (as opposed to the social and economic benefits) were the most important to them e.g., reducing air pollution, providing habitat, storing and capturing carbon and reducing stormwater to keep our rivers and creeks healthy
- The biggest concerns about trees were the poor choice of species and the risk of trees and branches falling. Risk was a big concern.
- 42% of respondents thought Council should improve regulation to protect privately owned trees, 20% didn't want any more regulation and 35% were not sure
- 48% of respondents thought there should be some level of protection over private trees and landholders and developers should be made to maintain trees where practical
- 73% of respondents were female with 24.87% males and 2% preferring not to say or self-describe.

How real is the risk of tree or limb fall?

Feedback from our community revealed concern about the risk of trees and branches falling, causing injury to property or people. While we do see some damage from trees after big storm events, statistics tell us that the actual risk of injury due to tree or limb fall is very small. Australia's are 370 times more likely to die from Melanoma or 250 times more likely to die while driving than being fatally injured by a tree (Hartley & Chalk, 2019). Research from UK estimates the risk of fatal injury from a tree is less than 1: 10,000,000, which is considered much less than the background risk of everyday life (Ball and Watt 2013). Often the perceived liability of a tree is overestimated due to unfamiliarity with trees and the mechanisms that cause their failure (Ball and Watt 2013). Most often, damage from trees occurs due to poor species selection where the wrong tree has been planted and outgrown its location or as a result of poor or lack of establishment maintenance including formative pruning.

As a Council we have been working hard to improve our decision making and processes so that the right trees are planted in the right locations and the trees are managed with formative pruning over their lifetime. We are also actively seeking to remove and replace trees that are no longer appropriate for their location.

You can do the same thing on your property. When selecting a tree for your property, consider the available space to allow the tree to grow to maturity, consider the right species to fit the available space and consider the ongoing habits of the tree e.g., flowering, shading, allowing winter sunlight in etc. Advice from your local nursery or arborist can you help you selection the right tree for your property and gain the multitude of benefits trees can bring into your garden.

In your back yard

Another key concern is around tree protection, particularly over privately owned land. Many people feel that developers in particular should be made to protect existing trees on their development sites where feasible, however the community are less certain about the level of regulation for established residential homes. People feel that they would like a level of freedom to make their own choices for their private property and feel that more regulation would see that control lost.

However, many people recognised that private trees do make a valuable contribution to Casey's urban forest which warranted some level of protection for private trees within their neighbourhood.

Given the complexity of this issue and based on recent research, Council will need to consider utilising a mix of regulation, incentives and community education to encourage residents and developers to both retain existing trees but also to plant the next generation of the urban forest on private land (Ordenez, 2021).

HOW WE WILL GREEN CASEY AND GROW OUR URBAN FOREST

Our urban forest, like our community, will be connected, bold and resilient. It will provide shade and benefits equally across the municipality and support our long-term liveability and health and wellbeing. A Greener Casey and our urban forest will support our region's urban biodiversity, providing habitat and connectivity. And most importantly, it will be valued by our community: residents and developers alike.

To Green Casey and grow our urban forest, we must all play a role in protecting and planting trees and shrubs in our parks, streets, open space, new developments, and established gardens. Council intends to take a leadership role, providing guidance and support to help everyone in our community make a contribution.

To support the delivery of our existing Council and broader Living Melbourne commitments we are committing to the following:

Council will:

1. Support the delivery of the Biodiversity Strategy Implementation Plan by planting indigenous and habitat tree and vegetation species in strategic biodiversity locations

2. Reach the following tree canopy cover targets which will support the Southern Region target of 21% overall canopy cover by 2030 (Living Melbourne):

- 15% tree canopy cover for Casey by 2030 (from 11.3% in 2018)
- 20% tree canopy cover over roads by 2050 (from 11.2% in 2018)
- 30% tree canopy cover over parklands/ open space by 2050
- 30% tree canopy cover over shared walking and cycling paths (from 5.3% in 2018) by 2050
- 25% tree canopy cover over Council owned carparks by 2050
- All future Precinct Structure Plan's should achieve 30% mature tree canopy cover in the public realm and open space

3. Spearhead a capacity building campaign to scale up greening in the private realm by:

- better protecting trees in the private realm through stronger regulation, compliance and enforcement (both for new subdivisions and in the well-established suburbs)
- encouraging further nominations for the Significant tree Register in private land
- incentivising and supporting residents to plant and care for trees on their own property e.g., through the Gardens for Wildlife Program

4. Partner and collaborate with key agencies such as the VPA, Melbourne Water, VicRoads, Department of Transport, Department of Education, Ausnet and United Energy and be an active contributor to relevant Living Melbourne projects to improve outcomes for the urban forest

5. Partner, collaborate and commit to sustained consultation with community groups such as Gender Equality Taskforce, Wall of Global Friendship, Aboriginal Gathering Place and Sustainability Community Reference Group

6. Adopt, utilise and embed key resources to support robust decision making including:

- Green Streets components of the Engineering Design and Construction Manual, including soil improvements
- The Sustainable Subdivisions Framework
- Casey Design Excellence Guide
- Victorian Government Precinct Structure Planning Guidelines: 2021
- Update of Councils Tree Technical Manual to incorporate a tree removal criterion for transparent decisions on removal of Council trees
- Green blue solutions for integrating tree planting and passive stormwater irrigation

7. Strategically plant public trees and passively irrigate them with stormwater where possible to meet tree canopy cover targets. We will also further embed tree protection and tree planting into all of Council's project planning and processes. Strategic tree planting locations to enhance tree canopy have been identified and assessed in our 10-year tree planting plan

8. Investigate opportunities to better integrate internal approvals and documentation in plans of subdivision to reduce conflicts between landscape and civil and other infrastructure

9. Participate in strategic initiatives for improvements in streetscape outcomes in future subdivisions, including with other growth areas, with the VPA and an openness to innovation of the private sector

The detail behind these commitments is listed in the Actions and Implementation Plan.

Council will support the community by:

- Running events and programs for residents to become involved in planting trees in their local area
- Continue to facilitate and expand the Gardens for Wildlife program
- Continue to provide access to the Casey Tree Planting Guide which provides information about species selection and tree planting techniques
- Continue to advocate with residents about the benefits of nature strip gardens utilising Council Guidelines
- Develop relationships with schools to run tree planting days
- Explore providing additional support to local community nurseries in partnership with Traditional Owners and other local groups to grow our future urban forest
- Seek alternative forms of funding for planting of vegetation, particularly for biodiversity outcomes in collaboration with the community. This includes continuation of Biodiversity Incentive Scheme
- Use Casey's much loved and well used public parks, reserves and gardens to educate the community about the huge array of benefits trees provide

Council will support developers by:

- Utilising a consistent and evidence based preferred species list to ensure continuing levels of species diversity within subdivisions
- Utilising and encouraging the use of the Green Streets components of the Engineering Design and Construction Manual and the Design Excellence Guide
- Working with developers to encourage strong urban greening outcomes in all new Precinct Structure Plan applications utilising the VPA Guidelines
- Celebrating innovation, including modification to streetscape typologies which create more space for urban greening and alternative housing typologies which reduce crossovers
- Timely and integrated assessment and approval of engineering and landscape drawings
- Adopting the principles of the Sustainable Subdivisions Framework and considering a trial of the assessment framework in the future
- Encouraging better planning and placement of crossovers and underground utilities to allow adequate space for street trees

GREENING CASEY

CASEY'S URBAN FOREST TODAY

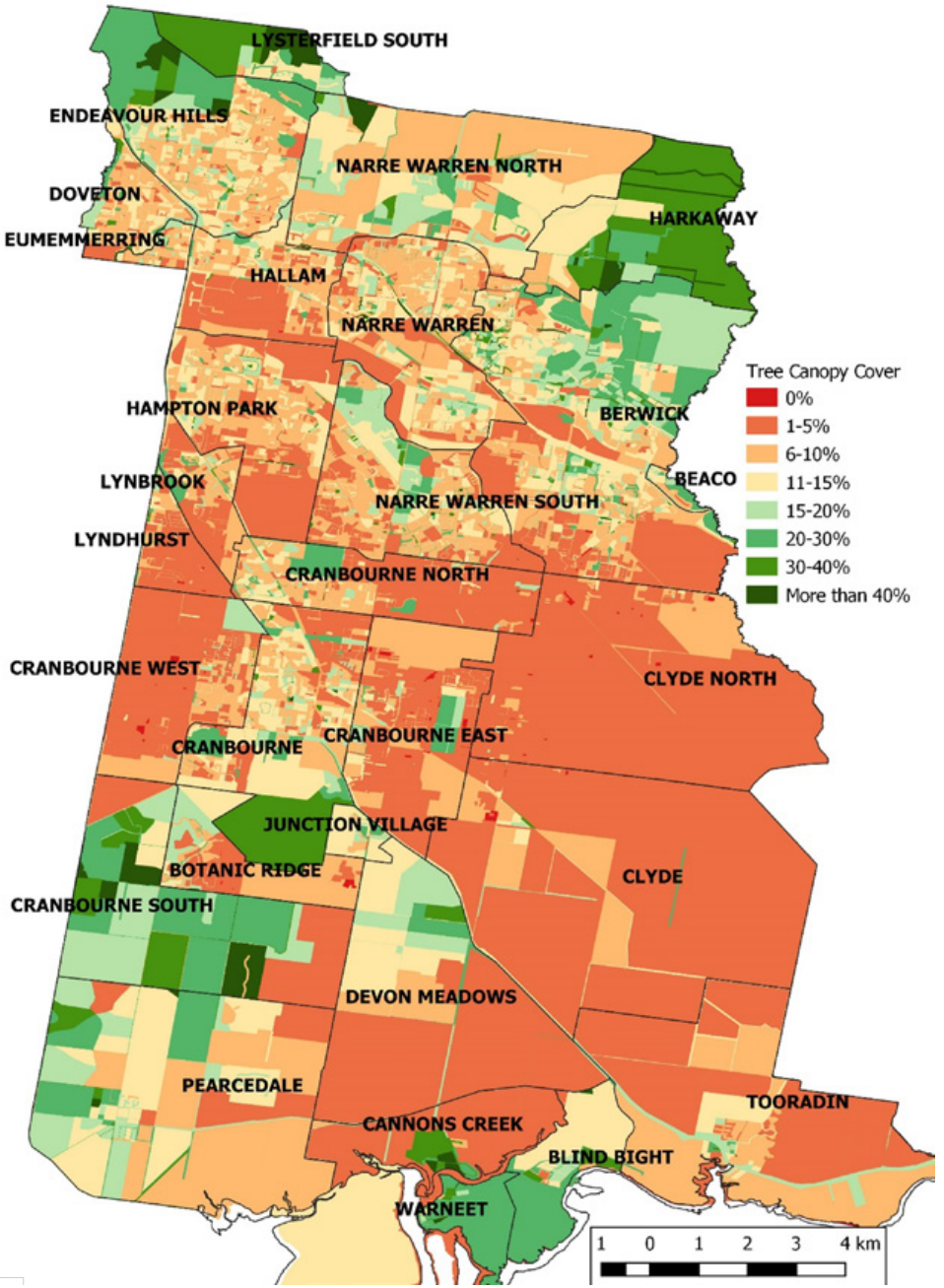
As one of the fastest growing local government areas in Australia, the City of Casey offers tremendous opportunities to provide liveable, safe and resilient neighbourhoods for the future. However, the pace of change poses some key challenges, particularly for protecting and enhancing our urban forest.

Recent State Government spatial mapping has derived individual tree locations for every tree within the Municipality. It indicates that there are 646, 544 trees across the City of Casey, including public and private trees. While this might sound like a lot, the tree canopy cover statistics for Casey show that ours is very low with significant room for improvement, which means a need for more trees. Shrubs have not been mapped.

State Government data showing all individual trees within Cranbourne north

URBAN FOREST COVER

Tree canopy cover is one of the most common measures of our urban forest. Spatially, it shows us where there is good shade cover and where more is needed. Trees and shrub cover together form the urban forest cover. Given the core component of the urban forest are trees, we have measured tree canopy cover as shown below. Areas in green have high tree canopy cover and areas in red and dark orange have no or low tree canopy cover.



Tree canopy cover by meshblock across the City of Casey (Source: DELWP, 2018). While some parts of Casey do have good urban forest cover (areas in green), others are missing out on the huge array of benefits that are delivered by an urban forest (areas in yellow, orange and red).

Overall, 16.5% of Casey's land area is covered by shrubs and trees, collectively referred to as urban forest cover.

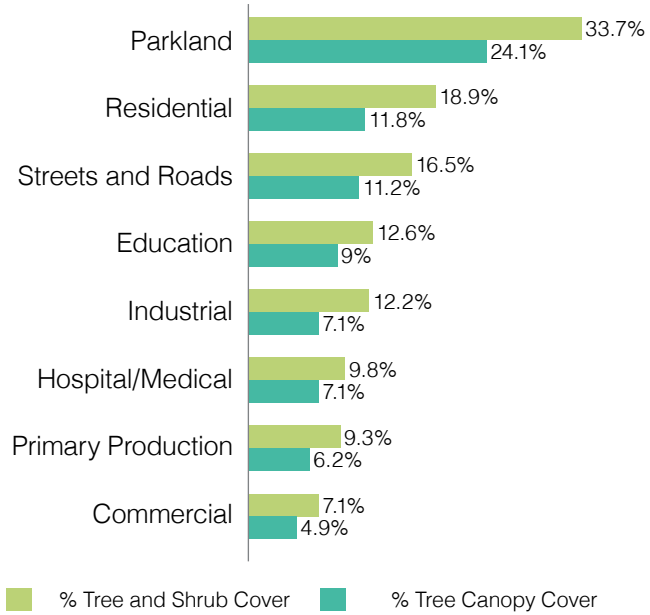
Only 11.3% of City of Casey's land is covered by tree canopy i.e., vegetation over 3m in height. This is considered relatively low compared to the average Melbourne LGA which records 19.26% tree canopy cover. The spread of tree canopy cover percentages across the 34 Melbourne metropolitan LGA's is shown below

	2016 Canopy Cover	2020 Canopy Cover
Mean	19.26%	20.77%
Median	18.85%	20.1%
Minimum	3.2%	3%
Maximum	76.9%	76.4%

Descriptive statistics for mean, median, minimum and maximum tree canopy cover values across the 34 Melbourne metropolitan LGA's. Source: Hurley et al, 2020

Tree canopy cover is not equally spread over our municipality, particularly when it comes to land use planning zones. Commercial and industrial land traditionally have low levels of vegetation cover, whereas parkland has much higher levels.

URBAN FOREST COVER BY LAND USE



Tree and shrub (urban forest) cover and tree cover by land use type across the City of Casey

Within the City of Casey, our greenest areas are our parks which cumulatively have 33% urban forest cover and 24.1% tree canopy cover. However, parks make up only 11% of our land area.

Residential land, which makes up almost a third of Casey's land area has 18.9% urban forest cover and 11.8% tree canopy cover.

Our streets and roads have 16.5% urban forest cover and only 11.2% tree canopy cover and they only make up 11.4% of our land area.

Primary production, or private agricultural land takes up the largest area of land in Casey at 32.5%, however has very low urban forest cover 9.3% and even lower tree canopy cover 6.2%.

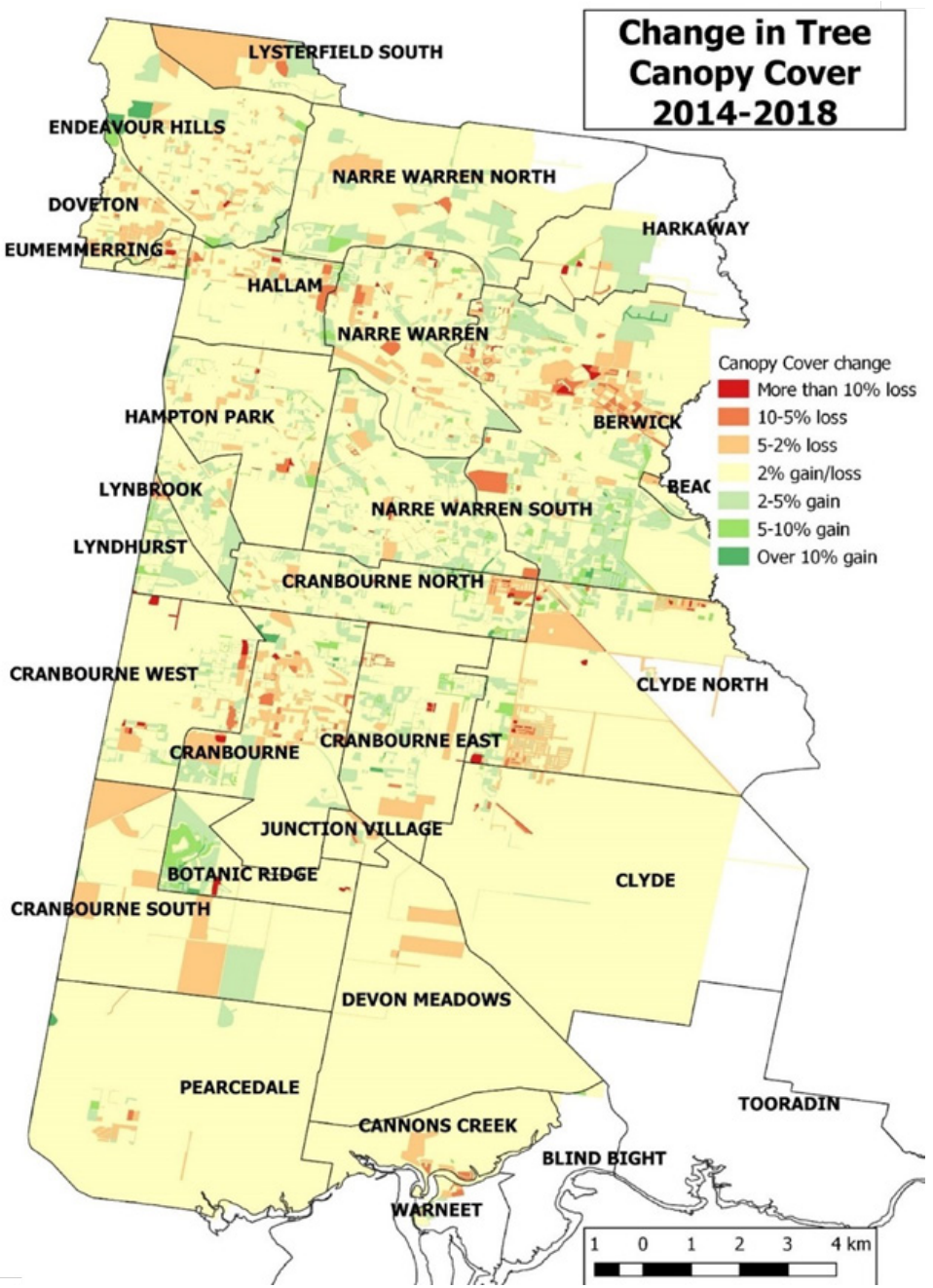
In terms of contribution to our municipal urban forest, ***private residential and agricultural land together contribute almost three times more tree canopy cover in square meters than parkland and streets combined.***

Critically, this tells us that while Council has a clear and defined role in providing public urban forest and tree cover over parks and streets, there is a considerable role for Council in supporting landowners and residents to maintain and enhance the urban forest on their land.

TREE CANOPY COVER CHANGE

Urban forest cover is also not static. It changes over time as trees and vegetation grow larger or are removed or pruned.

It is important to understand whether, over time, urban forest cover is growing or declining so we can apply different policy levers and change decision making to improve outcomes. We have measured the change in tree canopy cover from a period of 2014-2018 to determine the impacts of development on our biggest contributors to our urban forest, the trees. Areas in red and dark orange are where loss has occurred and areas in green are where canopy has grown.



Tree canopy cover change by meshblock across the City of Casey (Source: DELWP, 2018). Areas in Berwick, Narre Warren and Cranbourne show the greatest loss (coloured in red and dark orange).

Overall, the Municipality gained 346,567m² of canopy over 4 years, which is the equivalent of almost 20 MCG sized football ovals.

However, this gain was not seen evenly across the Municipality. The biggest gains in tree cover were seen along roads and streets, as would be expected in Casey as new streets and therefore street trees are rolled out in new developments. Residential tree cover grew slightly, however large infrastructure projects saw tree loss occur in hospital, industrial and commercial land use types.

Interestingly, parkland tree cover remained static meaning that any tree growth was negated by other tree loss. This was because Council had no significant tree planting programs in open space until 2019.

Tree Canopy cover change between 2014 and 2018

Land Use Type	% Tree Cover 2018	% Tree Cover 2014	Canopy Change
Commercial	4.9%	5.1%	-0.13%
Education	8.9%	8.7%	0.17%
Hospital/Medical	7.1%	7.6%	-0.41%
Industrial	7.1%	7.3%	-0.23%
Roads	11.5%	10.9%	0.64%
Parkland	26.2%	26.2%	0.00%
Primary Production	4.2%	4.2%	-0.04%
Residential	11.6%	11.5%	0.03%
Grand Total	11.3%	11.2%	0.09%

In terms of public versus private land, similar type results were found. Public land saw tree canopy grow considerably however private land saw an overall loss. This is worth noting given that we now recognise the huge role that private tree canopy plays in its contribution to the entire Casey urban forest.

Public vs Private

	% Canopy Cover 2018	% Canopy Cover 2014	Canopy change
Private	8.41%	8.42%	-0.01%
Public	18.32%	18.01%	0.3%

CASE STUDY: TIMBARRA ESTATE, BERWICK

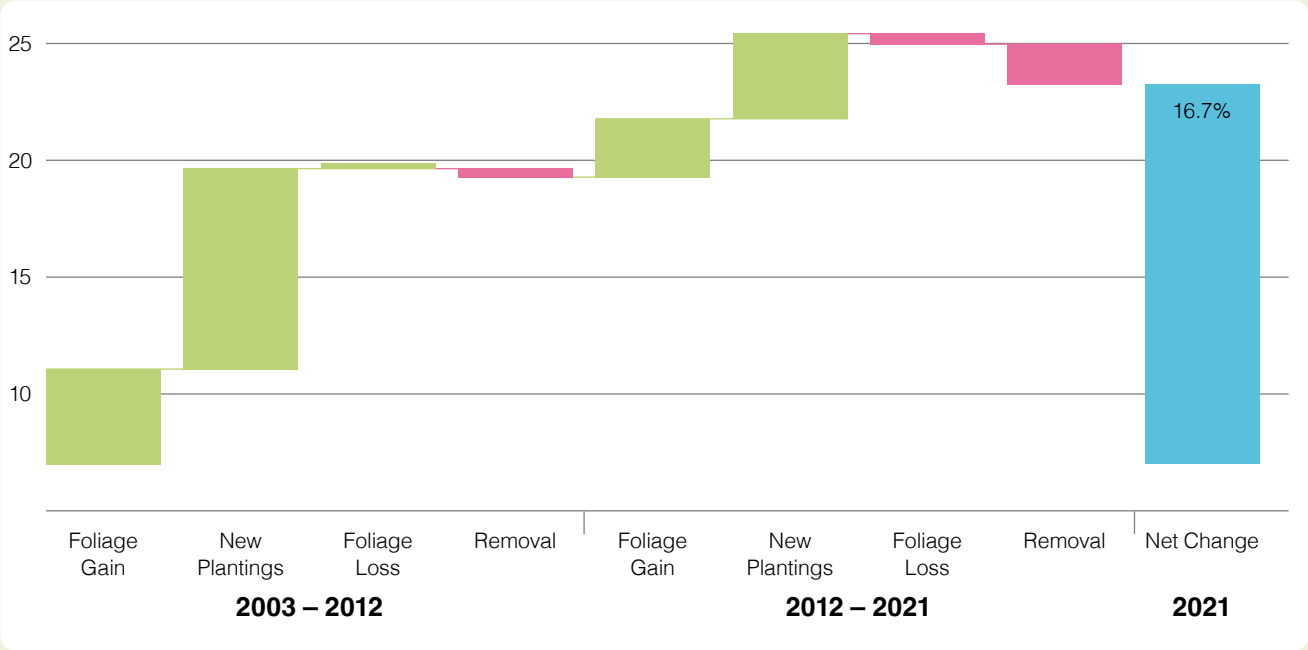
Timbarra Estate is one of the more established subdivisions in Casey having commenced in the late 1980's with construction of dwellings running throughout the 1990's. It has given us the opportunity to showcase the complexity behind tree canopy cover change over time to determine whether we can expect significant canopy growth from our newer subdivisions.

Tree canopy cover change was measured over time periods between 2003 to 2012 and again from 2012 to 2021.

Timbarra Tree Canopy Cover		
2003	2012	2021
7.2%	19.2%	23.4%

Tree canopy cover in Timbarra Estate

Between 2003-2012, retained and newly planted trees grew significantly from only 7.2% to an enormous 19.2% and then continued to grow through to 2021.



Tree canopy cover change attribution over time from 2003 to 2021 in Timbarra Estate

While there was an overall increase in tree canopy cover from 7.2% in 2003 to 23.4% to 2021, the cause of that change was different for the two various time periods. From 2003, Timbarra saw enormous growth from newly planted trees as would be expected from a new subdivision in its first decade. It is also saw significant growth from existing or retained trees. The second decade saw additional growth from both newly planted trees and retained trees, though at a lower rate. What is more obvious is that there were significant tree removals occurring between 2012-2022 which impacted on the overall canopy gain in Timbarra.

This was a result of poor species selection which saw many *Eucalyptus scoparia* being planted in the streets and backyards of the development. While these trees grow fast and large, within a decade they were causing impacts to infrastructure and property. Residents demanded a solution be found and as a result, Council made a significant investment to remove and replace these trees where possible, which then impacted on the net tree canopy gain to 2021.

The locations of tree canopy gain and loss can be identified in the images below. Canopy coloured red existed in 2003 but was removed by 2012. Canopy coloured orange existed in 2012 but was removed by 2021. This removal occurred on both public and private land.

Tree canopy loss as shown in red and orange since 2003 in Timbarra Estate

CASEY'S PUBLIC URBAN FOREST

As of 2023, Council manages approximately 204,000 street trees and 144,000 park trees across all Council managed land and each of these trees is treated as an individual asset. Significant amounts of data is maintained on individual trees to inform the ongoing tree maintenance, renewal and planting program. This data also provides an insight into the current health, species and age diversity of this public tree population.

Given that State Government data estimates over 646,000 trees across the Municipality, we can assume then that there are approximately 263,000 trees on privately owned or other types of land.

Casey's Street Trees

Our tree inventory records the presence of 204,000 trees along Casey's street and road network. These are made up of a variety of species, sizes, ages and useful life expectancies.

Street Species Diversity

AA health urban forest requires a diversity of species and genetic variation for survival, good growth and viability in the longer term. Diversity enhances resistance to adverse stressors such as pest and diseases, global warming and extreme weather events.

Most Common Street Tree Species	Common Name	Count	% of population
Eucalyptus sp.	Gum Trees	11358	7.2%
Pyrus calleryana	Ornamental pear	10139	6.4%
Ulmus parvifolia	Chinese Elm	10018	6.4%
Eucalyptus leucoxylon	Yellow gum	8957	5.7%
Tristaniopsis laurina	Water gum	7918	5.0%
Eucalyptus scoparia	White gum	5396	3.4%
Callistemon sp	Bottlebrush	5075	3.2%
Pyrus ussuriensis	Manchurian pear	3922	2.5%
Eucalyptus mannifera	Brittle gum	3698	2.3%
Corymbia maculata	Spotted gum	3603	2.3%
Melia azedarach	White cedar	3461	2.2%
Acer sp.	Maples	3141	2.0%
Angophora costata	Smooth barked apple	3099	2.0%
Lagerstroemia indica	Crepe myrtle	2900	1.8%
Quercus palustris	Pin oaks	2800	1.8%
Gleditsia triacanthos	Honey locust	2623	1.7%
Quercus robur	Red oak	2452	1.6%
Prunus cerasifera	Cherry plum	2274	1.4%
Unknown	Species not known	2205	1.4%
Melaleuca linariifolia	Narrow leaved paperbark	2070	1.3%

Top 20 most common street tree species in Casey

Unfortunately, due to data input inconsistencies, the most popular tree species recorded was only at genus level, Eucalyptus. Given there are over 700 species within this Genus, the result is hard to analyse. It is unknown whether it represents only a few species or a lot. On its own, a high representation of Eucalyptus within an urban tree population is to be expected given that they are a prolific genus to Australia. As such, we cannot draw any trends from this top scoring result.

However, the ornamental pears and Chinese elms as shown as the next most common species, are very commonly planted by developers given their proven ability to survive and thrive in urban residential landscapes. And so, in some cases, the density of these species within a subdivision or suburb creates a very low level of diversity.

A section of East Cranbourne including older and new subdivisions whereby half of all the street trees are Pyrus. This shows a poor level of diversity for East Cranbourne.

In terms of diversity, the twenty most common street tree species represent 62% of the street tree population and the top ten most common street trees represent just under half, or 44% of the tree population. While there is no one species that dominates the landscape, so few species representing the majority of the population does show a level of vulnerability. This could be improved by reducing the overall dominance of ornamental pears and Chinese elms with a diversity of other species through a tree planting program.

Half of the twenty most common species are exotic, the other half are native, which in itself shows a level of diversity.

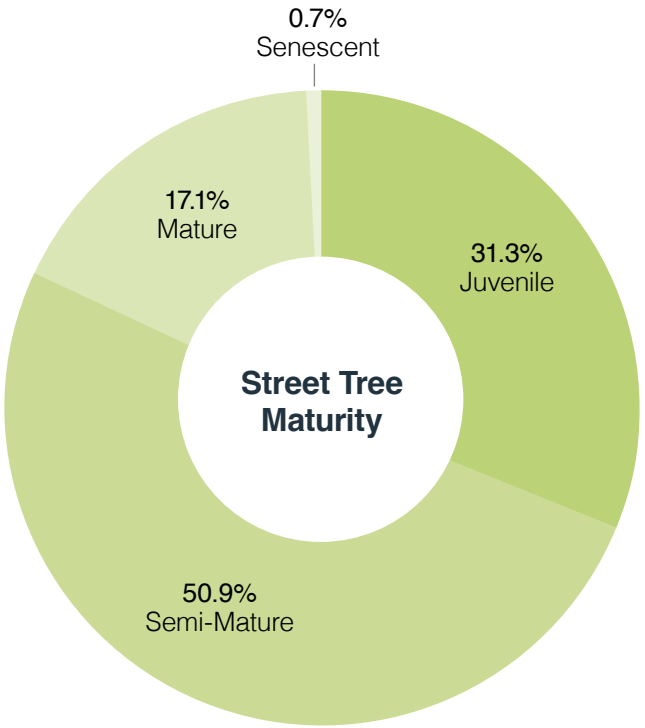
Native or Exotic – Which is better?

There is no one perfect tree. Rather there are the right trees for the right location. Depending on the functionality of a place, the tree will need to provide a range of benefits. As such the use of a diverse range of trees ensures that every time, we put the right tree in the right place. Native or indigenous trees have significant biodiversity benefits and are often well adapted to the local climate and soil type.

Exotic trees, however, are often deciduous, meaning they lose their leaves in winter. Exotic trees provide a range of colour and aesthetics that are different to native trees including autumnal colours and spring flowers. They also often provide broad canopies that provide deeper shade in summer yet allow the winter sunlight in.

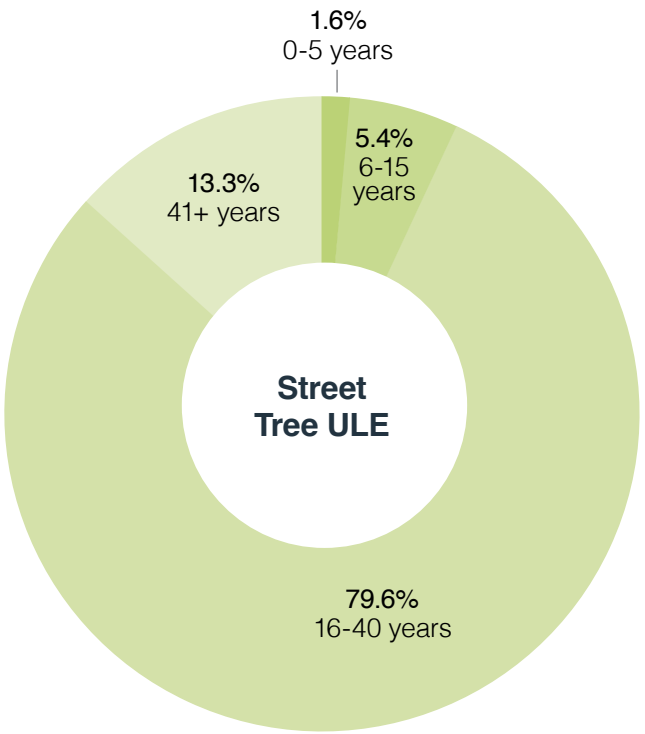
We acknowledge that there is a role for both native and exotic trees within our urban forest and our primary goal is to ensure a level of diversity.

STREET TREE AGES



82% of all street trees are juvenile or semi-mature. This indicates a significant number of trees have been planted either by Council or developers over the last 10-15 years. The young population and the presence of very few over mature trees bodes well for a growing and thriving future urban forest if these trees are well looked after. It also means that we are likely to see continued tree canopy cover growth over streets and roads for the next 10 -20 years, over and above any new trees that are planted. The mature trees are concentrated around the more established suburbs or Berwick and Cranbourne. These trees will be supplying larger canopies and producing maximum benefits. As a result, these trees should be well protected and managed as they move into older age.

STREET TREE USEFUL LIFE EXPECTANCY



A trees useful life expectancy (ULE) is a measure of a trees remaining life within the landscape before it requires removal and replacement. ULE is based on a number of factors including age, health, structure and appropriateness in the landscape. ULE can change over time e.g., many of Melbourne's trees declined in the millennium drought and their ULEs went down. However, with more annual rainfall, consequently slightly cooler summers and the advent of more proactive tree management programs, many trees have improved their ULEs since 2010.

In line with the age data, 93% of Casey's Street trees have an expected useful life into the medium and long term. Only 7% of street trees are likely to reach end of life within a 15-year period, which is very low.

The 1.6% (2,325 trees) that have a ULE less than 5 years, will form part of Council's street tree renewal program.

The 5.4% of trees that have a useful life expectancy up to 15 years will be targeted for a proactive maintenance regime to either extend their useful life expectancy or be replaced if their useful life expectancy cannot be cost-effectively extended.

Street Tree Sizes

Tree Height	Count	% of population
0-3m	79890	58.6%
3-6m	39445	28.9%
6-10m	12876	9.4%
10-20m	3707	2.7%
20m plus	445	0.3%

In line with both the dominant types of species recorded and the age profile of the street tree population, 87.5% of all street trees are below 6m in height. This is likely to change over time given that 82% of trees are yet to grow to full capacity, however Pears and Chinese Elms are relatively short statured trees.

As mentioned, large trees provide much greater benefits than small trees, so there is certainly an opportunity to find space for larger trees in Casey's Street and road network.

CASEY'S PARK TREES

Our tree inventory includes the records for 144,081 trees within Casey's open space network. These are made up of a variety of species, sizes, ages and useful life expectancies.

Park Species Diversity

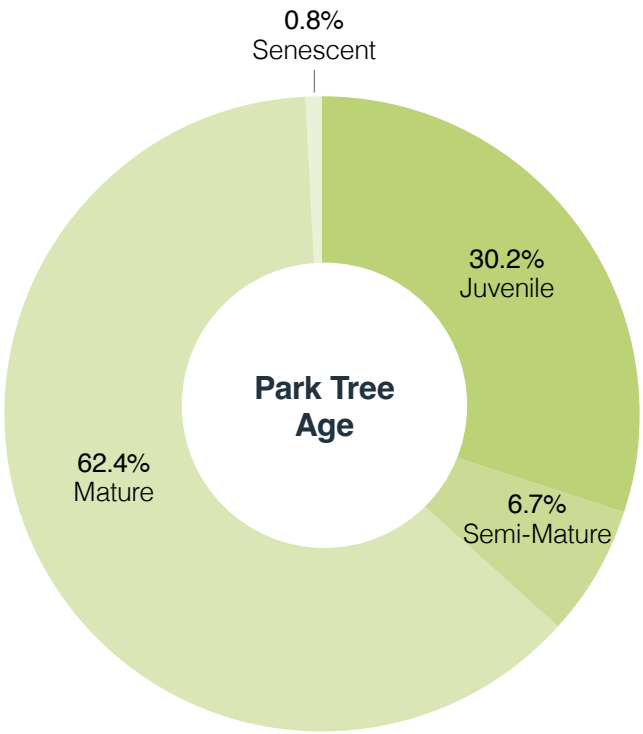
Most Common Park Species	Common Name	Count	% of population
Eucalyptus camaldulensis	River Red gum	11587	8.0%
Eucalyptus sp.	Eucalyptus	9591	6.7%
Corymbia maculata	Spotted Gum	7621	5.3%
Acacia melanoxylon	Blackwood	5535	3.8%
Acacia mearnsii	Black wattle	4181	2.9%
Eucalyptus viminalis	Manna gum	4062	2.8%
Eucalyptus leucoxylon	Yellow gum	3431	2.4%
Pyrus calleryana	Ornamental Pear	3310	2.3%
Callistemon viminalis	Weeping bottlebrush	3306	2.3%
Allocasuarina littoralis	Black she-oak	2734	1.9%
Melaleuca ericifolia	Swamp paperbark	2661	1.8%
Eucalyptus scoparia	Wallangara white gum	2498	1.7%
Eucalyptus ovata	Swamp gum	2390	1.7%
Angophora costata	Smooth barked apple	2347	1.6%
Melaleuca armillaris	Honey myrtle	2269	1.6%
Callistemon sp.	Bottlebrush	2188	1.5%
Eucalyptus sideroxylon	Red ironbark	2176	1.5%
Ulmus parvifolia	Chinese elm	2097	1.5%
Eucalyptus melliodora	Yellow box	1990	1.4%
Quercus robur	English Oak	1904	1.3%

Again, due to data input inconsistencies, a significant number of park tree records (9,591) failed to identify certain trees of the Eucalyptus genus. As such it is unknown whether they represent only a few species or many.

From the known data, the most common park trees in Casey are River Red gums, Spotted gums and Blackwoods. The River Red Gums and Blackwoods are both endemic to the region and it is likely that many of the River Red Gums are remnant and have been protected within parkland. Spotted gums, due to their large size and growth habits, suit open space more than streetscapes.

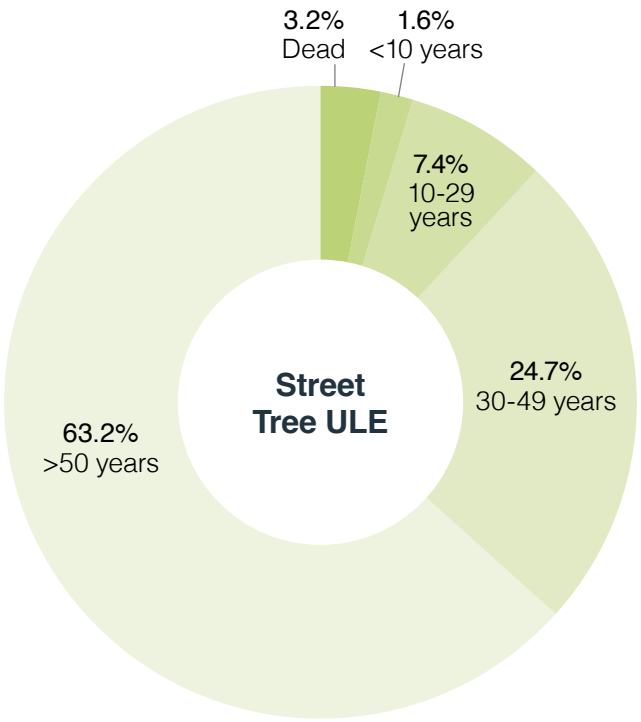
17 of the 20 most common park tree species are native, while the remaining three are exotic. Just over a third (38.4%) of the recorded park tree population is made up of only 10 species while just over half (54%) of the population are made up of 20 species. While these statistics pose no significant issue of species diversity, there is an opportunity to increase the overall diversity by planting a range of other species suited to the region that are adapted to changing climates.

PARK TREE AGE



Trees in our open spaces have quite a different age profile than in our streets. On the whole, they are much older, with the majority or 63% of trees being mature, over mature or senescent, which means they are in the final stages of life before needing to be removed and replaced. The majority of these mature trees are River Red Gums, which is to be expected. The 37% of juvenile and semi-mature trees represent the next generation of canopy that will replace the mature canopy when it starts to senesce.

PARK TREE USEFUL LIFE EXPECTANCY



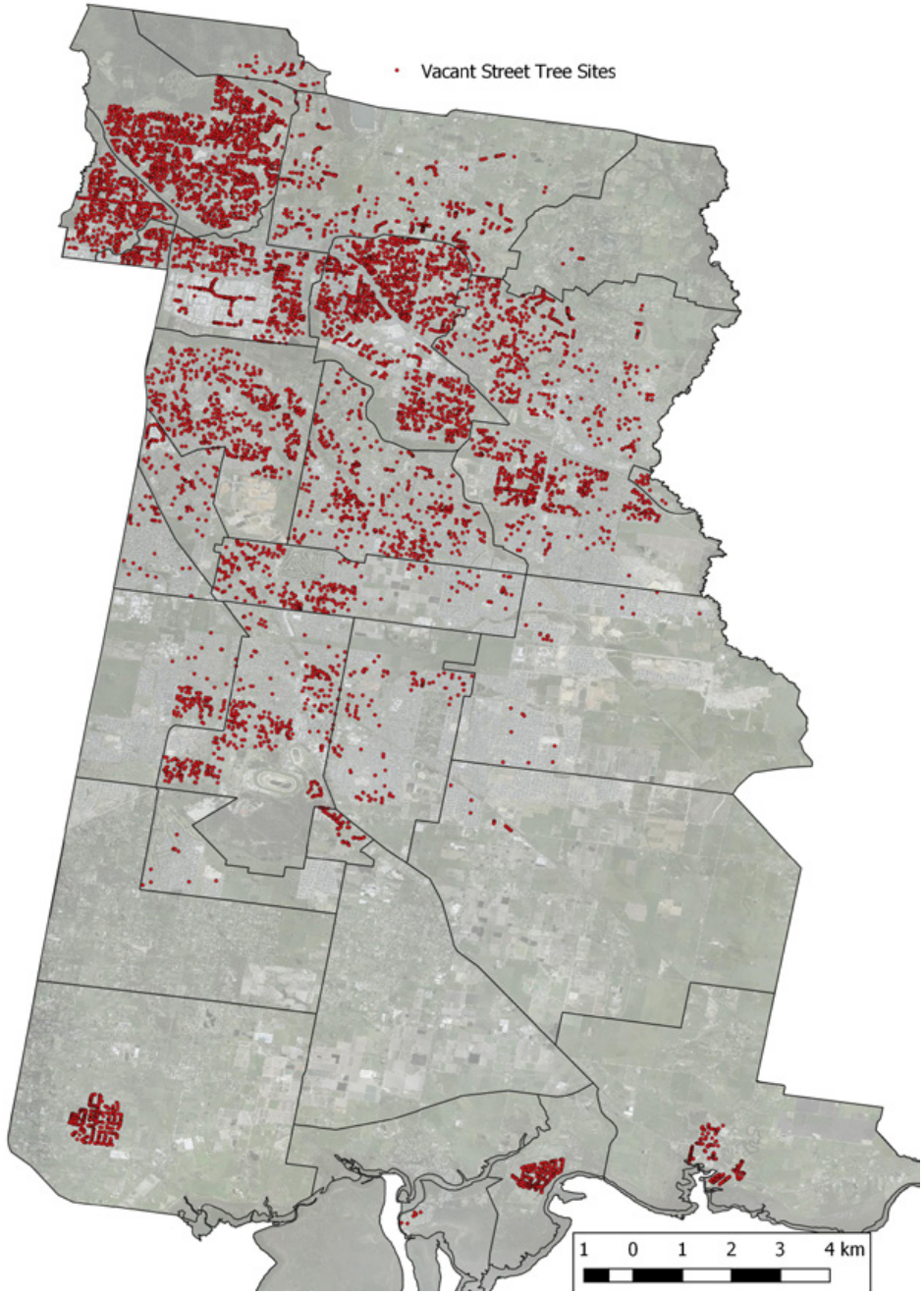
88% of park trees have a useful life expectancy greater than 30 years. Given the majority of mature park trees are River Red Gums, these trees are likely to continue thriving in the landscape for many decades, if they are maintained and protected.

2,300 trees or 1.5% of the population have or will shortly reach the end of their useful life and need renewal over the next decade. These trees will be systematically assessed for potential habitat value and risk before being renewed if required.

The majority of the 4,596 dead trees are used as habitat trees and retained in the landscape to create hollows and nests of birds, animals and insects. They are routinely inspected and pruned to maintain safety in the landscape.

VACANT STREET TREE SITES TO GREEN CASEY

10,135 vacant street tree sites have been identified from both desktop and on ground assessments. These are sites along streets where a tree could be planted now. Given Council plant around 3,000 street trees per year, these gaps will be filled by 2025. This analysis does not consider opportunities in non-traditional planting locations e.g., within asphalt carparks, in activity centres, along shared walking and cycle paths. These opportunities are discussed within the Feasibility Mapping section of the Strategy.

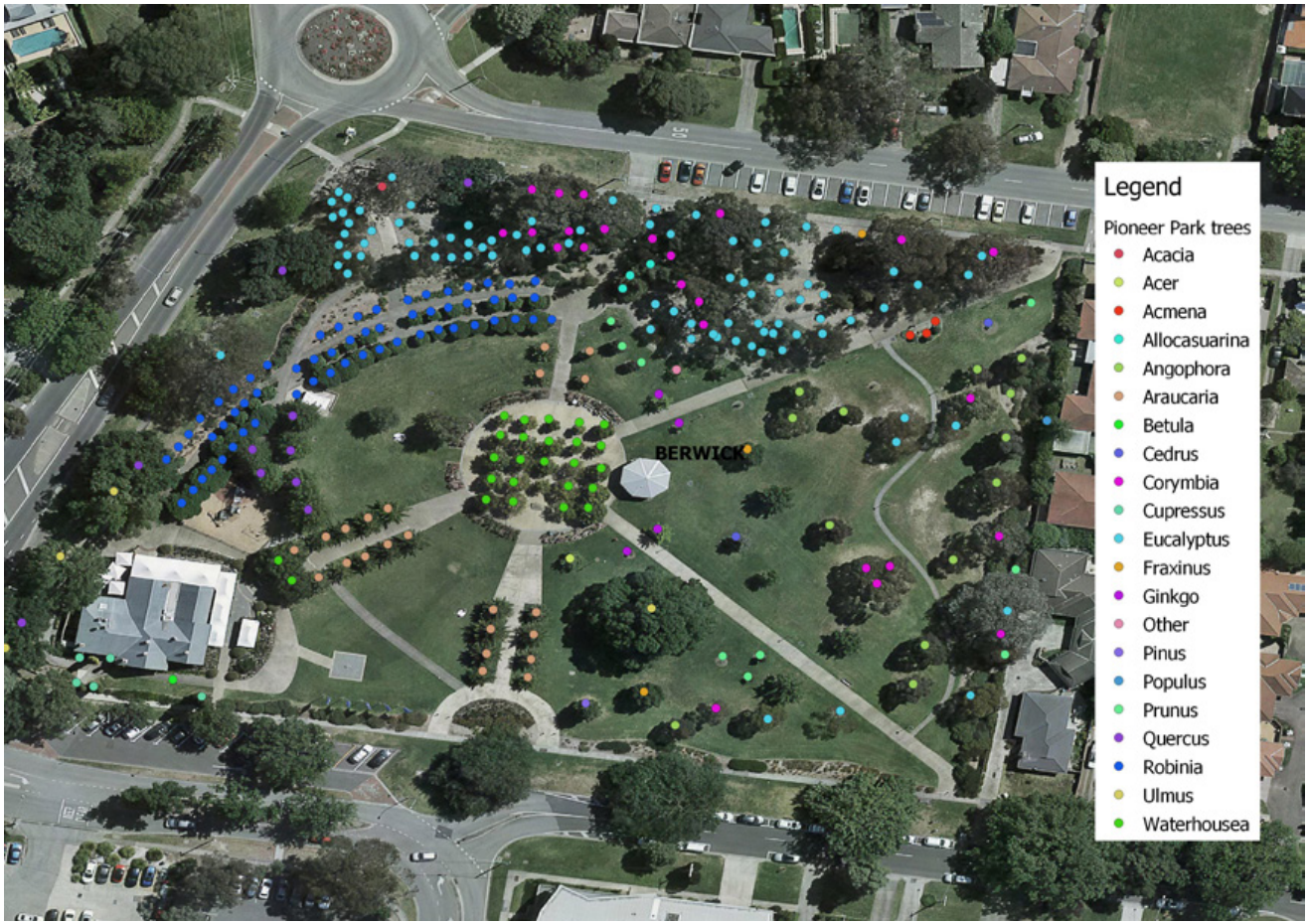


HOW MUCH IS OUR URBAN FOREST WORTH?

To understand the basic value of our urban forest sample areas were run through a valuation tool called I-Tree Eco which provides a dollar value for:

- Environmental benefits of the tree including carbon storage and sequestration, stormwater interception and air pollution mitigation
- Structural or replacement value of the tree i.e., how much it would cost to replace the tree back to its same size and health

Pioneers Park in Berwick was tested by inputting the species and trunk diameter for each tree into I-Tree Eco.



97 trees were assessed using I -Tree Eco. They were a mix of species, ages and sizes. The modelling found:

- They store 36 tons and annually sequester 0.95 tons of carbon
- They intercept 48 m^3 of stormwater runoff every year
- They remove 0.03 tons of air pollution and particulate matter every year
- Together they are worth $497,000

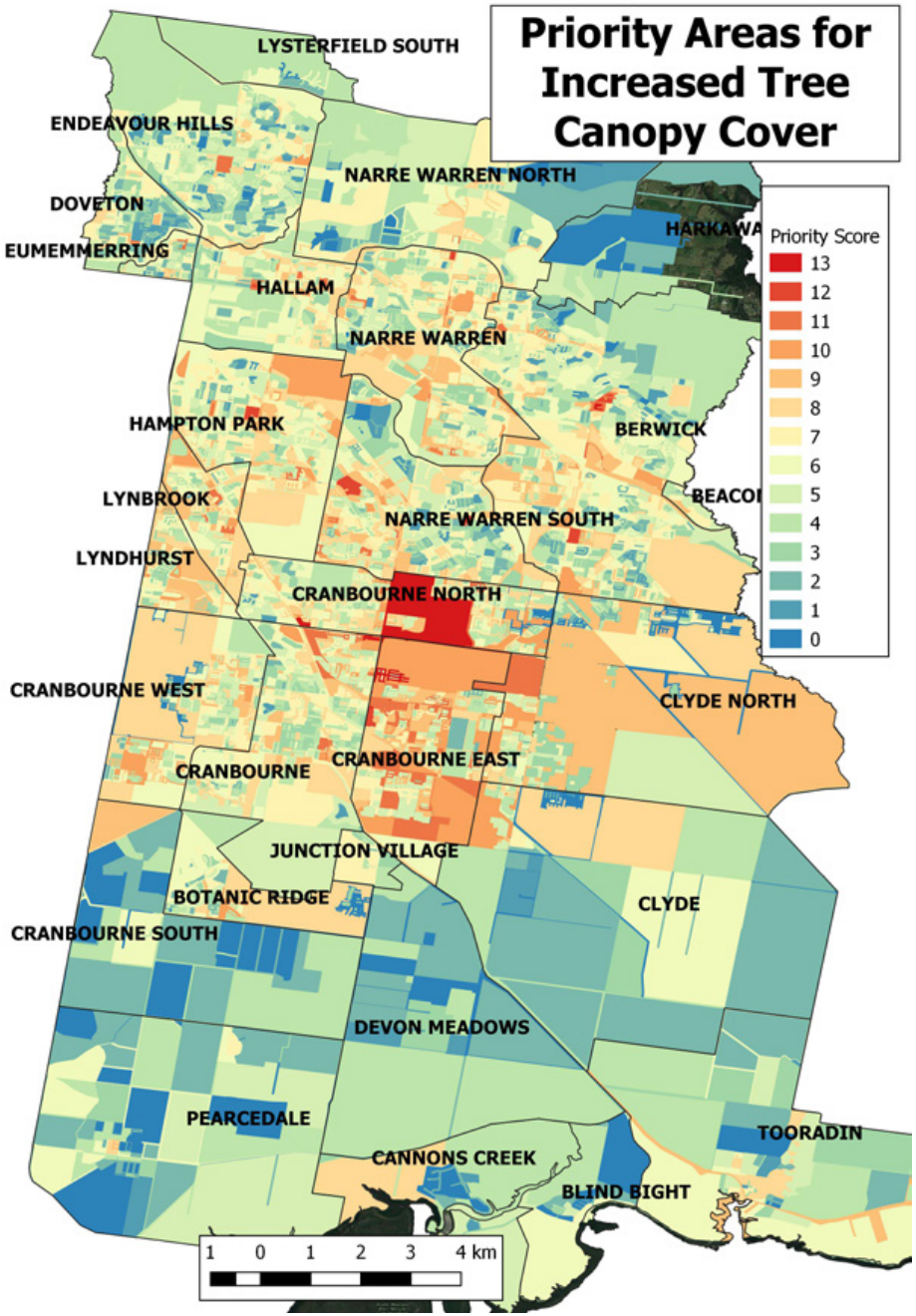
Using these results, we can estimate each tree is worth on average $5,000 over its lifetime.
If we extrapolate this over the 300,000 public tree population, we learn that our urban forest asset is worth around $1.5 billion. To compare this, City of Melbourne's public urban forest (70,000 trees) is worth around $650 million. In the USA, Chicago's urban forest is valued at US $2.5 billion.

Various studies in both Australia and the US have calculated that any investment in the urban forest is likely to make a positive return. The City of New York found that for every dollar spent on their trees, they would return $5.60 in environmental, social and economic benefits carbon storage and sequestration, energy saving benefits of nearby buildings and stormwater interception (City of New Work, 2022). The City of Chicago found that their investment in street and park trees had a payback period of 8-19 years. Street trees in Adelaide were found to have benefit to cost ratio of between 3.4 and 4.6:1. (Moore, G. 2021). This research shows that our investment in the urban forest represents very good economic value to our local community.

WHERE DO WE NEED MORE TREE COVER?

We have identified where we need more trees i.e., where canopy cover is low and urban heat is high. This data has been cross referenced with areas of the municipality where people are out and about, and therefore likely to be more vulnerable to heat and extreme heat events. This has helped us to determine priority areas where growing the urban forest will support healthier and safer communities.

Areas in red and dark orange are where tree canopy cover is low, urban heat is high and community vulnerability and exposure to heat is high. These are the areas to target for greater shade cover.



Priority areas for improved tree canopy cover for health and wellbeing outcomes

GREENING CASEY

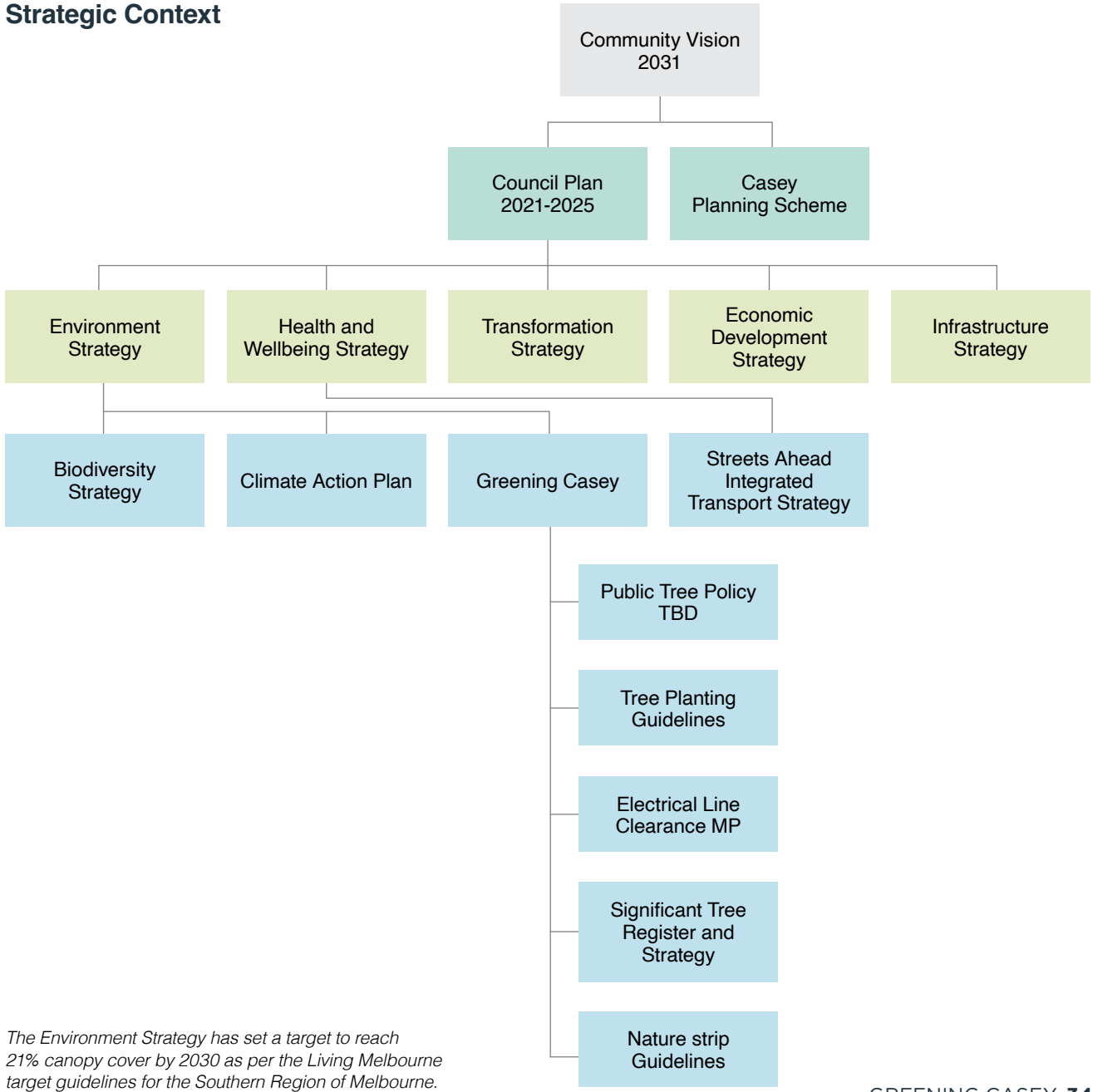
URBAN FOREST MANAGEMENT

Strategic Context

Our urban forest directly and indirectly benefits and contributes towards a number of existing priorities set by Council. Directly, our urban forest improves environmental outcomes, helps our city adapt to climate change and improves biodiversity outcomes.

Our urban forest also improves community health and wellbeing through shading, amenity and landscape character. It encourages the use of active transport like walking and cycling and helps to make our commercial and retail areas nicer places to be, thereby generating higher economic productivity. Our urban forest underpins the way our city looks and feels, creating welcoming, cool and shady spaces, attracting new residents, businesses and development.

Not only is our urban forest a highly valuable asset, but it also provides a broad range of benefits that support multiple strategic outcomes.



The Environment Strategy has set a target to reach 21% canopy cover by 2030 as per the Living Melbourne target guidelines for the Southern Region of Melbourne.

PUBLIC TREES

City of Casey's public vegetation, including trees, are currently planted and managed through the following technical documents:

1. **Open Space Masterplans**
2. **Precinct Structure Plans**
3. **Development Plans**
4. **City of Casey Tree Planting Guidelines**
5. **Tree Technical Manual**
6. **Electrical Line Clearance Management Plan**
7. **Nature Strip Guidelines**
8. **Infrastructure Design Manual –**
9. **Vegetation Management contracts**
10. **Significant Tree Register, protected by planning regulation**

Key aspects of tree/vegetation management undertaken by Council:

1. Tree Planting

Each year Council plant approximately (considering reduced planting during COVID)

- 3,000 street trees for renewal and infill
- 2,000 open space trees
- 20,000 tubestock in conservation areas

Across Casey, the soil quality is generally of poor structure. Council undertakes some ground improvement works to improve soil quality before planting, however, it is recognised that we could do more in this space. Trees are watered, maintained and formatively pruned for the first two years post planting.

2. Tree Removal

Council has a strict policy regarding tree removal on public land to ensure as many trees as possible are safely retained.

3. Tree Renewal

As trees are assessed and approved for removal, tree succession planning is undertaken to ensure no net loss of overall tree canopy cover and a new generation of trees are planted for the future.

4. Tree Maintenance/inspections (including tree root management)

Council run regular tree inspection programs for street and park trees, significant trees and nature reserves and bushland. These programs identify risk which informs an annual proactive maintenance program.

5. Conservation reserves

Council manages 29 nature conservation reserves and other parcels of open space for biodiversity. These areas are maintained for weeds and revegetated where needed.

6. Landscape Plans review/input

A Council arborist assesses development landscape plans to make sure developments are planting the right species of trees, in the right locations in streets and open space as part of subdivisions.

7. Community collaboration

Any resident can request a street tree be planted out the front of their house or request works to be done to their existing street tree.

We run a suite of programs designed to encourage residents to plant trees on their own property. Programs include Gardens for Wildlife and community tree planting days.

CASE STUDY: HERITAGE TREE RENEWAL IN CASEY

Casey is home to seven Avenues of Honour, which were planted to commemorate the contribution and sacrifices made by local volunteers in World War I, and to stand as living memorials to those who served in the wars that followed.

One of these, the Beaconsfield Avenue of Honour, which runs along High Street, Berwick, was planted with *Populus x canadensis* or Canadian Poplar, more than 90 years ago in an initiative led by the Beaconsfield Progress Association. Funds for its establishment were generously donated by Ada Armytage, a local philanthropist, to honour the 65 servicemen from Beaconsfield and district who served in World War I. The original trees have performed well in their urban environment however, now many have or will soon reach the end of their useful lives.

Individual tree assessments on this avenue identified that many of the trees were also in poor or declining condition and health indicating a need for a tree succession plan. Council developed a staged removal and replacement plan so that the impact of tree removal was minimised.

Phase 1, which saw the replacement of 32 trees in the avenue, was completed in late 2019. Following its success, Phase 2 was completed which involved a further removal and replacement of another 35 trees. A further 40 tree removals and replacements were completed in October 2022.

We actively planned for the renewal by propagating new trees from cuttings from the original Avenue trees back in 2015. These cuttings are now between four and five metres in height.

We also actively consulted and collaborated with the Berwick RSL, Beaconsfield Progress Association and the public to ensure this significant site remains as a living memorial into the future.

A review of our current public tree management documentation reveals the following gaps:

- Tree technical manual is outdated and in need of updating
- Stronger public tree protection criteria
- Stronger public tree removal criteria
- Technical specifications for soil improvements and planting of understory beneath street and park trees

These documents will be systematically prepared and reviewed as part of our action plan.

Contract grown advance specimen which was propagated from the original trees in 2015. Tree was planted in 2021 to replace a declining original tree.

PRIVATE TREES

Council maintains a Significant Tree Register which protects trees that have been nominated by the public and assessed as significant, which include large old River Red Gums. Not all significant trees within Casey are currently identified within the Register.

Vegetation on private land is subject to the Casey Planning Scheme. The planning scheme provides protection for some existing trees through various planning overlays. Within Casey's planning scheme, there is very little protection for tree removal outside of the provisions that seek to protect native vegetation specifically. This includes Clause 52.16 and Clause 52.17. As areas within Casey are often subject to Native Vegetation Precinct Plans (refer Clause 52.16) this may apply to some native vegetation on private land. Alternatively, Clause 52.17 applies and outlines a framework for native vegetation removal. Most subdivisions are governed by Precinct Structure Plans, City of Casey Landscape Policy 2005 and Subdivision Policy for New Estates 2017. The latter two are due for review.

A critical opportunity for enhancing vegetation outcomes on private land is through the planning permit process for new buildings and works. In the Casey context this is confined to development on smaller private lots or buildings and works associated with non-residential development. A planning permit is not required to build a single dwelling on a lot over 300m2, so Casey has limited scope to influence private landscape planning (associated with building a dwelling) through the statutory planning process.

In addition to regulation, awareness or education can improve community perception about the value of trees in the private realm. Council undertakes various community engagement programs that seek to encourage landholders to plant trees on their own properties e.g., Gardens for Wildlife program.

Another option available to Council is to explore incentives for private tree retention or tree planting.

ISSUES FACING THE URBAN FOREST

Our urban forest faces a raft of challenges that we're intending to address as part of this Strategy. Some of these issues are similarly faced by other metro and growth councils in Melbourne, and some are unique to Casey.

Development

There are many issues for the urban forest regarding development in Casey. These include:

- The majority of subdivision designs do not require the provision for trees on private lots
- There is a development driver for lot yield to maximise outcomes for developers, often at the cost of open space, gardens and the environment
- Land is valuable and becoming more so, and the highest value land use is for residential housing. Unfortunately, trees on private lots are often seen as a construction constraint rather than opportunity to site dwellings within the existing landscape.
- Currently the subdivision model places little value on creating space for trees and vegetation on private lots. This is further constrained by the prevalence of waffle pod slabs, which require protection from tree roots to avoid cracking. Potential buyers are often wary of requiring trees to be planted on private lots due to potential future liability.
- There is a lack of targets driving canopy cover on either private or public land within subdivision. Only recently did the VPA introduce a canopy cover target of 30% for public land so all existing Precinct Structure Plans have no such target. Furthermore, retrospectively introducing targets throughout established communities can only occur on individual lot development basis and often there is only space for small canopy trees.
- The current VPA Engineering Construction Design Manual (ECDM) includes standard street cross sections and process requirements which do not support tree growth, for example, they maintain conflict with underground services and separate the engineering and landscape documentation and approvals process
- This results in initiatives being lost or diluted through the planning and engineering approvals stages, but can be improved through both interagency collaborations that aspire to the same aligned urban forest objectives and through relationships between assessing officers with a focus on detail
- The Handover and compliance procedure for developer planted trees handed over to Council is not strong enough leading to handover tree and data quality issues. This can be resolved by better Council auditing and enforcement measures.
- Some developers do not maintain their trees well, meaning that Council inherits poor quality assets
- Developers want to plant early so that the development looks nice but often the trees get damaged in the build process and soils become compacted limiting future growth.

CASE STUDY – LOSS OF CANOPY THROUGH DEVELOPMENT

Two recent developments, showcase how incremental development is having an impact on existing tree cover. It also enforces our obligation to the community to retain viable vegetation where possible.

IIn the space of 3 years from 2018 to 2021, one estate lost 61% of its canopy cover resulting in an overall canopy of just 6.5%.

While this was for the purpose of development, it raises the issue of whether more of these established trees should have been strategically retained at the planning phase. It will take over 50 years to replace the amount of canopy lost.

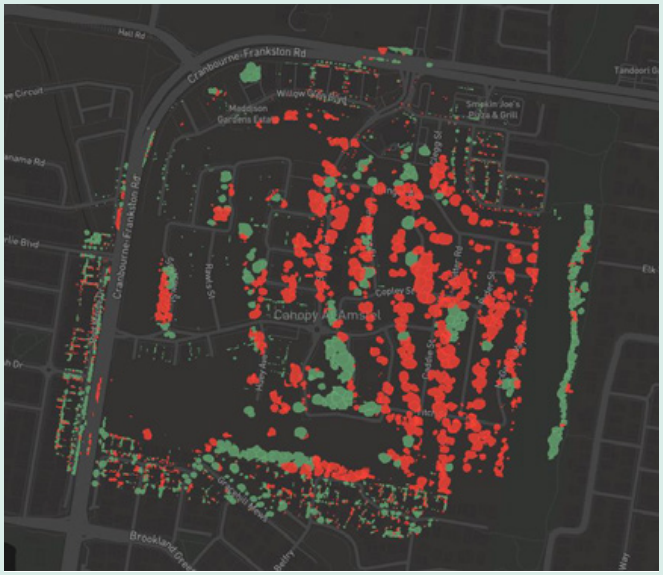
The canopy cover in 2021 is:

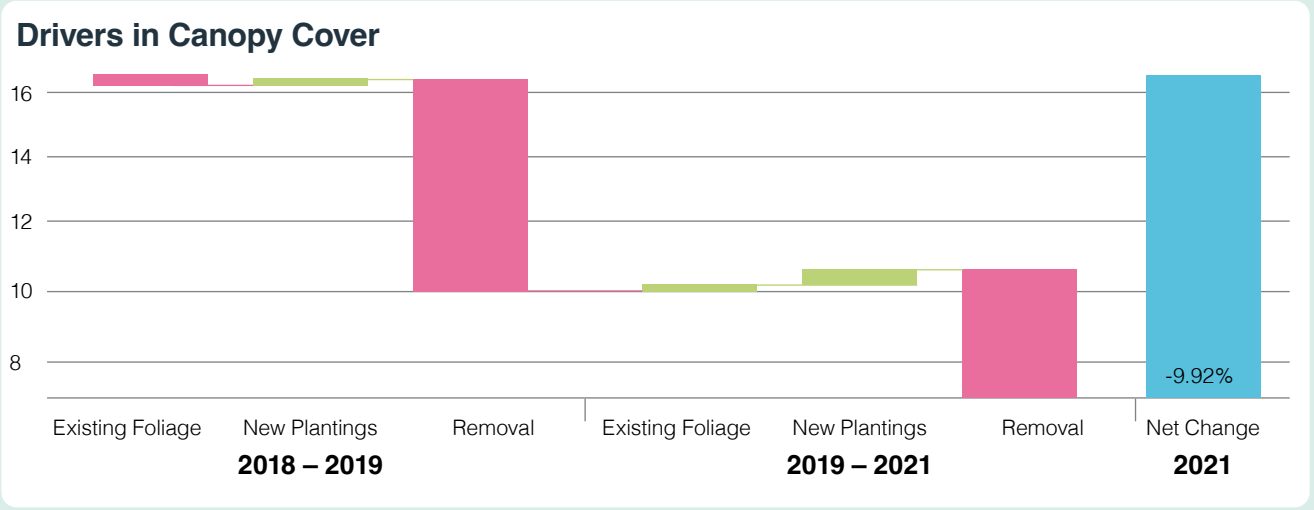
6.51%

That is a decrease of canopy cover of:

-60.13%

compared to what was measured in 2018.





The starting point of tree canopy cover at 16% for an estate in Casey and the subsequent small gains from new trees and significant losses from tree removal. Source: Player Piano Data Analytics, 2023

Another estate started at 8% in 2018, saw growth from existing trees and new plantings which was significantly outweighed by subsequential removal of existing trees and heavy pruning. Overall canopy decreased by almost 20% of the original resulting in a 2022 baseline of 6.5%. This type of loss is occurring in many estates across the municipality which significantly impacts Casey's ability to a) adapt adequately to climate change b) mitigate urban heat impacts and c) provide liveable neighbourhoods for these future communities.

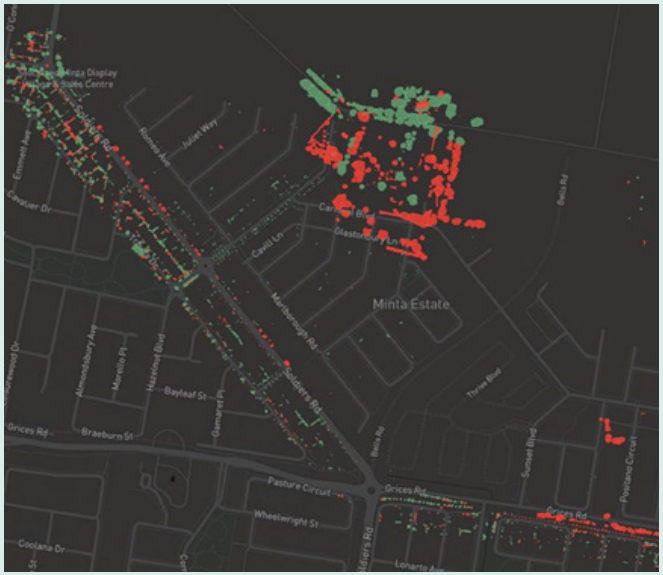
The canopy cover in 2021 is:

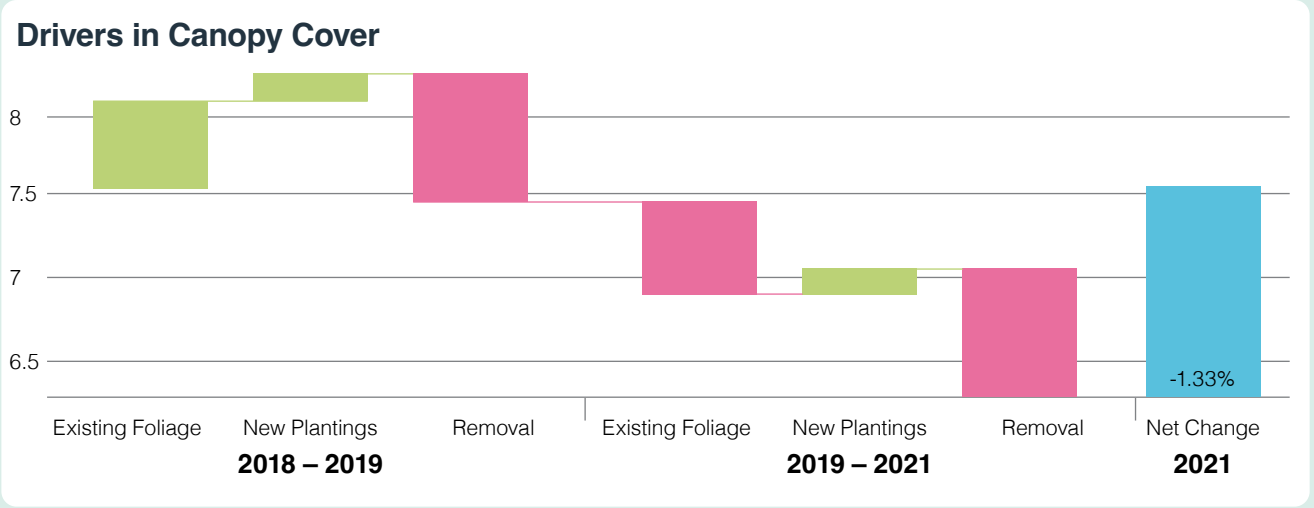
6.1%

That is a decrease of canopy cover of:

-17.63%

compared to what was measured in 2018.





The starting point of tree canopy cover at 8% for an estate in Casey and the subsequent small gains from new trees and significant losses from tree removal. Source: Player Piano Data Analytics, 2023

Vegetation loss

Casey's land area is increasingly becoming developed, making way for new roads, residential subdivisions, commercial and industrial areas. Vegetation, often native or indigenous, is typically removed to accommodate infrastructure, particularly when the design is focused on minimising overall project costs, rather than maximising amenity and sustainable solutions. Sometimes this vegetation removal is done with the correct approvals, sometimes not. Both scenarios lead to cumulative vegetation loss. The compliance and enforcement of non-permitted vegetation removal is resource intensive and expensive. Council currently do not employ a vegetation compliance officer.

Added to this, vegetation clearing exemptions for bushfire protection in Clause 52.12 of the Victorian Planning Scheme sees the legitimate loss of trees in bushfire prone areas.

The State Government, including Department of Transport maintain and build new infrastructure and will continue to do so to accommodate the fast-growing population of Casey. These works also have cumulative impacts on vegetation loss, which is often not replaced.

Vandalism is a problem in Casey with around 7% of all newly planted trees each year subjected to some level of destruction. Again, this is almost impossible to prosecute against and without a compliance officer, Council cannot seek to rectify this issue with regulation.

The Western Port Green Wedge area is managed through a strategic plan; however, it is not necessarily supporting positive vegetation outcomes, despite the recognition that it is home to some nationally significant indigenous biodiversity. The multiple uses of the Green Wedge Zone mean that trees and vegetation are not well protected.

Finally, through a community survey and targeted workshop, we found that the community feel that protecting trees on existing private land is important, and some level of regulation should be imposed on land being developed e.g., subdivisions.

Public feedback to Greening Casey suggested Council investigate the drafting of local laws relating to tree protection on private land, as implemented by other Local Government Authorities.

Conflict with infrastructure

Further to the issue of community risk profiles, poor past decision making has meant we are dealing with the inherited legacy of some older trees damaging infrastructure or causing problems. These stem from tree roots intercepting underground infrastructure, tree crowns impeding on electrical line clearance envelopes.

Innovative solutions have been and are still being developed to deal with the myriads of issues to ensure that both infrastructure and trees can coexist in well-designed urban landscapes. However, often these innovations are expensive or require technical skills that are not readily available within Council, making it more a challenge to implement them.

Unfortunately, asset planning for capital works or asset renewal projects often do not accurately account for the true cost-benefit of best practice landscaping. Too often, when project budgets overrun, the landscapes are the first thing to be reduced or removed.

Data

As discussed under the species diversity analysis with the Casey's Urban Forest Today section, the accuracy of tree data is problematic for making evidence-based decisions around species selection into the future. All of our tree management functions are outsourced through large service contracts. Unfortunately, there have been conflicts between contractor and Council systems, so data is not always smoothly transferred. Given Casey's scale and required workload, contractors will need to utilise Council's data asset management systems, which is currently in the planning phase.

We also don't fully utilise our rich data sources, such as the tree inventory to better inform the public about the urban forest e.g., through interactive urban forest maps.

Community

Overwhelmingly our community values trees and would like to see our urban forest protected and expanded. Council plays a significant role in supporting the community to better understand the benefits and role of our urban forest. While there is genuine support for building our resilience as a community, there is a gap in understanding of how the urban forest supports this.

The volume and nature of customer requests around trees suggests that our community has:

- A limited understanding about the breadth of value delivered by trees and the overall urban forest
- A perception of risk that is significantly higher than the statistical risk when it comes to tree and limb fall

Added to this, the ever-increasing environment of risk mitigation and litigation. We often hear comments about residents loving trees, but not the one out the front of their house or in their backyard. As personal risk appetites decrease, trees are sometimes seen as a liability to be managed, rather than recognised for the tremendous value they provide to our community.

GREENING CASEY

IMPLEMENTATION

To support our commitments to Green Casey and growing our urban forest we have developed a targeted tree planting plan alongside an implementation plan to help us achieve our targets as follows:

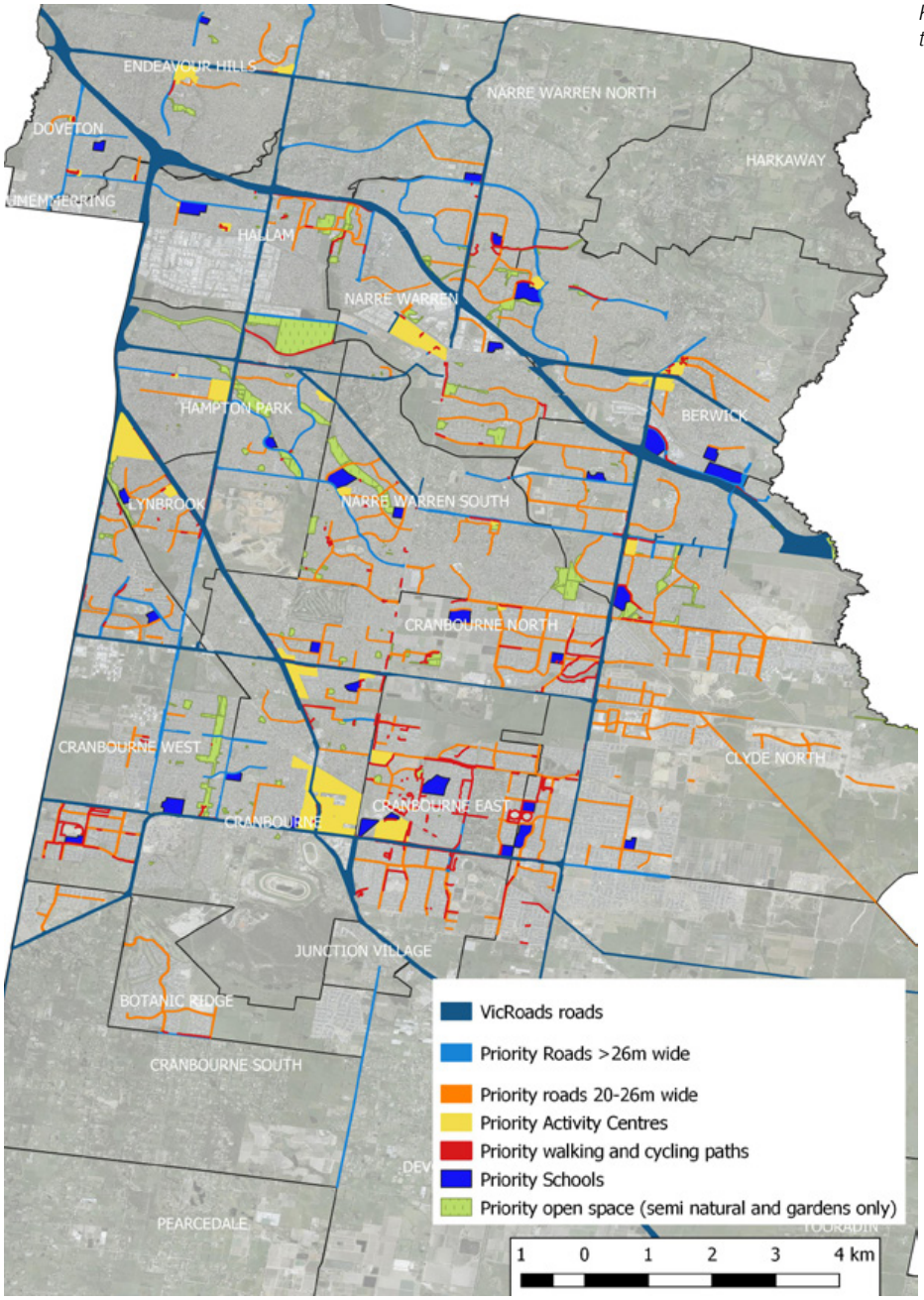
- 15% tree canopy cover overall by 2030 (from 11.3% in 2018)
- 20% tree canopy cover over roads by 2050 (from 11.2% in 2018)
- 30% tree canopy cover over parklands/open space by 2050
- 30% tree canopy cover over shared walking and cycling paths (from 5.3% in 2018) by 2050
- 25% tree canopy cover over Council owned carparks by 2050
- All future Precinct Structure Plan's should achieve 30% mature tree canopy cover in the public realm and open space

a) Tree Planting Plan

Our mapping indicates that we have 10,135 vacant street tree sites that are ready for planting now. We will fill these over the next three years through the delivery of our annual tree planting program.

However, to help inform where we will plant after that time, we have used the priority areas identified in our earlier analysis to identify the greatest opportunities to improve tree canopy cover on public land. These are:

- Wide road reserves with low canopy cover, including those owned by VicRoads
- Activity or retail centres
- Walking and cycling paths
- Carparks
- Streets and roads surrounding schools
- Public gardens and semi natural parcels of open space
- Streets and open spaces linking areas



Key public areas where we will target our tree planting program.

b) Wide Road Reserves

Council maintains a hierarchy of roads throughout the Municipality which house our street trees. There are three main road types that Council will prioritise for increased canopy cover:

1. VicRoads owned roads that are maintained by either Council or VicRoads. There is 180km of VicRoads roads across Casey which house an average canopy cover of just 7%. While these roads are subject to strict safety guidelines, VicRoads has recently shown its commitments to trees by allowing avenue plantings in other Melbourne LGA's. There is significant opportunity to collaborate and partner with VicRoads to target tree planting in this category to improve tree canopy cover while allowing adequate transport envelopes for vehicles.

2. Roads wider than 26m that are owned and maintained by Council. There are 172km of roads wider than 26m housing an average 12% tree canopy cover.

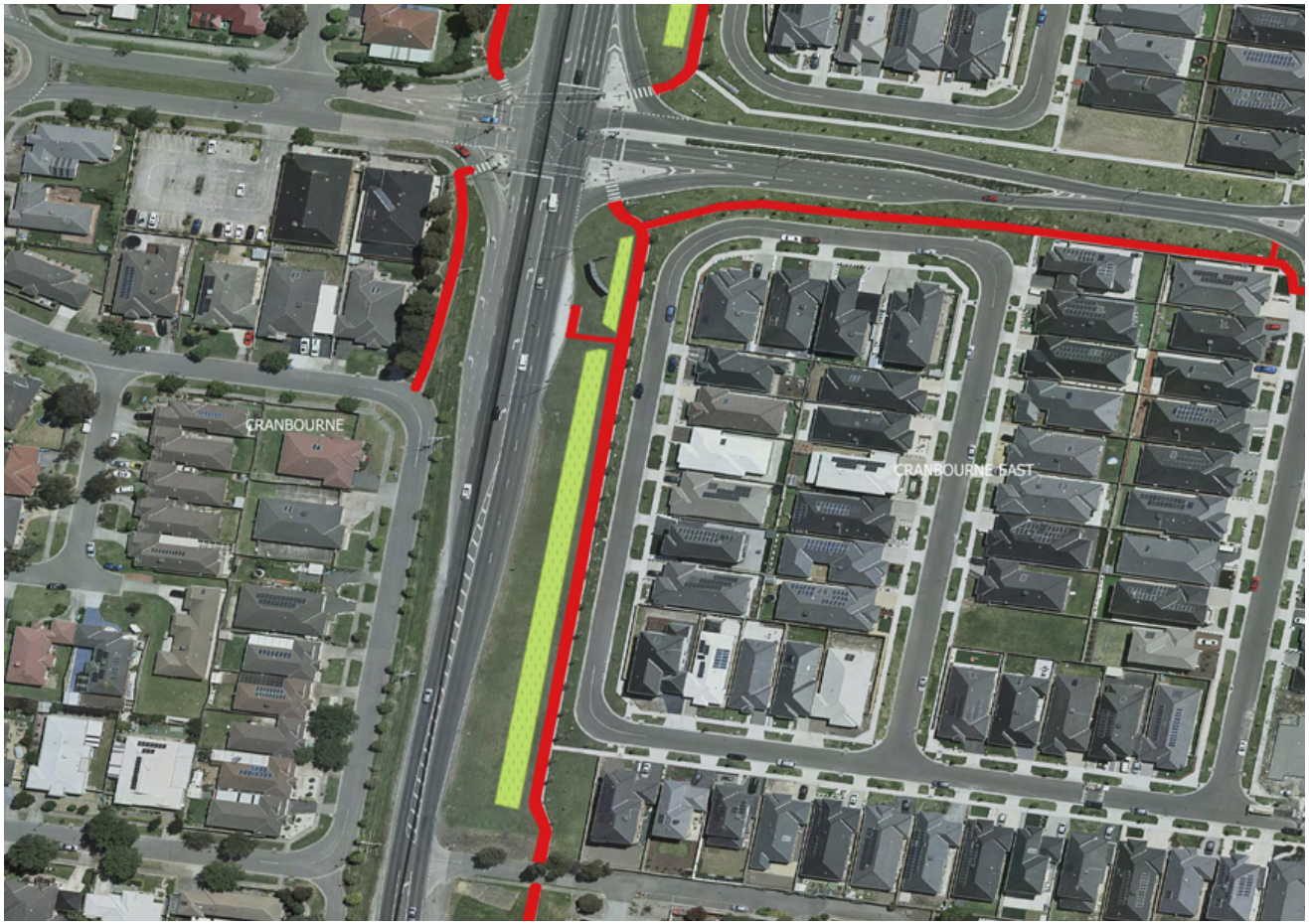
3. Roads between 20 and 26m wide that are owned and maintained by Council. There are 321km of roads that are between 20m and 26m wide housing an average of 8% tree canopy cover.

These three types of roads that occur within the priority areas identified for greater canopy cover. These roads will be systematically assessed and prioritised for tree canopy enhancement during any asset upgrade or road resurfacing works. Council will continue negotiations with VicRoads regarding canopy enhancement programs on their land.

South Gippsland Highway entering into Cranbourne has very limited tree canopy cover.

c) Shared walking and cycle paths

There are 302 km of linear walking and cycling paths mapped for the City of Casey. There are likely to be more given the pace of development and creation of new paths each year. The 71 km of paths that intersect with our identified priority areas, as shown below, are currently covered by approximately 5.3% tree canopy cover. There is significant opportunity to improve tree canopy cover.



Existing walking and cycling path in East Cranbourne showing opportunities to improve shade cover on the western side of the path. The image also shows the significant number of new trees already planted along the path to the north.

d) Open Space: semi natural and parkland settings

Council maintains 31km^2 of open space that is categorised as either semi natural or parkland. While there are other types of open space that would benefit from more shade, many of our active recreational open spaces are already governed and managed by Master Plans, which include tree planting. The semi natural and parkland type of open spaces however do not, providing significant opportunity to improve tree existing canopy cover which is recorded at 15.6%. We acknowledge that we cannot completely plant out these spaces with trees as open areas are needed for more passive recreation, but there are opportunities to create tree islands, improve shade along walkways within these reserves, and enhance the existing vegetation cover. There are also significant opportunities for Council to collaborate with other land agencies such as Melbourne Water.

River Red Gum Reserve in Hampton Park offers significant opportunity to collaborate with Melbourne Water to improve shade cover over walkways and grassed areas.

e) Carparks

There are 752,000m² of Council owned carparks in the City of Casey which record a current tree canopy cover of 10%. Some carparks are well treed, others however offer significant improvement opportunities. Wherever possible, tree planting in these locations should be supported by water sensitive urban design to enhance the cooling effect of the trees.

J and P Cam Reserve Carpark has 0% tree canopy cover providing great opportunity for improvement.

f) Activity Centres

The City of Casey has a number of activity and commercial centres. The majority of these centres have been designed to deliver patrons by car and are usually surrounded by extensive areas of asphalt carparking. As a result, average tree canopy cover over our activity centres is only 6.6%.

Council only owns and manages part of the land within these activity centres, typically including streets and nature strips, and sometimes the carparks. As such there is scope to redesign public areas to improve amenity, natural shade and reduce the urban heat island effect. This may mean redesigning on street parking bays to accommodate in-road tree plantings, creating kerb outstands along smaller streets, vegetating roundabouts that comply with sight lines, and considering alternative forms for greening for highly urbanised environments e.g., garden beds in plazas, green roofs for public buildings or green walls.

Our activity centres are some of the hottest areas in our Municipality. This means people are the most exposed to urban heat as they walk between their car and the retail area. These areas therefore warrant strong attention for mitigating urban heat and improving human thermal comfort, and generally improving overall landscape amenity. Trees are the most efficient and cost-effective way to do this, however these types of environments are not conducive to easy tree planting. Solutions to introduce trees to these landscapes need some level of infrastructure works to ensure adequate growing conditions. This comes with an increased cost to plant trees but with much greater benefits.

Berwick shopping precinct could integrate greater tree canopy by potentially redesigning carparking and planting in the kerb outstands, as well as planting trees in surrounding streets and lanes.

Lynbrook Industrial estate, despite space requirement for truck movements, shows significant opportunities to improve tree canopy cover along existing nature strips and walking paths.

g) High Priority Areas around schools

Encouraging children and their families to walk or ride to school has significant community health and wellbeing benefits. Creating shady streets is one of the crucial ingredients in encouraging greater active transport among children. As such we've identified the schools in our region that sit within our priority areas and plan to boost tree canopy cover along the main routes to and around the perimeters of each school.

Three schools and one childcare centre converge on this site in East Cranbourne. While there are significant opportunities to increase shade over the school grounds, which would be the owning authority's responsibility e.g., Department of Education, Council still has a role to play in filling gaps in canopy around the school perimeters, along feeder streets and in surrounding parkland, as seen to the north of these schools.

ACTIONS SUMMARY AND IMPLEMENTATION PLAN

The following Actions Summary and Implementation Plan outlines the actions from the Greening Casey Strategy. These actions and the implementation plan are specific to the City of Casey but also align with Living Melbourne's 6 Key Actions.

Each action is assigned a priority for i mplementation based on the following key:

- Immediate – 2024/2025 Financial Year
- Short Term – over the next 2 to 3 years
- Medium Term – over the next 4 to 8 years
- Ongoing

The implementation of each action will be undertaken according to resources available and monitored as part of Council's Strategic Services Outcomes model.

	Item	Action	Implementation Priority
Embed our targets and track our progress	1.1	Embed the following tree canopy cover targets into all relevant Council projects (capital and civil/renewal) to ensure net gain of tree canopy cover: - 15% tree canopy cover over all by 2030 (from 11.3% in 2018). - 20% tree canopy cover over roads by 2050 (from 11.2% in 2018). - 30% tree canopy cover over parklands / open space by 2050. - 30% tree canopy cover over shared walking and cycling paths (from 5.3% in 2018) by 2050. - 25% tree canopy cover over Council owned carparks by 2050.	Immediate & ongoing
	1.2	Continue to support a 30% tree canopy target in the public realm and open space areas in future Precinct Structure Plans (PSP's).	Immediate & ongoing
	1.3	Remeasure urban forest canopy cover every five years to manage and track target objectives. This may involve reestablishing a baseline measurement if State Government data previously utilised is no longer provided. Investigate working across LGA's to collectively procure and fund this work, where possible.	Short Term

	Item	Action	Implementation Priority
Education and Advocacy	2.1	Continue to promote the Gardens for Wildlife Victoria Program (G4W)	Immediate & ongoing
	2.2	Continue to utilise existing events to educate community about the benefits of urban forest and how community can contribute towards growing the urban forest	Immediate & ongoing
	2.3	Continue to organise community tree planting days to increase continue participation in growing Caseys urban forest	Short Term
	2.4	As per the March 2024 Innovate Reconciliation Action Plan, .Collaborate with Aboriginal and Torres Strait Islander experts to obtain cultural knowledge and formulate guidelines for the restoration of natural habitats, which will encompass activities such as planting Indigenous flora and establishing educational zones within City of Casey's parks and reserves Explore opportunities for an indigenous plant nursery.	Short term
	2.5	Seek alternative forms of funding for planting of vegetation in collaboration with the community and through establishment of potential landcare groups and expansion of friends groups.	Immediate & ongoing
Best practice management of Council trees and vegetation	3.1	Implement the Biodiversity Strategy through the planting of indigenous vegetation in revegetation sites, nature reserves, and offset sites.	Immediate & ongoing
	3.2	Utilise streets and existing open space, such as powerline easements, to help connect biodiversity hotspots and biodiversity land as proposed in the new biolink plan.	Immediate & ongoing
	3.3	Seek to improve data collection of street and park tree species to better inform strategic and operational decision making and progress towards holistic greening objectives.	Short Term
	3.4	Review and update Tree Technical Manual including public tree removal criteria.	Immediate
	3.5	Review and utilise the current preferred species list and update as further information regarding suitable adaptive climate suited species is available.	Short Term
	3.6	Review and update Council's Nature Strip Planting Guidelines	Immediate

	Item	Action	Implementation Priority
	3.7	Implement Casey's 10-year planting plan and align budget to facilitate delivery.	Short - Medium Term
	3.8	Ensure collaboration to assist with the development of a revised customer service delivery model, which provides customers with relevant and up to date information to improve effectively inform and manage customer requests.	Immediate
	3.9	Continue to explore the highest and best of timber from removed trees and seek to utilise in community-based projects and within Council operations	Immediate & ongoing
	3.10	Improve and develop community consultation for the implementation of Greening Casey's Tree planting plan.	Immediate - Short Term
Protection of trees and vegetation in the private realm	4.1	Investigate the drafting of local laws relating to tree protection on private land, as implemented by other Local Government Authorities.	Short – medium Term
	4.2	Review and update landscape planning guidelines/policies, with the intent to retain existing large to medium tree canopy cover and increase the total amount of vegetation cover.	Immediate - Short Term
	4.3	Review and identify gaps for tree protection and increasing tree canopy in industrial areas contained within the current Employment Land Design Guide and the current Landscape Policy.	Short – Medium Term
	4.4	Engage with the community to assist in the development of suburb/neighbourhood character criteria for street tree planting, landscape amenity in open spaces, civic spaces and character of place purposes.	Short Term
	4.5	Develop a stronger response to canopy removal or non-compliance of development conditions by increasing available enforcement and compliance resources.	Short - Medium Term
	4.6	Develop resources and processes for Council's planning staff to guide effective decision making in relation to protection, retention and enhancement of tree canopy	Short – Medium Term
	4.7	Review the Significant Tree Register and include community nominations for new significant trees.	Immediate & ongoing

	Item	Action	Implementation Priority
	4.8	In addition to the Biodiversity Incentive Scheme explore incentives and programs that encourage landowners to retain and protect existing medium to large canopy trees on private property.	Short Term
	4.9	Seek to implement the relevant Greening Casey's actions and objectives into the Casey Planning Scheme, as part of a future Planning Scheme Amendment, with the intent to protect trees on private property.	Medium Term
Advocacy and best practice for trees in future developments and subdivisions	5.1	Review the use and value of bonds used to protect street trees from damage during development.	Short Term
	5.2	Continue to apply a dual action approach in the early planning stages, prioritising conservation of existing vegetation (using (AS49702009) as well as establishing large tree canopy planting and vegetation in new developments.	Immediate & ongoing
	5.3	Street Tree Landscape Masterplans and Open Space Landscape Plans are to include: overall canopy cover of at least 30%, species not be greater than 30% from a botanical family, species will not be great than 20% from a botanical genus, and species will not be greater than 10% from a botanical species. Provide a minimum of 50 per cent ground coverage is required in proportion to the percentage of mature tree canopy.	Short Term & ongoing
	5.4	Encourage developers to protect and enhance natural, cultural and environmental values. Utilise the current Victorian Planning Authority's Guidelines for Precinct Structure Plans in growth areas as per 30% requirements.	Immediate & ongoing
	5.5	Continue to collaborate with the Victorian Government and the Victorian Planning Authority on State based policy that seeks to improve outcomes for the urban forest and liveability.	Immediate & ongoing

	Item	Action	Implementation Priority
	5.6	Coordinate Council's assessment of landscape plans and functional layout plans to ensure alignment and avoid conflicts. Landscape and engineering assessments to be conducted together in one assessment process.	Immediate – Short Term
	5.7	Continue to use, review and refine the current Engineering Design and Construction Manual (EDCM) Green Streets project and undertake trials with early adopters.	Short Term
	5.8	Consider the following actions to help reduce the number of tree species substitution requests: - Develop tree species substitution guidance. Primarily focussed on encouraging developers to forward plan contract grow and procure for tree species soon after endorsement of Street Tree Master Plans (STMP). - Provide developers with a package of up to date, collated guidance documents, such as new subdivisions and growth policy, Landscape guidelines, Open space strategy, furniture palette, and Greening Casey, etc. - Develop a set of criteria to which proposed substitution requests can be managed and then inform applications for secondary consent to alter the approved STMP. Investigate options to engage with local nurseries to manage, grow and procure the approved list and quantity of species.	Short Term
	5.9	Develop and implement soil improvement solutions for the public tree planting program. Advocate with developers to adopt similar soil improvement solutions.	Immediate - Short Term
	5.10	Review the current Sustainable Subdivisions Framework and trial relevant tree canopy initiatives where appropriate.	Medium Term

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