AURA TREE SERVICES pty ltd

"We go out on a limb for you"

Arboriculture Assessment & Hazard Management Statement

January 2020

Site:	**Lot 33 in DP 12186** **37 Parkes Street** **MANLY VALE, NSW**
Client:	**Zoe Ingram** **3.7 Parkes Street** **MANLY VALE, NSW** **Email:** sedcollins@gmail.com
Commissioned:	**Zoe Ingram**
Author:	**Kyle A Hill** Registered (Arb Aus #1884) Practising & Consulting Arborist Post Graduate Certificate in Arboriculture, Melbourne University Diploma of Horticulture–Arboriculture TAFE, Grow SA Certificate of Horticulture, TAFE Certificate Advanced Tree Care TAFE Founder -Growing My Way Tree Services (1977) Member of International Society of Arboriculture Member of Arboriculture Australia

1 Summary

Zoe Ungram (as the property owner) have commissioned *Aura Tree Services Pty Ltd* to prepare an "*Arboriculture Assessment & Management Statement–Tree Management Strategy*" to be linked to an application for the removal of a tree.

The site is within the *Northern Beaches Council (*from herein *NBC)* local government area.

NBC is the sole consent authority for the soon to be Tree Removal Applications.

Relative to tree management this document focuses on one (1) tree. By information provided & researched the one (1) discussed tree is located just within the subject site. Its canopy overhangs at least three (3) common boundary shared properties with the subject site.

It is our opinion that the discussed tree meets the criteria for a tree to be classified as a 'repeat offender' on the basis it at the time of assessment, Friday, 24 January 2020, it is confirmed to have dropped in the period of the last three (3) to four (4) years at least a minimum of seven (7) 'live branches' of a significant diameter. The tree is additionally confirmed to display compromised 'supporting wood' tissue in multiple locations. (The compromised supporting wood is consistent with a wood pathogen organism, (most likely a *Phellinus* spp.)

The site is not listed within the *NBC (old Warringah Council) 'Local Environment Plan, 2011'* (from herein *LEP) as being part of any 'Heritage Conservation Area'*. The subject site is not a listed 'Heritage Item', nor are any in close proximity. The tree discussed is not a species within any local *endangered ecological community.* (*See Part 3 of Schedule 1within the Threatened Species Conservation Act*.) The discussed trees are not listed within any known "*significant tree register*".

From a *Local Government Tree Management* perspective, the discussed tree is acknowledged to be subject to the provisions within the *NBC (old Warringah Council) 'Development Control Plan, 2011' (from herein DCP) & the SEPP 'Vegetation in Non Rural Areas, 25 August 2017'*

This document supports the immediate removal/replacement of the discussed tree.

Kyle Hill, Practicing & Consulting Arborist AQF Level 5 & 8, has prepared this document based on onsite inspection (Friday, 14 June 2019).

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2 Introduction

NBC is the *local government area* primary consent authority relative to development & tree management for the discussed & surrounding properties.

The discussed tree is identified to be a Eucalyptus botryoides (Bangalay gum) of at least forty (40) to fifty (50) years old. It is confirmed to be a locally indigenous tree species. It is not known if it is a planted or bird sown specimen.

The *Warringah DCP* & *NBC* 'Tree Management Provisions/Guidelines' plus the *SEPP 'Vegetation in Non-Rural Areas, 25 August 2017* are acknowledged to be the management criteria required to be addressed.

The subject site is Zoned *R2* "*Low Density Residential*" (*old Warringah Council LEP, 2011, Land Zoning Map*–Sheet LZN_010).

The occupants of the subject site have four (4) young children who are severely restricted by the presence of this tree based on its propensity to drop 'live branches' of a very significant diameter. (Significant diameter in this situation is defined as being greater than 50mm in diameter.)

Most of the observed/confirmed 'live branch' failure sites are likely to have been caused by 'sudden branch drop syndrome' as opposed to 'storm incidents'.

Taking into account legal 'reasonable duty of care' responsibilities for the tree owners & the fact its canopy overhangs not only the subject site but at least three (3) other common boundary with the subject site properties this tree is not considered to be an acceptable 'risk'. This conclusion has been reached on the basis it is highly 'probable' future 'live branch' failure will occur, especially on still days where the rear yard occupancy rate soars by virtue of the number of children & their guests undertaking normal outdoor children's activities. Pruning is not considered to be a viable option relative to reducing 'risk'. Pruning to remove immediately up to large diameter dead/dying or broken branches is specified to be completed for obvious safety reasons.

3 Methodology

Assessment of the trees has been by eye from ground level & aerial photography from multiple sources. Implementation of the *Visual Tree Assessment (VTA) Stage 1 principles* developed by Claus Mattheck, et.al is the assessment method & tool chosen for this site. The principles of *VTA* Stage 1 are explained & illustrated in the publication *The Body Language of Trees (1994).*

Assessment includes:

- *Tree's current condition & likely future health.*
- *Perusal of NBC (old Warringah Council) "Tree Management Provisions". Perusal of NBC (old Warringah Council) "Endangered Ecological Community listing" information.*
- *Perusal of NBC communication/responses to the as lodged DA submission*
- *Discussion of environment where the tree is growing. Tree's amenity & retention value, such as significance, screening & habitat.*

No root tissue analysis, soil testing, '*Resistograph*'®, '*ArborTom*'® assessment or similar was undertaken.

See the following Appendices for further information:

- *Appendix A Glossary of Common Arboreal terms*

*** *VTA*–Visual Tree Assessment,** as referenced is a systematic inspection of a tree for indicators of structural defects that may pose a risk due to failure. Stage 1 is made from ground level (i.e. no aerial inspection is undertaken). An aerial inspection (Stage 2) is undertaken when there are easily identified visual indicators that suggest such an inspection is merited. Visual indicators are outlined within *The Body Language of Trees (Mattheck & Breloer, 1994). VTA* is a broadly used relatively standardised approach. More complex (can be invasive) diagnostic fault detection equipment may be recommended once visual indicators of potential defects are confirmed.

4 Observations

4.1 The Site

By SixMaps website 'area calculation' tool the site area is approximately 477.00m^2 by calculation.

The site is developed to contain a single dwelling residence. The subject site & adjoining common boundary sites are zoned R2 'Low Density residential'.

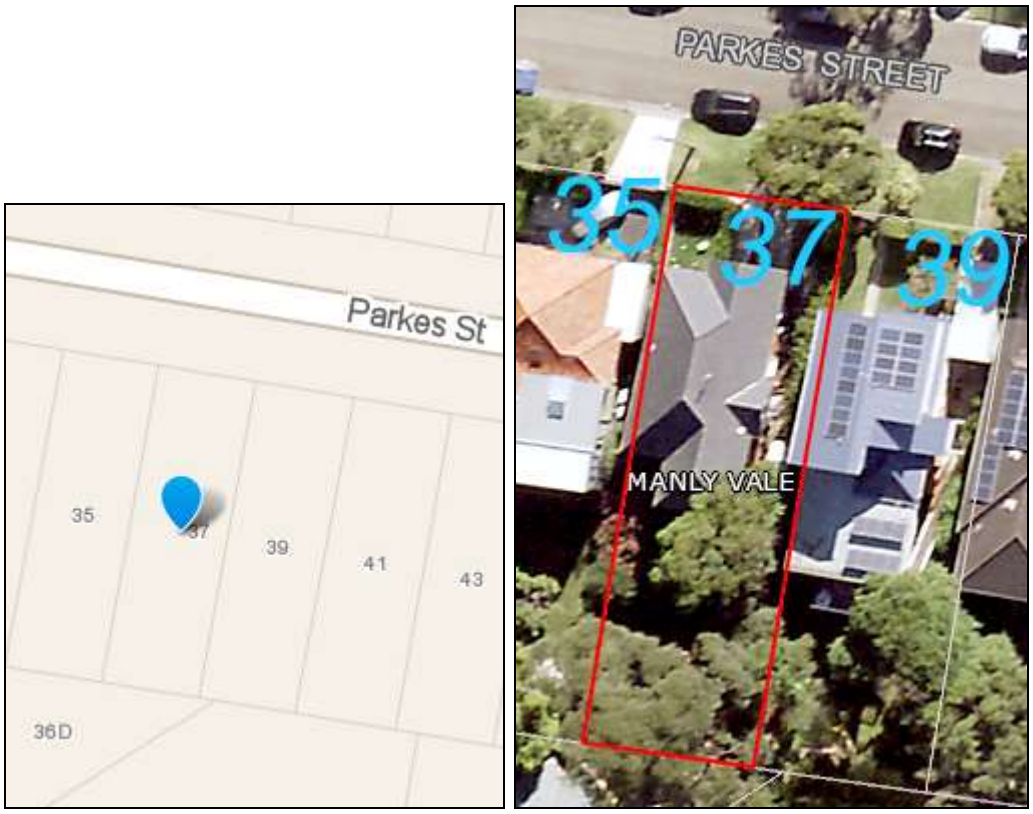


Figure 1: **Location Map courtesy of SixMaps area calculation website tool & Whereis.com website tool.**

The site is NOT within an area noted to be a classified area of "Wildlife Corridor" significance. The discussed trees are not listed on any known "*significant tree register*".

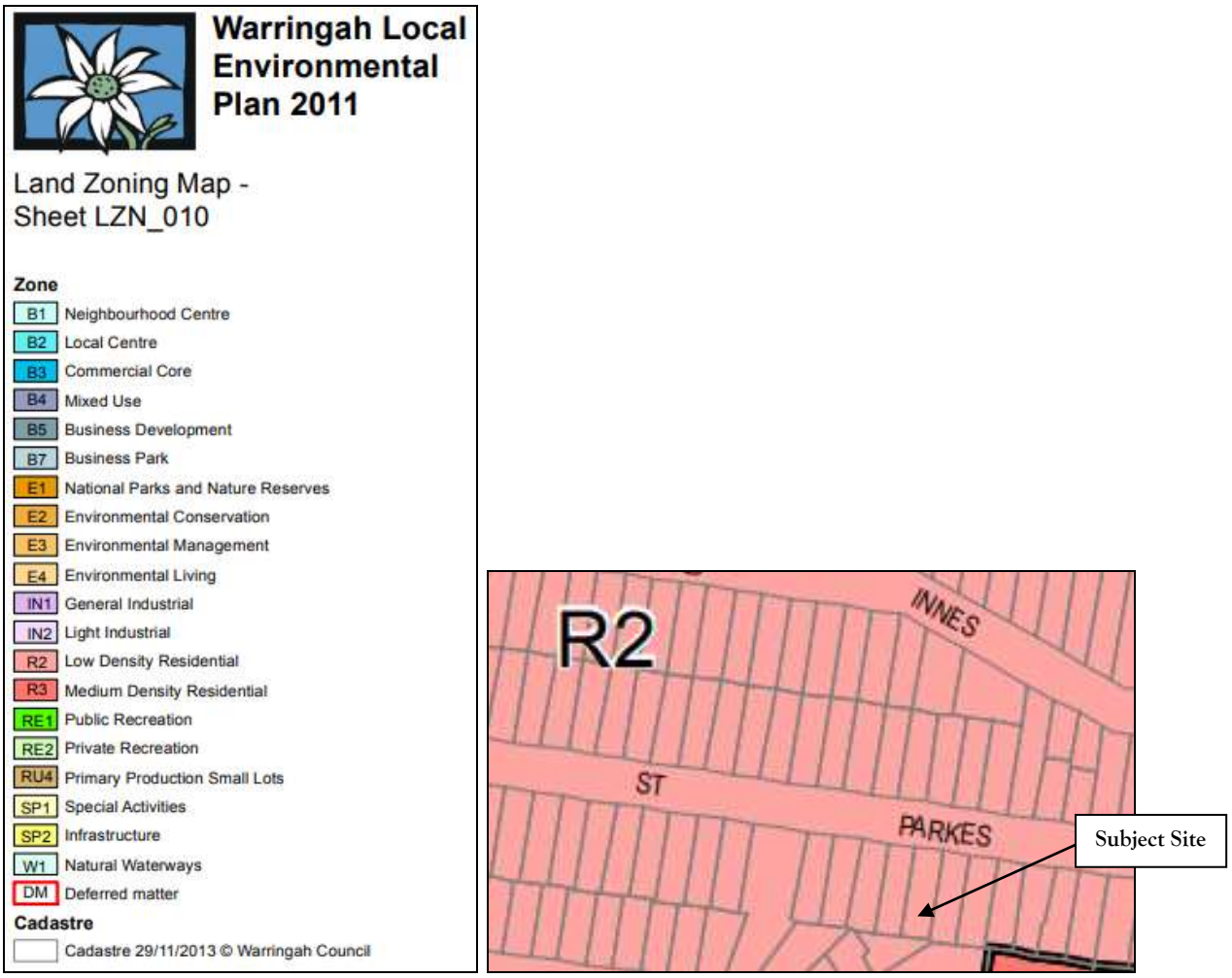
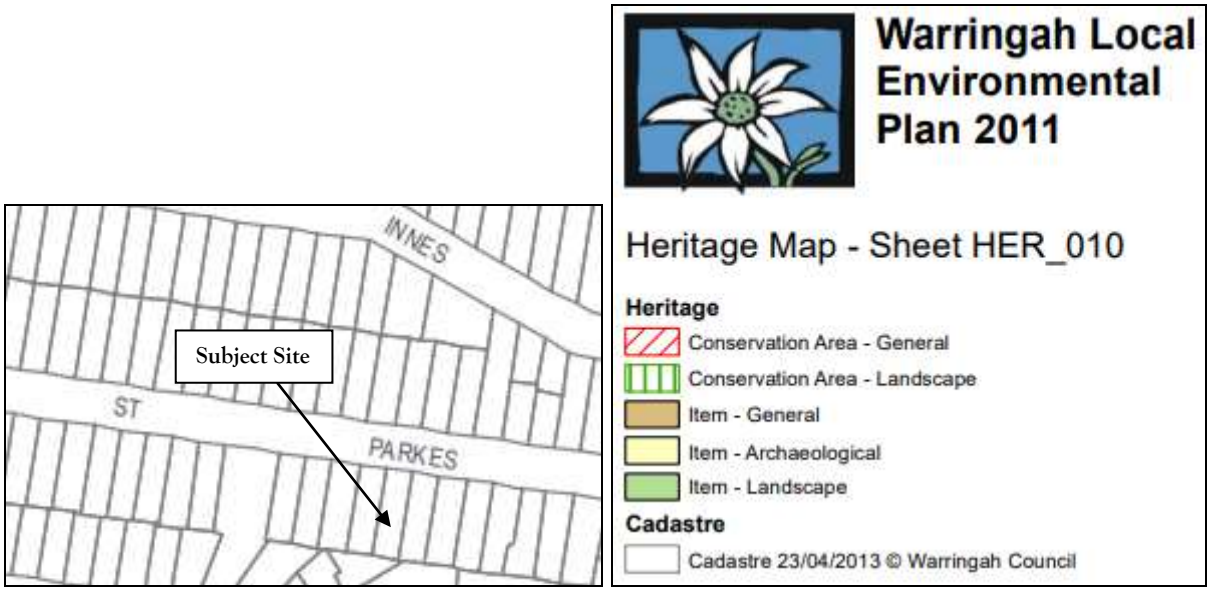


***Figure 2*: Confirms Land Zoning classification as being R2 'Low Density Residential'.**



4.2 Tree Images

Figure 3: Illustrates tree location & canopy outline.

Figure 4:Illustrates some of the confirmed 'live branch' failure sites.

Figure 5: Illustrates more 'live branch' failure sites, including the site likely to have been the most recent.

4.3 The Tree

Read this table in conjunction with Appendix A–Common Arboreal Terms

Trees Recommended for removal relative to site character, condition or safety	Trees Recommended for protection & retention
Exempt species	Trees retainable but of low amenity/significance

	Identification	Height (approx in m)	Crown (approx in m)	DBH (approx in m)	TPZ (approx in m)	SRZ (approx in m)	Age	Health/ Vigour	Retention & Significance Value	Structure/ Form	Comments
1	***Eucalyptus botryoides*** *Bangalay Gum*	<21.00	<19.00	<0.95	11.40	3.30	M	Fair-Good/ Fair-Good	High/High	Atypical on the basis its displays many mostly northern canopy portion 'live branch' failure sites	**Remove & Replace: Tree is considered on recent years behaviour to be an unacceptable risk.**

***Figure 6*: Aerial Map of 22 October 2019, (courtesy of Nearmap) confirms discussed tree location.**

5 Discussion

The discussed tree has been assessed & classified to be an unacceptable 'risk' on the basis of many recent years 'live branch' failure incidents of a significant diameter. Eight (8) sites have been identified by VTA stage 1 & stage 2 criteria.

It is unusual for a tree that has so many 'live branch' failure incidents to be as orientated in any single direction as observed at this site. Most 'live branch' failure incidents face the north. The reason for this is not known. The tree appears to be more exposed to winds from a Northerly direction. It is possible a tree from within one of the adjoining to the subject site common boundary properties has had a large tree removed that has exposed the discussed tree.

By virtue of the subject site property owners having four (4) young, active children & the fact most 'live branch' failure incidents appear to be consistent with 'sudden branch drop syndrome' (which occurs mostly during calm weather with nil wind).

Taking into account how restrictive this has been for the family's children to use the largely open area backyard (the front yard is unsuitable & unfenced) & the very likely 'probability' of similar 'live branch' failure incidents this is not considered to be an acceptable risk relative to potential 'consequences' should a child (or adult) be struck by a failing 'live branch'. (As briefed, the rear yard by the owners discretion has already been abandoned from hanging clothes to dry.)

With the tree without challenge providing both private & communal 'landscape amenity' it must be replaced by a suitable tree in a location whereby its present contribution to local area 'tree canopy density' can be replicated over time.

6 Site Specific 'Tree Plan of Management'

- ***Refrain from any unnecessary backyard occupation, especially during storm events or days.***
- ***Apply to the NBC for immediate removal & replacement in this coming Autumn with a suitable new tree species.***
- ***Prune to remove dead/dying/broken branches as well as branches where 'live branch failure sites have left stubs as identified & discussed. Pruning must be compliant with the Australian Standard (AS4373-2007 Pruning of amenity trees, see Chapter 7, Sections 7.1, 7.2 & 7.3.)***
- ***Tree removal must be undertaken by suitably experienced & qualified tree workers as per the provisions within the SafeWork NSW 'Amenity Tree Industry 'Industry Code of Practice, 1998'.***
- ***The replacement tree is to be sourced from growers/suppliers whose stock meets the production benchmarks of the Australian Standard (AS2303.2015 Tree stock for landscape use) or NATSPEC specification for the production of quality container produced trees.***
- ***The replacement tree is to be professionally planted & maintained for a minimum period of one (1) full active growing season in the Sydney Environment.***

7 Recommendations:

Lodge immediately an application for total tree removal & replacement with the NBC on the grounds of the tree presenting an unacceptable risk to persons & a lesser degree property.

If you have any questions relating to this report or require the implementation of recommendations, please contact Kyle Hill (Monday to Friday) on 02 9939 0078.

Yours faithfully,

Kyle A Hill, Practicing & Consulting Arborist (AQF level 8)

8 Limitations on the use of this report

This report is to be utilised in its entirety only. Any written or verbal submission, report or presentation that includes statements taken from the findings, discussions, conclusions or recommendations made in this report, may only be used where the whole of the original report (or a copy) is referenced in, & directly attached to that submission, report or presentation.

9 Assumptions

Care has been taken to obtain information from reliable resources. All data has been verified insofar as possible; however, AURA Tree Services Pty Ltd, can neither guarantee nor be responsible for the accuracy of information provided by others.

Unless stated otherwise:

Information contained in this report covers only the trees that were examined & reflects the condition of the trees at the time of inspection; and

The inspection was limited to visual examination of the subject trees without dissection, excavation, probing or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject trees may not arise in the future.

10 Recommended References

Barrell, J. 1993. '*Preplanning Tree Surveys: Safe Useful Life Expectancy (SULE) is the Natural Progression*', Arboricultural Journal 17:1, February 1993,

Barrell, J. 1995, '*Pre-development Tree Assessments*', in Trees & Building Sites, Proceedings of n International Conference Held in the Interest of Developing a Scientific Basis for Managing Trees in Proximity to Buildings, International Society of Arboriculture, Illinois,

Dr. G. Watson & Dr. D. Neely, '*Trees & Building Sites',* ISA Illinois USA 1995,

Dr. N. Matheny & Dr. J.R. Clark, '*Trees & Development',* ISA Illinois USA 1998 ,

Phillip J. Craul, '*Urban Soil in Landscape Design',* J. Wiley & Sons, New York USA 1992,

Clark, Ross, '*A Guide to Assessment of Tree Quality*'. NATSPEC/ Construction Information, Milson's Point NSW, 2003 &

Clark, Ross. '*Purchasing Landscape Trees*', Construction Information Systems Australia Pty. Ltd., Milson's Point NSW, 1996.

11 Selected Bibliography

Hitchmough, J.D. 1994. '*Urban Landscape Management*', Inkata Press, Sydney.

Mattheck, C. & Breloar, H. (1994) '*Body Language of Trees*'. The Stationery Office. London.

AS4373.2007 '*Pruning of amenity trees*', Standards Australia.

AS4970.2009 '*Protection of trees on development sites*', Standards Australia.

BS5837-2005. '*Guide for Trees in Relation to Construction*', Standards Board, UK.

Appendix A – Glossary of Common Arboreal Terms

Age: **I** *Immature* refers to a refers to a well-established but juvenile tree

SM *Semi-mature* refers to a tree at growth stages between immaturity & full size

M *Mature* refers to a full sized tree with some capacity for further growth

LM *Late Mature* refers to a full sized tree with little capacity for growth that is not yet about to enter decline

OM *Over-mature* refers to a tree about to enter decline or already declining

LS *Live Stag* refers to a tree in a significant state of decline. This is the last life stage of a tree prior to death.

Hth & Vig Health & Vigour

Health refers to the tree's form & growth habit, as modified by its environment (aspect, suppression by other tree, soils) & the state of the scaffold (ie. trunk & major branches), including structural defects such as cavities, crooked trunks or weak trunk/branch junctions. These are not directly connected with health & it is possible for a tree to be healthy but in poor condition/vigour. **Classes are:**

Excellent (E), V. Good (VG), Good (G), Fair (F), Declining (D), Poor (P), Very Poor (VP)

Vigour refers to the tree's growth rate/condition as exhibited by the crown density, leaf colour, presence of epicormic shoots, ability to withstand disease invasion & the degree of dieback. **Classes are:**

Excellent (E), V. Good (VG), Good (G), Fair (F), Declining (D), Poor (P), Very Poor (VP)

Useful Life Expectancy refers to any trees potential life expectancy (viability) not related to potential disturbances based on VTA assessment, classifications are: **Short, (0 – 5 years), Medium, (5 – 15 years) & Long, (15 or more years).**

Retention Value is expressed as Low, Medium, High or of Heritage Importance

Diameter at Breast Height (DBH) refers to the tree trunk diameter at breast height (1.4 metres above ground level).

Significant Diameter Roots are defined as being woody roots with a diameter greater than 0.05m/50mm. (Unless otherwise specified)

Structural Root Zone (SRZ) refers to a radial offset which relates to tree stability. This zone is presumed to be main location of the tree's structural support roots. It is calculated using the formula *SRZ radius= (D x 50)$^{0.42}$ x 0.64.*

Tree Protection Zone (TPZ) is ideally a "No Go Zone" surrounding a tree to aid in its ability to cope with disturbances associated with construction works. **TPZ = DBH x 12**. Tree protection involves minimising root damage that is caused by activities such as construction. Tree protection also reduces the chance of a tree's decline in health or death & the possibly damage to structural stability of the tree from root damage

To limit damage to the tree, protection within a specified distance of the tree's trunk must be maintained throughout the proposed development works. No excavation, stockpiling of building materials or the use of machinery is permitted within the TPZ

A TPZ is required for each tree or group of trees within five metres (unless otherwise specified) of building envelopes.

Stem/bark inclusion refers to a genetic fault in the tree's structure. This fault is located at the point where the stems/branches meet. In the case of an inclusion this point of attachment is potentially weak due to bark obstructing healthy tissue from joining together to strengthen the joint

Decay refers to the break down tissues within the tree. There are numerous types of decay that affect different types of tissues, spread at different rates & have different affect on both the tree's health & structural integrity

Point of Attachment refers to the point at which a stem/branch etc join

Dead wood refers to any whole limb that no longer contains living tissues (eg live leaves &/or bark). Some dead wood is common in a number of tree species.

Die back refers to the death of growth tips/shoots & partial limbs. Die back is often an indicator of stress & tree health

One dimensional crown refers to branching habits & leaves that extend/grow in One direction only. There are many causes for this growth habit such as competition & pruning

Crown Foliage Density of Potential (CFDP) refers to the density of a tree's crown in relation to the expected density of a healthy specimen of the same species. CFDP is measured as a percentage

Epicormic growth/shoots refers to growth/shoots that are/have sprouted from axillary buds within the bark. Epicormic growth/shoots are a survival mechanism that often indicates the presence of a current or past stress even such as fire, pruning, drought etc

Over Head Powerlines (OHP) Over head electricity wiring.

LVOHP	Low Voltage Over head Powerlines
HVOHP	High Voltage Over head Powerlines
ABC	Aerial Bundled Cable