

# Arboricultural Impact Assessment



## Prepared For

[REDACTED]  
CPB Contractors, Dragados and Samsung C&T Joint Venture (CDS-JV)  
30 Garema Ct  
KINGSGROVE NSW 2208

## Site Address

Westconnex New M5  
Tolling Gantries  
King Georges Road to St Peters

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## Revision 3

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**Note:** *Trees approved for removal within this Revision (4) are identified in Appendix G – Tree Location Maps*

# 1 Introduction

## 1.1 Brief

This Arboricultural Impact Assessment (AIA) was prepared by Treeism Arboricultural Services and was commissioned by [REDACTED] of CPB Contractors, Dragados and Samsung C&T Joint Venture (CDS-JV).

The proposed works are part of the larger WestConnex New M5 project. The scope of work specifically for the discussed area is:

- installation of tolling gantries and
- trenching for related utilities and services.

Tolling gantries installed at locations along the existing M5 East including locations adjacent to:

- King Georges Road;
- Kingsgrove Road;
- Bexley Road;
- Princes Highway;
- Marsh Street; and
- the M5 East Cooks River Tunnel.

The location of the tolling gantries at King Georges Road, Kingsgrove Road and Bexley Road are in accordance with the locations identified in the New M5 Environmental Impact Statement. The Tolling Gantries at Princes Highway, Marsh Street and M5 East Cooks River Tunnel and other ancillary tolling infrastructure is the subject of an RMS Consistency Assessment. This report gives recommendations for tree retention or removal and provides guidelines for tree protection and maintenance.

Care has been taken to obtain all information from reliable sources. All data has been verified as far as possible; however, I can neither guarantee nor be responsible for the accuracy of information provided by others.

This report is not intended to be a comprehensive tree risk assessment; however, the report may make recommendations, where appropriate, for further assessment, treatment or testing of trees where potential structural problems have been identified, or where below ground investigation may be required.

This AIA is not intended as an assessment of any impacts on trees by any proposed future development of the site, other than the current discussed scope of work.

The purpose of this report is to assess the vigour and condition of the trees, and identify the potential impacts the proposed development may have on those trees to be retained in proximity to the works.

The author of this report holds an AQF Level 5 Diploma of Horticulture (Arboriculture) and has 23 years in the horticultural industry. 18 of these 23 years have been specifically within the field of arboriculture.

Previous roles varied from working actively as a tree climber in private contracting companies to Tree Management Officer at several local Councils and working with independent Consultants. The author is independent from the project.

This AIA has been commissioned to ensure compliance with the requirements set out by the Department of Planning and Environment (DPE) as per Condition B63 - Table 1 (below/next page).

**Table 1** –Condition of Approval B63 Compliance Table

Condition	Requirement	Addressed in:
B63	The SSI must be designed to retain as many trees as possible and provide a net increase in the number of replacement trees. The Proponent must commission an independent experienced and suitably qualified arborist, to prepare a comprehensive Tree Report(s) prior to removing any trees on the periphery and/or outside the construction footprint as identified in the figures in Section 6 of the document referred to in condition A2(b), including any tree(s) removed along Euston Road. The Tree Report may be prepared for the entire SSI or separate reports may be prepared for individual areas where trees are required to be removed. The report(s) must identify the impacts of the SSI on trees and vegetation within and adjacent to the construction footprint. The report(s) must include:	This Report – Overview & individual area as per Appendix E & F.
B63(a)	a visual tree assessment with inputs from the design, landscape architect, construction team;	VTA noted in Appendix H & staff inputs as per Appendix D and onsite discussions.
B63(b)	consideration of all options to amend the SSI where a tree has been identified for removal, including realignment, relocation of services, redesign of or relocation of ancillary components (such as substations, fencing etc.) and reduction of standard offsets to underground services.	Appendix D, onsite discussion.
B63(c)	Measures to avoid the removal of trees or minimise damage to existing trees and is to ensure the health and stability of those trees to be protected. This includes details of any proposed canopy or root pruning, excavation works, site controls on waste disposal, vehicular access, and storage of materials and protection of public utilities.	Section 2 Part 2.3-2.4 & Section 3 - Recommendations
	In the event that trees are to be removed, then replacement trees are to be planted within, or in close proximity to, the SSI boundary, including along Euston Road where feasible and reasonable. The location of the trees must be determined in consultation with the relevant council(s). The replacement trees are to have a minimum pot size of 75 litres. A copy of the report(s) must be submitted to the Secretary for approval prior to the removal, damage and/or pruning of any trees, including those affected by site establishment works. All recommendations of the report must be implemented by the Proponent, unless otherwise agreed by the Secretary.	Consistent with earlier approved Tree Reports replanting will be detailed in the Urban Design & Landscape Plan in consultation with the relevant Council.

## 1.2 Methodology

In preparation for this report, ground-level, visual tree assessments (VTA)<sup>1</sup>, or limited VTA (e.g. where access was limited), were completed by the author of this report on 17<sup>th</sup>, 26<sup>th</sup> April and 25<sup>th</sup> May 2018, Inspection details of these trees are provided in Appendix H —Schedule of Assessed Trees.

The tree heights were visually estimated, and unless otherwise noted in Appendix H, the trunk Diameter at Breast Height were measured at 1.4 metres above ground level (DBH) using a diameter tape. Tree canopy spreads were stepped out with field observations written down, and photographs of the site and trees were taken using an iPhone 6.

<sup>1</sup> Visual Tree Assessment (VTA) is a procedure of defect analysis developed by Mattheck and Breloer (1994) that uses the growth response and form of trees to detect defects.



The areas of - Cooks River, Marsh Street, King Georges Road and Bexley (not 'Cable Run' only areas close to M5) had a very limited visual assessment given these tree inspections were carried out at night during an M5 shut down/road closure. This is the only time access was safe enough to inspect these trees.

No aerial inspections, root mapping or woody tissue testing were undertaken as part of this tree assessment. Information contained in this report only reflects the condition of the trees at the time of inspection.

Trees are dynamic, living things which can be subject to change without notice in certain circumstances.

Plans and documents referenced for the preparation of this report include:

- AS4970-2009 Protection of trees on development sites, Standards Australia;
- Conditions B63 – (Table 1);
- Marked up Aerial maps detailing proposed works location. These plans are attached as Appendix E—Site Overview Map & Appendix F- Tree Location Maps.

No hydraulic service or landscape plans have been reviewed in preparation of this report.

### 1.3 Tree Preservation and Management Guidelines

The proposed works form part of the approved WestConnex New M5 State Significant Infrastructure project (SSI 6788), which overrides the State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 'Vegetation SEPP' (which refers to prescribed and non-prescribed trees pursuant to the Rockdale Development Control Plan 2011 (RDCP) Part 4.1.7).

What constitutes a 'tree' as per planning approval is any tree that:

- is equal to or greater than three (3) metres in height; or
- for a single trunk species, a trunk circumference of 300 millimetres at a height of one metre above ground level; or
- for a multi-trunk species, a trunk circumference exceeding 100 millimetres at a height of one metre above ground level.

However, this excludes any species listed under the Biosecurity Act 2015 (this Act overrules Noxious Weed Act 1993).

## 2 Observations and Discussion

### 2.1 Summary of Assessed Trees

Two hundred and thirty (230) trees/tree groups were assessed and included in this report. Details of these are included in the Schedule of Assessed Trees – Appendix H. Of these trees:

- one hundred and ninety nine (199) are prescribed (i.e. 'considered a tree' under the DPE approval/conditions) trees/tree groups – T1-T5, G6, T7, T8, G9, T10-T26, T28-T30, T30A,

T30B, T33-T46, T48-T49, T51, T52, T54-T78, T80, T81, T83-T86, T88, T92-T94, G94A, T94B, G94C-D, T95, T95A & B, T96, T97, G97A & B, T98, G99, G99A, G99B, G99D, T100, T101, T103, G104, T105-T122, G124, G125, T126, T127, G129, G130, T131-T139, T141-T143, T145-T152, T156-T158, T160, T162, T164-T166, T168-T183, T185-T192, G193, T194-T206, T206A, T207-T211.

- thirty one (31) are non-prescribed trees/tree groups (i.e. exempt from DPE approval to remove or prune) - T27, T31, T32, T47, T50, T53, T79, T82, T87, T89-T91, G99C & G99E, T102, T123, G128, T140, T144, T149A, G152, T153-T155, T159, G161, T163, G167, T184 T184A, & T206B. It is assumed that all these non-prescribed trees would be removed if located within or near the proposed works zone.

Of the two hundred and thirty (230) trees/tree groups (trees within groups were provided a retention rating as a group rather than as individual trees) the following Retention Value (RV- see Appendix C) was ascribed to each:

- four (4) trees/tree groups have high RVs – T62, T64, T76 and T96;
- eighty six (86) trees/tree groups have medium RVs – T2, T3, T5, T8, T10-T12, T14, T18, T19, T22-T26, T28-T30, T30A & B, T33-T41, T44, T45, T48-T52, T54, T56, T58-T61, T63, T66, T72, T75, T77, T81, T95, T95B, G99A & B, G99D, T107-T109, T115-T117, T119-T122, T126, T127, T142, T145, T149, T151, T158, T171, T175, T180, T183, T188, G193, T194, T198-T203 and T208-T211;
- one hundred and thirty six (136) trees/tree groups have low RVs – T1, T4, G6, T7, G9, T13, T15-T17, T20, T21, T27, T31, T32, T42, T43, T46, T47, T50, T53, T55, T57, T65, T67-T71, T73, T74, T78-T80, T82-T94, G94A, T94B, G94C & D, T95A & B, T97, G97A & B, T98, G99, G99C, G99E, T100-T103, G104, T105, T106, T110-T114, G118, T123, G124, G125, G128-G130, T131-T141, T143, T144, T146-T148, T150, G152, T153-T157, T159, T160, G161, T162-T166, G167, T168-T170, T172-T174, T176-T179, T181, T184-T187, T189-T192, T195-T197, T204-T206, T206, T206A & T206B and T207.

## 2.2 Threatened Species

Four (4) assessed trees T40, T51, T58 & T72, *Syzygium paniculatum* (Magenta Lilly Pilly) are classified as 'Endangered' under the NSW Threatened Species Conservation Act 1995 and 'Vulnerable' under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999.

However, in the authors opinion, this classification is more pertinent to naturally occurring specimens growing within their habitat, or specimens planted adjoining natural environments to reinforce dwindling populations, rather than planted specimens within a road island (refer M5 East Planting Schedule for Marsh Street, Appendix E).

## 2.3 Proposed Removal of Prescribed Trees

One hundred and fifty five (155) of the one hundred and ninety nine (199) prescribed trees/tree groups are proposed to be removed as they are located within the zone of the proposed works and cannot be retained without significant detriment to the tree.

Only one (1) tree (T62) determined to have a 'High' Retention Value (RV- see Appendix C) is proposed for removal. Replanting will be undertaken in accordance with the condition B63 of the Compliance Table.

To install each Toll Gantry, my understanding is that a Piling Rig is required to be set up to bore the 'piles', (or pier foundations in layman's terms). An excavator is then used to 'box out' the pile cap footings. In locations of sloped ground, the area will require a battered slope, thus additional excavation will be required. Then a crane will be set up to slew in and position the Gantry column. The area required to carry out these works amounts to an approximate 10m radius from the gantry location. The largest area required for a single pile cap is 6.8m<sup>2</sup> (3.4m X 2m) however this increases in areas of sloped ground as previously discussed.

The technical shelters (noted on plans – see Appendix F- Tree Location Maps, as large rectangles) require a 13m by 7m area, this cannot be raised above the ground level (to avoid impacts on tree roots) as the services that are required to be installed at a depth of approximately 800mm below ground level and require the concrete slab for protection.

Significant soil level changes are unacceptable within the Tree Protection Zones (TPZ) of existing trees, lowering ground levels to any extent incurs root severance and raising ground levels significantly, leads to loss of available oxygen to tree roots and long term root death.

An additional issue to the required ground level changes, is the 10m radial above ground clearance required to ensure safe passage of materials and equipment. This requires the removal of tree stems and/or branches to avoid damage to both plant and the trees themselves.

Appendix D provides input from the Design Engineer in regard to the design options that have been assessed to minimise impacts on trees. The constraints in selecting Tolling Gantry locations are identified.

The trees within the table below are located within or adjacent to the construction sites and cannot be safely retained.

**Table 2**—Trees proposed to be removed to facilitate works.

Tree No.	Common Name	Reason	RV
G6	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T7	Bangalay	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
G8	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
G9	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T11	Bangalay	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M

Tree No.	Common Name	Reason	RV
T13	Forest Oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T14	Forest Oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T15	<i>Melaleuca</i> sp.	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T16	Gum	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T17	Cheese Tree	Tree positioned in location of proposed Tolling gantry.	L
T18	Forest Oak	Tree positioned in location of proposed Tolling gantry.	M
T19	Forest Oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T20	Gum	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T24	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T25	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T26	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T28	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T29	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T30	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T30A	Coast Banksia	Tree positioned in location of proposed Tolling gantry.	M
T30B	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T33	Swamp She-oak	Tree positioned in location of proposed Tolling gantry.	M
T34	Swamp She-oak	Tree positioned in location of proposed Tolling gantry.	M
T35	Swamp She-oak	Tree positioned in location of proposed Tolling gantry.	M
T36	Swamp She-oak	Tree positioned in location of proposed Tolling gantry.	M
T37	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T38	Swamp She-oak	Tree positioned in location of proposed Tolling gantry.	M
T39	Swamp She-oak	Tree positioned in location of proposed Tolling gantry.	M
T40	Magenta Lilly Pilly	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T41	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T42	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T43	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T44	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T46	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T48	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M

Tree No.	Common Name	Reason	RV
T55	White Feather Honeymyrtle	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T56	White Feather Honeymyrtle	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T57	White Feather Honeymyrtle	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T58	Magenta Lilly Pilly	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T59	White Feather Honeymyrtle	Tree positioned in location of proposed Tolling gantry.	M
T60	Swamp Mahogany	Tree positioned in location of proposed Tolling gantry.	M
T61	Weeping Bottlebrush	Tree positioned in location of proposed Tolling gantry.	M
T62	Swamp Mahogany	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	H
T63	Swamp Mahogany	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T65	QLD Silver Wattle	Tree positioned in footprint of Technical Shelter.	L
T66	Swamp She-oak	Tree positioned in location of proposed Tolling gantry.	M
T67	White Feather Honeymyrtle	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T68	White Feather Honeymyrtle	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T69	White Feather Honeymyrtle	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T70	White Feather Honeymyrtle	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T71	White Feather Honeymyrtle	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T73	White Feather Honeymyrtle	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T77	Jacaranda	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T81	Turpentine	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T83	Hong Kong Orchid Tree	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T84	Gum	Tree positioned in location of proposed Tolling gantry.	L
T85	Lemon Scented Tea Tree	Tree positioned in location of proposed Tolling gantry.	L
T86	Jacaranda	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T88	Lemon Scented Tea Tree	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T92	Chinese Tallow Tree	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T94	Canary Island Date Palm	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L

Tree No.	Common Name	Reason	RV
G94A	Tallowwood	Tree positioned in location of proposed Tolling gantry.	L
T94B	Canary Island Date Palm	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
G94C	Tallowwood	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
G94D	<i>Melaleuca</i> sp.	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
G97A	Tallowwood	Tree positioned in location of proposed Tolling gantry.	L
G97B	Weeping Bottlebrush	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
G99	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T99A	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T99B	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T99D	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T100	<i>Melaleuca</i> sp.	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T101	<i>Melaleuca</i> sp.	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T103	<i>Melaleuca</i> sp.	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
G104	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T105	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T106	<i>Melaleuca</i> sp.	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T107	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T108	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T109	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T110	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T111	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T112	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T113	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T114	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T115	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T116	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T117	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M

Tree No.	Common Name	Reason	RV
G124	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
G125	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T126	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T127	Swamp She-oak	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
G130	Cabbage Tree Palm	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T131	Cabbage Tree Palm	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
G132	Cabbage Tree Palm	Tree group positioned in location of proposed Tolling gantry.	L
T133	Cabbage Tree Palm	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T134	Cabbage Tree Palm	Tree group positioned in location of proposed Tolling gantry.	L
T135	Cabbage Tree Palm	Tree group positioned in location of proposed Tolling gantry.	L
T136	Cabbage Tree Palm	Tree group positioned in location of proposed Tolling gantry.	L
T137	Cabbage Tree Palm	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T138	Cabbage Tree Palm	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T139	Cabbage Tree Palm	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T141	Sweet Pittosporum	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
T142	Sydney Red Gum	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	M
T143	Tick Bush	Tree positioned in a location adjacent to the proposed Tolling gantry, equipment access required.	L
G145	Forest Oak	Excavation for underground service lines and in location adjacent to the proposed Tolling gantry, equipment access required.	M
T146	<i>Melaleuca</i> sp.	Tree positioned in footprint of Technical Shelter.	L
T147	Wattle	Tree positioned in footprint of Technical Shelter.	L
T148	Gum	Tree positioned in footprint of Technical Shelter.	L
T149	Wattle	Tree positioned in footprint of Conduit trench.	M
T150	Gum	Tree positioned in footprint of Conduit trench.	L
T151	Sydney Green Wattle	Tree positioned in footprint of Conduit trench.	M
T156	Water Gum	Tree positioned in footprint of Conduit trench.	L
T157	Water Gum	Tree positioned in footprint of Conduit trench.	L
T160	Water Gum	Tree positioned in footprint of Conduit trench.	L
T162	Port Jackson Fig	Tree positioned in a location adjacent to the proposed Conduit trench and works well within SRZ of tree.	L
T164	Water Gum	Tree positioned in footprint of Conduit trench.	L
T165	Water Gum	Tree positioned in footprint of Conduit trench.	L
T166	Chinese Tallow Tree	Tree positioned in footprint of Conduit trench.	L

Tree No.	Common Name	Reason	RV
T169	Water Gum	Tree positioned in footprint of Conduit trench.	L
T170	Water Gum	Tree positioned in footprint of Conduit trench.	L
T171	Sydney Red Gum	Tree positioned in footprint of Conduit trench.	M
T172	Forest Oak	Tree positioned in footprint of Conduit trench.	L
T173	Sydney Green Wattle	Tree positioned in footprint of Conduit trench.	L
T174	Forest Oak	Tree positioned in footprint of Conduit trench.	L
T175	Forest Oak	Tree positioned in footprint of Conduit trench.	M
T176	Sydney Green Wattle	Tree positioned in footprint of Conduit trench.	L
T177	Sydney Green Wattle	Tree positioned in footprint of Conduit trench.	L
T178	Forest Oak	Tree positioned in footprint of Conduit trench.	L
T179	Forest Oak	Tree positioned in footprint of Conduit trench.	L
T180	Sydney Red Gum	Tree positioned in footprint of Conduit trench.	M
T181	Forest Oak	Tree positioned in a location adjacent to the proposed Conduit trench and works well within SRZ of tree.	L
T182	Sydney Green Wattle	Tree positioned in footprint of Conduit trench.	L
T183	Forest Oak	Tree positioned in footprint of Conduit trench.	M
T186	Forest Oak	Tree positioned in footprint of Conduit trench.	L
T189	Mulberry	Tree positioned in footprint of Conduit trench.	L
T191	Gum	Tree positioned in footprint of Conduit trench.	L
T192	Gum	Tree positioned in footprint of Conduit trench.	L
G193	Fig, Wattle, Ash & Mulberry	<u>Some of this tree group</u> positioned in trench footprint or in a location adjacent to the proposed Conduit trench and works well within SRZ of tree. Impacts to this tree group will be minimised where possible and the total number of trees removed will be confirmed after the works.	M
T194	Blackbutt	Tree positioned in footprint of Conduit trench.	M
T195	Golden Wreath Wattle	Tree positioned in footprint of Conduit trench.	L
T196	Gum	Tree positioned in footprint of Conduit trench.	L
T197	Mulberry	Tree positioned in footprint of Conduit trench.	L
T198	Scribbly Gum	Tree positioned in footprint of Conduit trench.	M
T199	Scribbly Gum	Tree positioned in footprint of Conduit trench.	M
T200	Scribbly Gum	Tree positioned in footprint of Conduit trench.	M
T201	Tallowwood	Tree positioned in footprint of Conduit trench.	M
T202	Scribbly Gum	Tree positioned in footprint of Conduit trench.	M
T203	Gum	Tree positioned in footprint of Conduit trench.	M
T204	Cabbage Tree Palm	Tree positioned in footprint of Conduit trench.	L
T205	Tallowwood	Tree positioned in footprint of Conduit trench.	L
T207	Tallowwood	Tree positioned in footprint of Conduit trench.	L
T208	Scribbly Gum	Tree positioned in footprint of Conduit trench.	M



Tree No.	Common Name	Reason	RV
T210	White Cedar	Tree positioned in footprint of Conduit trench.	M
T211	Tallowwood	Tree positioned in a location adjacent to the proposed Conduit trench and works well within SRZ of tree.	M

## 2.4 Potential Impacts on Trees Proposed for Retention

Under the Australian Standard 4970-2009 Protection of trees on development sites (“AS4970”), encroachments of less than 10% of the Tree Protection Zone (TPZ) are considered to be minor. No specifications are provided in AS4970 for potential impacts of 10% or greater. This 10% is taken as the threshold figure, beyond which arboricultural investigations (as set out in clause 3.3.4) need to be considered.

Without a detailed Survey Plan estimates have been provided via the aerial mapping to determine likely disturbance within the Structural Root Zone (SRZ), and into the TPZs of protected trees to be retained, these are summarised in Table 3, below/next page.

**Table 3** – Encroachments into the SRZ and TPZ of trees proposed for retention. Pruning is estimated as Light pruning – less than 10% total live canopy (TLC), Moderate pruning – 10%-20% total live canopy, Heavy pruning 20% + total live canopy. All pruning shall be subject to instruction by a minimally qualified AQF Level 3 Arborist and conform to Australian Standards AS4373-2007 – Pruning of Amenity Trees. Works shall be carried out by minimally AQF Level 2 Arborist.

Tree No.	Tree Common name	SRZ affected	TPZ encroachment	Extent of required pruning
T1	Swamp She-oak	✗	✗	Unlikely required
T2	Swamp She-oak	✗	✗	Unlikely required
T3	Swamp She-oak	✗	✗	Unlikely required
T4	Sweet Pittosporum	✗	✗	Possible -Light
T5	Swamp She-oak	✗	✗	Heavy
T10	Bangalay	✗	✗	Light
T12	Forest oak	✗	✗	Heavy
T21	<i>Melaleuca</i> sp.	✗	✗	Possible -Light
T22	Swamp She-oak	✗	✗	Unlikely required
T23	Swamp She-oak	✗	✗	Possible -Light
T45	Gum	✗	✗	Moderate -Heavy
T49	Swamp She-oak	✗	✗	Unlikely required
T51	Magenta Lilly Pilly	✗	✗	Unlikely required
T52	Swamp She-oak	✗	✗	Unlikely required
T54	Swamp She-oak	✗	✗	Unlikely required
*T64	Tallowwood	✓	✓	Likely -Heavy
T72	Magenta Lilly Pilly	✗	✗	Possible -Moderate
T74	White Feather Honey Myrtle	✗	✗	Possible- Light
T75	Bangalay	✗	✗	Unlikely required
*T76	Port Jackson Fig	✗	✓	Likely -Heavy
T78	Lemon Scented Tea Tree	✗	✗	Unlikely required
T93	Canary Island Date Palm	✗	✗	Unlikely required
T95	Swamp Mahogany	✗	✗	Possible -Moderate
T95A	Silky Oak	✗	✗	Possible- Light
T95B	Canary Island Date Palm	✗	✗	Possible- Light
*T96	Tallowwood	✗	✗	Possible -Moderate
T97	Canary Island Date Palm	✗	✗	Unlikely required
T98	Canary Island Date Palm	✗	✗	Unlikely required
G118	Swamp She-oak	✗	✗	Unlikely required
T119	Swamp She-oak	✗	✗	Unlikely required

T120	Swamp She-oak	✘	✘	Unlikely required
T121	Swamp She-oak	✘	✘	Unlikely required
T122	Swamp She-oak	✘	✘	Unlikely required
G129	Cabbage Tree Palm	✘	✘	Possible- Light
T158	Sydney Green Wattle	✘	✓	Likely -Heavy
T168	Port Jackson Fig	✘	✘	Likely -Heavy
T185	Sydney Green Wattle	✘	✘	Unlikely required
T187	Gum	✘	✘	Unlikely required
T188	Stringybark Gum	✘	✘	Unlikely required
T190	Gum	✘	✘	Unlikely required
T206	Sydney Green Wattle	✘	✘	Possible -Moderate
T206A	Sydney Green Wattle	✘	✘	Possible -Moderate

\* See notes below regarding.

### **All tree pruning – Implications of moderate heavy pruning**

Pruning more than 15% -20% of the total tree canopy will significantly alter the tree branch architecture and has the potential to reduce tree vigour. Large branch removal can lead to decay being introduced into the tree, leading to cavities and compromised tree or branch stability.

Once the work site is established and it is clear how much pruning is required a minimum AQF Level 5 Arboriculturist should assess the pruning requirements, tree species and tolerance to pruning and decide whether tree retention is viable. It is possible further removals will be required for trees assessed as requiring moderate to heavy pruning to ensure long term safety to surrounding property and pedestrians.

### **Tree 64 - *Eucalyptus microcorys* (Tallowwood)**

The pruning required on this high RV specimen is likely to be crown raising and whilst not ideal the tree should tolerate it fairly well with minimal long term effects.

The Technical shelter is located just within the Structural Root Zone (SRZ). The Tree Protection Zone (TPZ) estimated encroachment is 21%, placing it (although works within SRZ automatically place it a *major* encroachment) into '*Major*' encroachment under Australian Standard 4970-2009 Protection of trees on development sites ("AS4970"). However, the real encroachment is likely to be more given the sound wall located to the south, south-west of the tree stem, this will be limiting root expansion.

Root mapping prior to works is recommended given the limiting factor of the Sound Wall behind this area. Large diameter roots may be found, assessment of the size and quantity of these roots by an AQF 5 Arboriculturist is required to understand if tree stability is likely to be compromised.

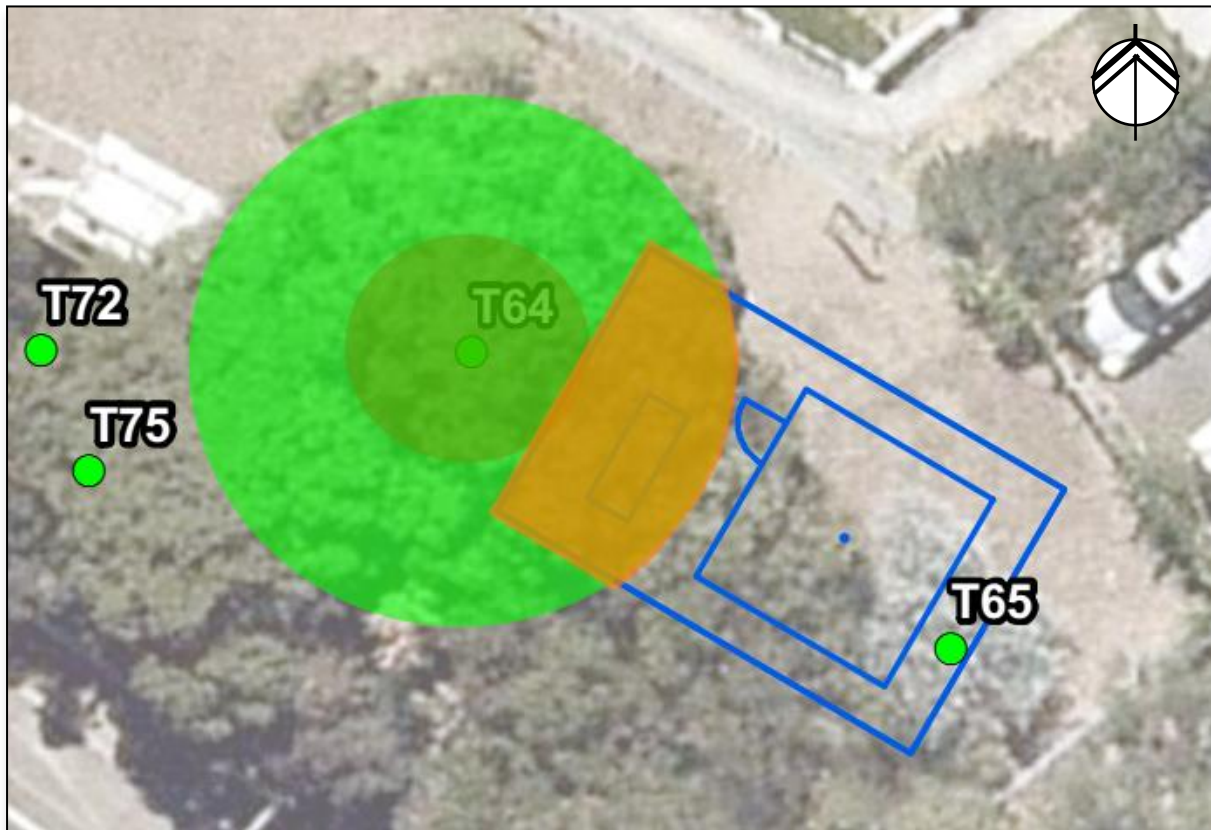


Figure 1 - Mark up of Marsh St Plan by C Hughes 31/5/18. Bright green circle indicates TPZ, SRZ can be seen centred under. Orange section indicates encroachment by Technical Shelter.

### **Tree 76 – *Ficus rubiginosa* (Port Jackson Fig)**

This locally native and significant specimen will be subject to significant pruning to allow access for Pile Rig and Crane. At minimum a 360mm diameter low branch growing to the south will require removal with several more smaller branches also affected.

This will leave a large wound on this tree with the long-term potential of decay moving into the tree branches/stem.

The required upgrade of the existing sewer will result in a 23% Tree Protection Zone (TPZ) encroachment (see Figure 3 below). Under Australian Standard 4970-2009 Protection of trees on development sites (“AS4970”) this is classed as *major* encroachment. However, given the existing sewer location (see Figure 2 below) and bitumen pathway, roots have been moderately restricted within this area already. There is ample unimpeded areas to the north and east for root growth.

With direct arborist input during trenching works, careful management and no further encroachments into the TPZ I believe this tree will only be moderately affected by the works. Short term loss in vigour may occur but this species is very resilient and will utilise all other resources around it to survive and thrive.



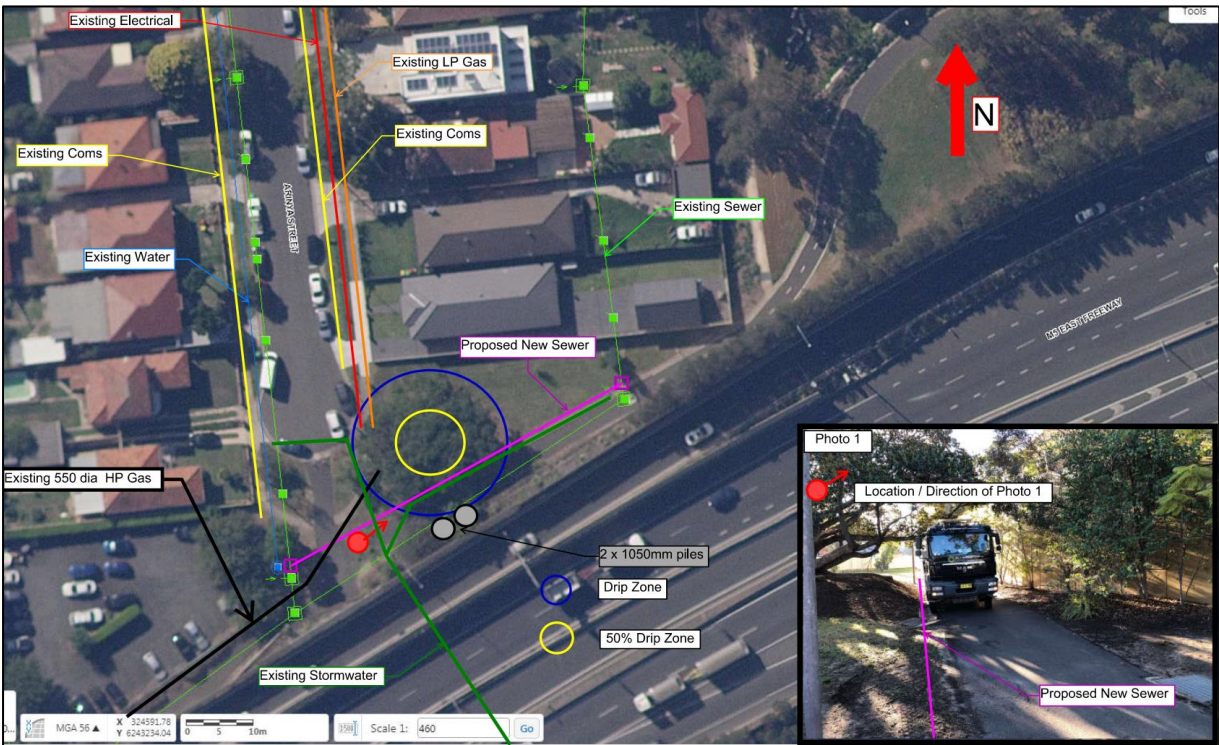


Figure 2 – Marked up aerial and photograph insert provided by Project Engineer CDS-JV 25/6/2018.

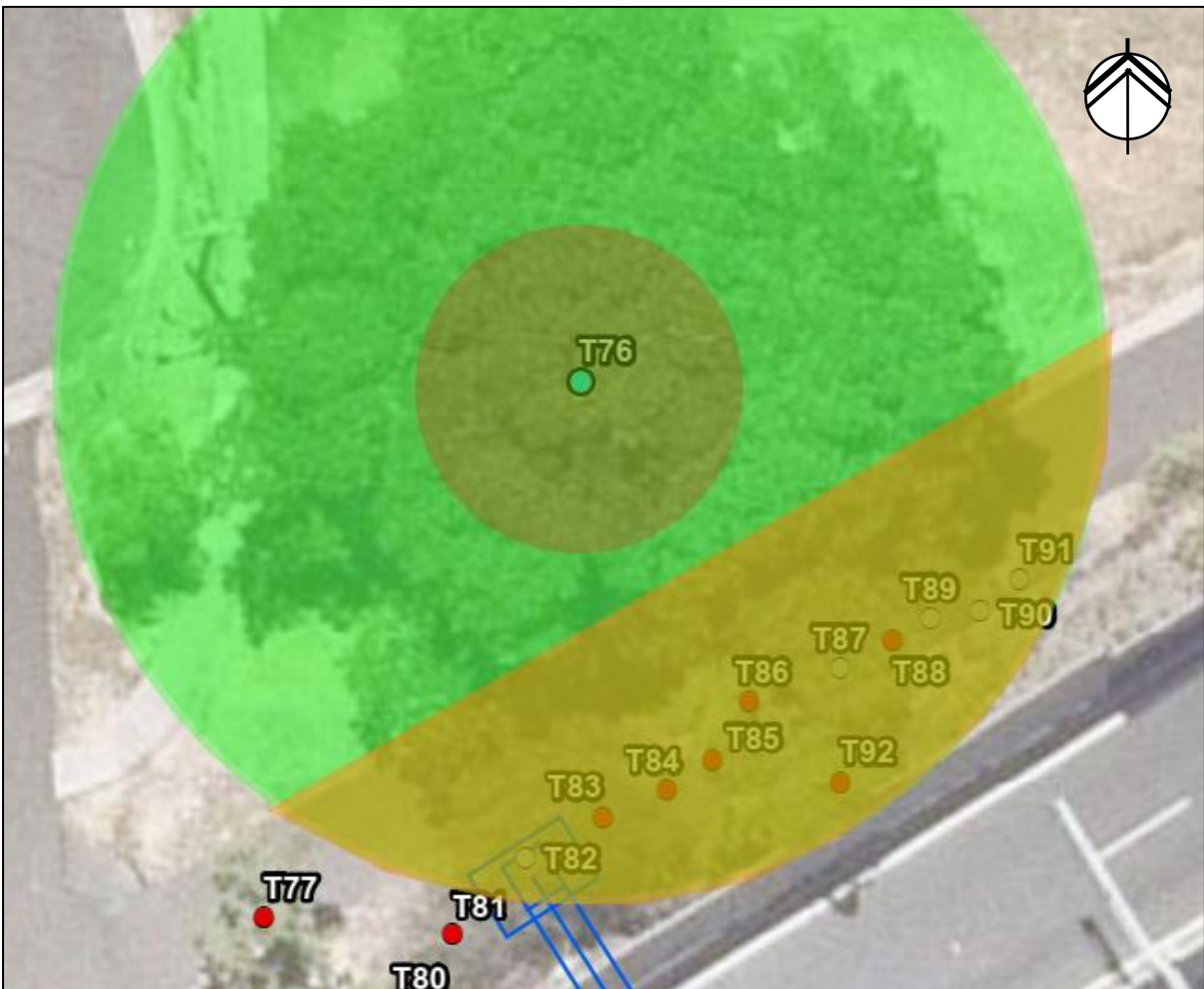


Figure 3 - Mark up of Marsh St Plan by C Hughes 28/6/18. Bright green circle indicates TPZ, SRZ can be seen centred under. Orange section indicates encroachment by Sewer upgrade.

### **Tree 96 - Eucalyptus microcorys (Tallowwood)**

This significant introduced, native specimen will require pruning. It is unclear the extent of pruning at this stage however this pruning should not be needed to an extent that it will damage branch architecture.

### **Group 193 – Ficus sp. (Fig), Acacia sp. (Wattle), Fraxinus sp. (Ash) & Morus sp. (Mulberry)**

Some of this group are located within the Conduit trench. The larger, more significant *Ficus sp.* are located closer to the existing sound wall and unlikely to be affected. While the design team have advised it is possible to design the conduit along the footpath, the construction team have advised this is not a preferred design for construction as it will require closure of the footpath (with a significant pedestrian and cyclist detour) for two weeks or more.

## **3 Recommendations**

### **3.1 Tree Removal**

One hundred and fifty five (155) tree/tree groups required to be removed to accommodate the proposed works. Replanting will be undertaken in accordance with the condition B63 of the Compliance Table.

### **3.2 Minimising Impacts on Trees to be Retained**

All trees within the work zone, not directly affected, are required to have tree protection placed as per Tree Protection Measures Part 4.1 below, prior to and during works.

#### **All trees requiring pruning**

- Any pruning required in excess of 10% of the total live canopy shall be as directly discussed prior to works on site with a minimally AQF Level 5 Arboriculturist. Should pruning in excess of 20% of the total live canopy be required, determination by an Arboriculturist with a minimum AQF5 in arboriculture is required.
- All pruning is to be to Australian Standard 4373-2007 *Pruning of Amenity Trees* and carried out (or overseen/directed) by a minimally qualified AQF Level 3 Arborist.

### **Tree 64- Eucalyptus microcorys (Tallowwood)**

- Root mapping by an experienced and appropriately qualified Arborist is to be carried out prior to works commencing to determine level of root encroachment. If roots are to be left exposed for more than a few hours, all effort to ensure roots do not dry out is to be taken.
- Any ground-level change within 3m of the tree is to be directly supervised by an Arboriculturist with a minimum AQF5 in arboriculture.
- Any pruning in excess of 10% of the total live canopy shall be directly discussed prior to works on site with a minimally AQF Level 5 Arboriculturist.
- Crown-lift pruning to Australian Standard 4373-2007 *Pruning of Amenity Trees* will be required to be carried out or overseen by a minimally qualified AQF Level 3 Arborist prior to works commencing.
- Tree protection is to be placed as per Tree Protection Measures Part 4.1 below, prior to and during works.

### **Tree 76 - *Ficus rubiginosa* (Port Jackson Fig)**

- Any ground-level change within 4.5m of the tree is to be directly supervised by an Arboriculturist with a minimum AQF5 in arboriculture (the project Arborist). Trenching works for the sewer shall occur under the direct supervision of the project Arborist (min AQF Level 5 in Arboriculture).
- Any pruning in excess of 10% of the total live canopy shall be directly discussed prior to works on site with a minimally AQF Level 5 Arboriculturist.
- Crown-lift pruning to Australian Standard 4373-2007 *Pruning of Amenity Trees* will be required to be carried out or overseen by a minimally qualified AQF Level 3 Arborist prior to works commencing.
- Tree protection is to be placed as per Tree Protection Measures Part 4.1 below, prior to and during works.

### **Tree 96 - *Eucalyptus microcorys* (Tallowwood)**

- Any ground-level change within 4m of the tree is to be directly supervised by an Arboriculturist with a minimum AQF5 in arboriculture.
- Any pruning in excess of 10% of the total live canopy shall be directly discussed prior to works on site with a minimally AQF Level 5 Arboriculturist.
- Crown-lift pruning to Australian Standard 4373-2007 *Pruning of Amenity Trees* will be required to be carried out or overseen by a minimally qualified AQF Level 3 Arborist prior to works commencing.
- Tree protection is to be placed as per Tree Protection Measures Part 4.1 below, prior to and during works.

### **Group 193 - *Ficus* sp. (Fig), *Acacia* sp. (Wattle), *Fraxinus* sp. (Ash) & *Morus* sp. (Mulberry)**

- Any ground-level change within 2.5m of a tree is to be directly supervised by an Arboriculturist with a minimum AQF5 in arboriculture.
- Any pruning in excess of 10% of the total live canopy shall be directly discussed prior to works on site with a minimally AQF Level 5 Arboriculturist.
- Crown-lift pruning to Australian Standard 4373-2007 *Pruning of Amenity Trees* will be required to be carried out or overseen by a minimally qualified AQF Level 3 Arborist prior to works commencing.
- Tree protection is to be placed as per Tree Protection Measures Part 4.1 below, prior to and during works.

## **4 Tree Protection Measures**

### **4.1 Tree Protection Devices**

The tree protection is to be in accordance with the following:

- Tree Protection Devices (TPD) may include mulching, tree guards and other devices other than fencing.
- The TPD must be in place prior to any site works commencing, including clearing, demolition or grading.

- The most appropriate fencing for tree protection is 1.8m chainlink with 50mm metal pole supports. During installation, care must be taken to avoid damage to significant roots. The practicality of providing this fencing on this site must be addressed by the Arboriculturist.
- Locate large primary roots by careful removal of soil within the fencing area. Do not drive any posts or pickets into tree roots. Replace soil back over tree roots.
- Nothing should occur inside the tree protection fenced areas, so therefore all access is prohibited for personnel and machinery, storage of fuel, chemicals, cement and site sheds.
- Signage should explain exclusion from the area defined by TPD and carry a contact name for access or advice.
- The TPD cannot be removed, altered, or relocated without the project arborist's prior assessment and approval.

#### 4.2 Stockpiling and Location of Site Sheds

- Any ground identified for proposed stockpiling that is within the TPZ of trees to be retained shall be covered with thick, coarse mulch, placement of wooden pallets over the mulch, covering of the pallets with a tarpaulin (or similar), and the placement of materials on top of this device to prevent loose or potentially contaminating materials from moving into the soil profile.

#### 4.3 Fill Material

- Placement of fill material within the TPZ of trees to be retained should be avoided where possible. Where placement of fill cannot be avoided, the material should be a coarse, gap graded material such as 20 — 50mm crushed basalt or equivalent to provide some aeration to the root zone. Note that road base or crushed sandstone or other material containing a high percentage of fines is unacceptable for this purpose.
- The fill material should be consolidated with a non-vibrating roller to minimise compaction of the underlying soil.
- A permeable geotextile may be used beneath the sub-base to prevent migration of the stone into the sub-grade. No fill material should be placed in direct contact with the trunk.

#### 4.4 Hygiene Practices

- No washing or rinsing of tools or other equipment, preparation of any mortars, cement mixing, or brick cutting is to occur within 8m up slope of any palms/trees to be retained.

## 5 References

Credit to Catriona Mackenzie of 'Urban Forestry Australia' for general report layout and several areas of text.

Mattheck, C. & Breloer, H. (1994) *The Body Language of Trees: A handbook for failure analysis. Research for Amenity Trees No. 4*, The Stationery Office, London.

Standards Australia AS4373-2007: *Pruning of Amenity Trees*, Standards Australia, Sydney.

Hadlington, P. & Johnston, J. (1988) *Australian Trees: Their Care & Repair*. University of NSW Press, Kensington.

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

Barrell, J (1995) *Pre-development Tree Assessment from Trees and Building Sites*, Eds. Watson & Neely, International Society of Arboriculture, Illinois.

Report prepared by [REDACTED] – May/June, 2018



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Member of the International Society of Arboriculture (ISA)  
ISA Tree Risk Assessment Qualification (TRAQ) 2016



## 6 Appendices

### 6.1 Appendix A - Terms and Definitions

**Aerial inspection:** where the subject tree is climbed by a professional tree worker/ arborist (typically AQF Level 3) specifically to inspect and assess the tree for signs of symptoms of defects, disease, etc.

#### Age classes

- Y** Young refers to an established but juvenile tree.
- SM** Semi-mature refers to a tree at growth stages between immaturity and full size.
- EM** Early-mature refers to a tree close to full sized still actively growing.
- 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 full sized tree with little capacity for growth that is entering or has entered decline.

**Co-dominant:** refers to stems or branches equal in size and relative importance.

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

**Deadwood:** refers to any whole limb that no longer contains living tissues (e.g. live leaves and/or bark). Some dead wood is common in a number of tree species.

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

**Epicormic growth:** adventitious branches that are considered to be a weak attachment in the short term due to minimal wood formation. There are generally formed following storm-related branch breakage or poor pruning practices. Should sufficient holding wood form in the long-term this growth is less of an issue.

**Hazard:** refers to anything with the potential to harm health, life or property.

**Health:** Refers to the tree's vigour as exhibited by the crown density, leaf colour, presence of epicormic shoots, ability to withstand disease invasion, and the degree of dieback.

**Inclusion stem/bark:** the pattern of development at branch or stem junctions where bark is turned inward rather than pushed out. This fault is located at the point where the stems/branches meet. This is normally a genetic fault and potentially a weak point of attachment as the bark obstructs healthy tissue from joining together to strengthen the joint.

**Scaffold branch/root:** a primary structural branch of the crown or primary structural root of the tree.

**Secondary Stem:** refers to stems or branches with one of unequal size and relative importance.

**SRZ:** refers to the Structural Root Zone of the tree, this is the area required for tree stability.

**TPZ:** refers to the Tree Protection Zone of the tree, this is the primary method of protecting trees, it is a combination of the root area and the canopy and the SRZ is located within it.

**Visual Tree Assessment (VTA):** a procedure of defect analysis developed by Mattheck and Breloer (1994) that uses the growth response and form of trees to detect defects.

## 6.2 Appendix B - ULE Guide

ULE categories (after Barrell 1996, Updated 01/04/01)

The five categories and their sub-groups are as follows:

1. Long ULE - tree appeared retainable at the time of assessment for over 40 years with an acceptable degree of risk, assuming reasonable maintenance:
  - a) Structurally sound trees located in positions that can accommodate future growth
  - b) Trees which could be made suitable for long term retention by remedial care
  - c) Trees of special significance which would warrant extraordinary efforts to secure their long term retention
2. Medium ULE - tree appeared to be retainable at the time of assessment for 15 to 40 years with an acceptable degree of risk, assuming reasonable maintenance:
  - a) Trees which may only live from 15 to 40 years
  - b) Trees which may live for more than 40 years but would be removed for safety or nuisance reasons
  - c) Trees which may live for more than 15 years but would be removed to prevent interference with more suitable individuals or to provide space for new planting
  - d) Trees which could be made suitable for retention in the medium term by remedial care
3. Short ULE - tree appeared to be retainable at the time of assessment for 5 to 15 years with an acceptable degree of risk, assuming reasonable maintenance:
  - a) Trees which may only live from 5 to 15 years
  - b) Trees which may live for more than 15 years but would be removed for safety or nuisance reasons
  - c) Trees which may live for more than 15 years but would be removed to prevent interference with more suitable individuals or to provide space for new planting
  - d) Trees which require substantial remediation and are only suitable for retention in the short term.
4. Removal - trees which should be removed within the next 5 years:
  - a) Dead, dying, suppressed or declining trees because of disease or inhospitable conditions
  - b) dangerous trees through instability or recent loss of adjacent trees
  - c) Dangerous trees because of structural defects including cavities, decay, included bark, wounds or poor form
  - d) Damaged trees that are clearly not safe to retain
  - e) Trees which may live for more than 5 years but would be removed to prevent interference with more suitable individuals or to provide space for new planting
  - f) Trees which are damaging or may cause damage to existing structures within the next 5 years
  - g) Trees that will become dangerous after removal of other trees for the reasons given in (a) to (f)
  - h) Trees in categories (a) to (g) that have a high wildlife habitat value and, with appropriate treatment, could be retained subject to regular review
5. Small, young or regularly pruned - Trees that can be reliably moved or replaced:
  - a) small trees less than 5m in height
  - b) young trees less than 15 years old but over 5m in height
  - c) formal hedges and trees intended for regular pruning to artificially control growth

## 6.3 Appendix C - STARS - Significance of a Tree Assessment Rating System (IACA 2010)© (1 of 2)

The landscape significance of a tree is an essential criterion for establishing the importance that a particular tree may have on a site. However, rating the significance of a tree becomes subjective and difficult to ascertain in a consistent and repetitive fashion due to assessor bias. It is therefore necessary to have a rating system utilising structured qualitative criteria to assist in determining the retention value for a tree.

This rating system will assist in the planning processes for proposed works, above and below ground where trees are to be retained on or adjacent a development site. The system uses a scale of *High*, *Medium* and *Low* significance in the landscape. Once the landscape significance and *Useful Life Expectancy* of an individual tree has been defined, the retention value can be determined.

### **Tree Significance - Assessment Criteria**

#### **1. High Significance in landscape.**

- The tree is in good condition and good vigour;
- The tree has a form typical for the species;
- The tree is a remnant or is a planted locally indigenous specimen and/or is rare or uncommon in the local area or of botanical interest or of substantial age;
- The tree is listed as a Heritage Item, Threatened Species or part of an Endangered ecological community or listed on Councils significant Tree Register;
- The tree is visually prominent and visible from a considerable distance when viewed from most directions within the landscape due to its size and scale and makes a positive contribution to the local amenity;
- The tree supports social and cultural sentiments or spiritual associations, reflected by the broader population or community group or has commemorative values;
- The tree's growth is unrestricted by above and below ground influences, supporting its ability to reach dimensions typical for the taxa *in situ* - tree is appropriate to the site conditions.

#### **2. Medium Significance in landscape.**

- The tree is in fair-good condition and good or low vigour;
- The tree has form typical or atypical of the species;
- The tree is a planted locally indigenous or a common species with its taxa commonly planted in the local area;
- The tree is visible from surrounding properties, although not visually prominent as partially obstructed by other vegetation or buildings when viewed from the street;
- The tree provides a fair contribution to the visual character and amenity of the local area;
- The tree's growth is moderately restricted by above or below ground influences, reducing its ability to reach dimensions typical for the taxa *in situ*.

#### **3. Low Significance in landscape.**

- The tree is in fair-poor condition and good or low vigour;
- The tree has form atypical of the species;
- The tree is not visible or is partly visible from surrounding properties as obstructed by other vegetation or buildings;
- The tree provides a minor contribution or has a negative impact on the visual character and amenity of the local area;
- The tree is a young specimen which may or may not have reached dimension to be protected by local Tree Preservation orders or similar protection mechanisms and can easily be replaced with a suitable specimen;
- The tree's growth is severely restricted by above or below ground influences, unlikely to reach dimensions typical for the taxa *in situ* - tree is inappropriate to the site conditions;
- The tree is listed as exempt under the provisions of the local Council Tree Preservation Order or similar protection mechanisms;
- The tree has a wound or defect that has potential to become structurally unsound.

#### **Environmental Pest / Noxious Weed Species:**

- The tree is an Environmental Pest Species due to its invasiveness or poisonous/ allergenic properties;
- The tree is a declared noxious weed by legislation.

#### **Hazardous/Irreversible Decline:**

- The tree is structurally unsound and/or unstable and is considered potentially dangerous;
- The tree is dead, or is in irreversible decline, or has the potential to fail or collapse in full or part in the immediate to short term.

## Appendix C - STARS - Significance of a Tree Assessment Rating System (IACA 2010)© (2 of 2)

The tree is to have a minimum of three (3) criteria in a category to be classified in that group.

Note: The assessment criteria are designed for individual trees only but can be applied to a monocultural stand in its entirety e.g. hedge.

In the development of this document IACA acknowledges the contribution and original concept of the Footprint Green Tree Significance & Retention Value Matrix, developed by Footprint Green Pty Ltd and Andrew Morton in June 2001.

		Significance				
		1. High	2. Medium	3. Low		
		Significance in Landscape	Significance in Landscape	Significance in Landscape	Environmental Pest / Noxious Weed Species	Hazardous / Irreversible Decline
Estimated Life Expectancy	1. Long >40 years					
	2. Medium 15-40 Years					
	3. Short <1-15 Years					
	Dead					
Legend for Matrix Assessment						
		<b>Priority for Retention (High)</b> -These trees are considered important for retention and should be retained and protected. Design modification or re-location of building/s should be considered to accommodate the setbacks as prescribed by the Australian Standard AS4970 <i>Protection of trees on development sites</i> . Tree sensitive construction measures must be implemented e.g. pier and beam etc if works are to proceed within the Tree Protection Zone.				
		<b>Consider for Retention (Medium)</b> -These trees may be retained and protected. These are considered less critical; however their retention should remain priority with removal considered only if adversely affecting the proposed building/works and all other alternatives have been considered and exhausted.				
		<b>Consider for Removal (Low)</b> -These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.				
		<b>Priority for Removal</b> -These trees are considered hazardous, or in irreversible decline, or weeds and should be removed irrespective of development.				

Table 1 - Tree Retention Value - Priority Matrix.

IACA, 2010, *IACA Significance of a Tree, Assessment Rating System (STARS)*, Institute of Australian Consulting Arboriculturists, Australia, [www.iaca.org.au](http://www.iaca.org.au)

#### 6.4 Appendix D - Record of Meetings and Design Input

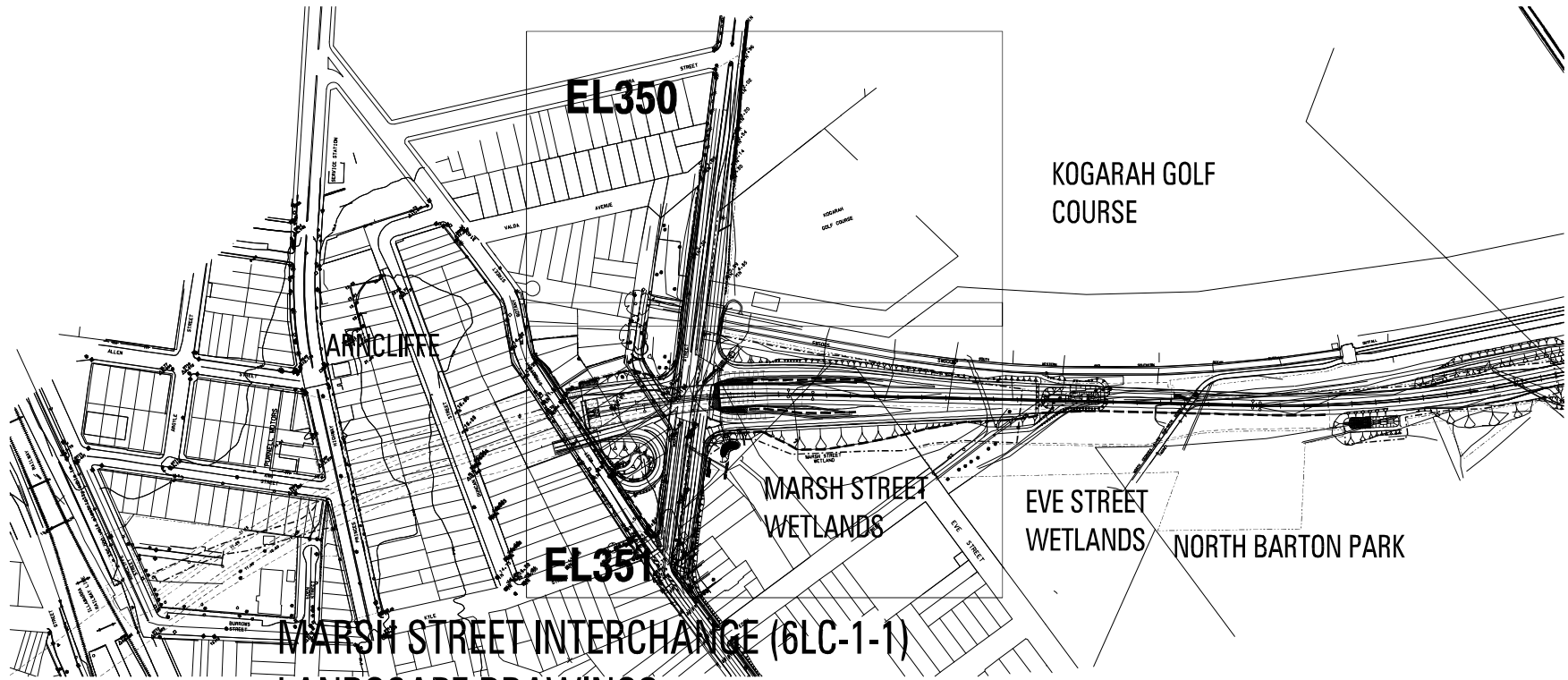
██████████ (Project Engineer) attended the site inspections with the author in areas of night time only access (areas too close to the M5 to be inspected outside of M5 shut down – 17/4/2018) and on 25/5/2018.

██████████ (Engineer) attended the site inspection on 26/5/2018 with construction input.

Input from ██████████ (Design Engineer) is provided below. No input from the Landscape Architect has been included as the tolling gantry design and location is not subject to any urban design or landscaping requirements.

## 6.5 Appendix E – M5 East Planting Schedule, Marsh Street

# M5 EAST MOTORWAY



## MARSH STREET INTERCHANGE (6LC-1-1) LANDSCAPE DRAWINGS ISSUE FOR CONSTRUCTION SUBMISSION

EL 001	COVER SHEET	0
EL 002	NOTES & LEGENDS	0
EL 350	MAINLINE EAST MARSH ST INTERCHANGE Sheet 1 of 2 - LANDSCAPE WORKS	1
EL 351	MAINLINE EAST MARSH ST INTERCHANGE Sheet 2 of 2 - LANDSCAPE WORKS	1
EL 450	MAINLINE EAST MARSH ST INTERCHANGE Sheet 1 of 2 - LANDSCAPE DETAILS	1
EL 451	MAINLINE EAST MARSH ST INTERCHANGE Sheet 2 of 2 - LANDSCAPE DETAILS	0

## SPECIFICATIONS

DCM R80	VEGETATION	ED 1 / REV 0
DCM R81	TREE PLANTING & TURFING	ED 1 / REV 0

Consultant

LANDSCAPE ARCHITECTS & ENVIRONMENTAL PLANNERS  
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 DEM DESIGN Pty Limited  
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Joint Venture



BHBH M5 East Joint Venture  
 BAULDERSTONE HORNIBROOK | BILFINGER+BERGER  
 BAUKUNGENGESELLSCHAFT

**AS BUILT**

A1	Stage	Drawing No.	Rev
	A	E L 001	X
	Area	Discipline	Number

# M5 EAST MOTORWAY

THESE LEGENDS ARE TO BE READ  
IN CONJUNCTION WITH THE PLANS

## TREE PLANTING LEGEND

	TRAsm05-09	Acmena smithii
	TRBin05-09	Banksia integrifolia
	TRCan05-09	Cupaniopsis anaroides
	TREre05-09	Eleocharis reticulata
	TRCfe05-09	Glochidion ferdinandi
	TRMqu05-09	Melaleuca quinquinervia
	TRSpa05-09	Syzygium paniculatum
	TREbo05-09	Eucalyptus botryoides

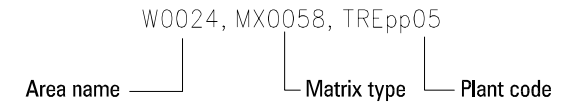
## LEGEND

### MATRIX PLANTING

	MX0050 MARSH STREET RAMPS
	MX0051 TIDAL CHANNEL
	MX0052 SALT MARSH AREAS
	MX0053 WATER QUALITY CONTROL PONDS
	MX0054
	MX0055 FROG HABITAT/ FROG CROSSING
	MX0056 SWOOS/ WETLAND EDGE
	MX0057 WETLAND EDGE

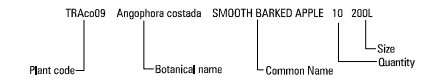
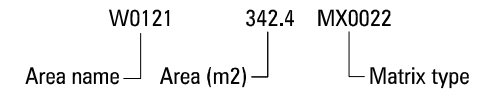
## GUIDE TO PLANTING LABELS & AREA SCHEDULE

### PLANT LABELS (on drawing)



Drawings are to be read in conjunction with **Plant Schedule & Schedule of Areas** (separate document)  
Refer to **Schedule of Areas** for the quantity, size & species of plants within each area  
**Area Names** denote location ie: W is West, C is Central & E is East

### SCHEDULE OF AREAS (separate document)



### PLANT CODE KEY

eg: TR Spa 09

Plant Type — Species — Size

PLANT TYPE:	SIZE CODE:		
TR Tree	01 Virocell	07	25L
SH Shrub	02 Virotube	08	35L
GC Groundcover	03 Grotube	09	75L
GR Grasses	04 2.5L	10	100L
NG Native Grasses	05 5L	11	200L
AC Accent	06 15L	12	400L
WP Water Plant		13	Specimen

### NOTE

ALL MATRIX TYPES DO NOT HAVE DETAILED LAYOUTS  
IE SINGLE SPECIES, TURF. THE CONTRACTOR IS  
TO SETOUT THE PLANTS EVENLY AT THE REQUIRED  
SPACING (CALCULATED BY DIVIDING THE  
AREA DRAWN WITH THE QUANTITY OF PLANTS)

### PLANT SCHEDULE

This provides a total quantity for plants in the design lot.

Consultant

### LANDSCAPE ARCHITECTS & ENVIRONMENTAL PLANNERS

Landscape DEN DESIGN Pty Limited X.O.C. 085 466 844 115 Salora Bay Road Northbridge 2063 AUSTRALIA Phone: (02) 9658 1533 Fax: (02) 9658 2126 Email: demat@den.com.au

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Joint Venture

BHBB M5 East Joint Venture

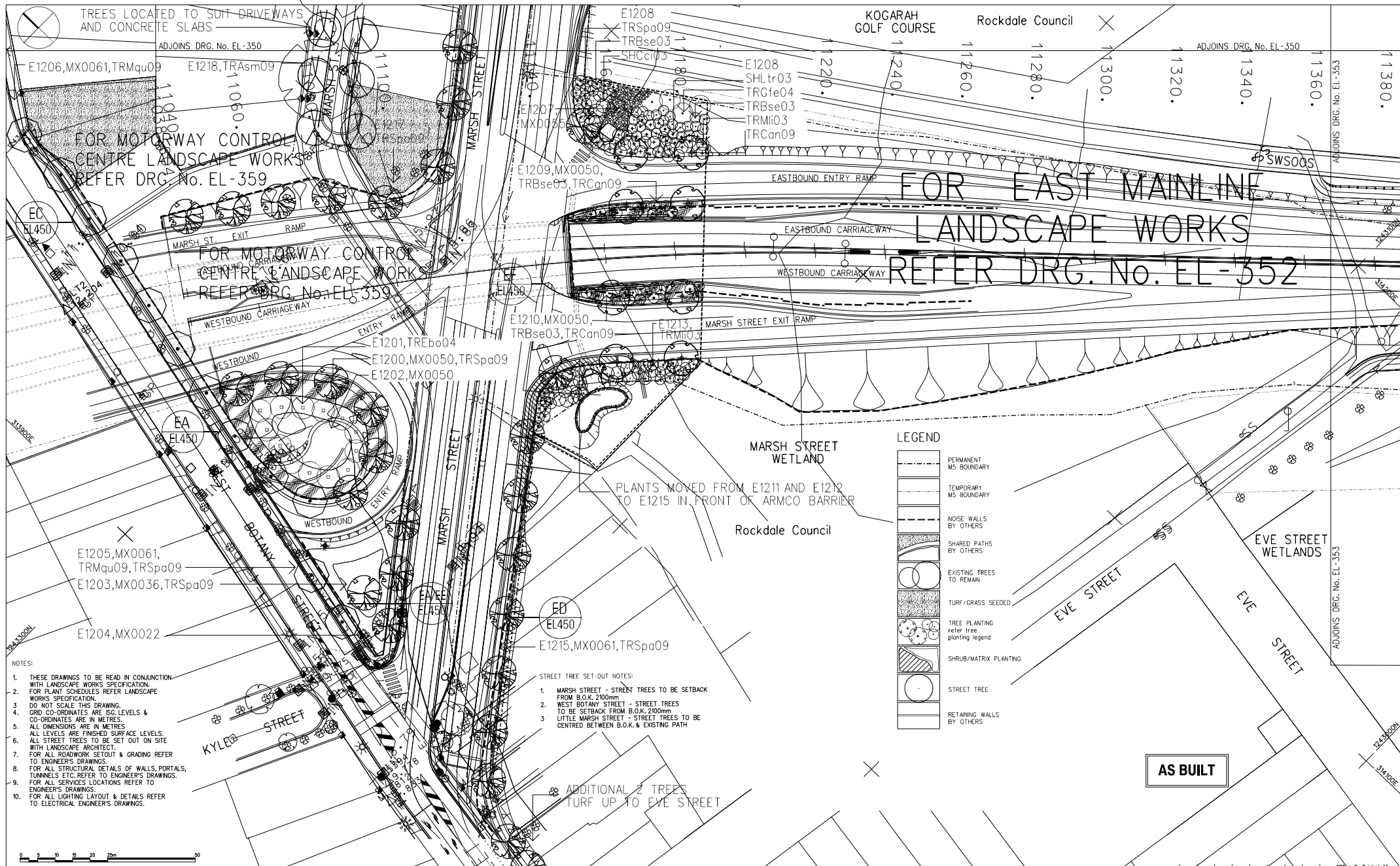
BAULDERSTONE  
HORNIBROOK BILFINGER + BERGER  
BAUKTIENGESSELLSCHAFT

AS BUILT

A1	Stage	Drawing No.	Rev
A	E	L 002	X
	Area	Discipline	Number







- NOTES:
1. THESE DRAWINGS TO BE READ IN CONJUNCTION WITH LANDSCAPE WORKS SPECIFICATION. FOR PLANT SCHEDULES REFER LANDSCAPE WORKS SPECIFICATION.
  2. DO NOT SCALE THIS DRAWING.
  3. GRID CO-ORDINATES ARE I.S.G. LEVELS & CO-ORDINATES ARE IN METRES.
  4. ALL DIMENSIONS ARE IN METRES.
  5. ALL LEVELS ARE FINISHED SURFACE LEVELS. ALL STREET TREES TO BE SET OUT ON SITE WITH LANDSCAPE ARCHITECT.
  6. FOR ALL ROADWORK SETOUT & GRADING REFER TO ENGINEER'S DRAWINGS.
  7. FOR ALL STRUCTURAL DETAILS OF WALLS, PORTALS, TUNNELS ETC. REFER TO ENGINEER'S DRAWINGS.
  8. FOR ALL SERVICES LOCATIONS REFER TO ENGINEER'S DRAWINGS.
  9. FOR ALL LIGHTING LAYOUT & DETAILS REFER TO ELECTRICAL ENGINEER'S DRAWINGS.

- STREET TREE SET-OUT NOTES:
1. MARSH STREET - STREET TREES TO BE SETBACK FROM B.O.K. 2100mm
  2. WEST ROTARY STREET - STREET TREES TO BE SETBACK FROM B.O.K. 2100mm
  3. LITTLE MARSH STREET - STREET TREES TO BE CENTRED BETWEEN B.O.K. & EXISTING PATH

ADDITIONAL 2 TREES TURF UP TO EVE STREET

Rev	Name	Designed	Drawn	Checked	Approved	Date	Description
X	JL	AM					'AS BUILT' - DESIGN LOT 6LC-1-1

ISSUED AS BUILT			
Name	Signature	Date	
Drafted	J. Long		
Approval	A. Massoud		

Prepared By  
**LANDSCAPE ARCHITECTS & ENVIRONMENTAL PLANNERS**  
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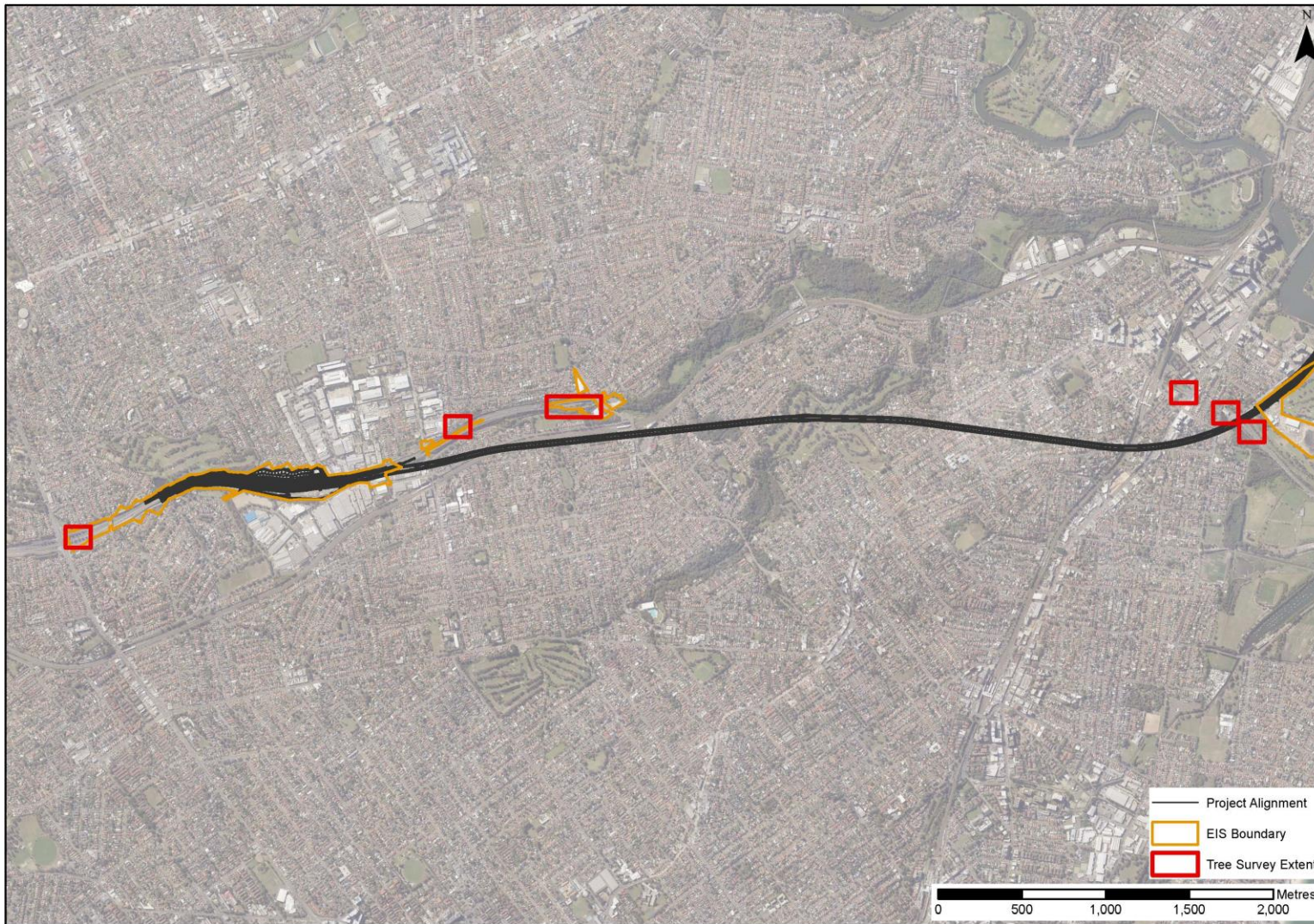
Client  
**Hyder Consulting**  
HYDER CONSULTING (AUSTRALIA) PTY LTD  
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**BHBB M5 East Joint Venture**  
BAULDERSTONE HORN BROOK | BILFINGER+BERGER BAUKUNGENGESELLSCHAFT

MARSH STREET INTERCHANGE (6LC-1-1)  
LANDSCAPE WORKS Sheet 2 of 2  
Scale 1:500  
Project Datum A.H.D  
Contract M5 EAST MOTORWAY  
Rev X

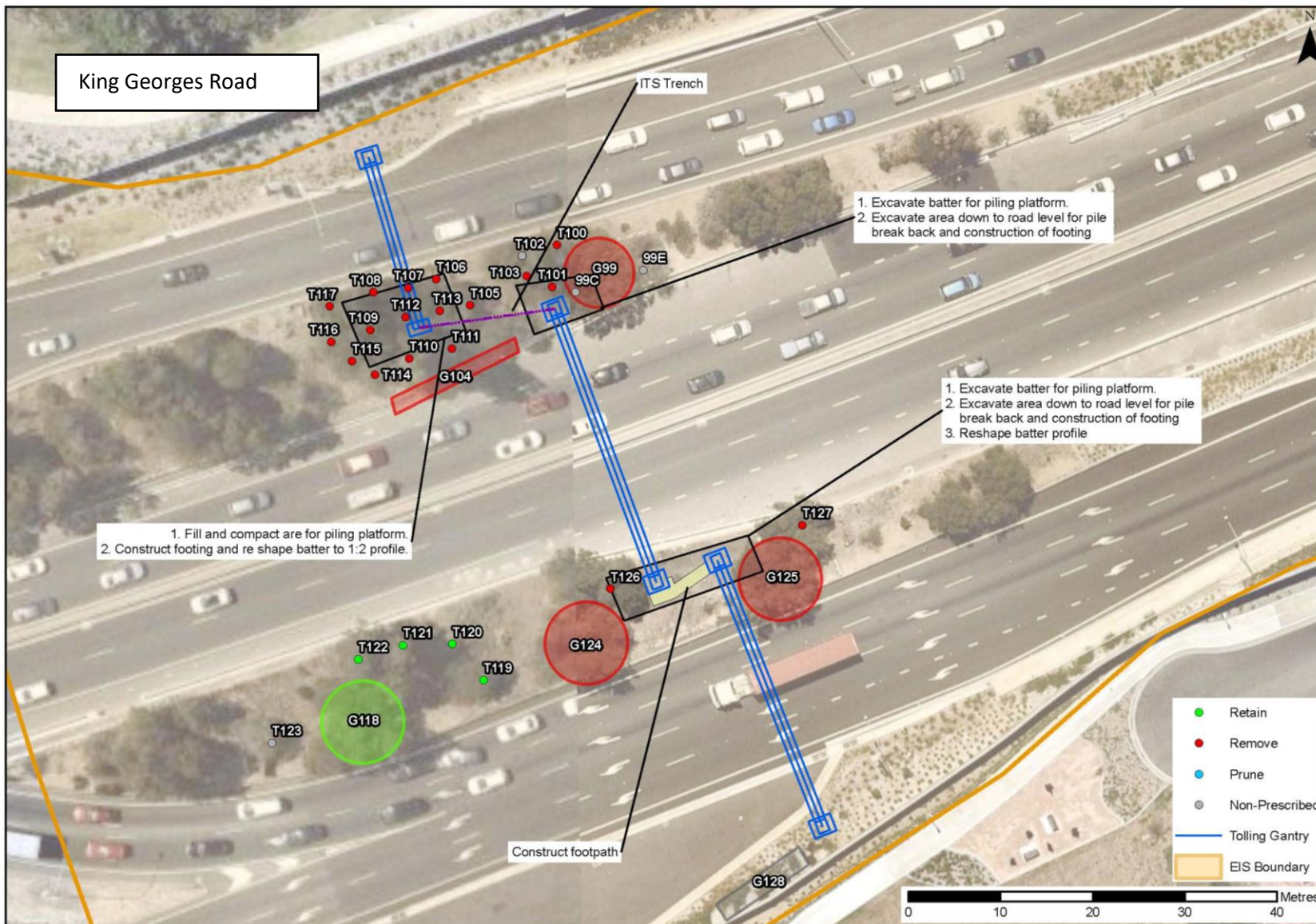


6.6 Appendix F - Site Overview Map



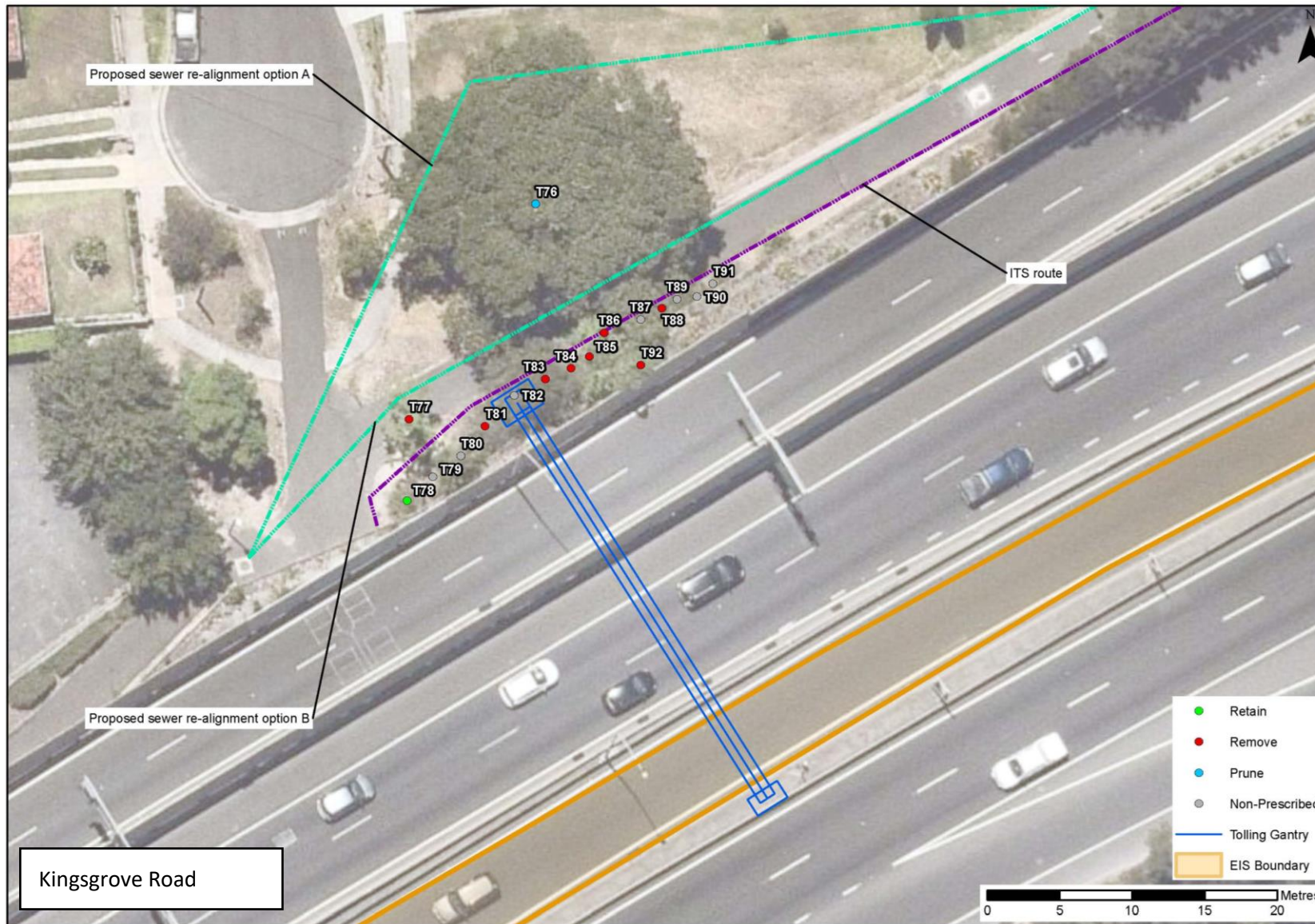
## 6.7 Appendix G - Tree Location Maps





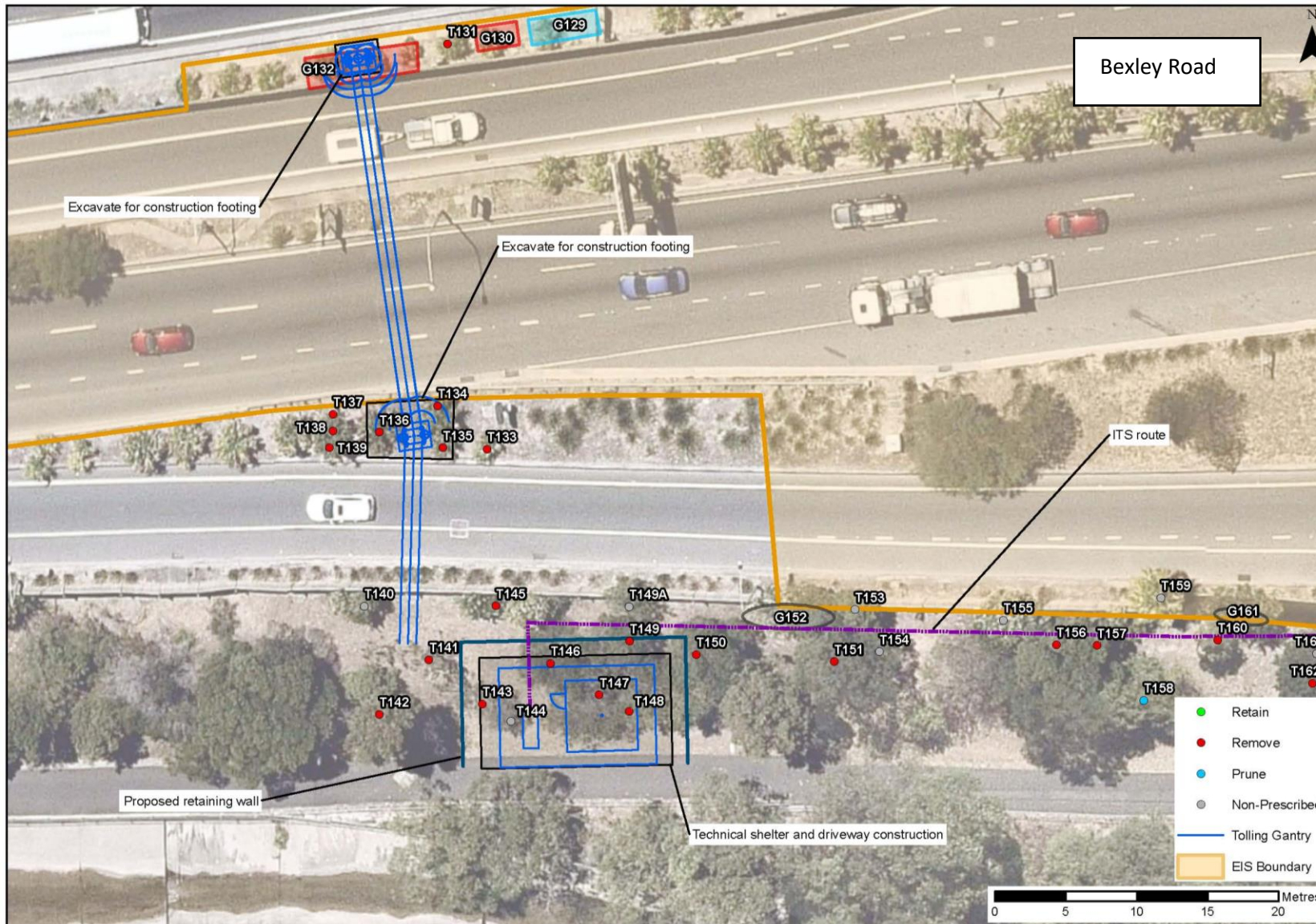
**Note:** Trees/tree groups identified for removal at King Georges Road interchange have been **approved** by DPE





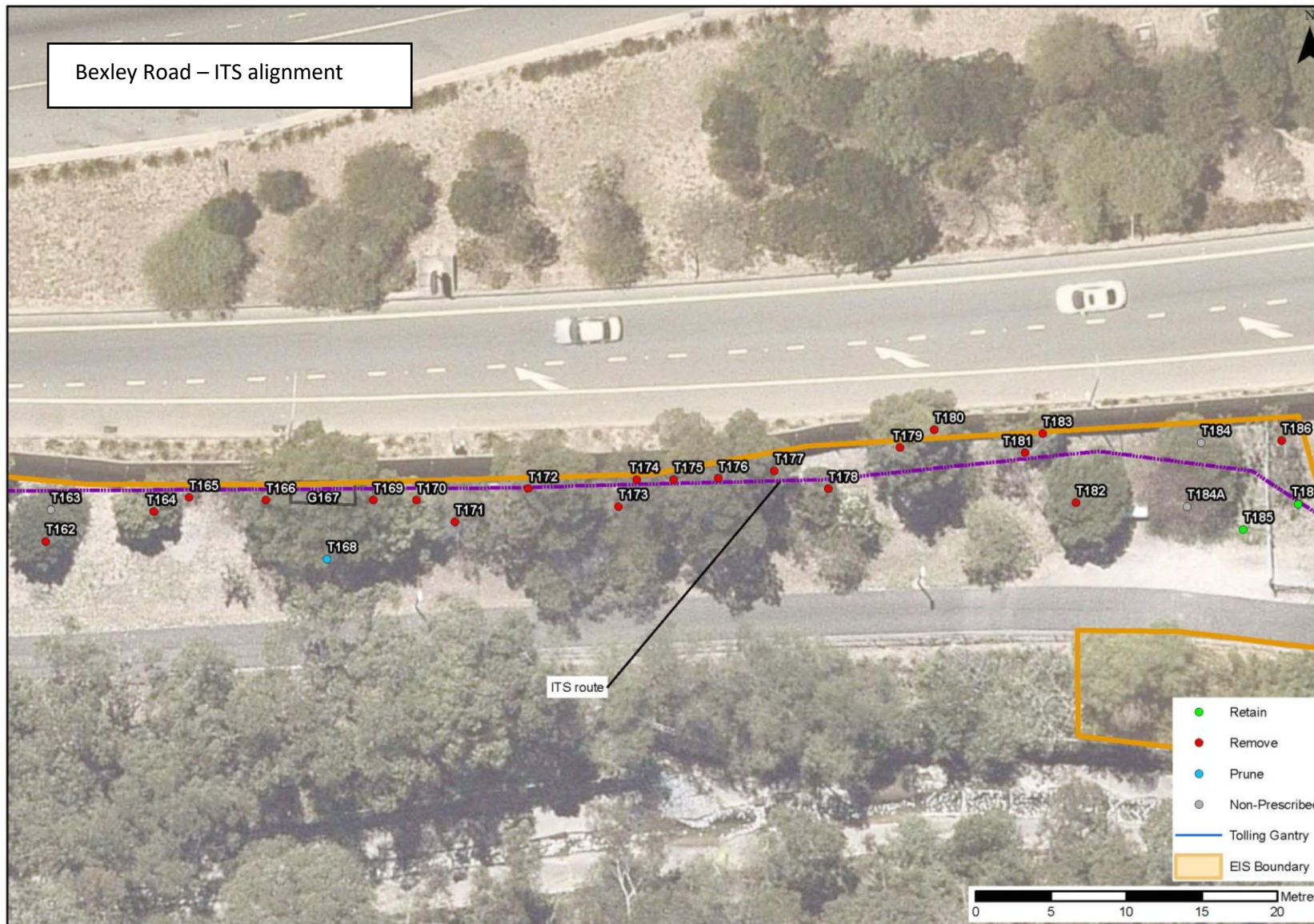
**Note:** Trees/tree groups identified for removal at Kingsgrove Road interchange have been **approved** by DPE





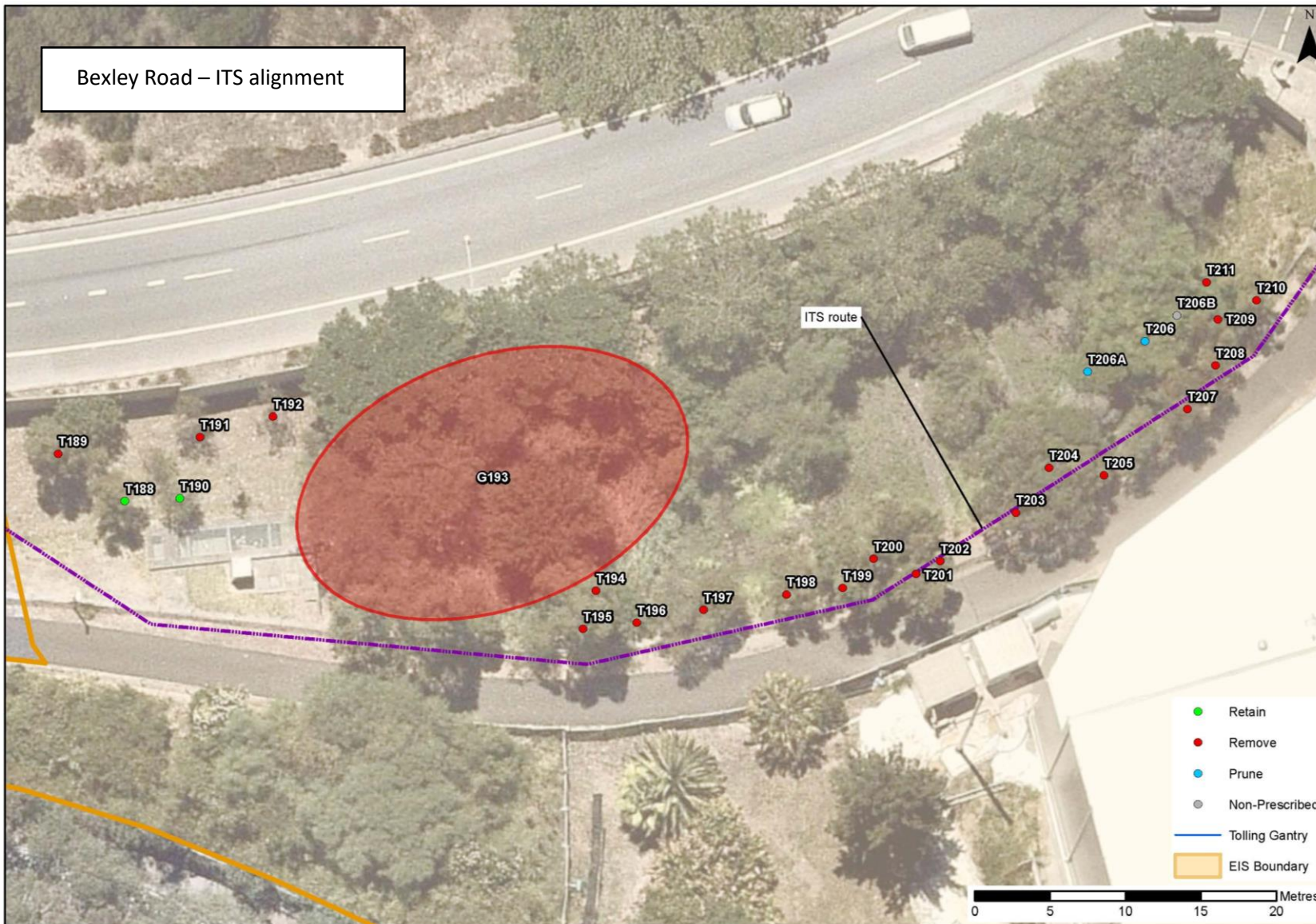
**Note:** Trees/tree groups identified for removal at Bexley Road interchange are currently **under assessment** by DPE





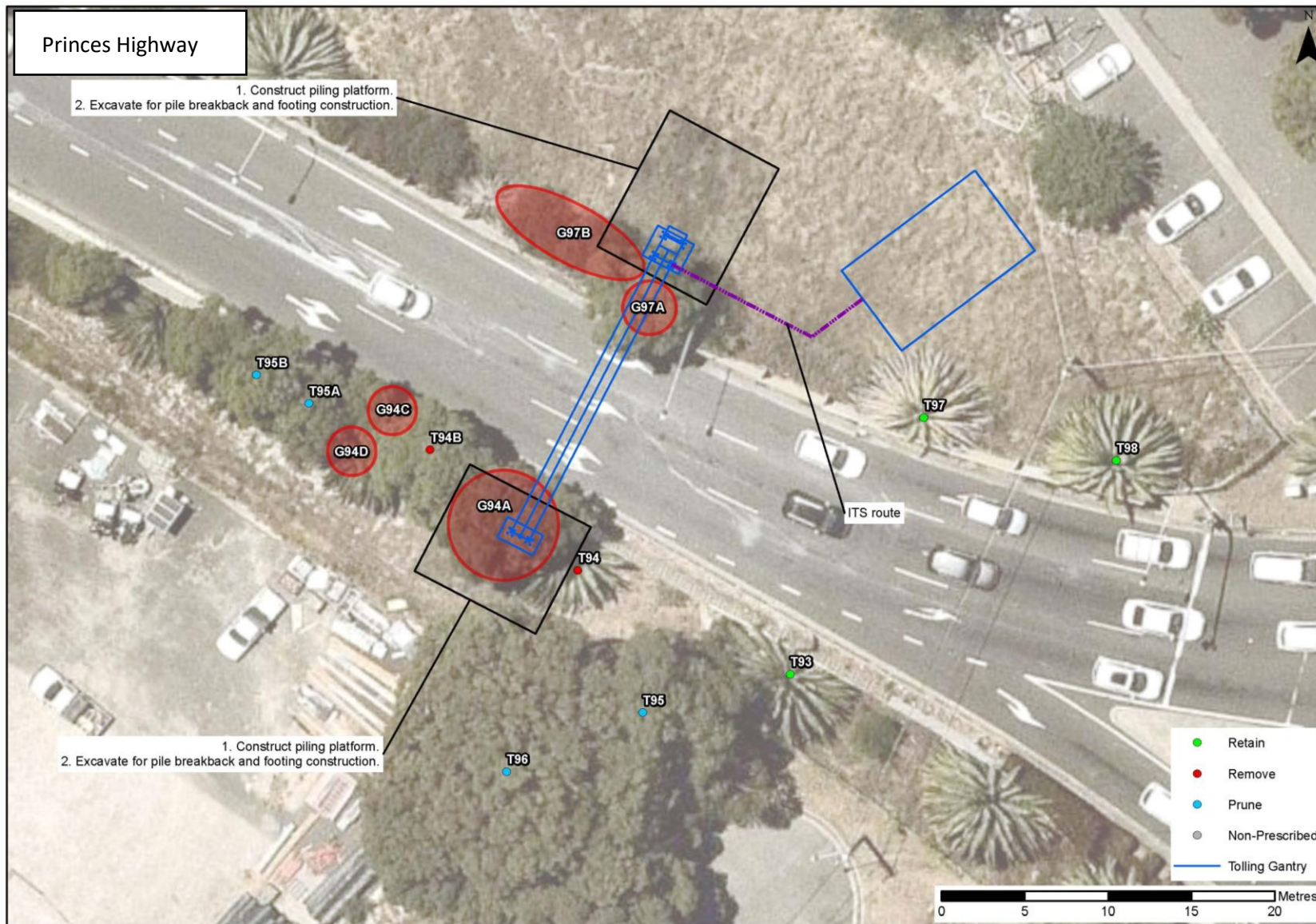
**Note:** Trees/tree groups identified for removal at Bexley Road interchange are currently **under assessment** by DPE





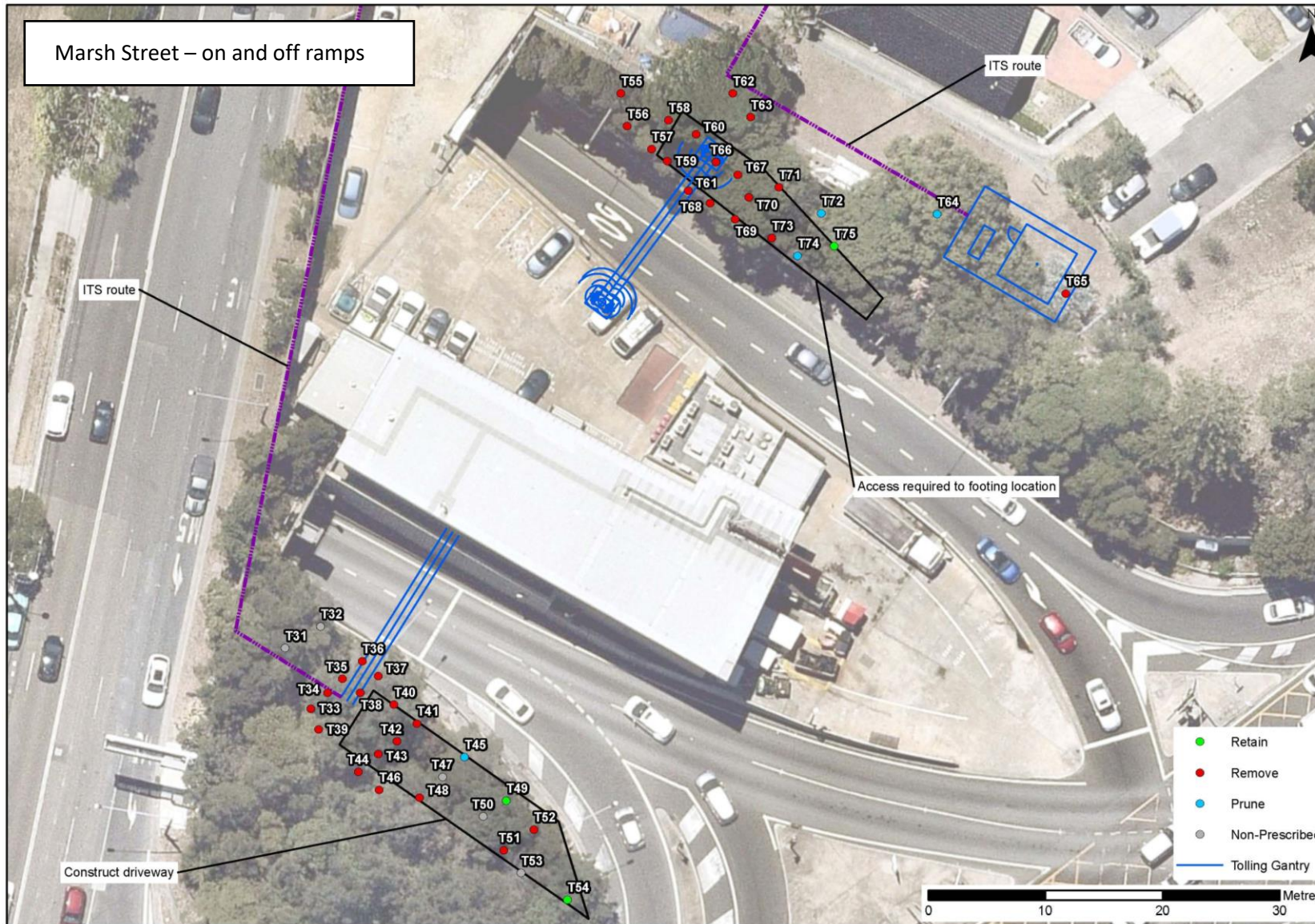
**Note:** Trees/tree groups identified for removal at Bexley Road interchange are currently **under assessment** by DPE





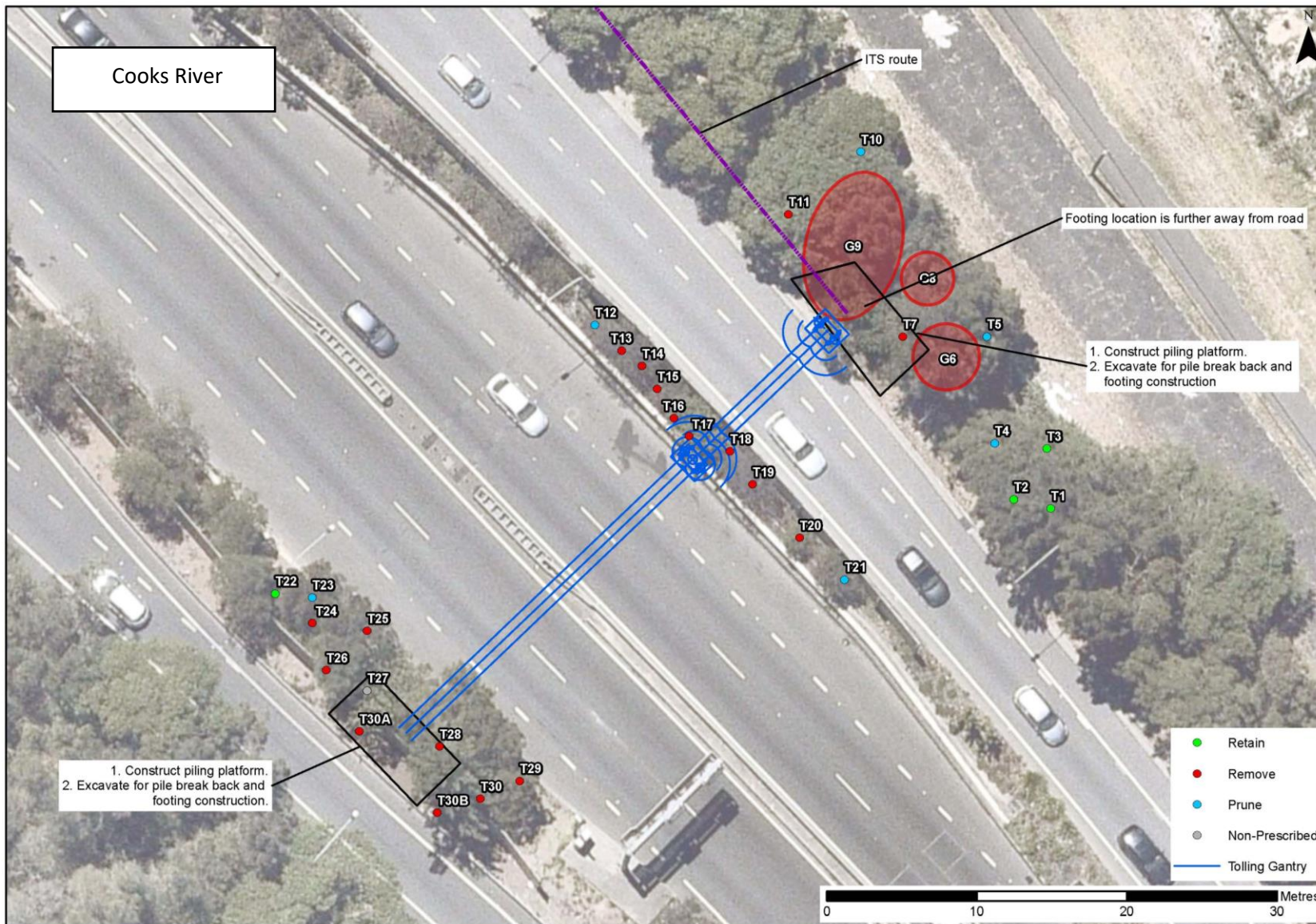
**Note:** Trees/tree groups identified for removal at Princes Highway interchange have been approved by DPE





**Note:** Trees/tree groups identified for removal at Marsh Street interchange have been approved by DPE





**Note:** Trees/tree groups identified for removal at Marsh Street interchange have been approved by DPE



6.8 Appendix H - Photographs



Plate 1 – Privet trees can be seen growing hard against existing sound wall.



Plate 2 – Tree 196, appears to be moving in ground. Red arrow notes ground cracking.







Plate 3 – Tree 202, cracking in stem, kino exudation noted with red arrow.  
condition (noted with red arrow).

Plate 4 – Tree 97, has been set fire too previously and is in poor



Plate 5 – Tree 76 noted with red arrow, is a significant tree and requires a large, low limb removed to accommodate access for equipment and excavation within the TPZ for sewer upgrade.

6.9 Appendix I - Schedule of Assessed Trees – M5 Site inspections 17, 26 April & 25 May 2018.

Tree No.	Genus & species Common Name	Ht (m)	Sp (m)	DBH (mm)	Age	V	C	Comments	ULE	TSR	RV	SRZ (m)	TPZ (m)	TPZ (area)
T1	<i>Casuarina glauca</i> Swamp She-oak	2.5	4	100 / 75	EM	F	P	Locally native species. 45° lean on north-eastern stem. Third stem has been removed.	5A	L	L	1.6	2	8
T2	<i>Casuarina glauca</i> Swamp She-oak	12	7	400	M	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	2.5	4.8	72
T3	<i>Casuarina glauca</i> Swamp She-oak	12	7	AB 550	M	G	G	Locally native species. Multiple stems @ .3m AGL.	2A	M	M	2.8	6.6	137
T4	<i>Pittosporum undulatum</i> Sweet Pittosporum	6	3	50	Y	G	G	Locally native species. No special problems noted at time of assessment.	3C	M	L	1.6	2	7
T5	<i>Casuarina glauca</i> Swamp She-oak	12	7	400	M	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	2.5	4.8	72
G6	<i>Casuarina glauca</i> Swamp She-oak	2-6	2	50-75	Y	G	G	Locally native species. No special problems noted at time of assessment. All most likely suckers off establish tree roots.	5B	M	L	1.6	2	7
T7	<i>Eucalyptus botryoides</i> Bangalay	5	7	225	EM	G	F	Locally native species. Canopy orientated to the south-west. Suppressed from surrounding trees.	5B	M	L	1.9	2.7	23
G8	<i>Casuarina glauca</i> Swamp She-oak - several	12	7	400	M	G	G	Group of locally native species. No special problems noted at time of assessment.	2A	M	M	2.5	4.8	72
G9	<i>Casuarina glauca</i> Swamp She-oak - several	2-6	2	25-200	Y	G	G	Group of locally native species. No special problems noted at time of assessment.	5B	M	L	1.8	2.4	18
T10	<i>Eucalyptus botryoides</i> Bangalay	6	6	AB 300	M	G	G?	Locally native species. Located outside RMS property boundary. Limited assessment.	2A	M	M	2.2	3.6	41
T11	<i>Eucalyptus botryoides</i> Bangalay	10	8	AB 375	M	G	G-F	Locally native species. Large Ø surface roots noted. Large wound on lower stem to the south-west.	2A	M	M	2.4	4.5	64



Tree No.	Genus & species Common Name	Ht (m)	Sp (m)	DBH (mm)	Age	V	C	Comments	ULE	TSR	RV	SRZ (m)	TPZ (m)	TPZ (area)
T12	<i>Allocasuarina torulosa</i> Forest Oak	7	5	125	M	G	G-F	Locally native species. Slightly thin canopy.	2A	M	M	1.6	2	8
T13	<i>Allocasuarina torulosa</i> Forest Oak	4	3	50	Y	G	G	Locally native species. Suppressed.	5A	L	L	1.6	2	7
T14	<i>Allocasuarina torulosa</i> Forest Oak	6.5	4	100	M	G	G-F	Locally native species. Slightly thin canopy.	2A	M	M	1.6	2	7
T15	<i>Melaleuca</i> sp.	2.5	4	25/50/ 50	M	G	G	Native species. No special problems noted at time of assessment.	5A	L	L	1.6	2	7
T16	<i>Eucalyptus</i> sp.	5	2	AB 100	Y	G	F-P	Locally native species. Sucker from stump only – 100% epicormic growth.	5B	L	L	1.6	2	7
T17	<i>Glochidion ferdinandi</i> Cheese Tree	5	4	AB 125	Y	G	G	Locally native species. Four (4) stems @ .1m AGL.	5B	M	L	1.6	2	8
T18	<i>Allocasuarina torulosa</i> Forest Oak	6	4	150	EM	F-P	F	Locally native species.	2A	L	M	1.6	2	10
T19	<i>Allocasuarina torulosa</i> Forest Oak	6	4	75 / 100	EM	F	F	Locally native species.	2A	M	M	1.6	2	8
T20	<i>Eucalyptus</i> sp. Gum	2.5	2	@ 1M AGL 125	EM	F	P	Native species. 100% epicormic growth, poor form.	5A	L	L	1.6	2	8
T21	<i>Melaleuca</i> sp.	3	3.5	AB 175	M	G	G	Native species. Secondary stem @ .3m AGL.	5A	L	L	1.7	2.2	15
T22	<i>Casuarina glauca</i> Swamp She-oak	7	4	@1m AGL 100	Y-EM	G	F	Locally native species. Slightly thin canopy, multiple stems @ 1.1m AGL.	2A	M	M	1.6	2	7
T23	<i>Casuarina glauca</i> Swamp She-oak	8	6	175	EM	G	F	Locally native species. Multiple stems @ .2m AGL. Poor pruning noted, stubs present.	2A	M	M	1.7	2.2	15

Tree No.	Genus & species Common Name	Ht (m)	Sp (m)	DBH (mm)	Age	V	C	Comments	ULE	TSR	RV	SRZ (m)	TPZ (m)	TPZ (area)
T24	<i>Casuarina glauca</i> Swamp She-oak	8	4	150	EM	G	F	Locally native species. Co-dominant @ .1m AGL.	2A	M	M	1.6	2	10
T25	<i>Casuarina glauca</i> Swamp She-oak	10	8	200	EM	G	F	Locally native species. Heavily and poorly crown raised, no clear leader.	2A	M	M	1.8	2.4	18
T26	<i>Casuarina glauca</i> Swamp She-oak	10	6	200	EM	G	F	Locally native species. Multiple stems @ 1m AGL.	2A	M	M	1.8	2.4	18
T27	<i>Tecoma stans</i> Yellow Bells	9	10	100 / 75 / 50	M	G	F	Introduced exotic species. Declared weed species under Biosecurity Act 2015.	4E	L	L	-	-	-
T28	<i>Casuarina glauca</i> Swamp She-oak	9	7	100 / 100 / 125 / 100	M	G	G	Locally native species. Four (4) stems at ground level.	2A	M	M	1.9	2.7	23
T29	<i>Casuarina glauca</i> Swamp She-oak	11	6	125	EM	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	1.6	2	8
T30	<i>Casuarina glauca</i> Swamp She-oak	11	5	200	M	G	G	Locally native species. Low, sprawling limbs.	2A	M	M	1.8	2.4	18
T30A	<i>Banksia integrifolia</i> Coast Banksia	8	4	75	EM	F	F	Locally native species.	2A	M	M	1.6	2	7
T30B	<i>Casuarina glauca</i> Swamp She-oak	9	7	125	Y-EM	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	1.6	2	8
T31	<i>Eucalyptus</i> sp. Gum– dead	-	-	200	-	-	-	Dead specimen.	4A	L	L	-	-	-
T32	<i>Eucalyptus</i> sp. Gum– dead	-	-	100	-	-	-	Dead specimen.	4A	L	L	-	-	-
T33	<i>Casuarina glauca</i> Swamp She-oak	14	8	@ 1m AGL 225	M	G	F-G	Locally native species. Do-dominant @ 1.8m AGL, cavity into union.	2A	M	M	1.9	2.7	23

Tree No.	Genus & species Common Name	Ht (m)	Sp (m)	DBH (mm)	Age	V	C	Comments	ULE	TSR	RV	SRZ (m)	TPZ (m)	TPZ (area)
T34	<i>Casuarina glauca</i> Swamp She-oak	10	4	150	EM	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	1.6	2	10
T35	<i>Casuarina glauca</i> Swamp She-oak	10	4	200	EM	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	1.8	2.4	18
T36	<i>Casuarina glauca</i> Swamp She-oak	10	4	200	EM	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	1.8	2.4	18
T37	<i>Casuarina glauca</i> Swamp She-oak	10	4	150	EM	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	1.6	2	10
T38	<i>Casuarina glauca</i> Swamp She-oak	11	5	200 / 75	EM	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	1.8	2.4	18
T39	<i>Casuarina glauca</i> Swamp She-oak	12	6	200	EM	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	1.8	2.4	18
T40	<i>Syzygium paniculatum</i> Magenta Lilly Pilly	8	5	125	EM	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	1.6	2	8
T41	<i>Casuarina glauca</i> Swamp She-oak	12	6	150	EM	G	F-G	Locally native species.	2A	M	M	1.6	2	10
T42	<i>Casuarina glauca</i> Swamp She-oak	11	5	125	EM	G	P	Locally native species.	4A	M	L	1.6	2	8
T43	<i>Casuarina glauca</i> Swamp She-oak	8	6	100 / 75	EM	G	F-P	Locally native species. Secondary stem growing at a right angle from the main leader.	4C	L	L	1.6	2	8
T44	<i>Casuarina glauca</i> Swamp She-oak	14	7	*200	M	G	G?	Locally native species. Extremely limited assessment due to surrounding overgrown <i>Lantana camara</i> .	2A	M	M	1.8	2.4	18
T45	<i>Eucalyptus</i> sp. Gum	14	7	225 / 250	M	G	F	Native species. Co-dominant stems @ .2m AGL, included.	2A	M	M	2.2	3.9	48
T46	<i>Casuarina glauca</i> Swamp She-oak	14	5	250	M	G	P	Locally native species. Included stems, one of which has failed & been removed.	4C	L	L	2.1	3.0	28

Tree No.	Genus & species Common Name	Ht (m)	Sp (m)	DBH (mm)	Age	V	C	Comments	ULE	TSR	RV	SRZ (m)	TPZ (m)	TPZ (area)
T47	Dead- unknown species	-	-	-	-	-	-	Dead.	4A	L	L	-	-	-
T48	<i>Casuarina glauca</i> Swamp She-oak	14	7	200	M	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	1.8	2.4	18
T49	<i>Casuarina glauca</i> Swamp She-oak	12	6	200	M	G	F	Locally native species. Secondary stem @ .4m AGL. Pruned for signage.	2A	M	M	1.8	2.4	18
T50	Dead	-	-	-	-	-	-	Dead.	4A	L	L	-	-	-
T51	<i>Syzygium paniculatum</i> Magenta Lilly Pilly	9	6	75	EM	G	G-F	Locally native species. Heavily crown raised.	2A	M	M	1.6	2	7
T52	<i>Casuarina glauca</i> Swamp She-oak	9	7	225	M	G	F	Locally native species. Trifurcate stems @ 2.5m AGL.	2A	M	M	1.9	2.7	23
T53	Dead	-	-	-	-	-	-	Dead.	4A	L	L	-	-	-
T54	<i>Casuarina glauca</i> Swamp She-oak	16	8	350	M	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	2.3	4.2	55
T55	<i>Melaleuca decora</i> White Feather Honeymyrtle	4	4	200	M	G	G	Locally native species. No special problems noted at time of assessment.	5A	M	L	1.8	2.4	18
T56	<i>Melaleuca decora</i> White Feather Honeymyrtle	7	7	250	M	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	2.1	3.0	28
T57	<i>Melaleuca decora</i> White Feather Honeymyrtle	4	4	75	M	G	G	Locally native species. No special problems noted at time of assessment.	5A	M	L	1.6	2	7
T58	<i>Syzygium paniculatum</i> Magenta Lilly Pilly	11	5	225	M	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	1.9	2.7	23
T59	<i>Melaleuca decora</i> White Feather Honeymyrtle	9	4	250	M	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	2.1	3.0	28

Tree No.	Genus & species Common Name	Ht (m)	Sp (m)	DBH (mm)	Age	V	C	Comments	ULE	TSR	RV	SRZ (m)	TPZ (m)	TPZ (area)
T60	<i>Eucalyptus robusta</i> Swamp Mahogany	12	8	325	M	G	G	Locally native species. No special problems noted at time of assessment. Low spreading branch from base of stem.	2A	M	M	2.2	3.9	48
T61	<i>Melaleuca viminalis</i> Weeping Bottlebrush	6	4	AB 225	M	G	G	Introduced native species. Four (4) stems @ .1m AGL.	2A	M	M	1.9	2.7	23
T62	<i>Eucalyptus robusta</i> Swamp Mahogany	15	12	400	M	G	G	Locally native species. No special problems noted at time of assessment. Obvious large diameter shallow roots roughly 4m from base of stem.	2A	H	H	2.5	4.8	72
T63	<i>Eucalyptus robusta</i> Swamp Mahogany	7	5	200	EM	G	G	Locally native species. Suppressed by Tree 62, canopy all orientated to the east.	2A	M	M	1.8	2.4	18
T64	<i>Eucalyptus microcorys</i> Tallowwood	16	14	500	M	G	G	Introduced native species. Large diameter branches positioned low to the ground (1m AGL) to the south.	2A	H	H	2.7	6.0	113
T65	<i>Acacia podalyriifolia</i> QLD Silver Wattle	3	6	150	M	G	G	Introduced native species, naturalised. Strong lean to north due to surround tree suppression, low to ground.	5A	L	L	1.6	2	10
T66	<i>Casuarina glauca</i> Swamp She-oak	6	4	225	M	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	1.9	2.7	23
T67	<i>Melaleuca decora</i> White Feather Honeymyrtle	4	4	200	M	G	G	Locally native species. No special problems noted at time of assessment.	5A	L	L	1.8	2.4	18
T68	<i>Melaleuca decora</i> White Feather Honeymyrtle	4	4	200	M	G	G	Locally native species. No special problems noted at time of assessment.	5A	L	L	1.8	2.4	18
T69	<i>Melaleuca decora</i> White Feather Honeymyrtle	4	4	200	M	G	G	Locally native species. No special problems noted at time of assessment.	5A	L	L	1.8	2.4	18
T70	<i>Melaleuca decora</i> White Feather Honeymyrtle	4	4	200	M	G	G	Locally native species. No special problems noted at time of assessment.	5A	L	L	1.8	2.4	18
T71	<i>Melaleuca decora</i> White Feather Honeymyrtle	4	4	200	M	G	G	Locally native species. No special problems noted at time of assessment.	5A	L	L	1.8	2.4	18

Tree No.	Genus & species Common Name	Ht (m)	Sp (m)	DBH (mm)	Age	V	C	Comments	ULE	TSR	RV	SRZ (m)	TPZ (m)	TPZ (area)
T72	<i>Syzygium paniculatum</i> Magenta Lilly Pilly	8	6	200	EM	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	1.8	2.4	18
T73	<i>Melaleuca decora</i> White Feather Honeymyrtle	4	4	200	M	G	G	Locally native species. No special problems noted at time of assessment.	5A	L	L	1.8	2.4	18
T74	<i>Melaleuca decora</i> White Feather Honeymyrtle	4	4	200	M	G	G	Locally native species. No special problems noted at time of assessment.	5A	L	L	1.8	2.4	18
T75	<i>Eucalyptus botryoides</i> Bangalay	14	12	400	EM	G	G	Introduced native species. Low branching, superficial wound to north.	2A	M	M	2.5	4.8	72
T76	<i>Ficus rubiginosa</i> Port Jackson Fig	9	22	AB 1800	M	G	G	Locally native species. On mounded site, roots noted in bitumen. Multiple stems from ground level sweeping low over ground level. Deadwood and broken branch noted.	1C	H	H	4.5	15.0	707
T77	<i>Jacaranda mimosifolia</i> Jacaranda	6	6	125 / 75	EM	G	F	Introduced exotic species. Lopped/flush cut branches, high percentage of epicormic growth.	2A	M	M	1.6	2	10
T78	<i>Leptospermum petersonii</i> Lemon Scented Tea Tree	2.5	4	AB 150	M	F	F	Introduced/naturalised native species. Tip die-back noted.	5A	L	L	1.6	2	10
T79	<i>Eucalyptus</i> sp. – Dead	-	-	-	-	-	-	Dead.	4A	L	L	-	-	-
T80	<i>Leptospermum petersonii</i> Lemon Scented Tea Tree	1.5	2	50	EM	F	F	Introduced/naturalised native species. Tip die-back noted.	5A	L	L	-	-	-
T81	<i>Syncarpia glomerifera</i> Turpentine	7.5	3	175	EM	G	G	Locally native species. Stem hard against existing wall. However no special problems noted at time of assessment.	2B	M	M	1.7	2.2	15
T82	<i>Leptospermum petersonii</i> Lemon Scented Tea Tree - Dead	-	-	-	-	-	-	Dead.	4A	L	L	-	-	-
T83	<i>Bauhinia x blakeana</i> Hong Kong Orchid Tree	6.5	5	AB 200	M	G	F-G	Introduced exotic species. Secondary stem @ .1m AGL, this then is trifurcated and included.	3B	L	L	1.8	2.4	18

Tree No.	Genus & species Common Name	Ht (m)	Sp (m)	DBH (mm)	Age	V	C	Comments	ULE	TSR	RV	SRZ (m)	TPZ (m)	TPZ (area)
T84	<i>Eucalyptus</i> sp. Gum	8	9	150	EM	G	F	Native species. Secondary stem @ 5m AGL, suspect included. Canopy extends over lower part of sound wall. Scale (insect) noted.	3B	M	L	1.6	2	10
T85	<i>Leptospermum petersonii</i> Lemon Scented Tea Tree	4	2	AB 100	M	G	P	Introduced/naturalised native species. Tip die-back noted, only epicormic growth.	5A	L	L	1.6	2	7
T86	<i>Jacaranda mimosifolia</i> Jacaranda	7	3	75 / 20 / 50 / 50	Y-EM	G	P	Introduced exotic species. Four (4) stems from base, suspect reshoot from lopped/damaged original tree.	4C	L	L	1.6	2	7
T87	<i>Leptospermum petersonii</i> Lemon Scented Tea Tree	2.5	1.5	AB 50	M	F	P	Introduced/naturalised native species. All epicormic growth.	5A	L	L	-	-	-
T88	<i>Leptospermum petersonii</i> Lemon Scented Tea Tree	5	5	AB 100 / 75	M	G	G	Introduced/naturalised native species. Twiggy deadwood, secondary stem @ base.	5A	L	L	1.6	2	8
T89	<i>Leptospermum petersonii</i> Lemon Scented Tea Tree	2	3	75	M	F	F	Introduced/naturalised native species. Tip die-back noted, mainly epicormic growth.	5A	L	L	-	-	-
T90	<i>Leptospermum petersonii</i> Lemon Scented Tea Tree	2.5	3	75	M	F	F	Introduced/naturalised native species. Tip die-back noted, mainly epicormic growth.	5A	L	L	-	-	-
T91	<i>Leptospermum petersonii</i> Lemon Scented Tea Tree	2	3	75	M	F	F-G	Introduced/naturalised native species. Tip die-back noted.	5A	L	L	-	-	-
T92	<i>Sapium sebiferum</i> Chinese Tallow Tree	4	3	100?	EM	G	G	Introduced exotic species. Weedy species. Located on upper section of sound wall so assessment severely limited.	5A	L	L	1.6	2	7
T93	<i>Phoenix canariensis</i> Canary Island Date Palm	5	10	800	Y	G	G	Introduced exotic species. No clear/true stem.	5B	L	L	N/A	6	290
T94	<i>Phoenix canariensis</i> Canary Island Date Palm	5	8	800	Y	G	G	Introduced exotic species. Tip of fronds displaying wind damage.	5B	L	L	N/A	5	290
G94A	<i>Eucalyptus microcorys</i> Tallowwood X 6	8-9	6-8	200- 225	EM	F	F-P	Introduced native species. Mainly epicormic growth as trees has been subject to recent fire damage. One is located hard against sound wall.	4F	L	L	1.9	2.7	23

Tree No.	Genus & species Common Name	Ht (m)	Sp (m)	DBH (mm)	Age	V	C	Comments	ULE	TSR	RV	SRZ (m)	TPZ (m)	TPZ (area)
T94B	<i>Phoenix canariensis</i> Canary Island Date Palm	3	8	400	EM	F	P	Introduced exotic species. Fire damage to lower fronds and stem. Main fronds ok.	5A	L	L	N/A	5	72
G94C	<i>Eucalyptus microcorys</i> Tallowwood X 3	8-9	6-8	200-225	EM	F	F-P	Introduced native species. Mainly epicormic growth as trees has been subject to recent fire damage. One is located hard against sound wall. Ground level changes within TPZ with soil 'mounded' along southern side of TPZ.	4F	L	L	1.9	2.7	23
G94D	<i>Melaleuca</i> sp. -several	3-4	4-5	100	M	G	G-F	Native species. Suppressed under G94C, canopies orientated to the south.	5A	L	L	1.6	2	7
T95	<i>Eucalyptus robusta</i> Swamp Mahogany	12	9	600	M	G	F-P	Locally native species. Canopy orientated to the north-east as suppressed by T96. Stem displays poor taper & large dead section.	2D	M	M	2.8	7.2	163
T95A	<i>Grevillia robusta</i> Silky Oak	7	6	200	EM	G	F	Introduced native species. High percentage of epicormic growth.	4F	L	L	1.8	2.4	18
T95B	<i>Phoenix canariensis</i> Canary Island Date Palm	5	7	*600	Y	G	G	Introduced exotic species. No special problems noted at time of assessment.	2B	L	M	N/A	5	163
T96	<i>Eucalyptus microcorys</i> Tallowwood	18	20-22	1175	LM	G	G	Introduced native species. Large, significant specimen, Multiple Ibis roosting in tree.	1C?	H	H	3.7	13.2	547
T97	<i>Phoenix canariensis</i> Canary Island Date Palm	3	8	400	EM	F	P	Introduced exotic species. Palm has been recently set fire to. One live frond remains.	5A	L	L	N/A	5	72
G97A	<i>Eucalyptus microcorys</i> Tallowwood X 2	8-9	6-8	200-225	EM	F	F-P	Introduced native species. No special problems noted at time of assessment.	4F	M	L	1.9	2.7	23
G97B	<i>Melaleuca (nee Callistemon) viminalis</i> Weeping Bottlebrush X 4	3	4	150-200	EM	F	F-G	Introduced native species. Located hard against sound wall.	5A	L	L	1.8	2.4	18
T98	<i>Phoenix canariensis</i> Canary Island Date Palm	4.5	8	600	EM	G	G	Introduced exotic species. No true/clear stem. Frond tips displaying wind damage.	5A	L	L	N/A	5	163



Tree No.	Genus & species Common Name	Ht (m)	Sp (m)	DBH (mm)	Age	V	C	Comments	ULE	TSR	RV	SRZ (m)	TPZ (m)	TPZ (area)
G99	<i>Casuarina glauca</i> Swamp She-oak X 17	7	4	100	Y	G	G-F	Locally native species. Most have multiple stems, some with inclusions.	5B	M	L	1.6	2	7
G99A	<i>Casuarina glauca</i> Swamp She-oak -several	7	4	150	EM	G	G-F	Locally native species. Most have multiple stems, some with inclusions.	2A	M	M	1.6	2	10
G99B	<i>Casuarina glauca</i> Swamp She-oak- several	7	4	200	EM	G	G-F	Locally native species. Most have multiple stems, some with inclusions.	2A	M	M	1.8	2.4	18
T99C	<i>Melaleuca sp.</i> - Dead	-	-	-	-	-	-	Dead.	4A	L	L	-	-	-
G99D	<i>Casuarina glauca</i> Swamp She-oak -several	7	4	150	EM	G	G-F	Locally native species. Most have multiple stems, some with inclusions.	2A	M	M	1.6	2	10
T99E	<i>Melaleuca sp.</i> -Dead	-	-	-	-	-	-	Dead.	4A	L	L	-	-	-
T100	<i>Melaleuca sp.</i>	4	4	100	M	G	G	Native species.	5A	L	L	1.6	2	7
T101	<i>Melaleuca sp.</i>	3	4	100	M	P	P	Native species. Deadwood/die-back present.	5A	L	L	1.6	2	7
T102	<i>Melaleuca sp.</i>	3	2	50	EM	F	F	Native species.	5A	L	L	-	-	-
T103	<i>Melaleuca sp.</i>	3.5	6	150	M	P	P	Native species. Deadwood/die-back present.	5A	L	L	1.6	2	10
G104	<i>Casuarina glauca</i> Swamp She-oak	4-7	3-5	75-150	Y	G	F	Locally native species.	5B	M	L	1.6	2	10
T105	<i>Casuarina glauca</i> Swamp She-oak	7	4	100	Y	G	G-F	Locally native species.	5B	M	L	1.6	2	7
T106	<i>Melaleuca sp.</i>	6	10	250	M	P	P	Native species. Specimen half dead.	4A	L	L	2.1	3.0	28
T107	<i>Casuarina glauca</i> Swamp She-oak	6	4	150	EM	G	F	Locally native species.	2A	M	M	1.6	2	10

Tree No.	Genus & species Common Name	Ht (m)	Sp (m)	DBH (mm)	Age	V	C	Comments	ULE	TSR	RV	SRZ (m)	TPZ (m)	TPZ (area)
T108	<i>Casuarina glauca</i> Swamp She-oak	6	4	200	EM	G	F	Locally native species. Multiple stems.	2A	M	M	1.8	2.4	18
T109	<i>Casuarina glauca</i> Swamp She-oak	6	4	150	EM	G	F	Locally native species. Multiple stems.	2A	M	M	1.6	2	10
T110	<i>Casuarina glauca</i> Swamp She-oak	7	4	100	Y	G	G-F	Locally native species.	5B	M	L	1.6	2	7
T111	<i>Casuarina glauca</i> Swamp She-oak	7	4	100	Y	G	G-F	Locally native species.	5B	M	L	1.6	2	7
T112	<i>Casuarina glauca</i> Swamp She-oak	7	4	100	Y	G	G-F	Locally native species.	5B	M	L	1.6	2	7
T113	<i>Casuarina glauca</i> Swamp She-oak	7	4	100	Y	G	G-F	Locally native species.	5B	M	L	1.6	2	7
T114	<i>Casuarina glauca</i> Swamp She-oak	6	4	100	Y	G	F	Locally native species. Multiple stems.	5B	M	L	1.6	2	7
T115	<i>Casuarina glauca</i> Swamp She-oak	6	4	AB 150	EM	G	F	Locally native species. Trifurcate and included @ .1m AGL.	2A	M	M	1.6	2	10
T116	<i>Casuarina glauca</i> Swamp She-oak	6	4	AB 200	EM	G	F	Locally native species. Co-dominant @ .2m AGL and included.	2A	M	M	1.8	2.4	18
T117	<i>Casuarina glauca</i> Swamp She-oak	6	4	AB 300	EM	G	F	Locally native species. Multiple and included stems @ .1m AGL.	2A	M	M	2.2	3.6	41
G118	<i>Casuarina glauca</i> Swamp She-oak X 16	7	2	75-100	Y	G	G	Locally native species. No special problems noted at time of assessment.	5B	M	L	1.6	2	7
T119	<i>Casuarina glauca</i> Swamp She-oak	9	4	150	EM	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	1.6	2	10
T120	<i>Casuarina glauca</i> Swamp She-oak	8	4	125	EM	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	1.6	2	8

Tree No.	Genus & species Common Name	Ht (m)	Sp (m)	DBH (mm)	Age	V	C	Comments	ULE	TSR	RV	SRZ (m)	TPZ (m)	TPZ (area)
T121	<i>Casuarina glauca</i> Swamp She-oak	9	4	150	EM	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	1.6	2	10
T122	<i>Casuarina glauca</i> Swamp She-oak	9	6	300	EM-M	G	F	Locally native species. Included stems @ 3m AGL.	2A	M	M	2.2	3.6	41
T123	<i>Acacia</i> sp. Wattle - Dead	-	-	125	-	-	-	Dead.	4A	L	L	-	-	-
G124	<i>Casuarina glauca</i> Swamp She-oak X 4	8	4	50-75	Y	G	G	Locally native species. No special problems noted at time of assessment.	5B	M	L	1.6	2	7
G125	<i>Casuarina glauca</i> Swamp She-oak X18	7	2-3	50-100	Y	G	G	Locally native species. No special problems noted at time of assessment.	5B	M	L	1.6	2	7
T126	<i>Casuarina glauca</i> Swamp She-oak	7.5	4	400	EM-M	G	F	Locally native species. Three (3) stems with two (2) crossing each other.	2A	M	M	2.5	4.8	72
T127	<i>Casuarina glauca</i> Swamp She-oak	8	6	AB 450	EM-M	G	G-F	Locally native species. Multiple @ .1m AGL. (seven stems).	2A	M	M	2.5	5.4	92
G128	<i>Eucalyptus</i> sp. Gum X 3	2	1.5	50	Y	G	G	Native species. Newly planted specimens.	5A	L	L	-	-	-
G129	<i>Livistona australis</i> Cabbage Tree Palm x 2	<1	4	400	Y	G	G	Introduced native species. No special problems noted at time of assessment.	5A	L	L	N/A	5	72
G130	<i>Livistona australis</i> Cabbage Tree Palm x 2	<1	4	400	Y	G	G	Introduced native species. No special problems noted at time of assessment.	5A	L	L	N/A	5	72
T131	<i>Livistona australis</i> Cabbage Tree Palm	2.5	4	400	Y	G	G	Introduced native species. No special problems noted at time of assessment.	5A	L	L	N/A	5	72
G132	<i>Livistona australis</i> Cabbage Tree Palm x 8	1.5	4	400	Y	G	G	Introduced native species. No special problems noted at time of assessment.	5A	L	L	N/A	5	72
T133	<i>Livistona australis</i> Cabbage Tree Palm	<1	4	400	Y	G	G	Introduced native species. No special problems noted at time of assessment.	5A	L	L	N/A	5	72

Tree No.	Genus & species Common Name	Ht (m)	Sp (m)	DBH (mm)	Age	V	C	Comments	ULE	TSR	RV	SRZ (m)	TPZ (m)	TPZ (area)
T134	<i>Livistona australis</i> Cabbage Tree Palm	3	2	450	Y	G	G	Introduced native species. No special problems noted at time of assessment.	5A	L	L	N/A	3	92
T135	<i>Livistona australis</i> Cabbage Tree Palm	2	2	400	Y	G	G	Introduced native species. No special problems noted at time of assessment.	5A	L	L	N/A	3	72
T136	<i>Livistona australis</i> Cabbage Tree Palm	2.5	2	400	Y	G	G	Introduced native species. No special problems noted at time of assessment.	5A	L	L	N/A	3	72
T137	<i>Livistona australis</i> Cabbage Tree Palm	<2.5	2	300	Y	G	G	Introduced native species. No special problems noted at time of assessment.	5A	L	L	N/A	3	41
T138	<i>Livistona australis</i> Cabbage Tree Palm	3.5	2	500	Y	G	G	Introduced native species. No special problems noted at time of assessment.	5A	L	L	N/A	3	113
T139	<i>Livistona australis</i> Cabbage Tree Palm	<2.5	2	300	Y	G	G	Introduced native species. No special problems noted at time of assessment.	5A	L	L	N/A	3	41
T140	<i>Ligustrum lucidum</i> Broad-leaved Privet	4	-	-	-	-	-	Introduced exotic species. Declared weed species under Biosecurity Act 2015.	4E	L	L	-	-	-
T141	<i>Pittosporum undulatum</i> Sweet Pittosporum	3	6	125	Y	G	G	Locally native species. Declared weed species under Biosecurity Act 2015.	4E	L	L	1.6	2	8
T142	<i>Angophora costata</i> Sydney Red Gum	12	7	225	EM	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	1.9	2.7	23
T143	<i>Kunzea ambigua</i> Tick Bush	3	4	AB 50	M	G	G	Locally native species. No special problems noted at time of assessment.	5A	L	L	1.6	2	7
T144	<i>Acacia</i> sp.- Dead Wattle	-	-	-	-	-	-	Dead	4A	L	L	-	-	-
T145	<i>Allocasuarina torulosa</i> Forest Oak	6.5	4	100	EM	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	1.6	2	7
T146	<i>Melaleuca</i> sp.	4	4	75	M	G	G	Native species. No special problems noted at time of assessment.	5A	L	L	1.6	2	7

Tree No.	Genus & species Common Name	Ht (m)	Sp (m)	DBH (mm)	Age	V	C	Comments	ULE	TSR	RV	SRZ (m)	TPZ (m)	TPZ (area)
T147	<i>Acacia sp.</i> Wattle	4	4	150	EM?	G	P	Native species. Borer damage.	5A	L	L	1.6	2	10
T148	<i>Eucalyptus sp.</i> Gum	6.5	4	75	Y	G	G	Native species. No special problems noted at time of assessment.	5B	M	L	1.6	2	7
T149	<i>Acacia sp.</i> Wattle	8	6	150	M	G	G	Native species. No special problems noted at time of assessment.	3A	M	M	1.6	2	10
T149 A	<i>Ligustrum lucidum</i> Broad-leaved Privet	6	-	200	M	-	-	Introduced exotic species. Declared weed species under Biosecurity Act 2015.	4E	L	L	-	-	-
T150	<i>Eucalyptus sp.</i> Gum	6.5	4	75	Y	G	G	Native species. No special problems noted at time of assessment.	5B	M	L	1.6	2	7
T151	<i>Acacia decurrens</i> Sydney Green Wattle	7	8	175	EM	G	G	Locally native species. Broken branch noted.	3A	M	M	1.7	2.2	15
G152	<i>Ligustrum lucidum</i> Broad-leaved Privet X 2	6	-	200	M	-	-	Introduced exotic species. Declared weed species under Biosecurity Act 2015.	4E	L	L	-	-	-
T153	<i>Cinnamomum camphora</i> Camphor Laurel	5	4	125	EM	G	G	Introduced exotic species. Declared weed species under Biosecurity Act 2015.	4E	L	L	-	-	-
T154	<i>Tristaniopsis laurina</i> Water Gum	1.5	2	AB 75	Y	G	F	Locally native species. Tip die-back noted.	5A	L	L	-	-	-
T155	<i>Ligustrum lucidum</i> Broad-leaved Privet	4	4	200	M	G	G	Introduced exotic species. Declared weed species under Biosecurity Act 2015.	4E	L	L	-	-	-
T156	<i>Tristaniopsis laurina</i> Water Gum	3	4	AB 200	EM	G	G	Locally native species. Multiple stems @ .1m AGL.	5A	L	L	1.8	2.4	18
T157	<i>Tristaniopsis laurina</i> Water Gum	2	3	AB 225	EM	G	F	Locally native species. Suppressed, four (4) stems 2 .1m AGL. Twiggy deadwood.	5A	L	L	1.9	2.7	23
T158	<i>Acacia decurrens</i> Sydney Green Wattle	7	7	125 / 125 / 175	M	G	F	Locally native species. Trifurcate @ ground level.	3A	M	M	2.1	3.0	28

Tree No.	Genus & species Common Name	Ht (m)	Sp (m)	DBH (mm)	Age	V	C	Comments	ULE	TSR	RV	SRZ (m)	TPZ (m)	TPZ (area)
T159	<i>Ligustrum lucidum</i> <b>Broad-leaved Privet</b>	5	3	75	Y	G	G	Introduced exotic species. Declared weed species under Biosecurity Act 2015.	4E	L	L	-	-	-
T160	<i>Tristaniopsis laurina</i> <b>Water Gum</b>	3.5	4	AB 150	EM	G	G	Locally native species. No special problems noted at time of assessment.	5A	L	L	1.6	2	10
G161	<i>Ligustrum lucidum</i> <b>Broad-leaved Privet X 3</b>	3.5	2	100	Y	G	G	Introduced exotic species. Declared weed species under Biosecurity Act 2015.	4E	L	L	-	-	-
T162	<i>Ficus rubiginosa</i> <b>Port Jackson Fig</b>	4	8	AB 125 / 150 / 150	EM	G	G	Locally native species. Trifurcate @ .05m AGL.	5A	L	L	2.1	3.0	28
T163	<i>Hakea</i> sp.	2	6	75	M	G	G	Native species. No special problems noted at time of assessment.	5A	L	L	-	-	-
T164	<i>Tristaniopsis laurina</i> <b>Water Gum</b>	3	3	200	EM	G	G	Locally native species. No special problems noted at time of assessment.	5A	L	L	1.8	2.4	18
T165	<i>Tristaniopsis laurina</i> <b>Water Gum</b>	3	2	100	EM	G	G	Locally native species. No special problems noted at time of assessment.	5A	L	L	1.6	2	7
T166	<i>Sapium sebiferum</i> <b>Chinese Tallow Tree</b>	3	1.5	100	Y	G	G	Introduced exotic species. Twiggy deadwood noted.	5A	L	L	1.6	2	7
G167	<i>Ligustrum lucidum</i> <b>Broad-leaved Privet X 2</b> <i>Sapium sebiferum</i> <b>Chinese Tallow Tree X 1</b>	2.5-4	2	Up to 100	Y	G	G	Introduced exotic species. Declared weed species under Biosecurity Act 2015.	4E	L	L	-	-	-
T168	<i>Ficus rubiginosa</i> <b>Port Jackson Fig</b>	4	4	125	Y	G	G	Locally native species. No special problems noted at time of assessment.	5A	L	L	1.6	2	8
T169	<i>Tristaniopsis laurina</i> <b>Water Gum</b>	4.5	3	100	Y	G	G	Locally native species. No special problems noted at time of assessment.	5A	L	L	1.6	2	7
T170	<i>Tristaniopsis laurina</i> <b>Water Gum</b>	4	4	75	Y	G	G	Locally native species. No special problems noted at time of assessment.	5A	L	L	1.6	2	7

Tree No.	Genus & species Common Name	Ht (m)	Sp (m)	DBH (mm)	Age	V	C	Comments	ULE	TSR	RV	SRZ (m)	TPZ (m)	TPZ (area)
T171	<i>Angophora costata</i> Sydney Red Gum	7.5	3	175	EM	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	1.7	2.2	15
T172	<i>Allocasuarina torulosa</i> Forest Oak	5	2	50	Y	G	F	Locally native species. No special problems noted at time of assessment.	5B	M	L	1.6	2	7
T173	<i>Acacia decurrens</i> Sydney Green Wattle	8	4	225	M	F	P	Locally native species. Affected by borer attack and numerous wounds.	3A	M	L	1.9	2.7	23
T174	<i>Allocasuarina torulosa</i> Forest Oak	6	2	100	Y	G	G	Locally native species. No special problems noted at time of assessment.	5B	M	L	1.6	2	7
T175	<i>Allocasuarina torulosa</i> Forest Oak	6	2	125	EM	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	1.6	2	8
T176	<i>Acacia decurrens</i> Sydney Green Wattle	8	6	225	M	G	F	Locally native species. Mistletoe noted in canopy, minor borer damage.	3A	M	L	1.9	2.7	23
T177	<i>Acacia decurrens</i> Sydney Green Wattle	8	6	200	M	G	F	Locally native species. Surface roots noted.	3A	M	L	1.8	2.4	18
T178	<i>Allocasuarina torulosa</i> Forest Oak	3	4	75	Y	G	F	Locally native species. Twiggy deadwood noted.	5A	L	L	1.6	2	7
T179	<i>Allocasuarina torulosa</i> Forest Oak	4	3	50	Y	G	G	Locally native species. No special problems noted at time of assessment.	5A	L	L	1.6	2	7
T180	<i>Angophora costata</i> Sydney Red Gum	9	8	250	EM	G	F	Locally native species. Drying and cracking of section of stem and wound to base of eastern side of stem.	2A	M	M	2.1	3.0	28
T181	<i>Allocasuarina torulosa</i> Forest Oak	4	3	75	EM	G	G	Locally native species. No special problems noted at time of assessment.	5A	L	L	1.6	2	7
T182	<i>Acacia longifolia</i> subsp. <i>longifolia</i> Sydney Golden Wattle	2	4	100	Y	G	G	Locally native species. No special problems noted at time of assessment.	5A	L	L	1.6	2	7

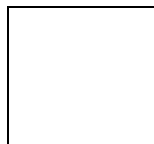
Tree No.	Genus & species Common Name	Ht (m)	Sp (m)	DBH (mm)	Age	V	C	Comments	ULE	TSR	RV	SRZ (m)	TPZ (m)	TPZ (area)
<b>T183</b>	<i>Allocasuarina torulosa</i> <b>Forest Oak</b>	5.5	4	125	EM	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	1.6	2	8
<b>T184</b>	<i>Ligustrum lucidum</i> <b>Broad-leaved Privet</b>	4	5	200	M	G	G	Introduced exotic species. Declared weed species under Biosecurity Act 2015.	4E	L	L	-	-	-
<b>T184 A</b>	<i>Allocasuarina torulosa</i> <b>Forest Oak - Dead</b>	-	-	-	-	-	-	Dead.	4A	L	L	-	-	-
<b>T185</b>	<i>Acacia decurrens</i> <b>Sydney Green Wattle</b>	3.5	5	250	M	P	P	Locally native species. Only one (1) live branch noted.	5A	L	L	2.1	3.0	28
<b>T186</b>	<i>Allocasuarina torulosa</i> <b>Forest Oak</b>	3	3	100	Y	G	G	Locally native species. No special problems noted at time of assessment.	5A	L	L	1.6	2	7
<b>T187</b>	<i>Eucalyptus sp.</i> <b>Gum</b>	5	6	200	EM	F	P	Native species. Epicormic growth has died, poor form, wound to base of stem. Strong lean to the north.	4A	L	L	1.8	2.4	18
<b>T188</b>	<i>Eucalyptus sp.</i> <b>Stringy bark</b>	7	5	200	EM	G	G	Native species. No special problems noted at time of assessment.	2A	M	M	1.8	2.4	18
<b>T189</b>	<i>Morus spp.</i> <b>Mulberry</b>	4	6	150	EM	G	G	Introduced exotic species.	5A	L	L	1.6	2	10
<b>T190</b>	<i>Eucalyptus sp.</i> <b>Gum</b>	4	4	100	Y	G	G	Native species. No special problems noted at time of assessment.	5A	L	L	1.6	2	7
<b>T191</b>	<i>Eucalyptus sp.</i> <b>Gum</b>	4	4	100	Y	G	G	Native species. No special problems noted at time of assessment.	5A	L	L	1.6	2	7
<b>T192</b>	<i>Eucalyptus sp.</i> <b>Gum</b>	4	3	100	Y	G	F	Native species. Kink in stem, poor form.	5A	L	L	1.6	2	7
<b>G193</b>	<i>Ficus sp.</i> - <b>Fig</b> <i>Acacia sp.</i> - <b>Wattle</b>	2-8	3-10	100-400	Y-M	G	G-F	Introduced, exotic species and introduced native species.	2A	M	M	2.5	4.8	72
<b>G193</b>	<i>Fraxinus griffithii</i> – <b>Ash</b> <i>Morus spp.</i> – <b>Mulberry</b>													



Tree No.	Genus & species Common Name	Ht (m)	Sp (m)	DBH (mm)	Age	V	C	Comments	ULE	TSR	RV	SRZ (m)	TPZ (m)	TPZ (area)
T194	<i>Eucalyptus pilularis</i> <b>Blackbutt</b>	7	6	200	EM	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	1.8	2.4	18
T195	<i>Acacia saligna</i> <b>Golden Wreath Wattle</b>	3.5	2	75	Y	G	G	Introduced native species (naturalised but weedy). Growing within the fence.	5A	L	L	1.6	2	7
T196	<i>Eucalyptus</i> sp. <b>Gum</b>	8	8	225	EM	G	F-P?	Native species. Located On embankment, ground has cracked around base of tree, suspect partial failure.	4B	L	L	1.9	2.7	23
T197	<i>Morus</i> spp. <b>Mulberry</b>	4	6	40 x 3 75	M	G	G	Introduced exotic species. Four (4) stems noted.	5A	L	L	2.1	3.3	35
T198	<i>Eucalyptus haemastoma</i> <b>Scribbly Gum</b>	6	6	AB 300	EM	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	2.2	3.6	41
T199	<i>Eucalyptus haemastoma</i> <b>Scribbly Gum</b>	6	4	200	EM	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	1.8	2.4	18
T200	<i>Eucalyptus haemastoma</i> <b>Scribbly Gum</b>	6.5	6	150	EM	G	G-F	Locally native species. Superficial cracks in stem.	2A	M	M	1.6	2	10
T201	<i>Eucalyptus microcorys</i> <b>Tallowwood</b>	8	6	225	EM	G	G-F	Introduced native species. Kino exudation @ base of stem. Four (4) stems @ 3.5m AGL.	2A	M	M	1.9	2.7	23
T202	<i>Eucalyptus haemastoma</i> <b>Scribbly Gum</b>	6.5	7	225	EM	G	G-F	Locally native species. Cracks noted in stem.	2A	M	M	1.9	2.7	23
T203	<i>Eucalyptus</i> sp. <b>Gum</b>	7	8	250	M	G	G	Native species.	2A	M	M	2.1	3.0	28
T204	<i>Livistona australis</i> <b>Cabbage Tree Palm</b>	2	4	300	Y	G	G	Introduced native species. No true stem formed.	5A	L	L	N/A	5	41
T205	<i>Eucalyptus microcorys</i> <b>Tallowwood</b>	7	3	100	Y	G	G	Introduced native species. No special problems noted at time of assessment.	5B	M	L	1.6	2	7
T206	<i>Acacia decurrens</i> <b>Sydney Green Wattle</b>	7	4	150	M	G	G	Locally native species. No special problems noted at time of assessment.	3A	M	L	1.6	2	10

Tree No.	Genus & species Common Name	Ht (m)	Sp (m)	DBH (mm)	Age	V	C	Comments	ULE	TSR	RV	SRZ (m)	TPZ (m)	TPZ (area)
T206 A	<i>Acacia decurrens</i> <b>Sydney Green Wattle</b>	7	4	150	M	G	G	Locally native species. No special problems noted at time of assessment.	3A	M	L	1.6	2	10
T206 B	<i>Acacia</i> sp. <b>Wattle– Dead</b>	-	-	-	-	-	-	Dead	4A	L	L	-	-	-
T207	<i>Eucalyptus microcorys</i> <b>Tallowwood</b>	6	3	100	Y	G	P	Introduced native species. Torn out leader, 100% epicormic growth.	4A	L	L	1.6	2	7
T208	<i>Eucalyptus haemastoma</i> <b>Scribbly Gum</b>	7	4	150	EM	G	G	Locally native species. No special problems noted at time of assessment.	2A	M	M	1.6	2	10
T209	<i>Eucalyptus haemastoma</i> <b>Scribbly Gum</b>	7	4	150	EM	G	G	Locally native species. Kink in lower stem.	2A	M	M	1.6	2	10
T210	<i>Melia azedarach</i> <b>White Cedar</b>	8	12	400	M	G	G	Introduced native species. Low branching.	2A	L	M	2.5	4.8	72
T211	<i>Eucalyptus microcorys</i> <b>Tallowwood</b>	7	6	125	EM	G	G	Introduced native species. No special problems noted at time of assessment.	2A	M	M	1.6	2	8

**KEY**



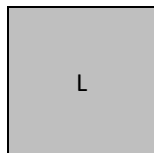
Tree to be retained.



Not classed as 'a tree' under DPE conditions (see Part 1.3).



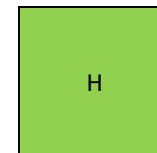
Tree proposed to be removed.



Low Retention Value-These trees are not considered important for retention.



Medium Retention Value-These trees may be retained & protected.



High Retention Value -These trees are considered important for retention and should be retained and protected.

\* DBH is visually estimated (usually adjoining trees or those that are hard to access). AB – above *buttress roots*. AGL - above ground level.

\*\* Determined by the largest number found (i.e. broadest branch spread or highest DBH) within a tree group to ensure ample tree protection zone.

**H** refers to the approximate height of a tree in metres, from base of stem to top of tree crown.

**Sp** refers to the approximate and average spread in metres of branches/canopy (the ‘crown’) of a tree.

**DBH** refers to the approximate diameter of tree stem at breast height i.e. 1.4 metres above ground (unless otherwise noted), and expressed in millimetres.

**Age** refer to Appendix A -Terms and Definitions for more detail.

**V** refers to the tree’s vigour (health) Refer to Appendix A -Terms and Definitions for more detail.

**C** refers to the tree’s structural condition. Refer to Appendix A -Terms and Definitions for more detail.

**ULE** refers to the estimated *Useful Life Expectancy* of a tree. Refer to Appendices A and B for details.

**TSR** The *Tree Significance Rating* considers the importance of the tree as a result of its prominence in the landscape and its amenity value, from the point of view of public benefit. Refer to Appendix C – Significance of a Tree Assessment Rating for more detail.

**RV** Refers to the retention value of a tree, based on the tree’s ULE *and* Tree Significance. Refer to Appendix C – Significance of a Tree Assessment Rating for more detail.

**SRZ** Structural Root Zone (SRZ) refers to the critical area required to maintain stability of the tree. Refer to Appendix A -Terms and Definitions for more detail.

**TPZ** Tree Protection Zone (TPZ) refers to the *tree protection zones* for trees to be retained. Refer to Appendix A -Terms and Definitions for more detail.