Wyndham Tree Canopy Cover Report

September 2021

wyndhamcity
city. coast. country

Contents

1. Introduction

Wyndham City and the West of Melbourne is known for its flat grassland landscapes and lower tree canopy cover when compared with Melbourne's leafy East.

Since 2017, Council has been focussed on addressing this by investing in annual Street Tree Planting Programs and annual tubestock planting of trees in parks and waterway corridors.

At the 27 April 2021 Council Meeting a Notice of Motion (NoM) was passed requesting:

- That Council Officers conduct a review and provide a report on tree canopy in Wyndham and actions that can be considered to increase the amount of tree canopy cover in industrial and commercial areas, home gardens, parks, streets and other public land
- That the report includes consideration of actions to accelerate the rate of tree canopy establishment and how risks associated with Council trees are managed.
- That the report be due no later than September 2021 and be presented at a Council meeting for consideration.

This report has been prepared to address the above NoM and makes recommendations to achieve an increased tree canopy cover sooner.

This report focusses on public land and public tree management. This report has identified that this is the area of influence in which Council is best placed to increase tree canopy cover across Wyndham. It is also the key focus of the aspects of the NoM related to direct cost and risk.

The report also addresses tree canopy on private land and the need to advocate for planning scheme and policy changes to improve tree canopy outcomes. However, as any new policies and guidance related to private land will only be triggered by development applications, change will be slow and scattered. It is therefore important that Council maintains its focus on public land tree planting across residential, commercial and industrial streets, open spaces and semi-public open spaces, such as car parks, in order to green Wyndham. As a result, there is less of a focus on private land outcomes in this report.

2. Strategic Context

2.1. Tree Canopy Targets

The City Forest and Habitat Strategy 2017-2040 (CFHS) provides a holistic approach to the management of Wyndham City's habitat and tree assets that will ensure integrated strategic plantings, biodiversity protection, land use planning and asset protection.

Wyndham is one of the fastest growing municipalities in Metropolitan Melbourne due to the significant amount of greenfield housing developments underway in growth areas. Canopy trees make a significant contribution to the character of Melbourne's urban areas. They also contribute to a municipality's biodiversity and liveability. Canopy trees are identified as an important mechanism for mitigating and increasing resilience to the potential impacts of climate change.

The strategic objectives of the CFHS are to:

1. Increase urban tree canopy cover and create an urban forest;
2. Protect and manage our trees as valuable council assets;
3. Improve urban and rural habitat protection, connectivity, resilience and health;
4. Engage our community in understanding and valuing our trees and natural habitat, and;
5. Manage risks and better integrate trees into the design of assets, services and the built form.

The CFHS sets specific potential tree canopy targets for different public and private land types as there are areas of the municipality that will remain as farming land or conservations zones and others that will be developed for various urban uses. Each private urban land use has limitations on the amount of tree canopy that it can realistically achieve.

Critically, the Strategy identifies that "The space available for trees in the private realm is decreasing rapidly and as such, increasing canopy cover in the public realm is vital".

Public realm tree canopy cover targets

The CFHS sets long-term targets to increase potential canopy coverage to 25% in streets and 35% in parks by the year 2040. These targets apply to public land where Council can directly undertake tree planting initiatives.

The recently endorsed Resilient Wyndham Strategy has brought forward the CFHS targets to 2030.

Private realm tree canopy cover targets

The CFHS sets 2040 targets of 15% potential canopy coverage in established areas and 10% in establishing (growth) areas, in recognition of smaller residential lot sizes. Council has a much-reduced ability to influence rapid and significant change in canopy across these areas.

Why we have potential canopy cover targets?

The CFHS set potential canopy cover targets for the years 2030 and 2040 as a tree will not reach its maximum canopy cover until ten or more years after planting.

Meeting our potential canopy cover targets sooner

Due to the relatively low number of trees in existing urban areas and the significant portion of the Municipality yet to be developed, even if Council planted the required shortfall in trees this year, the community would not see the canopy and cooling benefits of these trees for at least another decade.

Recommendation:

> *Bring forward the CFHS 2040 canopy targets to 2030, in line with the Resilient Wyndham Strategy, so that urban areas are cooler and greener 10 years sooner.*

2.2. Influencing tree canopy cover

Council's ability to increase the number of trees and percentage tree canopy cover across public and private land is influenced by the below policies, strategies, and legislation (extract below from City Forest and Habitat Strategy).

Activity Area	Policy and Legislation
Biodiversity and conservation –management of threatened or endangered flora and fauna, protection of soils and management of noxious weeds	• Flora and Fauna Guarantee Act 1988 (Vic) • Protecting Victoria's Environment – Biodiversity 2037 (Vic) • Catchment and Land Protection Act 1994 (Vic) • Environment Protection and Biodiversity Conservation Act 1999 (Federal)
Waterways – compliance with the policies and regulations related to stormwater, flood management and riparian land management	• Victorian Waterway Management Strategy 2013 • Melbourne Water Local Government Charter • Water for Victoria Water Plan
Strategic Planning – managing urban growth, working with State planning requirements, including fire management	• Planning and Environment Act 1987 (Vic) • Plan Melbourne 2017-2050 (Vic) • Wyndham Planning Scheme and Municipal Strategic Statement • Precinct Structure Plans and Guidelines (Vic)
Infrastructure – compliance with policy and regulations regarding safety, damage to infrastructure and ongoing maintenance, including public safety of Council assets	• Road Management Act 2004 (Vic) • Electricity Safety (Electric Line Clearance) Regulations 2015 (Vic) • Utility asset protection standards (various -Vic) • Occupational Health and Safety Act 2004 (Vic)
Indigenous and other heritage protection - protecting heritage sites, ensuring rights of Traditional Owners are respected	• Aboriginal Heritage Act 2006 (Vic) • Heritage Act 2017 (Vic)

Across the growth areas, current Precinct Structure Plans (PSPs) provide little protection to existing trees. Phrases such as "possible retention" are typically used to describe the need to retain limiting Council's ability to require tree retention when planning applications are submitted.

PSPs do not mandate tree canopy cover outcomes across public and private land.

Council is reliant on existing planning scheme controls, the CFHS, the Resilient Wyndham Strategy, and the Tree and Urban Forest Policy 2019 to achieve greater canopy cover outcomes across the existing urban areas of Wyndham.

Recommendations:

Advocate for future Precinct Structure Plans to include clear directive language to ensure the retention of existing trees and the meeting of Council's potential canopy cover targets across public and private land.

Pursue amendments to the planning scheme and subdivision approvals process to require developers to meet Council's potential tree canopy cover targets.

3. Current and future Potential Tree Canopy Cover

3.1. Council 2017 baseline

A 2017 Council study recorded canopy and landscape coverage in 2007 and 2017 on private and public land.

Results showed that Wyndham had a low canopy cover of only 3.6% compared to other Councils in the Melbourne region. However, in the period between 2007 and 2017, Wyndham's tree canopy cover had grown by 1.2% (from 2.4% to 3,6%), a relative increase of +51% over the ten-year period.

The canopy cover assessment also found that canopy cover across the:

- private urban area increased from 2.4 per cent in 2007 to 3.4 per cent in 2017
- public urban area increased from 5.6 per cent in 2007 to 7.9 per cent in 2017

As a municipality that includes large areas outside of the Urban Growth Area (UGB), large areas of currently undeveloped farming land and substantial conservation and foreshore areas, the report focuses on the existing urban area and the growth areas specifically.

3.2. How many trees does Council have?

Council's Tree Inventory is used to track and manage trees across Council streets, parks and conservation reserves.

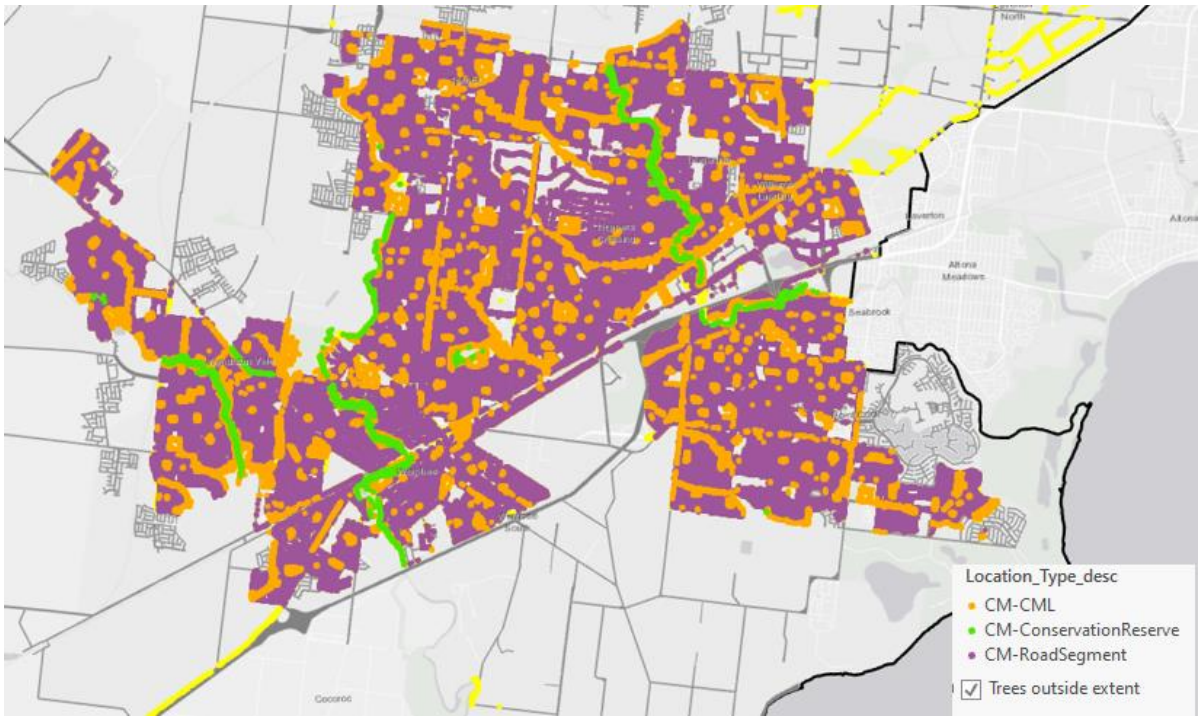

Figure 1 Council's Street Tree Inventory

The majority of Council's tress are located with the Existing Urban Area (refer Figure 2 below).

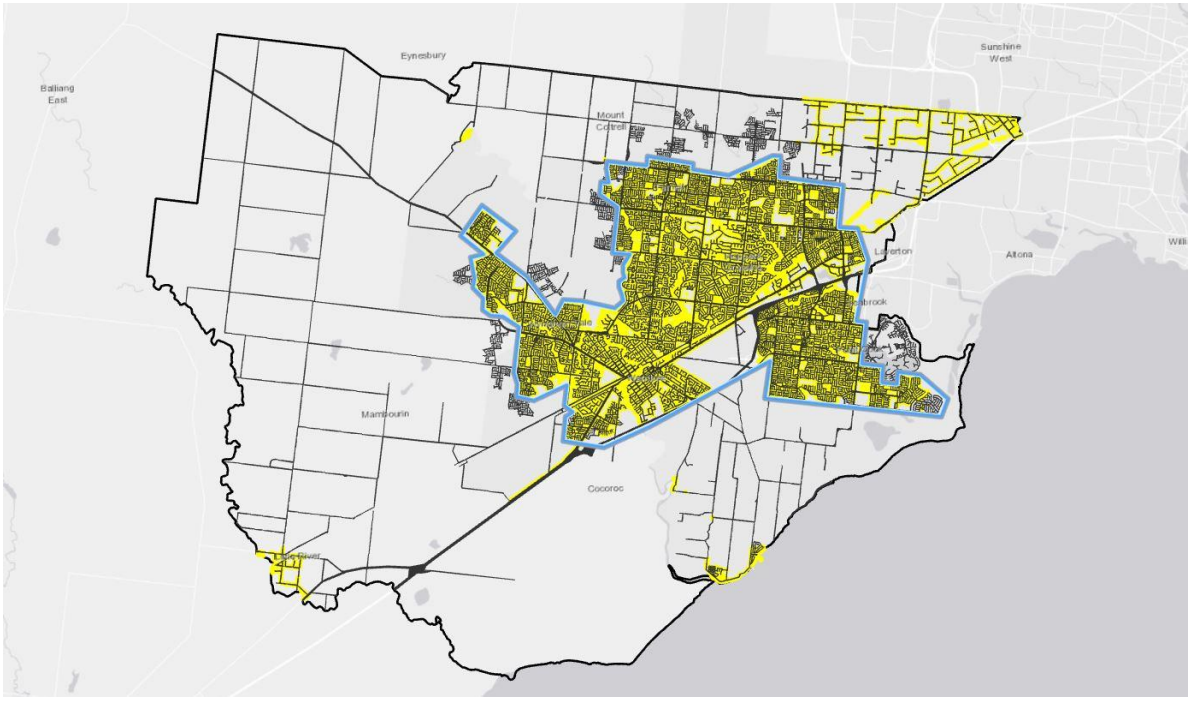

Figure 2 Existing Urban Area - Blue outline

Due to the pace of growth and the delivery and maintenance of trees by land developers, some trees within the existing urban area may not yet be Council assets, while some trees outside of the existing urban area may already have been handed to Council.

The Tree Inventory shows that Council is responsible for 217,620 trees in streets and open spaces within the existing urban area. This does not include trees in the private realm.

Table 1 Council trees in existing urban areas

Number of Council Trees in Exiting Urban Areas (2021)	
Location	Trees
Streets	147,675
Open Space	69,945
Total in existing urban area	**217,620**

Maintenance of the Tree Inventory requires extensive field assessment and data entry. Due to COVID-19 and budgetary constraints the inventory has not been updated since the 2020 planting season. However, Council retains detailed records of all plantings that allows for a determination of total plantings across the Council.

The Tree Inventory does not track tubestock plantings of tree species. Any tubestock trees planted over the past 2 years have not yet been transferred into the Tree Inventory and are not reflected in the open space tree numbers above.

3.3. What is our current Potential Tree Canopy Cover?

An estimate of Council's current potential tree canopy cover across existing urban areas has been calculated by dividing the total area of streets and open spaces by the estimated canopy generated by the number of trees within them.

This required an average canopy area of a Council tree to be calculated.

Table 2 Average Tree Canopy Size

Average Canopy Size	
Type of tree	**Average Canopy Diameter (m)**
Small trees	3.5
Medium Trees	7
Large Trees	9
Overall	**6.5**

The average canopy size of 6.5m represents an average canopy area of 33.18m^2 per tree across Wyndham. This average canopy area, the total number of trees, and areas of street or open space have been used to calculate the current potential canopy cover.

$$\frac{\textit{(Number of trees x average area of canopy per tree)}}{\textit{total area of streets or open space}} \textit{ x 100 = \% potential canopy cover}$$

Table 3 Estimated Potential Canopy Cover

Existing Urban Area	Canopy Cover Target	Current Canopy Cover
Streets	25%	20%
Open space	35%	15%*

* It is expected that the open space forecasted canopy cover is higher as no tubestock plantings are currently tracked by the Tree inventory.

<u>Recommendation:</u>

All established trees resulting from tubestock planting are assessed and recorded in the Council system within 5 years of planting

3.4. How successful are we at greening existing streets and public spaces?

The data presented in table 3, indicates that Council is tracking towards a future canopy cover of 20% in streets. There are some streets across Wyndham that achieve well above the 25% canopy requirement (see Figure 3 - John Street, Werribee) with currently over 50% canopy cover.

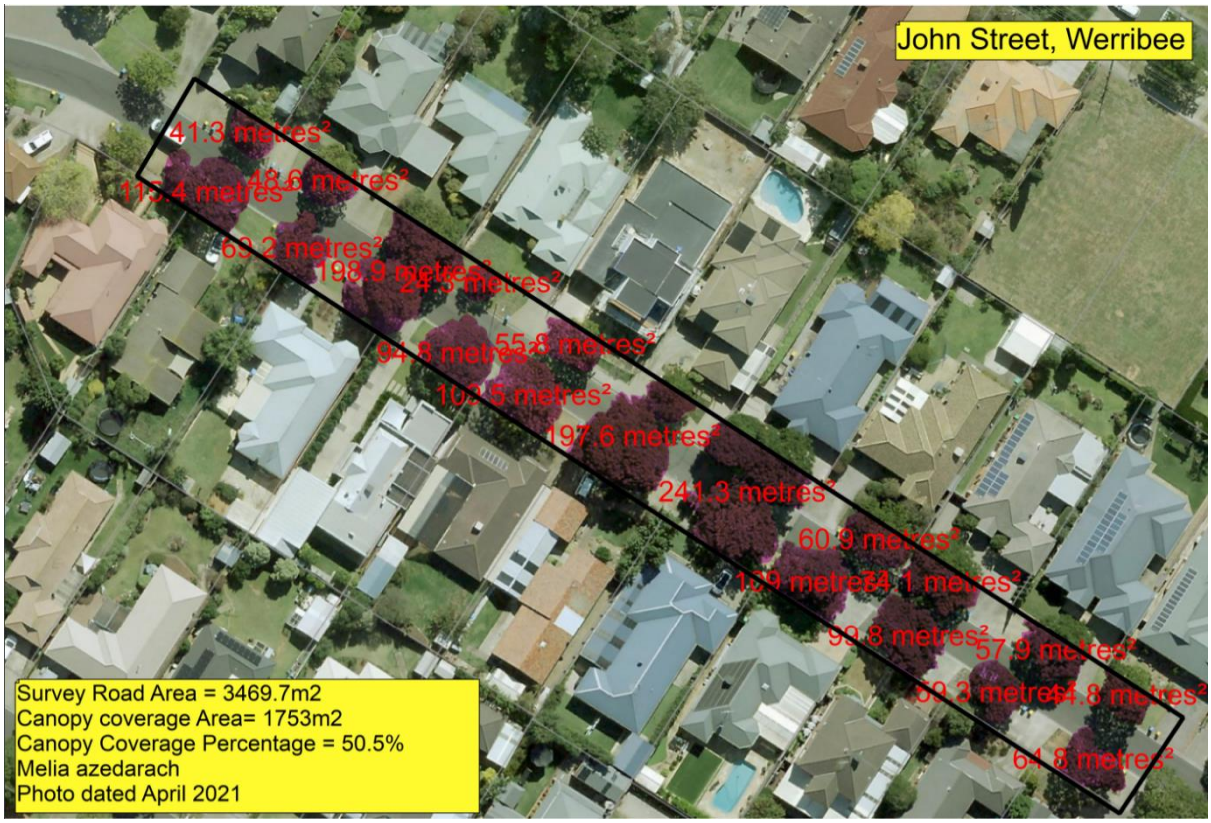

Figure 3 John Street, Werribee – 50% Canopy Cover

Unfortunately, there are other areas where streets are well below the targeted canopy cover, even after retrofitting (see figure 4 – Daphne Crescent & Hakea Court, Hoppers Crossing).

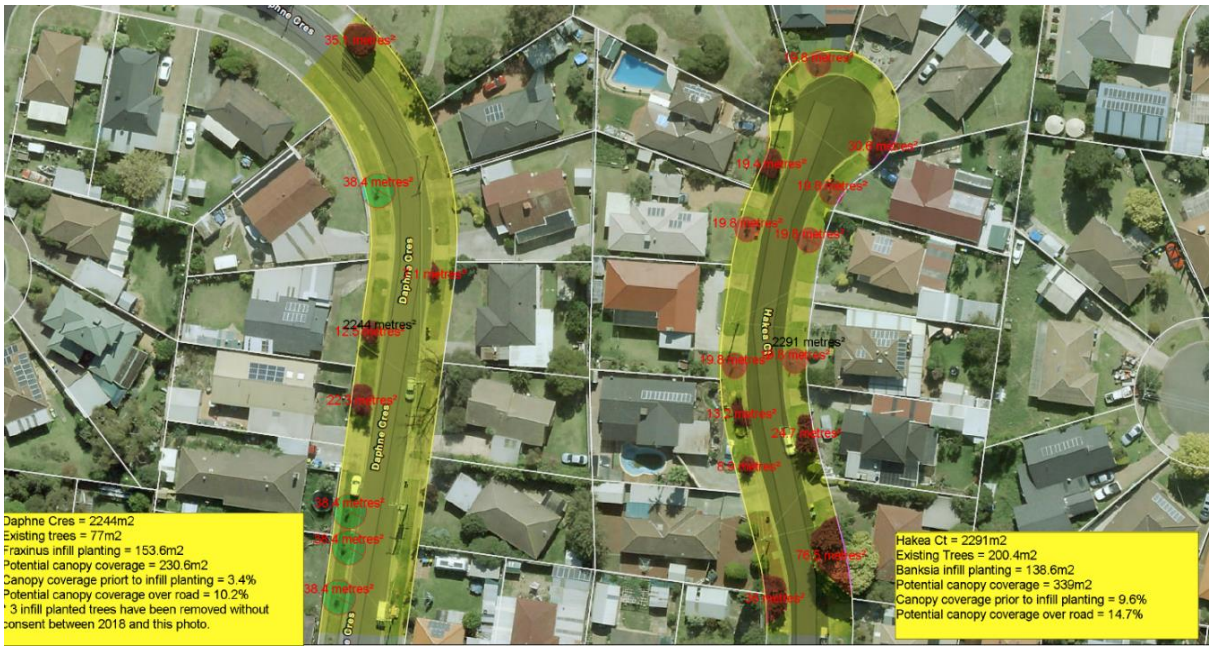

Figure 4 Daphne Cres and Hakea Ct, Hoppers Crossing – 10-15% Potential Canopy Cover (post Street Tree Planting Program)

The data presented in table 3, indicates that Council is tracking towards a future canopy cover of 15% in our open spaces. Typical local parks across Wyndham are achieving 25%-30% canopy cover (see Figure 5 – Central Park, Hoppers Crossing). However, larger district level active and passive open spaces are achieving significantly lower canopy coverage at present.

Figure 5 Central Park, Hoppers Crossing - Existing Park – 28% tree canopy cover

3.5. How successful are we at achieving greener streets and public spaces in growth areas?

The case studies below, a selection of development plans currently under review, demonstrate that new streetscapes and open space environments nearly meet or exceed Council's targets.

The two streets below achieve 28% and 45% canopy cover, well above the 25% target.

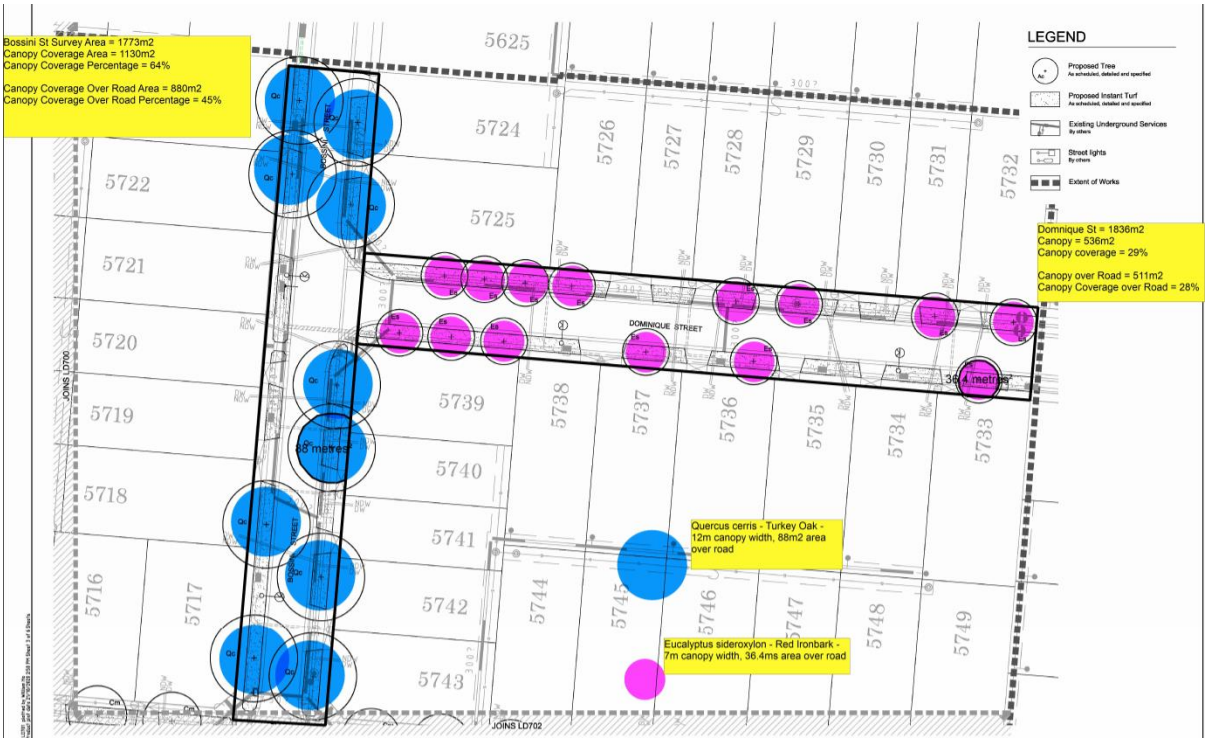

Figure 6 Growth Area – Typical Streets – 28-45% Potential Canopy Cover

However, wider streets such as collector roads and arterial roads, and streets with narrower house lot frontages are falling well short of meeting the 25% target.

In the case of the typical local passive open space reviewed (see figure 7 below), the plans submitted do not quite meet the minimum canopy cover required (35%) only reaching a 31.5% potential future canopy cover.

In this case, Council has requested the developer reviews the open space plan to ensure a minimum of 35% canopy cover is reached.

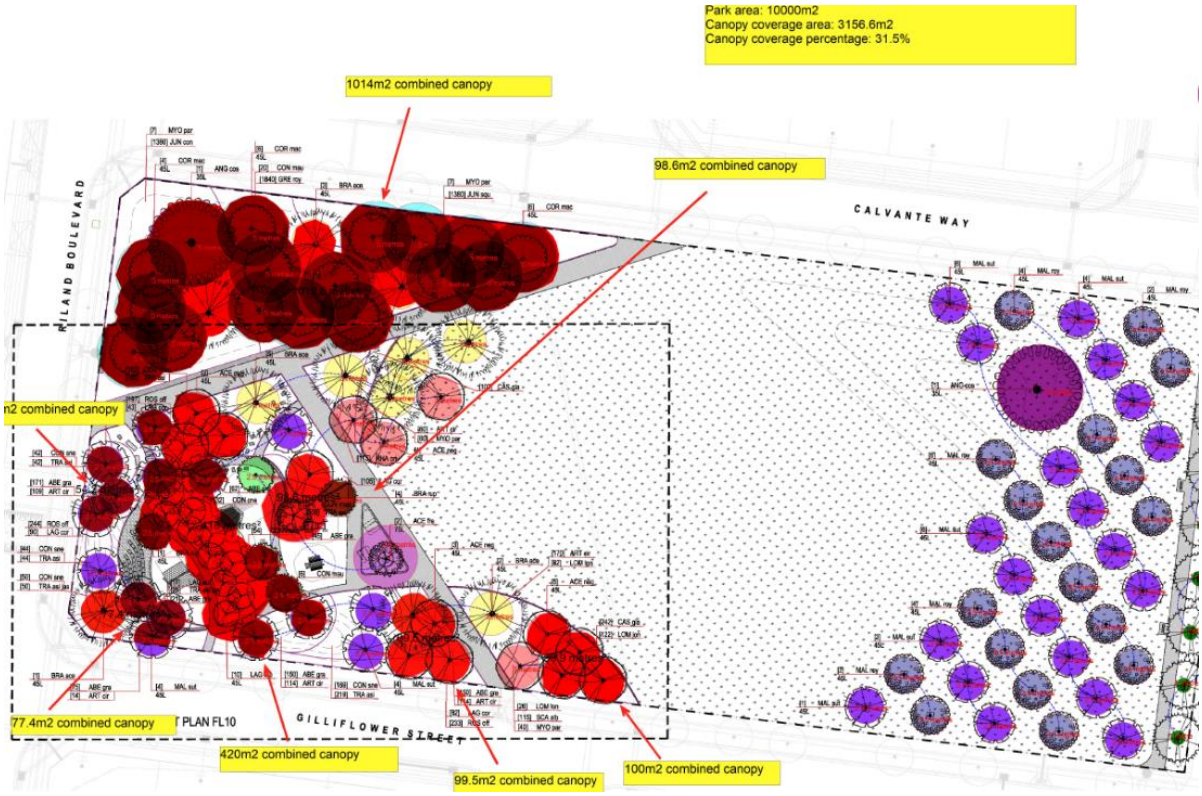

Figure 7 Growth Area – Typical Park – 32% Potential Canopy Cover

Requiring the accurate portrayal of potential canopy sizes on application plans and accompanying calculations or plans demonstrating how each stage and overall development meet or exceed the tree canopy targets will ensure that Council is not accepting urban development that will be costly to retrofit with trees in the short term.

Recommendation:

> *Require all development to demonstrate that each stage, and the overall plan, meet or exceed Council's potential street tree canopy targets.*

4. Additional Canopy Trees required to meet Canopy Targets

Growth Areas

As demonstrated in Section 4, with minor changes to internal processes and a focus on achieving increased canopy cover wherever possible, to offset more challenging street and open space environments, the growth areas of Wyndham City will meet Council's public realm potential canopy targets. Council does not expect to be required to plant a significant number of additional trees in the growth areas.

At current rates of urban development in the growth areas, Council takes on the ownership and maintenance responsibilities of approximately 10,000 trees annually.

It expected that approximately 90,000 trees will be handed to Council between 2021 and 2030 if current rates of growth continue.

Existing Urban Areas

As demonstrated in Section 4, the existing urban areas of Wyndham have potential tree canopy cover significantly below target and require a substantial investment in tree planting between 2021 and 2030 to make target.

Meeting the 25% Streetscape target:

Existing urban area streetscapes contain over 147,675 trees. In order to meet the 25% target a total tree population of 188,675 trees is required.

An additional 41,000 trees are required across our streets between now and 2030. This equates to planting at least 5,125 trees annually over the next 8 planting seasons to meet the target.

Meeting the 35% Open Space target:

There are 69,945 trees across open spaces within the existing urban area. In order to achieve the 35% target a total tree population of 166,945 is required. 97,000 additional trees are required across our open spaces, equating to at least 12,125 trees per annum over the next 8 planting seasons.

Table 4 Total Trees in Study Area

Location	Number of Trees (2021)	Extra trees to be planted between 2021 and 2030	Total (2030)
Street trees	147,675	+41,000	188,675
Open space	69,945	+97,000	166,945
no. trees to be managed across existing urban area (2030)			**355,620**

Recommendation:

Appropriate funding is made available to deliver tree planting to reach targets.

.

5. Protecting existing tree canopy

The Wyndham Planning Scheme, approved Precinct Structure Plans and Development Plans identify existing trees that are required to be retained. Proposed designs must demonstrate how existing trees have been incorporated and will be protected throughout development. However, large canopy trees on private property and mature stands of sugar gums across the growth areas are not protected, often due to them not being native trees.

Wyndham City set out targets and actions in the CFHS to protect existing canopy trees, including:

- All significant trees in the public realm will be identified and protected by 2022; and.
- Undertake processes to apply planning protections to all public realm trees over 35cm Diameter at Breast Height (DBH)

Council currently has some vegetation protection provisions in the Wyndham Planning Scheme but lacks specific tree protection provisions on urban private land. In order to achieve tree canopy cover targets, tree protection mechanisms across the private realm are also required.

Further work is currently underway to identify appropriate mechanisms to enhance the protection of trees in Wyndham including the development of a significant tree register and investigation of potential to protect trees on public and private land with a Diameter at Breast Height (DBH) of greater than 35cm.

It has been recommended that Council pursue a significant tree overlays and heritage overlays for individually significant trees and stands. The review of nominated significant trees on public land is complete. The heritage and arboricultural review of nominated significant trees on private land has commenced and will be complete by the end of 2022. The drafting of planning provisions to implement tree protections will occur in collaboration with Urban Futures and DELWP between now and the end of 2022, with the planning scheme amendment expected to be lodged with DELWP in December 2022.

Recommendations:

Investigate a local law that assists in the enforcement of planning permits and planning scheme protections of trees with a DBH of over 35cm.

Implement the Significant Tree Register into the planning scheme as a significant tree overlay and/or heritage overlays.

6. Growing tree canopy cover on public land

Council has programs that focus on tree planting across Wyndham including the annual Street Tree Planting Program, Trees for Schools Program, Free Tree Giveaways, and the planting of tubestock along waterways and in conservation areas.

Community groups also take part in various planting activities of tube stock across multiple nature reserves.

In the growth areas, planning approvals and the appropriate landscape designs are submitted for Council's approval that aspires to reach one tree per development lot in street scapes and deliver the appropriate number of trees in open space. Developers must follow guidance provided in the Tree and Urban Forest Policy 2019.

6.1. Annual Street Tree Planting Program

The Annual Street Tree Planting Program is an annual program that retrofits trees across existing more established suburbs. Due to a combination of poor planning and lack of enforcement around tree planting in the past Wyndham has a shortage of trees throughout its existing streets and open spaces resulting in low canopy cover in these areas. The Street Tree Planting Program aims at retrofit trees into these areas.

Council's Tree Inventory indicates where trees are planted and also identifies vacant sites that will require plantings to take place. Residents are also able to request tree planting on their nature strip. This information is used to develop Council's annual program.

Council's Street Tree Matrix support the establishment of 'The right tree in the right place'. The tree matrix assists in selecting the appropriate tree species for each site that can better adapt to the environmental conditions, deliver canopy cover, street amenity and taking into consideration maintenance and risk management. However, some streets have been retrofitted with small canopy trees at infrequent spacings resulting in a failure to meet the 25% canopy target.

Over recent years Council has made significant efforts to increase the canopy cover. In the last four years the Street Tree Planting Program has planted almost 28,000 trees. During this 20/21 planting season Council will plant almost 5,000 trees.

Recommendation:

> *Update the Wyndham Street Tree Species (Tree Matrix) to provide additional guidance on tree species selection to deliver the highest possible canopy cover.*

6.2. Tree Amenity Fund

Council seeks to retain all existing trees within streets and on Council land adjacent to new development. However, in some instances it is not possible for all of Council's trees to be retained. If, once all alternate design and construction alternatives have been explored, a Council tree must be removed to facilitate a development outcome, then a cash payment is made to Council's Tree Amenity Fund.

The fee payable is determined via the Tree Amenity Valuation Procedure which takes into consideration the size, age and longevity of the tree, the resources required to establish and maintain the tree to date, and the amenity and environmental benefits the tree provides. If the tree valuation is over $8,000 alternatives should be looked at before approval.

The fee is placed into the Tree Amenity Fund. These funds are used to replace amenity lost from tree removals across the municipality. Initiatives include:

- Replanting of a street tree at the same address or in the immediate vicinity of the tree which was removed;
- Funding towards the Annual Street Tree Planting Program;
- National Tree Day events;
- Trees for Schools Program;
- Habitat Heroes Program;
- Tree Species Trials; and
- Water Sensitive Urban Design trials.

Recommendation:

Ensure that the individual trees removed to facilitate development are replaced by Council (or the developer) at the completion of development to avoid future resident complaints.

6.3. Open Space and Conservation Plantings

Council plants an average of 30,000 tubestock plantings annually across the municipality. Around 18,000 are tubestock tree species. These plantings are often in collaboration with community groups or otherwise directly by the Conservation and Arboriculture team.

Most tubestock planting is a combination of multiple tree species, with a mixture of pioneer plants and long-lived species. Special attention is given to native and indigenous species especially within conservation zones.

6.4. Street Tree Species Trial

In partnership with a number of Metropolitan Councils and as part of the implementation of the CFHS, Wyndham City has begun a street tree species trial to test a 5 new tree species that are likely better suited to Wyndham's future climatic and soil conditions as a result of climate change.

The 5 trial species are scheduled to be planted at several lower-profile trial sites in September 2021 and will be monitored over the next 10 years.

6.5. Tree planting in new development

All new development areas are expected to be meeting the Tree and Urban Forest Policy 2019 guidelines that indicates at a minimum 1 tree planted per house in street scapes. Trees planted by developers are maintained by developers for 27 months. At the end of this period, they are handed over to Council and become Council assets which require regular assessments and maintenance.

When developers submit plans for approval a bond is retained by the Council. This bond is associated to all trees expected to be planted and maintained by the developer until the moment the trees are handed over to Council. On average, Council takes ownership of approximately 10,000 trees annually from developers.

In some cases, developers do not plant or hand over trees with Council retaining their bond. This creates issues including inconsistency of streetscapes and development areas, new urban areas without street trees, a requirement for Council to retrospectively plant missing streets trees and property owners not aware that a street tree was to be planted in their nature trip, resulting in customer service complaints.

Recommendations:

Advocate for changes to the State's growth area and infrastructure delivery standards that currently preclude tree planting.

Require all development to demonstrate that it meets or exceeds Council's potential street tree canopy targets.

6.6. External Initiatives and Funding

With finite resources to expand mature tree and tubestock planting, it is imperative that Council takes advantage of any other state or federal funding opportunities to increase canopy cover across Wyndham.

Recently the Victorian State Government announced a $5 million investment in Melbourne's west to plant 500,000 new trees. From this announcement the "More Trees for a Cooler, Greener West Initiative" was created that will deliver on the State's announcement over two phases: Phase 1 will fund existing projects that can be scaled-up to commence tree planting by September 2021 via an Expression of Interest (EOI) for up to $250,000. Phase 2 will fund new projects that will commence tree planting in optimal planting seasons in 2022 and 2023.

Council submitted an EOI in late July that will focus on planting mature trees in streetscapes and reserves, and tubestock along waterways and reserves.

Recommendation

Develop a plan to identify future areas to receive plantings. This plan should include the annual street tree program, park planting and identify other projects and initiative, such as arterial roads, that will improve canopy cover across Wyndham.

7. Public trees and tree management

The most commonly occurring challenges related to tree management and the community's interactions with trees and tree planting programs are identified below. Recommendations have been made to improve future outcomes where required.

Internal tree management systems

Council currently uses multiple systems to track and manage trees.

- The Asset Management Infrastructure Services Planning team are responsible for recording trees in new development areas.
- The Tree Inventory records the exact location and species of each tree in council streets. It does not track tubestock trees planted. The Tree Inventory is managed by an external contractor and cannot be updated by Council staff. Area assessed is determined based on available funding (~ $300,000/year).
- Tree assessment and maintenance is managed by the Conservation and Arboriculture team with some work undertaken by the team and the remainder contracted out. Tree assessments are generally paper based and are not saved into the Tree Inventory as an in-depth history of works/inspections undertaken on a tree. These records form an essential part of Council's legal obligations and support the handling of insurance claims related to trees.

The above systems do net effectively communicate with each other resulting in inaccuracies and incompleteness of data available and duplication of costs associated with tree assessments.

Recommendation:

> *Review and Integrate Council's tree record and management systems into a single system that captures all previous and future work undertaken on each tree, by internal and external maintenance teams and is accessible to anyone working for or on behalf of Council. If integration of existing systems is not possible, consider a market ready "off the shelf" platform that can deliver a more reliable and efficient management of trees.*

Tree Root Complaints

This is becoming a more common issue raised by residents, both in new developments and in established residential areas.

As the distance between house slabs and nature strips have reduced over time in newer development, resident complaints about root damage or concern about future impacts on dwelling structure has increased. Building contractors direct residents to complain to council that the nature strip tree will require a more costly house slab and therefore the tree should be removed. Or alternatively, cases where properties that have been built for several years show signs of foundation damage, residents are directed to council, often by their builder who are denying liability, to complain that the street trees are the cause.

It's imperative that going forward council takes a stronger stand on the tree selection in new developments, providing more direction in which trees species must be planted in nature strips. This will be in line with the overall objective of "Planting the right tree in the right place".

Developers often change the species of trees after the plans have been approved due to sourcing stock (or other reasons unknown to Council). This can be problematic particularly if no consideration is given to the location vs tree species.

Maintenance and assessment regimes are also a key element to be maintained with improved records of assessment and treatment process to each category of tree risk. This is particularly important when managing risk and addressing insurance claims (please further details and recommendations in section 8).

Recommendation:

> *Investigate potential changes to Council policy, planning approvals, planting practise, species selection, management etc. to minimise future claims against Council relating to root damage (to slabs).*

Retrofitting trees in established areas

Tree planting proposals across established areas often result in resident complaints and requests not to receive a nature strip tree due to a fear of future falling branches, root damage, increased leaf litter and an inability to park on the nature strip.

The Annual Street Tree Planting Program has improved community engagement and increased communication around proposed planting in recent years. This has helped to reduce the number of resident complaints. The annual program now also provides extra information to residents about the benefits of having trees in their nature strip and the residents' roles and responsibilities regarding the nature strip and tree.

Vandalism & Accidental Damage

A common issue across the council is the illegal removal or damage of newly planted trees in nature strips and parks. Council is usually unable to prove the source of the damage and undertake enforcement measures. Council minimises acts of vandalism by providing the opportunity for residents to object to tree plantings in nature strips adjacent to their properties, as above.

Council does not currently pursue costs for trees damaged as a result of road accidents.

Council's Tree and Urban Forest Policy 2019

This policy provides specific guidance around the requirements for developers to plant trees in nature strips. Aspects of the policy's wording are allowing developers not to plant any trees at all. A revised policy has been developed which will remove these loopholes and provide additional guidance to developers and Council's planners on the appropriate design process and tree canopy and development outcomes.

Recommendation

> *Approve the attached revised Tree and Urban Forest Policy (2021).*

Trees in Car Parks

At-grade car parks associated with commercial, industrial, Council and public transport uses typically prioritise car parking numbers over tree canopy cover and integrated water management. This creates public and semi-public open spaces as heat islands with limited amenity value.

Recommendation

Consider all public and publicly accessible private at-grade car parks as open space and seek for these to meet the open space tree canopy cover target of 35%.

Planting trees in arterial roads

Planting trees in large boulevards, arterial roads and other areas under the management of the Department of Transport is a significant issue. All trees planted in these areas require prior approval by DoT, and removal of any existing trees in DoT managed land doesn't require approval. Significant efforts are made to ensure trees are retained in road development, unfortunately most situations tree loss is unavoidable and in the worst-case scenario, new road developments in some instances will not allow for tree amenity replacement.

Due to the legislative limitations within these areas Council needs to consider that best case scenario is that tree plantings are increased across council managed roads and well beyond the 25% so that will allow offsetting residual or minimum canopy cover present in DoT managed roads.

Trees in the private realm

Council has limited ability to protect existing trees or mandate new canopy trees on private property.

When subdivisions take place, planning approvals requirement for a landscape plan only apply to areas above 300m^2.

As a result, Council has invested in activities such as the Tree Giveaway program (which gives 500 trees to residents annually) and community education and events to promote tree planting on private land.

Recommendation:

Increase the free tree giveaway from 500 to 1000 trees per annum.

Continue to invest in community education and events that promote tree planting and increased tree canopy outcomes.

Trees and leaves seen a nuisance

Council receives resistance from many residents who consider trees, in particular Eucalyptus species, as a danger to both people and property and whilst some of these preconceived notions can be explored and explained to residents, wild weather events often serve to further worry residents about their personal and property safety. Leaf litter can be a contentious issue for many residents who prefer to see their streets and gardens in neat and tidy conditions. Street sweeping activities currently operate on a 6-week cycle, however some residents feel this is not enough and/or still would rather have no tree on their nature strip to prevent the mess in their front yards.

Council's trees are subject to cyclic maintenance and inspections where the structural integrity of trees and their limbs are assessed, depending on set requirements for each species of tree. An increase in tree inventory will require consideration to the increased amount of maintenance. Many residents view leaf litter and bird droppings to be a nuisance.

Often council receive complaints from residents concerned that tree branches might fall and hurt people or damage property. Often leaves dropping into gardens and nature strip are seen as a irritation with increased requirements for cleaning by the residents.

8. Council Tree Costs

Council's annual costs associated with trees relate to maintenance of existing trees, contracting costs for tree planting, proactive management of trees handed over by new development, and staff costs including arboriculture and urban forest expertise (refer table 5).

Table 5 Annual tree maintenance budget

Annual Tree Maintenance Budget (21/22)	
Item	**Budget value**
Periodic tree assessment and pruning - trees checked every 1, 2 or 3 years (to meet insurance obligations)	$3,752,472.00
Ongoing proactive tree maintenance	$300,000.00
Council staff and resources	$1,105,039.00
Street tree planting program	$2,623,304.00
Conservation tubestock tree planting	$112,000.00
Total	**$7,892,815.00**

Council's annual tree maintenance costs (lines 1-3 above) are based on the management of the Tree Inventory of 217,620 trees. This equates to approximately $24/tree/year.

The Conservation and Arboriculture team is responsible for undertaking or overseeing tree assessments. These assessments are important for general tree management and risk management and form the basis for decisions related to insurance claims.

The location of each tree determines the frequency of assessments required to be conducted. In general, street trees are assessed every 3 years, except for trees under power lines which are assessed annually. Trees in open spaces have 3 different classifications based on the level of use of their surroundings:

- High use areas - playgrounds, some parks or reserves with high attendance and interactive infrastructure;
- Medium use - simple open space with little or no infrastructure; and
- Low use - drainage reserve, water ways etc.

The use classification determines how often the tree needs is assessed, please see table below for details.

Table 6 Periodic tree assessments in open space

Tree assessment schedule	
Location	**Regularity of assessment**
High use areas	annually
Medium use areas	Every 2 years
Low use areas	Reactive basis
Trees in street	every 3years
Trees under power lines	annually

If, at any time during the year a resident lodges a complaint or concern regarding a tree the Conservation and Arboriculture team must visit the tree and conduct an assessment, irrespective of when it was last assessed. Council then provides a response to the resident. This additional visit and assessment provide extra protection to Council from a liability/insurance perspective in the event a claim is submitted.

Recommendations:

Appropriate funding is made available to ensure all necessary tree management is conducted.

Tree management funding increases proportionately to the increasing number of trees managed by Council.

All trees continue to be tracked and managed to minimise risk and insurance costs to the Council.

Ensure that an appropriate system is in place to track all trees and record all tree assessments and routine maintenance procedures.

9. Tree Risk, Compliance, and Insurance

9.1. Risk and Compliance

Effective management of risk can support the achievement of our objectives. While an increase to our tree canopy will increase the likelihood of injury or damage arising from Council trees, the reward from a climate management and amenity perspective is higher.

Council's current levels of tree assessment and maintenance make up the majority of costs associated with trees annually (refer Table 3). These tasks and their costs are essential to minimising the risks trees pose to people and property and maintaining healthy and safe trees across Wyndham.

Council must comply with Acts relating to tree safety and risk including the Electricity Safety Act (for the management of trees under power lines) and Road Safety Act (for the implementation of annual tree in road management plans). This compliance is also included within the annual tree maintenance costs within Table 5.

9.2. Insurance

As custodians of public funds, Council maintains insurance coverage to mitigate financial risks. Council relies on its public liability cover, in the event that a third party is injured and/or property damaged as a result of its business activities or occurring on Council land. Each claim is assessed on its merits, Council will only accept claims where it has contributed to the loss and is deemed to be liable. Council participates in the MAV (Municipal Association of Victoria) Liability Mutual Insurance scheme, which delivers a reliable public liability and professional indemnity insurance product to the local government sector, with a focus on working with its members to reduce their risks.

In the past 5 years, Council has on average received 135 claims per year, relevant to its public liability policy, with 12% of claims attributed to Council trees and 3% to tree roots. Council accepted 11 tree claims across this period; others were denied, referred to another party, withdrawn or remain open. Determination of these claims considers evidence provided by claimants, whether council has met its obligations in relation to tree management and maintenance, and the assessment conducted by Council arborists. They review a range of factors, including tree species and health, outcomes of council inspections and previous reported issues and any works undertaken, other trees and infrastructure in the vicinity and further environmental factors.

Tree related claims against Council have traditionally related to falling tree branches. The risk of death or injury from a tree or tree part collapse is very low. A majority of tree fall claims relate to property damage and are often the result of significant weather events. However, Council is seeing an increasing number of claims related to infrastructure damage due to tree roots. In any urban context, conflicts with tree roots in the built environment will arise. Tree growth is influenced by below-ground conditions. Tree roots are opportunistic and will proliferate wherever moisture, aeration, nutrition and soil structure are favourable, which are not governed by property boundaries. Damage may be direct or indirect:

- Direct damage is the distortion of built structures as the growing tree root exerts pressure. Direct damage by tree roots is usually limited to light-built structures such as pavements and low walls and can also be witnessed in buildings of sub-standard footings or where footing design considered the house and does not accommodate the surrounding environment.

- Indirect damage is the distortion of built structures as the growing tree root takes up soil moisture. Often there are multiple factors contributing to foundation movement which are seldom associated with root growth alone. As a result, claims of indirect tree root damage are challenging to assess.

The MAV provide guidance in relation the legal position surrounding tree root claims. Stating:

> Claims in relation to tree roots can be brought under nuisance and negligence. However, they are most commonly brought under nuisance against councils. Negligence claims are generally brought where the council has chosen an unsuitable species of plant, approved the planting by others under the planning scheme etc.)
>
> Nuisance can be defined as conduct which unreasonably and substantially interferes with another person's use or enjoyment of their land. This interference can include physical interference such as tree roots entering the property and causing damage to property.
>
> In determining whether the interference is unreasonable it is not relevant whether the council has acted reasonably, but rather whether the tree root causes an unreasonable interference.

It is not possible to apportion a cost directly to Council's tree inventory, nor an individual cost per tree to insure. The number of tree related claims are expected to rise, not just due to the planned canopy increase but due to the expected population growth within the municipality as well as the fact that many of our trees are not yet mature. Focus is required to ensure tree related risks are well managed through good planting strategies, positioning the right trees for the location; a regular inspection regime to identify maintenance needs; appropriate and timely reactive inspections and interventions as required; a replacement program for trees past maturity; and maintenance of documentation which both provides evidence of past tree management and guides the future.

As Council moves from 217,620 trees today, towards the 355,000+ trees needed to meet potential canopy cover targets for streets and open spaces, it is critical that the resources required to assess, maintain and document the condition of each tree in the inventory is scaled up to meet the task.

<u>Recommendation:</u>

Continue to manage trees appropriately to mitigate Council's tree risks, assure compliance and evidence reasonable care to support the defensibility of insurance claims.

10. Improving canopy outcomes on private land

Council's ability to directly influence or require the planting of canopy trees on private land is limited.

Aspects of the planning scheme, state and local policies and guidelines that require tree planting on private land are only triggered by development applications. This results in sporadic and scattered instances of increased tree planting, often on sites where existing canopy trees and street trees are approved for removal in order to facilitate development.

Residential areas

Community education and free tree giveaways discussed earlier in this report are some of the methods by which Council seeks to encourage planting of trees on private land voluntarily.

The Victorian Planning Authority (VPA) is currently reviewing the Precinct Structure Planning (PSP) Guidelines. Council provided feedback into this review in October/November 2020. This feedback included a section on tree canopy, heat and road widths. The VPA is still finalising the new PSP guidelines and do not provide a date for their release. The new guidelines will directly impact on future PSPs to be prepared across Wyndham.

The Urban Futures Team is currently preparing an updated housing and neighbourhood charter study. This study will feed into a review and refresh of the residential zones and schedules. This provides an opportunity to include canopy tree requirements for private residential land. The planning scheme amendment is expected to be lodged with DELWP in November 2022.

Recommendation:

> *Advocate for future Precinct Structure Plans to include clear directive language to ensure the retention of existing trees and the meeting of Council's potential canopy cover targets across public and private land.*
>
> *Pursue amendments to the planning scheme and subdivision approvals process to require developers to meet Council's potential tree canopy cover targets.*

Commercial areas

Town centre streets, town squares, at-grade car parks and boulevard roads are high profile locations experienced by larger numbers of the community. Ensuring that cool publicly owned and accessible spaces are available within all town centres and commercial is important for the resilience of the Wyndham community.

Recommendation:

> *Prioritise the early planting of trees in commercial and town centre areas and advocate for improved tree planting and canopy cover outcomes across both the future public spaces and private lands in new and existing commercial areas.*

Industrial areas

Industrial areas and sites can be heat islands due to large areas of roof, hardstand and car parking.

There is a marked difference between older established industrial zones and the newly developed industrial zones, with newly developed industrial areas typically integrating more trees into the design phase than was typical of older areas.

Improving the canopy cover of existing hardstand and car parking areas is only possible when a site is planned for redevelopment. Trees planting and establishment in industrial areas can be particularly challenging with truck and staff parking and storage occurring on nature strips.

Recommendation:

> Target industrial streetscapes as part of the Street Tree Planting Program, allowing for the inclusion of tree protection measures in streetscapes where conflict with trucks, machinery and plant are likely to ensure street trees can establish.

11.Summary of Recommendations

In order to meet Council's tree canopy cover targets sooner and in the most sustainable way for the organisation, as well as protecting existing canopy trees and encouraging increased canopy tree plantings across private land it is recommended that Council:

Table 7 Summary of Recommendations

Item	Key Recommendations	Report Recommendations
1	Re-enforces its commitment to the tree canopy targets in the Resilient Wyndham Strategy.	*Bring forward the CFHS 2040 tree canopy targets to 2030, in line with the Resilient Wyndham Strategy, so that urban areas are cooler and greener 10 years sooner.*
2	Educate and engage with community, seek external funding for, and promote and advocate for tree canopy cover outcomes that achieve or exceed the 2030 targets	*Advocate for future Precinct Structure Plans to include clear directive language to ensure the retention of existing trees and the meeting of Council's potential canopy cover targets across public and private land.* *Pursue amendments to the planning scheme and subdivision approvals process to require developers to meet Council's potential tree canopy cover targets.* *Increase the free tree giveaway from 500 to 1000 trees per annum.* *Continue to invest in community education and events that promote tree planting and increased tree canopy outcomes.* *Update the Wyndham Street Tree Species (Tree Matrix) to provide additional guidance on tree species selection to deliver the highest possible canopy cover.* *Ensure that the individual trees removed to facilitate development are replaced by Council (or the developer) at the completion of development to avoid future resident complaints.* *Advocate for changes to the State's growth area and infrastructure delivery standards that currently preclude tree planting.* *Require all development to demonstrate that it meets or exceeds Council's potential street tree canopy targets.*

3	Adjusts annual budgets to meet the increased operational costs of planning, planting, establishment and proactive management of trees to meet the new targets, minimise risk and maximise canopy.	*Appropriate funding is made available to deliver of the necessary plantings to reach targets.* *Appropriate funding is made available to ensure all necessary tree management is conducted.* *Tree management funding increases proportionately to the increasing number of trees managed by Council.* *Continue to manage trees appropriately to mitigate Council's tree risks, assure compliance and evidence reasonable care to support the defensibility of insurance claims.*
4	Adopts the attached updated Tree and Urban Forest Policy (2021).	*Adopt the attached revised Tree and Urban Forest Policy 2021 (Draft)*
5	Develops and implements tree protection controls to limit the removal of existing canopy trees on both public and private land.	*Investigate a local law that assists in the enforcement of planning permits and planning scheme protections of trees with a DBH of over 35cm.* *Implement the Significant Tree Register into the planning scheme as a significant tree overlay and/or heritage overlays.*
6	Implements improvements to systems to better track and manage the tree inventory.	*Review and Integrate Council's tree record and management systems into a single system that captures all previous and future work undertaken on each tree, by internal and external maintenance teams and is accessible to anyone working for or on behalf of Council. If integration of existing systems is not possible, consider a market ready "off the shelf" platform that can deliver a more reliable and efficient management of trees.* *Require all development to demonstrate that each stage, and the overall plan, meet or exceed Council's potential street tree canopy targets.* *All established trees that resulted from tubestock planting are assessed and recorded in the Council system within 5 years of planting.* *All trees continue to be tracked and managed to minimise risk and insurance costs to the Council.* *Ensure that an appropriate system is in place to track all trees and record all tree assessments and routine maintenance procedures.* *Investigate potential changes to Council policy, planning approvals, planting practise, species selection, management etc. to minimise future claims against Council relating to root damage (to slabs).*

7	Develops a Canopy Cover Implementation Plan to ensure the new 2030 targets are achieved.	*Develop a plan to identify future areas to receive plantings. This plan should include the annual street tree program, park planting and identify other projects and initiative, such as arterial roads, that will improve canopy cover across Wyndham.* *Prioritise the early planting of trees in commercial and town centre areas and advocate for improved tree planting and canopy cover outcomes across both the future public spaces and private lands in new and existing commercial areas.* *Target industrial streetscapes as part of the Street Tree Planting Program, allowing for the inclusion of tree protection measures in streetscapes where conflict with trucks, machinery and plant are likely to ensure street trees can establish.* *Consider all public and publicly accessible private at-grade car parks as open space and seek for these to meet the open space tree canopy cover target of 35%.*