TREE VALUATIONS: A COUNCIL PERSPECTIVE

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Abstract

The many values and benefits urban trees provide make them essential infrastructure in healthy, thriving, climate-resilient cities. To prevent undesirable loss of these values and benefits, it is important to have a transparent and reliable method to attribute economic values to publicly owned trees. These values can then inform decision makers who may wish to consider the loss of tree-related benefits against other potential benefits that may arise should a tree be removed from a public space, to make way for a private development as an example. A 'tree amenity fee' might then be charged to those who directly benefit from the tree's removal to offset the loss of tree benefits or values. The application of tree valuations is becoming more commonplace throughout Australian Councils to support urban greening. Tree valuation can help to preserve trees through community awareness of tree values and by establishing canopy replacement values and costs to inform bond values on development sites. This paper reflects on one Council's experience with tree amenity valuations and introduces the Minimum Industry Standard (MIS) method recently developed by Arboriculture Australia Ltd and the New Zealand Arboricultural Association in consultation with the national arboriculture communities in both countries.

Introduction

Many cities measure their 'canopy cover' – a metric based on the horizontal spread of tree canopy over land. The City of Hobart has the greatest tree canopy cover of all Australian capital cities at over 59%. However, the City of Hobart is surrounded by extensive bushland reserves and national parks. While this provides a unique and exceptional connection to nature for the City's residents and visitors, it does not reflect the canopy cover across the urban and suburban areas. Hobart's canopy cover in suburban areas, excluding the large bushland reserves that rim the City, is just 16.7%. Canopy cover in the CBD is just 4%. These figures include all the trees in parks, gardens, on private land and along streets.

The City of Hobart Street Tree Strategy was endorsed by council in July 2017. This strategy includes 49 recommendations and an ambitious target to increase tree canopy cover across the urban areas of the City from 16.7% to 40% by 2046. To achieve this goal the City must protect its current tree population and carry out an ambitious tree planting agenda.

Review of Tree Compensation Policy

Street and park trees are essential public assets and substantial public funding is used to install and maintain them. Unlike most other public assets however, the value of an established tree is often far greater than the cost to purchase and install a new replacement. A large, mature tree provides significantly greater amenity and value to the community than a small replacement tree would generate in its early decades. Existing trees in public spaces, and particularly large canopy trees, play an increasingly important role as infill development and urban densification continue to reduce the space available for trees on private land.

To help to preserve existing trees and their benefits and values to communities, as part of the implementation of the Street Tree Strategy council endorsed its Tree Compensation Policy in February 2019, based on the City of Melbourne method. This policy outlined a framework for charging an amenity fee for publicly owned and managed trees that were approved for removal to support private development. A key component of the tree compensation policy was to attribute appropriate monetary values to the amenity provided by established trees,

as an incentive to encourage developers to favour design proposals that retained and protected established trees.

In December 2021, following media coverage about the council's policy, the motion was passed that:

> *"Council review its tree removal compensation policy, to ensure that it balances the need to maintain significant tree coverage with the need for additional housing development, and to ensure it remains consistent with community expectation."*

The Council resolution of December 2021 prompted a review of how the policy was being implemented. In the 33 months between the policy's endorsement and its review in December 2021 a total of 24 development applications were assessed that proposed the removal of a council tree to support private development, an average of 0.7 applications per month. A review of the outcomes of these 24 applications was undertaken. It was determined that there were four categories of applications, as summarized in Table 1.

Table 1. Summary of findings from review of 33 months of implementation of the Tree Compensation Policy

Category of application	Number of applications	Number of trees removed	Amenity value
Removal permitted (no changes to design required)	10	15	Average amenity value of $2820 per tree
Designs changed to allow retention of all trees, or the retention of higher valued trees	8	9	Average amenity value of trees approved for removal: $2100 per tree Selective design changes to retain significant trees allowed for the retention of $306,344 in tree amenity
Not progressed due to non-tree related issues	5	0	No cost
Tree removed by Council due to storm damage	1	0	No cost

The category with the largest number of applications (10) required no changes to the design of the development and tree removal was approved; this resulted in the loss of 15 trees with an average amenity value of $2820 charged per tree. This demonstrated that applicants who wished to remove trees of relatively low value proceeded with minimal consideration of tree retention, and the value of the removed trees was used to increase funding of the City's annual tree planting program. One tree proposed for removal was damaged by a storm during the assessment processes and removed by Council. Five applications that included proposals to removal council trees were put on hold or not progressed due to non-tree related issues.

The final category of development applications was where changes were made to the design to enable the retention of all trees or of the more valuable trees; there were 8 applications in this category. Of the 25 trees that were assessed in these 8 applications only 9 were approved for removal, with an average amenity value of trees approved for removal of $2,100 per tree. The 16 trees that were assessed but were able to be retained following selective design changes had a total amenity value of $306,344. This demonstrated that the tree compensation policy was effectively incentivising designs which retained trees, particularly trees of high amenity value. The City's tree compensation policy and its Street Tree Strategy have, therefore, been shown to provide a framework within which the need to protect and expand Hobart's tree canopy can be balanced with the need for more housing, while ensuring the approach is consistent with community expectations.

A Minimum Industry Standard Method (MIS506)

Minimum Industry Standards (MIS) are produced by Arboriculture Australia Ltd in partnership with the New Zealand Arboricultural Association and the wider arboriculture community. They aim to ensure that people working with, assessing, and providing advice in relation to urban trees have access to industry-relevant, peer-reviewed documents detailing the standards of skills and equipment with which competent practitioners should be familiar. Arboriculture related MIS' do not apply to commercial forestry. Where a MIS exists for a particular task, such as tree valuation, it is deemed by industry experts to provide an overview of the task as it is practiced in industry and to define industry consensus regarding appropriate contemporary methods to conducting the task.

The Tree Valuation MIS (MIS506) provides a framework, criteria, minimum and preferred benchmark standards to facilitate the consistent and transparent valuation of trees in Australia and in New Zealand. It includes a method (MIS506/22) that meets the preferred compliance criteria which are described as follows:

- methodology to determine the amenity value of individual trees, communities of trees, and to forecast the amenity value of trees, compliant with the Minimum Industry Standard
- fusion of the principles and practices of accepted valuation methods. It references Burnley, CAVAT, the 2021 City of Melbourne, STEM™ and Thyer methods along with best practice principles from modelling and market research science
- by design accommodates further adaptation within its framework, to suit various scenarios that will arise under different laws, regulations and protocols, and countries
- is agnostic to assessment methods
- utilizes newly researched (Arup 2022) nursery benchmarks for AUS and NZ

The MIS506/22 method is fully described in *Tree Valuation, Industry Guidance on Tree Valuation Methodologies, Practices and Standards MIS506*. The following valuation methods are also defined in MIS506 as compliant (in their territory of use) with the MIS's minimum criteria:

- Burnley AUS
- City of Melbourne AUS
- i-Tree Eco AUS (Ecosystem services only)
- STEM™ NZ
- Thyer AUS

In all of these methods, tree value is determined not as a 'sum of benefits' but as a representative market value. Tree valuation is based on a market baseline value which is modified or adjusted to account for the tree's condition and site influences including physical, environmental, social and market-related elements. The MIS provides a detailed description of how these tree, site, community and market-related features combine and interact, and the role of the arborist in assessing these when calculating tree values.

Similarities and differences between earlier valuation methods were reviewed to inform the development of the MIS. The major differences between methods related to which elements or benefits were included in the valuation, their quantification in calculations, and baseline values. Tree size-based market baseline values were attributed relative to trunk diameter (DBH), canopy area or canopy volume, which allows for forecasting of future values based on predicted growth. Reliability and repeatability, ease of application, and reasonableness in terms of previously developed methods were desired in the development of the new MIS method, to allow for continuity and ongoing relevance of earlier assessments.

The value of a 'standard' test tree is presented as an example. The 'standard' tree is a stand-alone Australian native specimen with a DBH of 60 cm, height of 17 m, even crown spread of 18 m and height to crown of 2 m. The 'standard' tree was situated in middle ring suburbia of an Australian capital city, was 60 years of age and had a life expectancy of >40 years. The values of this 'standard' tree produced using the various methods are reported in Table 2. This example demonstrates that the Burnley, City of Melbourne, Thyer and MIS506 methods produced monetary valuations for the example tree that were consistent to within ±5%.

Table 2. Comparison of values attributed using MIS506-compliant tree valuation methods for a 'standard' 60 cm DBH tree

Burnley	City of Melbourne	Thyer	MIS506/22
$58,630	$55,510	$60,298	$56,537

Conclusion

The trees that line Hobart's streets and parks are essential public assets and require public funds to install and maintain over decades and sometimes over centuries. The value of each tree varies based on size, location, species characteristics, prominence, health and form. Clearly, a large tree that has been cared for and nurtured for 50, 80 or even 100 years is far more valuable to the community than a recently planted tree. The many benefits a large, mature tree provides cannot be readily replaced in the short term. Trees provide amenity that enhances the image of the city and the experience of the community. They provide a sense of place and can be key landmarks that are valued over generations. Private development that impacts or removes council's trees trades off the public benefit from community assets against private benefit.

A review of the City of Hobart's Tree Compensation Policy after 33 months of implementation revealed that applying an amenity value allowed for the recognition and consideration of tree values in design and decision-making processes relating to site development. If a developer believed that tree removal was required to support their building plans, the City's policy offered a clear and transparent process that showed the value of the tree/s. Having to compensate for the loss of the determined value proved to be an effective incentive to retain trees where possible, particularly high-value trees. Where it could, the City of Hobart worked with developers to find alternative design solutions that allowed street trees to remain in the landscape for the benefit of the wider community. This approach promoted smarter and more sensitive development designs that helped maintain the liveability of the city and contributed toward achieving the increased tree canopy cover target.

The Tree Valuations MIS (MIS506) provides a robust framework, valuation criteria, minimum and preferred benchmark standards to facilitate consistent and transparent valuation of urban trees. It is hoped the MIS will help to increase the use of tree valuation nationally to improve community understanding and acceptance of tree and canopy cover management and preservation.

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