The following is an abridged version of the Arboricultural Assessment and Arborist Advice that informed part of the City's decision to remove a verge tree along Buxton Road in Wembley Downs. Details related to private property have been redacted. It is important to note that the City did not receive a request to remove the tree. The decision to remove the tree was based on the City's responsibilities and liabilities.

Arboricultural Assessment January 2026

1. Introduction

1.1 The purpose of this arboricultural assessment is to evaluate the health and structural condition of the Brittle Gum (*Eucalyptus mannifera*) located on the Buxton Road verge adjacent to 36 Dover Crescent, Wembely Downs.

1.2 This report presents observations and recommendations for tree management, along with a valuation using the Helliwell System.

1.3 A Quantified Tree Risk Assessment (QTRA) has been undertaken as part of this assessment to identify the risk the tree poses to nearby people and property. Where possible, options will be provided to ensure the risk posed is as low as reasonably practicable (ALARP).



Image 1 – Image of the inspected tree

2. Observations

2.1 The mature ***Eucalyptus mannifera*** has the following attributes:

- **Height** 17m
- **Canopy spread** 17m
- **Diameter at Brest Height** 98cm

2.2 The root crown demonstrates a limited development of a root buttress, which, along with the absence of observable signs of soil displacement, bark necrosis, or recent excavation activities, indicates that the tree appears to be maintaining stability at the root plate.



Image 2 – Base of tree



Image 3 – Primary stem structure

2.3 The trunk exhibits a strong tonal response, indicating a sound structure, with no significant signs of decay observed during tests conducted with a nylon mallet.

2.4 The main stem evolves into two upright stems at approximately 5 meters, with a lateral stem extending to the southwest forming above this junction. While some persistent bark has accumulated at the union, observations indicate no discernible increase in compression or subsequent cracking.

2.5 The canopy exhibits a balanced arrangement of secondary branches that are free from notable structural abnormalities or characteristics that would suggest an increased likelihood of failure.



Images 4 – Pruning away from property



Image 5 - Lower crossing branches

2.6 The canopy exhibits a slight asymmetry resulting from prior management practices aimed at minimising property overhang.

2.7 Some sporadic deadwood is present within the canopy; however, this material is lightweight, with a diameter of less than 20mm

2.8 The lower southern canopy is supported by several minor crossing limbs, predominantly extending over the adjacent roadway. There appears to be no visible damage to the bark tissues in contact; however, this may largely be attributed to the absence of incoherent oscillation during wind events.

2.9 Occluded wounds, particularly observed in the lower and northwestern canopy, indicate previous management practices. However, certain locations suggest either irregular pruning patterns or remediation of prior live-branch failures, although there is insufficient detail to draw definitive conclusions. Notably, there is no evidence of recent live branch failures of a size that would warrant further assessment.



Image 6 – Thinning of the southern canopy

2.10 The leaves are displaying indicators of good health and vitality, exhibiting good size, shape, and colour. However, it is evident that a portion of the upper southern canopy has reduced density towards its outer sections and slight chlorosis. This issue is attributed to a reduced hydraulic connectivity, though the underlying causes could vary.

3. Discussion

3.1 The subject tree provides significant environmental, amenity, and aesthetic advantages. Furthermore, it enhances the nearby streetscapes, particularly with the presence of other large Eucalypts, a feature of the low-lying area of Wembley Downs.

3.2 The tree exhibits well-formed primary and secondary unions that do not present any discernible indications of abnormal development or defective characteristics (van Haaften et al., 2021), which may imply impaired stability or an increased risk of failure. Although the main stem union can be classified as co-dominant, there is an absence of clear signs of increased compression or cracking, which would indicate disrupted mechanical attachment.

3.3 The canopy exhibits some degree of asymmetry; however, it is not believed that this irregularity is significant enough to increase torsional loads during wind events (James., 2003). The observed asymmetry predominantly results from the removal of older, lower northern laterals, while the upper northern canopy remains largely intact.

3.4 The small crossing branches on the lower southern side of the canopy are not causing any damage at this time, due to the lack of opposing movement. Pruning to resolve this issue should be of low priority (Koeser et al., 2023); however, if future work is required, removing this conflict should be considered. The cost to undertake this work in itself is high, given the potential benefits.

3.5 A small quantity of deadwood is present within the canopy, with the majority of this material being light in mass. The overall volume of this deadwood is relatively low; with the corresponding low likelihood of resulting injuries to individuals or damage to property, mostly due to the negligible occupancy beneath much of the tree.

3.6 The canopy of the tree indicates that it is currently in a state of good health; however, there is a noticeable decline in canopy density within the upper southern section, which serves as a physiological indicator of potential issues related to hydraulic connectivity or a possible moisture deficit. Various factors may contribute to this condition, including dysfunction of the associated root system, damage to the vascular tissue within this area, or prevailing wind conditions that may disrupt the boundary layer of humidity over the leaves, leading to desiccation and necrosis. Nonetheless, the severity of this condition does not warrant immediate intervention, as the observed decline may be due to seasonal variations; however, future inspections should compare the foliage condition.

4. QTRA Assessment

4.1 The risk a tree poses is formed by the following inputs:

- **Target** – the people or property which are beneath a tree which are likely to be injured or damaged as a result of a tree or branch failure.
- **Size of part** – the size of the stem or branch which fails has a direct correlation with the extent of injury or damage it will cause.
- **Probability of failure** – the chance a stem or branch will fail within the coming year. The more likely the failure, the higher the risk posed.

4.2 The position of the tree means that there are only two target areas to consider: the roadway and the property.

4.3 The risk of harm posed to a passing vehicle is considered broadly acceptable and doesn't require further evaluation.

Target	Size of Part	Probability of Failure	Risk of Harm
4 47-6 vehicles per day	**Property damage**	**4** 1/1k - >1/10k	**>1/1 000 000** Broadly acceptable

Figure 1 – Risk of harm to a passing vehicle

QUANTIFIED TREE RISK ASSESSMENT - RISK DECISION INFORMING FRAMEWORK

Risk Thresholds	Description	Action
	Unacceptable Risks will not ordinarily be tolerated	• Control the risk • Periodically review the risk
1/1 000	**Unacceptable** (where imposed on others) Risks will not ordinarily be tolerated	• Control the risk • Periodically review the risk
	Tolerable (by agreement) Risks may be tolerated if • those exposed to the risk accept it, or • the tree has exceptional value	• Control the risk unless there is broad stakeholder agreement to tolerate it, or the tree has exceptional value • Periodically review the risk
1/10 000	**Tolerable** (where imposed on others) Risks are generally tolerable	• Assess costs and benefits of risk control • Control the risk only where a significant benefit might be achieved at a reasonable cost • Periodically review the risk
1/1 000 000	**Broadly Acceptable**	• No action currently required • Periodically review the risk

5. Helliwell Amenity Valuation

5.1 The Helliwell valuation system, developed by Rodney Helliwell, is a methodological approach utilised to assign a monetary value to the visual amenity offered by individual trees or woodlands. This system employs six fundamental factors, including size, life expectancy, suitability, and form, to derive values that are assessed against a predetermined base value.

5.2 Following the passing of Helliwell in 2018, the Arboricultural Association in the United Kingdom has been publishing base values denominated in pounds sterling, which are subsequently converted to Australian dollars.

Factor	Value	Points
i. Size	>200m^2	8
ii. Life expectancy	40-100 years	3
iii. Importance	Considerable	3
iv. Tree cover	Some	2
v. Suitability	Fairly	2
vi. Form	Average	1
Total		288
$96.43 x 288 = **$27 771.84**		

5.3 The amenity value for this specimen is $27 771.84.

6. Recommendations

6.1 No work required.

6.2 Reassess within 2 years unless a significant change is noted earlier. The timing of the inspection should be adjusted to mid-spring, ideally September, in order to determine whether the observed thinning of the canopy is related to seasonal factors.

7. References

- *Ellison, M – Quantified Tree Risk Assessment User Manual Version 5 2015*
- *James, K., 2003. Dynamic loading of trees. Arboriculture & Urban Forestry (AUF), 29(3), pp.165-171.*
- *Koeser, A.K., Klein, R.W., Hauer, R.J., Miesbauer, J.W., Freeman, Z., Harchick, C. and Kane, B., 2023. Defective or just different? Observed storm failure in four urban tree growth patterns. Forests, 14(5), p.988.*
- *van Haaften, M., Liu, Y., Wang, Y., Zhang, Y., Gardebroek, C., Heijman, W. and Meuwissen, M., 2021. Understanding tree failure—A systematic review and meta-analysis. PloS one, 16(2), p.e0246805)*

Arborist Advice - root control measures July 2026

Introduction

Excavation was undertaken to inspect whether the tree has caused the damage and to determine if root control measures can be implemented.

Excavation was undertaken by manual means, with supplementary watering used to soften the soil and minimise root disturbance.

Observations/comments

- Trenching of approximately 6 m length to a depth of 600mm was conducted.
- Four roots over 100 mm diameter were found within the trench (numbering shown in image 5. Root sizes were difficult to measure as they were adjoining, so were estimated as;
    - **Root #1:** 200 - 250 mm diameter
    - **Root #2:** 350 - 450 mm diameter
    - **Root #3:** 100 - 150 mm diameter
    - **Root #4:** 200 - 250 mm diameter
- Secateurs were placed on the root mass for perspective and not moved while images were taken.



Image 1 – Excavation process



Image 2 – Exposed roots (secateur for perspective)



Image 3 – Exposed root mass (secateur for perspective)



Image 4 – Numbering of roots over 100 mm diameter

Conclusion

The size and extent of the root cluster provide significant structural support. The roots can't be severed without a very high likelihood of instability (Peltola., 2006).