GEOSCAPES
LANDSCAPE ARCHITECTS

SSD 10459 - Central Sydney Industrial Estate

ESTATE LANDSCAPE MANAGEMENT PLAN (EXCLUDING LOT 6 DOWNER)

Report Ref: **190130_CC_RPT_LAN_LMP02**

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Document Status

REV	Description	Initial	Date
1	Draft	BG	19.01.2021
2	For Approval	BG	11.03.2021

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1.0 INTRODUCTION

1.1 Project Background

This Landscape Management Plan has been prepared to fulfill DA condition B51, B52 & B53 of the approved SSD 10459 - Central Sydney Industrial Estate located at 9 Devon Street, Rosehill. Condition B51, B52 & B53 state:

B51. Prior to the commencement of construction, the Applicant must prepare a Landscape Management Plan (LMP) to manage the revegetation and landscaping works on-site, to the satisfaction of the Planning Secretary. The LMP must form part of an OEMP in accordance with condition C5. The LMP must:

(a) detail the species to be planted on-site, using only locally native species;
(b) describe the monitoring and maintenance measures to manage revegetation and landscaping works; and
(c) be consistent with the Applicant's Management and Mitigation Measures at Appendix 2.

B52. The Applicant must:

(a) not commence operation until the LMP is approved by the Planning Secretary;
(b) implement the most recent version of the LMP approved by the Planning Secretary; and
(c) maintain the landscaping and vegetation on the site in accordance with the approved LMP required by Condition B51 for the life of the development.

B53. Prior to services installation works commencing within Devon Street, the Applicant is to engage an AQF Level 5 Arborist to prepare a:

(a) Tree Protection Plan and Tree Management Specification to incorporate specific tree protection measures to the street trees located along Devon Street in accordance with AS4970-2009 (Protection of Trees on Development Sites); and
(b)Tree Removal Plan for any trees proposed to be removed. In the event that street trees are required to be removed on Devon Street, replacement street trees are to be provided in consultation with Council.

Condition B53 has been satisfied by an Arboricultural Impact Report complied by Guy Paroissien and is included within Appendix D of this LMP.

This management plan relates solely to the landscaping within the estate, **outside** of the Downer Lot 6 Sustainable Road Resource Centre. For the Downer site refer to the separate LMP01.

1.2 This Report and Author

Geoscapes Pty Ltd has been commissioned by VE Property to produce a Landscape Management Plan (LMP) for the above mentioned development. This LMP has been written by Ben Gluszkowski, the director of Geoscapes and a Registered Landscape Architect.

Geoscapes also prepared the approved SSD (10459) landscape design drawings and landscape design report. These documents detail landscape treatments to the site, and should be read in conjunction with this report.

1.3 The Role of this Landscape Management Plan

The estate will be a staged subdivision into thirteen lots. The approved lot 6 site (Stage 1) will contain the Downer Sustainable Road Resource Centre and is subject to a separate LMP.

Subdivision earthworks will bench the site to create flat pads running down to Duck River. Landscaping will include street trees and grassed verges to a new public access road running south from Devon Street. A small number of street trees along Devon Street are required to be removed to allow for entry to the access road. All other street trees to Devon Street are due to be retained, however, if new services are required, existing street trees may need to be removed and replaced (refer to Arboricultural report). A 5m setback has also been introduced to all lots along Devon Street and planting is subject to a future application.

The southern boundary proposes a riparian corridor in the form of a 40m offset from Duck River using an averaging method. Existing riparian vegetation will be retained and supplemented by new riparian planting to create the riparian zone. This will also extend further across into the Lot 6 Downer Site. Management of the riparian planting within Lot 6 is subject to a separate LMP.

Due to the site being located adjacent to the Duck River corridor, revegetation and visual screening with the use of landscape planting is an important part of the development. The visual appearance and scale of future built form can be reduced with the maintenance of existing vegetation and introduction of new native tree and shrub species. The ongoing management of landscape buffer zones and the riparian corridor is therefore, fundamental in maintaining visual mitigation of the development and habitats at present and into the future. A Vegetation Management Plan or VMP has been prepared by AECOM and was submitted with the development application. This should be referenced where required. Planting numbers and locations have been detailed in the landscape plans following species listed in the VMP.

1.4 Areas to which this Plan Applies

This plan will apply to the following areas within the site boundary, these are:

- Devon Street south
- A 21m wide access road
- The riparian corridor to southern boundary

1.5 Landscape Maintenance Responsibility

The Landscape Contractor awarded the contract, will hold the first level of responsibility for the implementation of the Landscape Management Plan. The on-going, day-to-day implementation, monitoring and reviewing of the LMP will be undertaken by VE Property.

1.6 Landscape Management Principles

The following landscape management principles have been identified as being consistent with the approved SSD Landscape Documentation:

- Minimise environmental impacts that may result from landscape management activities and utilise environmentally sustainable practices. Disturb only the minimum area necessary.
- Control dust with best management principles.
- Mark clearance boundaries prior to commencement of construction to ensure that there is no removal of native vegetation.
- Strengthen, enhance and promote local character with the use of native and endemic planting in all landscape areas and for any replacement plantings.
- Construct, manage and maintain a fully structured riparian corridor following guidelines within the VMP.
- Adopt a low water use, low maintenance approach with the use of native species.
- Provide clear site lines for trucks and vehicular users.
- Provide a safe environment, minimising potential risks to people, buildings and property.
- Best practice landscape maintenance in landscaped areas.
- Target environmental weeds and feral animals through the use of integrated pest management approaches, as per section 5.2 of this LMP.

- Undertake monitoring, auditing and maintenance activities to ensure an effective and a resilient landscaping outcome.

- Appropriately fund, plan and manage landscape maintenance to provide sufficient resource to achieve a long term quality landscape.

1.7 Report Structure

This report is to be read in conjunction with the following documents:

• Landscape Drawings for State Significant Development- SSD 10459 prepared by Geoscapes Landscape Architects, Dwg No's SSD-00 to SSD-17.
• Landscape Design Report for State Significant Development - SSD 10459 prepared by Geoscapes Landscape Architects, Rpt No: LDR01
• Operational Environmental Management Plan (OEMP).
• Construction Environmental Management Plan (CEMP).
• SSD 10459 Development Consent Appendix 2 - Applicant's Management and Mitigation Measures.
• Vegetation Management Plan (VMP), prepared by AECOM 2020

Section 1.0 provides an introduction to the LMP
Section 2.0 describes the general site conditions
Section 3.0 describes the proposed planting species
Section 4.0 describes landscape management activities
Section 5.0 describes irrigation, disease and insect control
Section 6.0 describes protective measures for trees, vegetation and erosion
Section 7.0 monitoring and reporting

The report describes maintenance categories as follows:

1. Specific Landscape types –

• Swamp Oak Floodplain Forest within the Riparian corridor - This revegetation area has a mix of trees, shrubs, native grasses and groundcovers planted in accordance with the VMP and the landscape plans.
• Access road streetscape planting - This is a new 21m wide access road reserve, with turfed verges, street trees and a 3m wide shared footpath.
• Potential future tree planting to Devon Street.

2. All areas of the site – Those maintenance activities that apply to all areas across the site. These activities include but is not limited to:

a. Soil Management
b. Mulching
c. Pruning
d. Weeding
e. Disease and Insect Control

1.8 Intensity of Use

A key factor in the frequency and types of landscape maintenance activities required for particular areas is the intensity of their use.

Riparian Corridor

Planting occurs close to the site boundary in the south and the riparian planting will not generally be susceptible to compaction from pedestrian usage, therefore heavier textured soils can be used if required.

2.0 GENERAL SITE CONDITIONS

2.1 Soil

The site had previous industrial uses and has been remediated. It is recommended that all topsoil be imported for new planting works.

2.2 Existing Vegetation

Within the landscape plans and VMP, an area along the shoreline to Duck River has been identified for retention and protection. Sediment, protection fencing and management activities for this area are described within the VMP and erosion and sediment control plans by Costin Roe.

3.0 PROPOSED PLANTING SPECIES

3.1 Riparian Planting

The riparian area will be planted with trees, shrubs and groundcovers that form part of the Swamp Oak Floodplain Forest community. Approximately 500 canopy and sub-canopy trees are proposed to be planted to fulfill revegetation outcomes within the VMP. A 2.5m wide access track has been proposed for maintenance. All species are listed in the schedule within section 3.4 and the landscape documentation, and they should be read in conjunction with this LMP. The landscape plans document the placement and planting of species listed in the VMP. They are intended to create a fully structured 40m averaged riparian zone.

3.2 Access Road Streetscape

Paperbark trees are to be installed at 8m centres along the new access road. Turf to the verge is proposed to be couch and maintained to a height of 40mm.

3.3 Devon Street

As a result of future works to install underground services by Sydney Water or Endevour Energy, existing street trees are required to be protected in accordance with AS4970-2009 (Protection of Trees on Development Sites). Some trees may be required to be removed and replaced. Any removal and recommended replacements are to follow the Arborist report by Guy Paroissien. This report can be found in Appendix D of this LMP.

3.4 VIVA Industrial Estate Planting

Proposed Access Road Street tree planting								
CODE	BOTANICAL NAME	COMMON NAME	MATURE HEIGHT	MATURE WIDTH	POT SIZE	NATIVE	PLANTING DENSITY	QTY*
Trees								
MEL LIN	*Melaleuca linariifolia*	Snow in Summer	10m	4m	75LT	✓	AS SHOWN	144

Riparian Corridor Planting - Swamp Oak Floodplain Forest								
CODE	BOTANICAL NAME	COMMON NAME	MATURE HEIGHT	MATURE WIDTH	POT SIZE	NATIVE	PLANTING DENSITY	QTY*
Trees Canopy Species 1 per 300m2								
ALP EXC	*Alphitonia excelsa*	Red Ash	20m	15m	Forestry Tube	✓	AS SHOWN	11
CAS GLA	*Casuarina glauca*	Swamp Oak	20m	15m	Forestry Tube	✓	AS SHOWN	15
GLO FER	*Glochidion ferdinandi*	Cheese Tree	15m	8m	Forestry Tube	✓	AS SHOWN	16
MEL STY	*Melaleuca styphelioides*	Prickly-leaved Paperbark	10m	8m	Forestry Tube	✓	AS SHOWN	11
MEL QUI	*Melaleuca quinquenervia*	Broad-leaved Paperbark	20m	6m	Forestry Tube	✓	AS SHOWN	19
Small Trees / Shrubs 1 per 50m2								
ACM smi	*Acmena smithii*	Lilly Pilly	3-5m	2m	Tube	✓	AS SHOWN	182
CUP ANA	*Cupaniopsis anacardioides*	Tuckeroo	6m	3m	Tube	✓	AS SHOWN	19
CAL SAL	*Callistemon salignus*	Sweet Willow Bottlebrush	8m	5m	Tube	✓	AS SHOWN	15
MEL alt	*Melaleuca alternifolia*	Narrow-leaved Paperbark	7m	3m	Tube	✓	AS SHOWN	95
MEL ERI	*Melaleuca ericifolia*	Swamp Paperbark	9-15m	3m	Tube	✓	AS SHOWN	34
MYO acu	*Myoporum acuminatum*	Waterbush	10m	3m	Tube	✓	AS SHOWN	88
Grasses and Groundcovers 1 per 2.5m² in fully structured vegetation only								
BLE ind	*Blechnum indicum*	Swamp Water-fern	1m	NIL	Forestry Tube	✓	AS SHOWN	467
CAR app	*Carex appressa*	Tall Sedge	1m	1m	Forestry Tube	✓	AS SHOWN	467
DIA cae	*Dianella caerulea*	Blue Flax Lily	0.8m	1.5m	Forestry Tube	✓	AS SHOWN	513
JUN usi	*Juncus usitatus*	Common Rush	1.2m	0.5m	Forestry Tube	✓	AS SHOWN	467
ISO inu	*Isolepis inundata*	Swamp Club-sedge	0.5m	0.5m	Forestry Tube	✓	AS SHOWN	467
LOM lon	*Lomandra longifolia*	Spiny-headed Mat-Rush	0.8m	0.8m	Forestry Tube	✓	AS SHOWN	513
VIO ban	*Viola banksii*	A Violet	0.40m	NIL	Forestry Tube	✓	AS SHOWN	513
Vines 1 per 25m² in fully structured vegetation only								
PAR str	*Parsonsia straminea*	Common Silkpod	0.1m	NIL	Tube	✓	AS SPECIFIED	114
STE dis	*Stephania japonica var. discolor*	Snake Vine	na	NIL	Tube	✓	AS SPECIFIED	113
FLA ind	*Flagellaria indica*	Whip Vine	15m	NIL	Tube	✓	AS SPECIFIED	113

Stormwater Outlet Rip-rap Planting							
BAU jun	*Baumea juncea*	Bare Twig Rush	1m	1m	Tubestock	✓	3/m2
CAR app	*Carex appressa*	Tall Sedge	1m	1m	Tubestock	✓	3/m2
DIA cae	*Dianella caerulea*	Blue Flax Lily	0.8m	1.5m	Tubestock	✓	3/m2
GAH cla	*Gahnia clarkei*	Saw Sedge	1.5m	1.5m	Tubestock	✓	3/m2
IMP inu	*Imperata cylindrica var. major*	Blady Grass	1.2m	0.3m	Tubestock	✓	3/m2
ISO inu	*Isolepis inundata*	Swamp Club-sedge	0.5m	0.5m	Tubestock	✓	3/m2
JUN usi	*Juncus usitatus*	Common Rush	1.2m	0.5m	Tubestock	✓	3/m2
LOM lon	*Lomandra longifolia*	Spiny-headed Mat-Rush	0.8m	0.8m	Tubestock	✓	3/m2
Swale planting							
BAU jun	*Baumea juncea*	Bare Twig Rush	1m	1m	Tubestock	✓	3/m2
CAR app	*Carex appressa*	Tall Sedge	1m	1m	Tubestock	✓	3/m2
DIA cae	*Dianella caerulea*	Blue Flax Lily	0.8m	1.5m	Tubestock	✓	3/m2
GAH cla	*Gahnia clarkei*	Saw Sedge	1.5m	1.5m	Tubestock	✓	3/m2
IMP inu	*Imperata cylindrica var. major*	Blady Grass	1.2m	0.3m	Tubestock	✓	3/m2
ISO inu	*Isolepis inundata*	Swamp Club-sedge	0.5m	0.5m	Tubestock	✓	3/m2
JUN usi	*Juncus usitatus*	Common Rush	1.2m	0.5m	Tubestock	✓	3/m2
LOM lon	*Lomandra longifolia*	Spiny-headed Mat-Rush	0.8m	0.8m	Tubestock	✓	3/m2
*Final plant number to be calculated at CC stage							

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4.0 LANDSCAPE MANAGEMENT ACTIVITIES

4.1 General

All plant species are native or endemic and have been selected from the VMP (for riparian corridor planting) or council planting lists, the landscape plans follow these selections and set out planting with specified densities and spacings. Areas shall be weed free and mulched annually to suppress weed growth and retain moisture content within the soil.

The key differences in the management of native plants are their requirement for low-phosphorous fertilisers and a lower fertiliser rate than exotic species generally. Plants of the Pea group (including Acacias, Daviesia and Pultenaeas) and Casuarinas are also able to fix their own Nitrogen. Natives also have lower water requirements in comparison to exotics and are adapted to the harsher Australian conditions.

For the above reasons native plantings make a more sustainable option in respect of the long term landscape management and should there be failures the original species specified on the landscape plans should always be reused.

4.2 Swamp Oak Floodplain Forest (SWOF) within Riparian Corridor

To protect waterways, loose mulch should not be placed within 10m of the top of bank. Mulch under a covering of biodegradable erosion protection, such as pegged and overlapped open-weave jute mesh, should be used for revegetation areas within 10m of the top of bank.

Any native vegetation requiring removal for development shall be immediately mulched or chipped and stockpiled on site. It can be used in the riparian restoration areas beyond 10m of the top of bank, as determined by the riparian regeneration contractor. In these areas, mulch is to be placed at a depth of 75-100 mm covering any areas of replanting.

Tubestock is used throughout the riparian corridor, therefore a 10-15% failure rate is to be expected through the establishment stage. The contractor is to monitor and replace failed tubestock immediately.

Any further riparian bank stablisation required is to be as documented in the VMP. For full management and construction activities refer to the VMP.

4.3 Street Tree Planting

75L Semi-mature trees are to be planted at 8m centres along the new access road. Ensure that positive drainage is achieved in all tree pits and install agg-line drainage if necessary. The trees should be regularly watered during the establishment stage and checked for damage. Any failures should be replaced with the same sized stock. Verges should be regularly mown.

4.4 Soil Management

As a general rule riparian or areas of native mass planting require a sandy loam to clay loam topsoil mix which is suitable for the planting of grasses, woody and herbaceous perennials and trees. The following mix is suitable for plants that do not have high nutrient requirements and are not susceptible to compaction. Note that if phosphorous sensitive natives are used, the phosphorous levels of all components must be checked for suitability. Additional drainage may be required depending on the situation.

The following table outlines suggested components, that may likely meet the physical requirements of the soil for all landscape areas:

Sandy loam soil or site won topsoil Composted soil conditioner conforming with AS 4454	70-100% by volume 0-30% by volume	e.g. 8 parts washed sand/2 parts sandy loam/1 part AS 4454 compost

(Leake and Haege 2014, p.87)

4.5 Fertilising, Composting and Mulching

Fertilisers, composting and mulching is used to ensure the health and vigor of the riparian and street trees are maintained. Mass planted areas will perform better when the soil conditions are healthy. Building healthy soils is the key to achieving the long term maintenance goals of mass planted landscape areas. Soil health is primarily achieved with regular applications of organic soil conditioners.

Fertilising and composting are not critical maintenance activities except where there are obvious deficiencies, but should be assessed on an annual basis by observation and leaf analysis.

Maintain an adequate level of mulch to all planting and new riparian areas in order to maximise water conservations and to suppress weeds. Do not use organic mulches in the swale. Instead a rock mulch should be used of a size that will not be disturbed by water flows.

4.6 Pruning

Remove dead or dying plant material from mass planted areas on the site as required. This may become necessary as plantings mature, after damage or adverse environmental conditions. Pruning will be carried out on trees and shrubs that require it to remove the dead and damaged branches, to retain natural shape and improve health and vigour. Where die-back of plant material has been identified new plants should be planted as soon as possible, using species originally specified.

4.7 Weeding

For the riparian corridor, a detailed Weed Management Plan is also described within the VMP .

Weeding is often a concern in new areas of revegetation type landscaping. As of 1 July 2017 the NSW Noxious Weeds Act 1994 was repealed and replaced with the NSW Biosecurity Act 2015 and its accompanying Biosecurity Regulations. Under the act, plants are no longer termed "noxious weeds" nor do they have "classes" of weeds. The new legislation provides greater flexibility to respond to, manage and control all weed species. All plants are assessed for their biosecurity risk. This is the risk that the introduction, presence, spread or increase of a plant will have, or may potentially have, an adverse effect on the economy, the environment or the community.

Environmental weeds are non-local plants that can invade and change natural areas and threaten the survival of native plants and animals. After land clearing, environmental weeds are considered to be the next greatest threat to our indigenous biological diversity. Environmental weeds have the potential to readily invade planting bed areas and potentially impact on the adjacent lands.

In addition to the environmental hazard posed by weeds, weeds occurring in mass planted beds, growing from the base of trees and from pavements can be unsightly and presents an untidy appearance.

Appendix 1 of the Greater Sydney Regional Strategic Weed Management Plan 2017-2022 lists all priority weeds for the Greater Sydney region that have prescribed requirements under the NSW Biosecurity Act 2015. It also lists other regional priority weeds and the minimum outcomes that demonstrate compliance with the general biosecurity duty.

NSW WeedWise is a NSW Department of Primary Industry website which profiles over 300 high priority weeds across the State and Greater Sydney Region. It describes the Biosecurity duty required under the Biosecurity Act 2015 for each plant and outlines their methods of control

(including registered herbicide options).

Another guide for the control of weeds on the site is the New South Wales Weed Control Handbook a guide to weed control in non-crop, aquatic and bushland situations NSW DPI management guide, seventh edition.

A copy of the handbook can be downloaded at the link:

https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0017/123317/weed-control-handbook.pdf

To ensure that environmental weeds do not reproduce within or spread into mass planted areas, compete with plantings and spread to other areas such as Duck River. Weeding and weed control is considered to be a critical maintenance action.

Maintenance Action Required	Frequency
Prevent reproduction of weeds by destroying seedlings and established weeds before seed set or other propagules form. Remove by hand in the first instance (where infestations are low). Ensure that the entire weed including all roots is removed. Dispose of the weeds off site.	Monthly or as defined by the VMP
Remove by Herbicide application any weeds which cannot be controlled by hand removal. Herbicide application must occur before weed seed set. Non-target species and areas must be reinstated if damaged by herbicide application.	
Herbicide use to be in accordance with regulation rates and manufacturers recommendations. Herbicide use must comply with the requirements of the Noxious and environmental weed control handbook. a guide to weed control in non-crop, aquatic and bushland situations. NSW Department of Primary Industry Management Guide, Seventh Edition.	
After spraying, lop any dead weeds flush with the ground surface and dispose of the cuttings.	Monthly or as defined by the VMP
Use of bio-degradable herbicide is mandatory	

5.0 IRRIGATION, DISEASE AND INSECT CONTROL

5.1 Temporary Irrigation

It is recommended that the riparian corridor has a temporary irrigation system installed to help establish revegetation works within the first 6 months after planting. The irrigation system is to be designed, supplied and installed by an experienced specialist irrigation contractor, nominated by the Landscape Contractor and approved by the landscape consultant. After selection they will be required to prepare detailed irrigation plans and specifications for approval prior to commencing work. The Landscape Contractor will co-ordinate the irrigation installation to the client / landscape architects approval. Ensure completion of the irrigation system before the commencement of any other landscape works, so as to provide a readily available supply of water to planting areas.

Upon completion of the installation of irrigation works, the Landscape Contractor is to run through the system to ensure that it is operating correctly and instruct the client's representative in the correct operation and maintenance of the system.

The following principles are to apply:

Maintain adequate soil moisture – match supplemental irrigation water needs to climate conditions and available soil water
Water effectively – apply water so that it reaches the root systems with minimal losses
Encourage extension of the root system – apply water to extremity of root system and beyond
Remove competition for water – maintain mulch around the plants

5.2 Disease, Insect and Feral Animal Control

Always consider biological and non-chemical controls in favour of chemical controls in the first instance because the margin for error is far smaller with chemicals. For example most insecticide will also harm beneficial insects as well as the target species. For a comprehensive reference to the identification, diagnosis and control of pests and diseases refer to "What Garden Pest or Disease Is That? Organic and Chemical Solutions for Every Garden Problem" by Judy McMaugh 2000 New Holland.

If feral animals become a problem refer to Greater Sydney Regional Strategic Pest Animal Plan 2018 - 2023.

The plan can be found at the following location:

https://www.lls.nsw.gov.au/__data/assets/pdf_file/0003/820794/greater-sydney-strategic-pest-plan-web.pdf

6.0 PROTECTIVE MEASURES

6.1 Protection of Existing Vegetation

Existing vegetation to the Duck River shoreline is nominated within the VMP and landscape documentation to be protected and retained.

Existing vegetation needs protection during construction and establishment. An existing fence is present along the edge of the existing Duck River riparian vegetation and is likely to remain in place during construction.

As per commitments of the EIS, the existing native vegetation along Duck River is to be demarcated as a no-go zone and is to include appropriate signage. Access to the riparian corridor (outside the existing native vegetation) during construction is to be limited to personnel and equipment required to install the stormwater outfalls and for revegetation works. After the stormwater outfalls and revegetation works are complete, the riparian corridor will be permanently fenced.

6.2 Tree Protection

Trees along Devon Street should be protected and measures must comply with the Australian Standard 4970 – 2009 (Protection of trees on development sites). Refer to Arboricultural report complied by Guy Paroissien in Appendix D.

The relevant Australian Standards are:
• AS 4970 Protection of trees on development sites.
• AS 4687 Temporary fencing and hoardings

6.3 Erosion, Contamination and Sedimentation Control

During construction, all precautions necessary should be undertaken to prevent erosion, contamination, and sedimentation of the site, surrounding areas and drainage systems, including but not limited to the following:

• Construction of temporary drains and catch drains

• Diversion and dispersal of concentrated flows to points where the water can pass through the site without detrimental impacts

• Construction and maintenance of silt traps to prevent discharge of scoured material to downstream areas

• Stabilisation of exposed soil surfaces

• Use of erosion and sediment control measures to collect sediment and to reduce flow velocities

• Construction of sediment fencing and erosion controls as per Landcom's Managaing Urban Stormwater: Soils and Construction 2004.

• Regular monitoring and maintenance of all erosion and sediment control structures throughout the construction and operational phases of the development to ensure their effective function.

Refer to the approved erosion and sediment control plans documented by Costin Roe, drawing numbers C013919.01-DA21 to C013919.01-DA25.

7.0 MONITORING AND REPORTING

General maintenance tasks are described in SSD landscape drawing 'Specifications & Typical Details SSD-16'. A Maintenance Schedule is also included in Appendix B of this report. A log book should be used to record daily/weekly/monthly visits. All maintenance actions should be recorded in the log book.

Regular inspections of all landscape areas should be undertaken initially by the appointed contractor and then following handover. This is to ensure that maintenance is carried out according to the plan. Inspections should include the ongoing protection of revegetation works during its establishment period.

8.0 APPENDICES

8.1 Appendix A - Approved Central Sydney Industrial Estate Landscape Masterplan

8.2 Appendix B - Maintenance Schedule

CATEGORY		TIMEFRAMES / FREQUENCY			
	Daily/Weekly	2 Weekly/Monthly	3 to 6 Months	As Required	Tasks and Specification
1. Weeding and Rubbish Removal		✓			Remove by Herbicide application any weeds which cannot be controlled by hand removal. Herbicide application must occur before weedseed set. Protect plants from overspray and avoid if rain is likely within 12 hour period. Non-target species and areas must be reinstated if damaged by herbicide application. . Dispose of any waste material using appropriate methods and at designated disposal sites. Maintain weeds for a period of 12 months, with more frequent weeding in the summer months. Use of bio-degradable herbicide is mandatory
2. Leaf Litter Removal		✓	✓		Remove leaf litter from pathways
3. Mulching		✓	✓		Reapply mulch to maintain to a depth of 75mm in areas that are deficient. Soil should be aerated before placing mulch. After 12 months, mulching will have broken down and should be topped up to ensure a depth of 75mm.
4. Plant Fertiliser			✓		Only to be applied if plants are noticeably under stress and the plant will benefit from the application of the fertiliser. Apply slow release fertiliser N:P:K ratio– 18:3:10 at manufacturer's recommended rate per plant.
5. Pest & Disease Control		✓		✓	Check for incidence of fungal and insect attack. Avoid use of chemical sprays. Apply appropriate treatment for fungal and insect attack if necessary. Check for damage by animals, seek specialist advice if persistent damage is observed.
6. Pruning, Trimming, Stakes and Ties		✓			Remove deadwood, remove suckering roots from rootball, check ties. Improve plant shape and promote new growth .Adjust ties and stakes as necessary. Stakes can be removed once plants are self-supporting. Identify need for tree structural work and appoint contractor to perform work.
7. Plant Removal & Replacements		✓			Inspect for failed or dying plants requiring replacement and record probable cause. Replant after dead or failed plant removal. Densities, sizes and species to be in accordance with Landscape DWG SSD-17 and relevant drawing sheet no. Water replacement plantings for a minimum of 12 weeks after planting.
8. Urgent Works	✓				To be actioned within 7 days.
9. Watering	✓	✓			Water as necessary every day especially during periods of hot weather. 2 week interval watering should be maintained until planting is fully established. Best practice watering is early morning or late afternoon to reduce evaporation.
10. Mowing		✓	✓	✓	Remove litter before mowing. Cut grass height must not be less than 40mm or greater than 60mm high. Do not remove more than 50% of the grass height at any one time. Clippings to be removed. Spring, summer and autumn mowing to be every 4-5 weeks. Winter to be every 12 weeks.

CATEGORY		TIMEFRAMES / FREQUENCY				
	Daily/Weekly	2 Weekly/Monthly	3 to 6 Months	Annually	As Required	Tasks and Specification
DISSAPATION OUTLETS						
1. Outlet			✓		✓	Check for no evidence of erosion, blockage, damage or standing water. Outlet freely draining. No excessive sediment build-up (i.e. more than 20% of pipe opening blocked with sediment). Refer to Water by Design (2012) Rectifying Vegetated Stormwater Treatment Assets, if the erosion is either recurring or severe.
2. Erosion and Scour			✓			Check for no evidence of erosion. Eroded areas should be locally re-profiled or reinforced and re-planted if necessary. Refer to Water by Design (2012) Rectifying Vegetated Stormwater Treatment Assets, if the erosion is either recurring or severe.
3. Sediment accumulation			✓			Check for no sediment accumulated in the base of the dissipation outlet. Sediment should be removed from the base if it is impeding the free drainage of stormwater. The removal of accumulated sediment may involve removal and re-establishment of vegetation. Refer to Water by Design (2012) Rectifying Vegetated Stormwater Treatment Assets, if excessive sediment deposition is a recurring issue. Note: the disposal of sediment material must comply with EPA NSW guidelines for the disposal of contaminated soil .

8.3 Appendix C - Reference Documents

The following Australian Standards are referred to in this management plan:

- AS 1319 Safety signs for the occupational environment
- AS 4373 Pruning of amenity trees
- AS 4454 Composts, soil conditioners and mulches
- AS 4687 Temporary fencing and hoardings
- AS 4970 Protection of trees on development sites

The following documents are referred to in this report:

- Landscape Drawings for State Significant Development- SSD 10459 prepared by Geoscapes Landscape Architects, Dwg No's SSD-00 to SSD-17.
- Landscape Design Report for State Significant Development - SSD 10459 prepared by Geoscapes Landscape Architects, Rpt no: LDR01
- Arboricultural Impact Report - Central Sydney Industrial Estate Devon Street Rosehill NSW - Prepared by Guy Paroissien.
- Operational Environmental Management Plan (OEMP).
- Construction Environmental Management Plan (CEMP).
- SSD 10459 Appendix 2 - Applicant's Management and Mitigation Measures.
- Vegetation Management Plan (VMP), prepared by AECOM 2020
- Noxious and environmental weed control handbook. A guide to weed control in non-crop, aquatic and bushland situations. NSW Department of Primary Industry Management Guide, Seventh Edition.
- Soils for Landscape Development. Selection, Specification and Validation. Simon Leake and Elke Haege. CSIRO Publishing 2014.
- What Garden Pest or Disease Is That? Organic and Chemical Solutions for Every Garden Problem. Judy McMaugh 2000 New Holland.

8.4 Appendix D - Arboricultural Impact Report

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ARBORICULTURAL IMPACT REPORT

CENTRAL SYDNEY INDUSTRIAL ESTATE
DEVON STREET
ROSEHILL NSW

1ST FEBRUARY 2021

PREPARED FOR VE PROPERTY PTY LTD
TO ADDRESS CONDITION B53 OF SSD 10459

Prepared by:
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CONTENTS

1. BACKGROUND

Landscape Matrix Pty Ltd has been engaged by VE Property Pty Ltd to prepare an Arboricultural Impact Report in respect to 85 trees adjacent to proposed Central Sydney Industrial Estate at Devon Street Rosehill (the site). The trees are potentially impacted by proposed services installation at the site.

This report has been prepared by Guy Paroissien a Director of Landscape Matrix Pty Ltd. The site was inspected on 19th January 2021.

The subject site has recently been the subject of a State Significant Development (SSD) Approval. Condition B53 of SSD 10459 requires the following in respect of the management of existing trees on the Devon Street frontage:

B53. Prior to services installation works commencing within Devon Street, the Applicant is to engage an AQF Level 5 Arborist to prepare a:

(a) Tree Protection Plan and Tree Management Specification to incorporate specific tree protection measures to the street trees located along Devon Street in accordance with AS4970-2009 (Protection of Trees on Development Sites); and

(b) Tree Removal Plan for any trees proposed to be removed. In the event that street trees are required to be removed on Devon Street, replacement street trees are to be provided in consultation with Council.

This report therefore specifically addresses that Condition.

The assessment of the trees was based upon a visual inspection of the trees from ground level using the Visual Tree Assessment (VTA) approach developed by Mattheck & Breloer (1994). The visual inspection included examination of the trees' dimensions, foliage density and foliage health, form, structure, structural condition, overall health and vigour and landscape significance.

The inspection was limited to visual inspection of the trees without dissection, probing or coring. No aerial inspection of the trees was carried out and the assessment did not include any woody tissue testing or root investigation.

The tree heights and canopy spreads were estimated and expressed in metres and the tree diameters at breast height (DBH) were measured with a standard metal tape at approximately 1.4 metres above ground level and are expressed in millimetres.

2. TREES ON SITE

85 trees on the site have been individually assessed in preparing this report. A summary of these trees, their dimensions, condition, Useful Life Expectancy (ULE) and landscape significance is attached in Appendix B.

The tree numbers in Appendix B correspond with the tree numbers marked on the attached Survey Plans prepared by Land Partners dated 8/7/2020 and identified as Drawing Reference SY04707.000.3.2, Sheets 1 and 2. (Appendix C). The design plan that was used for the assessments in this report is attached at Appendix D (Overall Masterplan prepared by Geoscapes Landscape Architects dated 26/11/2020and identified as Drawing Number SSD-01, Revision K).

The trees that have been assessed on the nature strip frontage of site are summarised in table 1 as follows:

Table 1: Summary of species present, number and height range.

SPECIES	**COMMON NAME**	**NUMBER PRESENT**	**HEIGHT RANGE (metres)**
Callistemon viminalis	Weeping Bottlebrush	74	3 to 7 metres
Melaleuca bracteata	Black Tea-tree	1	5 metres
Melaleuca linariifolia	Flax-leaved Paperbark, Budjur	9	4.5 to 6 metres
Melaleuca quinquenervia	Broad-leaved Paperbark	1	5 metres
Total number of trees		**85**	**3 to 28 metres**

None of the trees assessed for this report is listed individually as a threatened species on the Schedules of the NSW *Biodiversity Conservation Act 2016* or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

3. TREES IDENTIFIED AS A PRIORITY FOR RETENTION/PROTECTION.

The identification of trees as priorities for retention is based upon a number of factors including; species, dimensions, health, maturity, Useful Life Expectancy (ULE) and landscape significance.

Following assessment of the trees it is considered that none of the trees assessed are of high landscape significance and medium to long life expectancy and should be considered as priorities for retention/protection.

4. TREES THAT SHOULD BE CONSIDERED FOR RETENTION/PROTECTION

The identification of trees for consideration (but not as a priority) for retention is based upon the same factors as those for priority for retention (species, dimensions, health, maturity, ULE and landscape significance).

Following assessment of the trees it is considered the following 19 trees are of moderate or moderate to high landscape significance and medium to long life expectancy and should be considered for retention/protection, if possible:

Table 2: Trees identified for consideration for retention/protection.

TREE NO.	SCIENTIFIC AND COMMON NAME	TPZ	SRZ	COMMENTS
17	*Callistemon viminalis* (Weeping Bottlebrush)	4	2.1	A mature, multi trunked specimen approx. 4 metres in height with a canopy spread of 5 x 6 metres and diameters at breast height (DBH) of up to 180mm (330mm above the root flare). In good health and of moderate landscape significance. Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
44	*Callistemon viminalis* (Weeping Bottlebrush)	5.6	2.4	A mature, multi trunked specimen approx. 4 metres in height with a canopy spread of 6 x 7 metres and DBH of up to 190mm (470mm above the root flare). In good health and of moderate landscape significance. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure. Recent mechanical damage at 1.2 metres on Sth side.

45	*Callistemon viminalis* (Weeping Bottlebrush)	4.6	2.2	A mature, multi trunked specimen approx. 4 metres in height with a canopy spread of 4.5 metres and DBH of up to 210mm (380mm above the root flare). In good health and of moderate landscape significance. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
46	*Callistemon viminalis* (Weeping Bottlebrush)	3.6	2	A mature, multi trunked specimen approx. 4 metres in height with a canopy spread of 4 metres and DBH of up to 140mm (260 x 340mm above the root flare). In good health and of moderate landscape significance. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
56	*Callistemon viminalis* (Weeping Bottlebrush)	5	2.3	A mature, multi trunked specimen approx. 3.5 metres in height with a canopy spread of 4 metres and DBH of up to 180mm (420mm above the root flare). In good health and of moderate landscape significance. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
60	*Callistemon viminalis* (Weeping Bottlebrush)	4.8	2.3	A mature, multi trunked specimen approx. 4 metres in height with a canopy spread of 4 x 6 metres and DBH of up to 210mm (400mm above the root flare). In good health and of moderate landscape significance. Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
62	*Melaleuca linariifolia* (Flax-leaved Paperbark, Budjur)	5.3	2.5	A mature, twin trunked specimen approx. 5 metres in height with a canopy spread of 6 metres and DBH of 270 and 350mm. In good health and of moderate landscape significance. The tree displays fair branch attachment with codominant leaders from 1.2 metres - not considered at risk of failure in the short term. At the time of inspection the tree was of fair vigour and exhibited reduced foliage density and low to moderate levels of dieback.
63	*Melaleuca linariifolia* (Flax-leaved Paperbark, Budjur)	5.2	2.3	A mature, twin trunked specimen approx. 5 metres in height with a canopy spread of 6 metres and DBH of 260 and 340mm. In good health and of moderate landscape significance. The tree displays fair branch attachment with codominant leaders from 0.3 metres and multiple leaders from 1.7 metres - not considered at risk of failure in the short term. At the time of inspection the tree was of fair vigour and exhibited low levels of dieback.
65	*Melaleuca linariifolia* (Flax-leaved Paperbark, Budjur)	4.1	2.1	A mature, multi trunked specimen approx. 4.5 metres in height with a canopy spread of 4 metres and DBH of up to 200mm (340mm above the root flare). In good health and of moderate landscape significance. Continued next page…

				The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
66	*Melaleuca quinquenervia* (Broad-leaved Paperbark)	4.1	2.3	A mature, twin trunked specimen approx. 5 metres in height with a canopy spread of 5 metres and DBH of 220 and 260mm. In good health and of moderate landscape significance.
67	*Melaleuca bracteata* (Black Tea-tree)	4.8	2.3	A mature, multi trunked specimen approx. 5 metres in height with a canopy spread of 5 x 6 metres and DBH of up to 230mm (380 x 420mm above the root flare). In good health and of moderate landscape significance. Slight canopy bias to the east. The tree displays fair branch attachment with multiple leaders and a past failure on Nth at 3 metres - not considered at risk of failure in the short term. At the time of inspection the tree was of fair vigour and exhibited low to moderate levels of dieback.
68	*Melaleuca linariifolia* (Flax-leaved Paperbark, Budjur)	4.9	2.3	A mature, multi trunked specimen approx. 4.5 metres in height with a canopy spread of 5.5 metres and DBH of up to 290mm (410mm above the root flare). In good health and of moderate landscape significance. Distinct trunk lean to the west for 1.6 metres then upright. At the time of inspection the tree exhibited low levels of dieback.
70	*Melaleuca linariifolia* (Flax-leaved Paperbark, Budjur)	6.2	2.8	A mature, twin trunked specimen approx. 6 metres in height with a canopy spread of 6 metres and DBH of 350 and 390mm. In good health and of moderate landscape significance. The tree displays fair to poor branch attachment with codominant leaders from ground level and multiple regrowth following past pruning - not considered at risk of failure in the short term.
72	*Melaleuca linariifolia* (Flax-leaved Paperbark, Budjur)	6	2.5	A mature, multi trunked specimen approx. 5 metres in height with a canopy spread of 3 x 7 metres and DBH of 120, 200 and 360mm. In good health and of moderate landscape significance. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure in the short term.
74	*Callistemon viminalis* (Weeping Bottlebrush)	6.0	2.5	A mature, multi trunked specimen approx. 5 metres in height with a canopy spread of 5 x 6 metres and DBH of up to 260mm (480 x 520mm above the root flare). In good health and of moderate landscape significance. Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
75	*Callistemon viminalis* (Weeping Bottlebrush)	5.3	2.4	A mature, multi trunked specimen approx. 6 metres in height with a canopy spread of 5 x 6 metres and DBH of up to 170mm (380 x 510mm above the root flare). In good health and of

				moderate landscape significance. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
77	*Callistemon viminalis* (Weeping Bottlebrush)	4.7	2.2	A mature, multi trunked specimen approx. 5 metres in height with a canopy spread of 7 metres and DBH of up to 190mm (390mm above the root flare). In good health and of moderate landscape significance. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
78	*Callistemon viminalis* (Weeping Bottlebrush)	6.5	2.6	A mature, multi trunked specimen approx. 6 metres in height with a canopy spread of 6 metres and DBH of up to 230mm (500 x 580mm above the root flare). In good health and of moderate landscape significance. Slight canopy bias to the SE. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
80	*Callistemon viminalis* (Weeping Bottlebrush)	4.2	2.8	A mature, twin trunked specimen approx. 7 metres in height with a canopy spread of 7 metres and DBH of 200 and 290mm. In good health and of moderate landscape significance. Slight canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.

TPZ = Tree Protection Zone under AS4970-2009, SRZ = Structural Root Zone under AS4970-2009

A number of methods to determine the likely extent of root zones and appropriate setbacks for tree root protection zones for trees on development sites have been developed in the past. The key criteria used in determining setbacks is the tree's trunk diameter at breast height (DBH) in conjunction with other factors including the sensitivity of the species in question to environmental disturbance/change, the age of the tree and the tree's health and vigour at the time.

Harris et al (2004) provide formulae for calculating tree protection zones based on the above criteria and modified from the 1991 British Standard for protection of trees on construction sites (BS 5837:1991). The 2005 version of the British Standard (BS 5837:2005) recommends a radius of 12 times the tree's DBH. For multi trunked trees BS 5837:2005 recommends a setback of 10 times the basal trunk diameter.

The Australian Standard AS 4970-2009 Protection of Trees on Construction Sites also identifies a 'Tree Protection Zone' (TPZ) of 12 times the tree's DBH. AS 4790-2009 also provides a formula for calculating the "Structural Root Zone' of trees on development sites. This is the area required for stability. In regard to palms, other monocots, cycads and tree ferns the Standard identifies the Tree Protection Zone should not be less than 1 metre outside the crown projection. (Australian Standards Association 2009)

The tree protection zones identified above have been calculated using the Australian Standard 'AS 4970 Protection of trees on construction sites' and are the identified setback from the trees where disturbance (e.g. soil level changes, compaction, excavation etc.) should be minimised to reduce potential impacts on the long-term health of the trees. Preferably, no more than 10% of the tree protection zone should be disturbed with compensation made by extension of other areas of the TPZ to compensate for the area(s) disturbed.

Where greater than 10% of the tree protection zone is potentially disturbed the tree's viability needs to be investigated and demonstrated by the project arborist. The structural root zone is the area required for stability and where disturbance of any sort should be avoided.

5. TREES THAT SHOULD BE CONSIDERED FOR REMOVAL

Following assessment of the trees on the site it is considered that none of the trees assessed should be considered for immediate removal due to poor/declining health or condition and/or inappropriate species.

6. TREES NOT IDENTIFIED FOR REMOVAL OR RETENTION

The following 66 trees have not been identified as being of specific design consideration:

- Tree numbers 1 to 16, 18 to 43, 47-55, 57-59, 61, 64, 69, 71, 79, 81-85..

These trees are generally in good health/condition and do perform some landscape function of low or low to moderate significance. However, these trees individually are not considered significant enough to warrant specific design consideration.

7. POTENTIAL IMPACTS ON TREES

The potential impacts of the proposal have been assessed using the following plans:

- Overall Masterplan prepared by Geoscapes Landscape Architects dated 26/11/2020and identified as Drawing Number SSD-01, Revision K.

Trees requiring removal or proposed to be removed to facilitate the proposed works.

To facilitate construction of the proposed road works, entry driveways, utilities relocation and drainage upgrades the following 13 trees would require removal due to their location within or immediately next to the proposed road works, entry driveways, utilities relocation and drainage upgrades (taking into account the extent of TPZ encroachment).

These trees shown here as being removed are as part of the approved SSD plans, and therefore will be removed.

Table 3: Trees requiring removal to facilitate construction of the proposed works.

TREE NO.	SCIENTIFIC AND COMMON NAME	COMMENTS
43	*Callistemon viminalis* (Weeping Bottlebrush)	Within the proposed access road into the site and will require removal.
44	*Callistemon viminalis* (Weeping Bottlebrush)	Within the proposed access road into the site and will require removal.
45	*Callistemon viminalis* (Weeping Bottlebrush)	Within the proposed access road into the site and will require removal.
46	*Callistemon viminalis* (Weeping Bottlebrush)	Within the proposed access road into the site and will require removal.
64	*Melaleuca linariifolia* (Flax-leaved Paperbark, Budjur)	Within the proposed access road into the proposed Stage 1, Lot 6 Downer Sustainable Road Resource Centre and will require removal.
65	*Melaleuca linariifolia* (Flax-leaved Paperbark, Budjur)	Within the proposed access road into the proposed Stage 1, Lot 6 Downer Sustainable Road Resource Centre and will require removal.
66	*Melaleuca quinquenervia* (Broad-leaved Paperbark)	Within the proposed access road into the proposed Stage 1, Lot 6 Downer Sustainable Road Resource Centre and will require removal.
67	*Melaleuca bracteata* (Black Tea-tree)	Within the proposed access road into the proposed Stage 1, Lot 6 Downer Sustainable Road Resource Centre and will require removal.
68	*Melaleuca linariifolia* (Flax-leaved Paperbark, Budjur)	Within the proposed access road into the proposed Stage 1, Lot 6 Downer Sustainable Road Resource Centre and will require removal.
82	*Callistemon viminalis* (Weeping Bottlebrush)	Identified to be removed as part of the works.

83	*Callistemon viminalis* (Weeping Bottlebrush)	Identified to be removed as part of the works.
84	*Callistemon viminalis* (Weeping Bottlebrush)	Identified to be removed as part of the works.
85	*Callistemon viminalis* (Weeping Bottlebrush)	Identified to be removed as part of the works.

Trees potentially impacted by the proposed footpath and services works
The remaining 66 trees assessed are potentially impacted by services works. These trees are:
Tree numbers 1- 42, 47 to 63 and 69 to 81.

Other tree removals
In addition to the nominated tree removals noted in the SSD and itemised above, there is potential that other trees may require removal. Should this be required the following steps will be undertaken:

- The reason for the additional removals will be identified;
- Alternatives to removal will be considered;
- Replacement plantings will be included in the landscape planting works;
- The Council's tree management officer(s) will be consulted in the process.

Proposed installation of new water service and other services
Sewer and electrical services are proposed to be installed inside the property within the first 5 metres. The existing boundary wall (with fencing above) will remain and this will reduce any potential impacts on the trees' TPZ areas.

Services work for a new water line and other service extensions has the potential to impact on the street trees shown to be retained.

The existing nature strip area in which the trees are located is approximately 3 metres in width with the trees generally located within a metre of the northern (kerb) side of the nature strip.

Under *AS4970-2009 Protection of trees on development sites* the trees have TPZs of up to 6.5 metres (average of 4.1 metres) and SRZs of up to 2.8 metres (average of 2.1 metres).

The proposed installation of a new water supply service and associated 600mm wide trench and other services works will involve excavation within both the TPZs and SRZs of the trees and will impact a high to significant area of the trees' identified TPZ areas.

It is considered the actual impacts will be greater than a calculated percentage of nominal TPZ as the existing kerb, gutter and road is likely to have resulted in more root growth in the area impacted. In addition, there is high potential for impact on structural roots and the trees' structural integrity (stability).

The following options are available to assist in minimising these potential impacts:

- Thrust boring/directional drilling
- Water jet vacuum excavation

Thrust boring the services installation at a depth of 600mm (or greater) will minimise any potential impacts of the services installation. The bore pit locations will need to be determined in consultation with the project arborist to minimise impacts to trees proposed to be retained. In this regard it is noted there are several gaps in the row of street trees that would provide suitable locations for the bore pit locations.

The use of a water jet vacuum to undertake the trenching for services installation is also an option that would assist in minimising impacts - this would involve the trench being excavated using the water jet vacuum and then the services being carefully installed below the exposed roots.

Of the two options it is considered the option of thrust boring is preferred as it will minimise disturbance to the soil profile and avoids the need for excavation, contractor access to install the utilities and access to backfill the trench in close proximity to all of the trees.

8. TREE PROTECTION MEASURES

The following tree protection measures are recommended to assist in minimising potential impacts that may arise during the works (including the implementation of landscape works on the site).

A. Measures to be implemented prior to the commencement of any works on the site.

1. Trees to be retained are to be clearly identified by signage as protected trees (to be located on the existing site boundary fence..

2. The installation of tree protection fencing to protect the trees during works is limited by their location adjacent to the kerb – installation of fencing along the kerb would require pruning on the northern side of their crowns in addition to previous pruning for vehicular access and upper crown pruning for OH wire clearance. In light of this it is recommended the existing chain wire fence along the site boundary be retained during the life of demolition/construction works to provide protection from works within the site.

3. Where access is required on the nature strip for installation of services then those specific trees can be protected by a combination of trunk and ground protection in accordance with Figure 4 of AS4970-2009 – the identification of these specific trees and the protection measures would need to be finalised on site with the project arborist when the specific locations of services installation have been identified.

4. The existing tree protection fence along the site boundary is to be retained for the life of demolition/construction works to provide protection from works within the site.

B. Measures to be implemented and maintained during the life of construction works on the site.

5. Any excavation within the identified TPZ of trees to be retained shall be carried out by hand to minimize disturbance to tree roots. Roots greater than 25mm are not to be damaged or severed without prior assessment by a minimum level 5 AQF arborist to determine likely level of impact and the restorative actions required to minimise the impacts of root damage.

6. Tree roots between 10mm and 25mm diameter, severed during excavation, shall be cleanly severed using sterilised hand tools (i.e. secateurs or a pruning saw) – all root pruning work shall be done, or directly supervised, by a minimum level 5 AQF arborist.

7. The following activities/actions are prohibited from the tree protection zones:

- Soil cut or fill including excavation and trenching (except where required for approved works and under the supervision of an AQF level 5 arborist)

- Soil cultivation, disturbance or compaction (except where required for approved works and under the supervision of an AQF level 5 arborist)
- Stockpiling storage or mixing of materials
- The parking, storing, washing and repairing of tools, equipment and machinery
- The disposal of liquids and refueling
- The disposal of building materials
- The sitting of offices or sheds
- Any action leading to the impact on tree health or structure

8. Canopy pruning of trees identified for protection which is necessary to accommodate approved building works shall be undertaken in accordance with Australian Standard 4373-2007 'Pruning of Amenity Trees'.

9. USE OF TREES BY WILDLIFE

During the inspection on 19th January 2021 the trees on the site were checked for signs of use by wildlife. Few of the trees showed signs of usage by wildlife such as scratch marks or the presence of scats consistent with usage by Common Brushtail Possum (*Trichosurus vulpecula*) or Common Ringtail Possum (*Pseudocheirus peregrinus*).

It is probable that a number of the trees would be used by native fauna at various times for food, shelter and roosting purposes and the retention and replacement of trees on and adjoining the site will retain this opportunity.

The following bird species were noted on site (or heard in the immediate vicinity of the site) during the inspection on 19th January 2021: Noisy Miner (*Manorina melanocephala*) and Rainbow Lorikeet (*Trichoglossus haematodus*).

10. CONCLUSIONS/RECOMMENDATIONS

Of the 85 trees adjacent to the proposed works at 9 Devon Street Rosehill that have been assessed none of the trees were identified as having high landscape significance and as a priority for retention. However, 19 trees have been identified as worthy of specific consideration for retention/protection if possible.

None of the trees assessed for this report were identified as recommended for removal regardless of any development proposal.

The remaining 66 trees are identified in section 6 of the report as not requiring specific design consideration (i.e. are either of low landscape significance or short life expectancy).

To facilitate construction of the proposed development works the following 13 trees will require removal or are proposed to be removed as part of the works:
Tree # 43 *Callistemon viminalis* (Weeping Bottlebrush)
Tree # 44 *Callistemon viminalis* (Weeping Bottlebrush)
Tree # 45 *Callistemon viminalis* (Weeping Bottlebrush)
Tree # 46 *Callistemon viminalis* (Weeping Bottlebrush)
Tree # 64 *Melaleuca linariifolia* (Flax-leaved Paperbark, Budjur)
Tree # 65 *Melaleuca linariifolia* (Flax-leaved Paperbark, Budjur)
Tree # 66 *Melaleuca quinquenervia* (Broad-leaved Paperbark)
Tree # 67 *Melaleuca bracteata* (Black Tea-tree)
Tree # 68 *Melaleuca linariifolia* (Flax-leaved Paperbark, Budjur)
Tree # 82 *Callistemon viminalis* (Weeping Bottlebrush)
Tree # 83 *Callistemon viminalis* (Weeping Bottlebrush)
Tree # 84 *Callistemon viminalis* (Weeping Bottlebrush)
Tree # 85 *Callistemon viminalis* (Weeping Bottlebrush)

Trees potentially impacted by the proposed footpath and water services works
The remaining 66 trees assessed for the report are in the vicinity of the proposed footpath and water services works and have the potential to be impacted by these proposed works.

These trees are:
Tree numbers 1- 42, 47 to 63 and 69 to 81.

Other tree removals
In addition to the nominated tree removals noted in the SSD and itemised above, there is potential that other trees may require removal. Should this be required the following steps will be undertaken:

- The reason for the additional removals will be identified;
- Alternatives to removal will be considered;
- Replacement plantings will be included in the landscape planting works;
- The Council's tree management officer(s) will be consulted in the process.

Proposed installation of new water service and other services
Sewer and electrical services are proposed to be installed inside the property within the first 5 metres. The existing boundary wall (with fencing above) will remain and this will reduce any potential impacts on the trees' TPZ areas.

Services work for a new water line and other service extensions has the potential to impact on the street trees shown to be retained.

The existing nature strip area in which the trees are located is approximately 3 metres in width with the trees generally located within a metre of the northern (kerb) side of the nature strip.

Under *AS4970-2009 Protection of trees on development sites* the trees have TPZs of up to 6.5 metres (average of 4.1 metres) and SRZs of up to 2.8 metres (average of 2.1 metres).

The proposed installation of a new water supply service and associated 600mm wide trench and other services works will involve excavation within both the TPZs and SRZs of the trees and will impact a high to significant area of the trees' identified TPZ areas.

It is considered the actual impacts will be greater than a calculated percentage of nominal TPZ as the existing kerb, gutter and road is likely to have resulted in more root growth in the area impacted. In addition, there is high potential for impact on structural roots and the trees' structural integrity (stability).

The following options are available to assist in minimising these potential impacts:

- Thrust boring/directional drilling
- Water jet vacuum excavation

Thrust boring the services installation at a depth of 600mm (or greater) will minimise any potential impacts of the services installation. The bore pit locations will need to be determined in consultation with the project arborist to minimise impacts to trees proposed to be retained. In this regard it is noted there are several gaps in the row of street trees that would provide suitable locations for the bore pit locations.

The use of a water jet vacuum to undertake the trenching for services installation is also an option that would assist in minimising impacts - this would involve the trench being excavated using the water jet vacuum and then the services being carefully installed below the exposed roots.

Of the two options it is considered the option of thrust boring is preferred as it will minimise disturbance to the soil profile and avoids the need for excavation, contractor access to install the utilities and access to backfill the trench in close proximity to all of the trees.

Generic tree protection measures are identified in section 8 of this report to minimise potential impacts to the trees to be retained.

Guy Paroissien, MAIH, MIACA, MISA, MAA
M Env. Mgt & Restor., Dip. Arboriculture, Hort Cert., Tree Care Cert.
Director
Landscape Matrix Pty Ltd
1st February 2021

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APPENDIX A

Photograph 1: Illustrating the location and context of the trees along Devon Street.

Photograph 2: Illustrating the location of the trees within the nature strip area.

Photograph 3: Illustrating past mechanical damage from vehicle impacts.

Photograph 4: Illustrating a recent branch tear from vehicle impact.

Photograph 5: Illustrating a recent branch tear from vehicle impact.

Photograph 6: Illustrating the multiple leaders from near ground level in many of the trees

Photograph 7: Illustrating the multiple regrowth following past pruning for OH wires.

Photograph 8: Illustrating the multiple regrowth following past pruning for OH wires.

APPENDIX B - TREE DATA SUMMARY - 9 DEVON STREET ROSEHILL

Tree No.	*Genus, Species (Common Name)*	Height (m)	Canopy (m)	DBH (mm)	DBH for TPZ	DGL for SRZ	Foliage Condition	Age Class	Trunk	Trunk Lean	Crown balance	Past Pruning	Stability	Branch Attachment	Health	Vigour	Dead Wood	Pest or disease	ULE	Landscape Significance	Retention Value*	Comments
1	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	4	Up to 140 (290 above root flare)	290	290	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the south	Lower limbs pruned in past to 2.5 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
2	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	4	Up to 140 (330 above root flare)	330	330	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the south	Lower limbs pruned in past to 2 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
3	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	4	Up to 140 (360 above root flare)	360	360	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the south	Lower limbs pruned in past to 2 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
4	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	3	190	190	350	Good foliage condition	Mature	Single trunk	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 2 metres, upper branches pruned for OH wires in centre, central leader reduced to 0.4m	Appears stable	Sound branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low landscape significance	3	Originally multi stemmed - now reduced to one stem.
5	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	4	Up to 180 (240 x 460 above root flare)	330	330	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the south	Lower limbs pruned in past to 2.2 metres, upper branches pruned for OH wires in centre	Appears stable	Fair to poor branch attachment	Good health	Good vigour	<5%	Decay in basal trunk	3 Short (5 to 15 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair to poor branch attachment with codominant leaders from ground level with some evidence of poor attachment and evidence of decay in the basal trunk - at increased risk of failure.
6	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	3	Up to 190 (320 above root flare)	320	320	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the south	Lower limbs pruned in past to 2.2 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
7	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	3.5	Up to 120 (310 above root flare)	310	310	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the south	Lower limbs pruned in past to 2 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.

Tree No.	*Genus, Species (Common Name)*	Height (m)	Canopy (m)	DBH (mm)	DBH for TPZ	DGL for SRZ	Foliage Condition	Age Class	Trunk	Trunk Lean	Crown balance	Past Pruning	Stability	Branch Attachment	Health	Vigour	Dead Wood	Pest or disease	ULE	Landscape Significance	Retention Value*	Comments
8	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	4	Up to 220 (320 above root flare)	320	320	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the south	Lower limbs pruned in past to 2 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
9	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	3.5 x 4	Up to 220 (370 above root flare)	370	370	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the south	Lower limbs pruned in past to 2 metres, upper branches pruned for OH wires in centre	Appears stable	Fair to poor branch attachment	Good health	Fair vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair to poor branch attachment with multiple leaders and evidence of past failure of a leader at 0.8 metres. At the time of inspection the tree was of fair vigour and exhibited reduced foliage density.
10	*Callistemon viminalis* (Weeping Bottlebrush)	4	4	Up to 170 (360 above root flare)	360	360	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the south	Lower limbs pruned in past to 2.2 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
11	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	3.5	Up to 140 (340 x 420 above root flare)	380	380	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy on an E x W axis	Lower limbs pruned in past to 1.6 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
12	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	4	Up to 130 (340 above root flare)	340	340	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the south	Lower limbs pruned in past to 2 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
13	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	3.5 x 4	Up to 130 (300 above root flare)	300	300	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the south	Lower limbs pruned in past to 2 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
14	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	3.5	Up to 130 (280 x 380 above root flare)	330	330	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy on an E x W axis	Lower limbs pruned in past to 1.6 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
15	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	4	Up to 140 (310 above root flare)	310	310	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the south	Lower limbs pruned in past to 1.6 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure. Past mechanical damage to branch on north side.

Tree No.	*Genus, Species (Common Name)*	Height (m)	Canopy (m)	DBH (mm)	DBH for TPZ	DGL for SRZ	Foliage Condition	Age Class	Trunk	Trunk Lean	Crown balance	Past Pruning	Stability	Branch Attachment	Health	Vigour	Dead Wood	Pest or disease	ULE	Landscape Significance	Retention Value*	Comments
16	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	4 x 5	Up to 180 (340 x 420 above root flare)	390	390	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the south	Lower limbs pruned in past to 1.8 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
17	*Callistemon viminalis* (Weeping Bottlebrush)	4	5 x 6	Up to 180 (330 above root flare)	330	330	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the south	Lower limbs pruned in past to 1.8 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate landscape significance	2	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
18	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	3.5 x 4.5	Up to 130 (320 above root flare)	320	320	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the south	Lower limbs pruned in past to 1.5 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
19	*Callistemon viminalis* (Weeping Bottlebrush)	4.5	4	Up to 140 (340 above root flare)	340	340	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the SW	Lower limbs pruned in past to 1.6 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
20	*Callistemon viminalis* (Weeping Bottlebrush)	4	4 x 5	Up to 170 (320 above root flare)	320	320	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the south	Lower limbs pruned in past to 2 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
21	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	3 x 4	Up to 150 (290 above root flare)	290	290	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy on an E x W axis	Lower limbs pruned in past to 1.8 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
22	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	3 x 4	Up to 120 (270 above root flare)	270	270	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy on an E x W axis	Lower limbs pruned in past to 1.7 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
23	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	2.5 x 4	Up to 120 (260 above root flare)	260	260	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy on an E x W axis	Lower limbs pruned in past to 1.6 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.

Tree No.	*Genus, Species (Common Name)*	Height (m)	Canopy (m)	DBH (mm)	DBH for TPZ	DGL for SRZ	Foliage Condition	Age Class	Trunk	Trunk Lean	Crown balance	Past Pruning	Stability	Branch Attachment	Health	Vigour	Dead Wood	Pest or disease	ULE	Landscape Significance	Retention Value*	Comments
24	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	3 x 4	Up to 100 (250 x 290 above root flare)	270	270	Good foliage condition	Mature	Single trunk	Upright trunk	Majority of canopy to the south	Lower limbs pruned in past to 1.5 metres, upper branches pruned for OH wires in centre, central leader reduced to 0.3m on Nth	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure. Past mechanical damage on south at 1 metre.
25	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	3 x 4	Up to 110 (300 above root flare)	300	300	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the south	Lower limbs pruned in past to 1.6 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
26	*Callistemon viminalis* (Weeping Bottlebrush)	4	3 x 4	Up to 130 (280 above root flare)	280	280	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the south	Lower limbs pruned in past to 1.5 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
27	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	3	Up to 100 (280 above root flare)	280	280	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 1.6 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
28	*Callistemon viminalis* (Weeping Bottlebrush)	4	2.5	120, 150	190	340	Good foliage condition	Mature	Twin trunked	Upright trunk	Majority of canopy to the east	Lower limbs pruned in past to 1.4 metres, central leader removed in past at 1.2 metres	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low landscape significance	3	Canopy bias due to past pruning. The tree's form has been compromised by severe past pruning.
29	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	4	Up to 130 (280 above root flare)	280	280	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 1.8 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
30	*Callistemon viminalis* (Weeping Bottlebrush)	4	4	Up to 130 (320 above root flare)	320	320	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 1.7 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
31	*Callistemon viminalis* (Weeping Bottlebrush)	4	3 x 4	Up to 120 (340 above root flare)	340	340	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the south	Lower limbs pruned in past to 1.5 metres	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	Mistletoe present in central crown	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure. Mistletoe present in central crown.

Tree No.	*Genus, Species (Common Name)*	Height (m)	Canopy (m)	DBH (mm)	DBH for TPZ	DGL for SRZ	Foliage Condition	Age Class	Trunk	Trunk Lean	Crown balance	Past Pruning	Stability	Branch Attachment	Health	Vigour	Dead Wood	Pest or disease	ULE	Landscape Significance	Retention Value*	Comments
32	*Callistemon viminalis* (Weeping Bottlebrush)	4	4	Up to 140 (360 above root flare)	360	360	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 2 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure. Past mechanical damage on Nth side at 1.2 to 2.2 metres.
33	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	4 x 5	Up to 150 (320 above root flare)	320	320	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the south	Lower limbs pruned in past to 1.7 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
34	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	4 x 5	Up to 140 (290 above root flare)	290	290	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the south	Lower limbs pruned in past to 2 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure. Recent branch failure due to impact from vehicle.
35	*Callistemon viminalis* (Weeping Bottlebrush)	4	4	Up to 160 (290 above root flare)	290	290	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the south	Lower limbs pruned in past to 1.6 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure. Recent mechanical damage to leader on NW from vehicle impact.
36	*Callistemon viminalis* (Weeping Bottlebrush)	4.5	1 x 2.5	180	180	290	Good foliage condition	Mature	Single trunk	Upright trunk	Majority of canopy to the east	Lower limbs pruned in past to 1 metre, central leader removed at 2.5 metres in past	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple regrowth following severe past pruning - not considered at risk of failure. The tree's form has been compromised by severe past pruning.
37	*Callistemon viminalis* (Weeping Bottlebrush)	4	4	Up to 150 (320 above root flare)	320	320	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 3 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
38	*Callistemon viminalis* (Weeping Bottlebrush)	4		Up to 140 (440 above root flare)	440	440	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 1.8 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
39	*Callistemon viminalis* (Weeping Bottlebrush)	4	3.5	Up to 150 (330 above root flare)	330	330	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 1.7 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.

Tree No.	*Genus, Species (Common Name)*	Height (m)	Canopy (m)	DBH (mm)	DBH for TPZ	DGL for SRZ	Foliage Condition	Age Class	Trunk	Trunk Lean	Crown balance	Past Pruning	Stability	Branch Attachment	Health	Vigour	Dead Wood	Pest or disease	ULE	Landscape Significance	Retention Value*	Comments
40	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	3 x 4.5	Up to 130 (320 above root flare)	320	320	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 1.8 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
41	*Callistemon viminalis* (Weeping Bottlebrush)	4	3	Up to 140 (320 above root flare)	320	320	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 1.6 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
42	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	3.5	Up to 170 (320 above root flare)	320	320	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 1.7 metres, upper branches pruned for OH wires in centre	Appears stable	Fair to poor branch attachment	Good health	Fair vigour	5%	No visual evidence of significant pest or disease	3 Short (5 to 15 years)	Low landscape significance	3	The tree displays fair to poor branch attachment with multiple leaders and a past failure on the south side at 3 metres - not considered at risk of failure. At the time of inspection the tree was of fair vigour and exhibited reduced foliage density and low levels of dieback.
43	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	3 x 4	Up to 75 (230 above root flare)	230	230	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the west	Lower limbs pruned in past to 1.2 metres	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low landscape significance	3	The tree's past canopy development has been suppressed. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
44	*Callistemon viminalis* (Weeping Bottlebrush)	4	6 x 7	Up to 190 (470 above root flare)	470	470	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 2.4 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate landscape significance	2	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure. Recent mechanical damage at 1.2 metres on Sth side.
45	*Callistemon viminalis* (Weeping Bottlebrush)	4	4.5	Up to 210 (380 above root flare)	380	380	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 2 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate landscape significance	2	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
46	*Callistemon viminalis* (Weeping Bottlebrush)	4	4	Up to 190 (260 x 340 above root flare)	300	300	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 2 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate landscape significance	2	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
47	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	3.5	Up to 140 (370 above root flare)	370	370	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 1.6 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Moderate health	Poor vigour	30%	No visual evidence of significant pest or disease	3 Short (5 to 15 years)	Low landscape significance	3	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure. At the time of inspection the tree was of moderate health and poor vigour and exhibited high levels of dieback and epicormic growth.
48	*Callistemon viminalis* (Weeping Bottlebrush)	4	4 x 3.5	Up to 130 (310 above root flare)	310	310	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 1.7 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.

Tree No.	*Genus, Species (Common Name)*	Height (m)	Canopy (m)	DBH (mm)	DBH for TPZ	DGL for SRZ	Foliage Condition	Age Class	Trunk	Trunk Lean	Crown balance	Past Pruning	Stability	Branch Attachment	Health	Vigour	Dead Wood	Pest or disease	ULE	Landscape Significance	Retention Value*	Comments
49	*Callistemon viminalis* (Weeping Bottlebrush)	4	4 x 5	Up to 140 (340 above root flare)	340	340	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 1.8 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
50	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	3 x 4	Up to 130 (380 above root flare)	380	380	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 2 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
51	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	3 x 4	Up to 160 (340 above root flare)	340	340	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 1.6 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
52	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	3 x 4	Up to 240 (340 x 480 above root flare)	410	410	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 1.7 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
53	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	3 x 4	Up to 180 (310 above root flare)	310	310	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 1.6 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
54	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	3	Up to 110 (220 above root flare)	220	220	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 1.6 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
55	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	3 x 4	Up to 150 (320 above root flare)	320	320	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 2 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
56	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	4	Up to 180 (420 above root flare)	420	420	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 2 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	2	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
57	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	2 x 3.5	Up to 110 (270 above root flare)	270	270	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy on an E x W axis	Lower limbs pruned in past to 1.6 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.

Tree No.	*Genus, Species (Common Name)*	Height (m)	Canopy (m)	DBH (mm)	DBH for TPZ	DGL for SRZ	Foliage Condition	Age Class	Trunk	Trunk Lean	Crown balance	Past Pruning	Stability	Branch Attachment	Health	Vigour	Dead Wood	Pest or disease	ULE	Landscape Significance	Retention Value*	Comments
58	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	3	Up to 85 (290 above root flare)	290	290	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 1.6 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
59	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	3.5	Up to 110 (320 above root flare)	320	320	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 1.5 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
60	*Callistemon viminalis* (Weeping Bottlebrush)	4	4 x 6	Up to 210 (400 above root flare)	400	400	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy on an E x W axis	Lower limbs pruned in past to 2 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate landscape significance	2	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
61	*Callistemon viminalis* (Weeping Bottlebrush)	3	2	130	130	160	Good foliage condition	Semi Mature	Single trunk	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 1.6 metres	Appears stable	Sound branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	1 Long (> 40 years)	Low landscape significance	3	
62	*Melaleuca linariifolia* (Flax-leaved Paperbark, Budjur)	5	6	270, 350	440	490	Fair foliage condition	Mature	Twin trunked	Upright trunk	Balanced canopy area	Upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Fair vigour	10%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate landscape significance	2	The tree displays fair branch attachment with codominant leaders from 1.2 metres - not considered at risk of failure in the short term. At the time of inspection the tree was of fair vigour and exhibited reduced foliage density and low to moderate levels of dieback.
63	*Melaleuca linariifolia* (Flax-leaved Paperbark, Budjur)	5	6	260, 340	430	430	Good foliage condition	Mature	Twin trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 3 metres	Appears stable	Fair branch attachment	Good health	Fair vigour	5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate landscape significance	2	The tree displays fair branch attachment with codominant leaders from 0.3 metres and multiple leaders from 1.7 metres - not considered at risk of failure in the short term. At the time of inspection the tree was of fair vigour and exhibited low levels of dieback.
64	*Melaleuca linariifolia* (Flax-leaved Paperbark, Budjur)	4.5	3	290	290	360	Good foliage condition	Mature	Single trunk	Upright trunk	Majority of canopy to the west	Lower limbs pruned in past to 1.1 metres	Appears stable	Poor branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	3 Short (5 to 15 years)	Low to moderate landscape significance	3	Canopy bias due to past failure of codominant leader at 1.6 metres. The tree displays poor branch attachment with past failure of a codominant leader at 1.6 metres.
65	*Melaleuca linariifolia* (Flax-leaved Paperbark, Budjur)	4.5	4	Up to 200 (340 above the root flare)	340	340	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 2 metres	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate landscape significance	2	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
66	*Melaleuca quinquenervia* (Broad-leaved Paperbark)	5	5	220, 260	340	410	Good foliage condition	Mature	Twin trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 2 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate landscape significance	2	
67	*Melaleuca bracteata* (Black Tea-tree)	5	5 x 6	Up to 230 (380 x 420 above the root flare)	400	400	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the east	Lower limbs pruned in past to 2 metres	Appears stable	Fair branch attachment	Good health	Fair vigour	5 to 10%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate landscape significance	2	Slight canopy bias to the east. The tree displays fair branch attachment with multiple leaders and a past failure on Nth at 3 metres - not considered at risk of failure in the short term. At the time of inspection the tree was of fair vigour and exhibited low to moderate levels of dieback.
68	*Melaleuca linariifolia* (Flax-leaved Paperbark, Budjur)	4.5	5	Up to 390 (410 above the root flare)	410	410	Good foliage condition	Mature	Multi trunked	Distinct trunk lean to the west	Balanced canopy area	Lower limbs pruned in past to 2 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate landscape significance	2	Distinct trunk lean to the west for 1.6 metres then upright. At the time of inspection the tree exhibited low levels of dieback.

Tree No.	*Genus, Species (Common Name)*	Height (m)	Canopy (m)	DBH (mm)	DBH for TPZ	DGL for SRZ	Foliage Condition	Age Class	Trunk	Trunk Lean	Crown balance	Past Pruning	Stability	Branch Attachment	Health	Vigour	Dead Wood	Pest or disease	ULE	Landscape Significance	Retention Value*	Comments
69	*Melaleuca linariifolia* (Flax-leaved Paperbark, Budjur)	4.5	4	Up to 270 (410 above the root flare)	410	410	Good foliage condition	Mature	Multi trunked	Slight trunk lean to the west	All canopy to the west	Lower limbs pruned in past to 3 metres	Appears stable	Fair branch attachment	Good health	Fair vigour	5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree's past canopy development has been significantly suppressed. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure in the short term.
70	*Melaleuca linariifolia* (Flax-leaved Paperbark, Budjur)	6	6	350, 390	520	650	Good foliage condition	Mature	Twin trunked	Upright trunk	Balanced canopy area	Upper branches pruned for OH wires in centre	Appears stable	Fair to poor branch attachment	Good health	Good vigour	5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate landscape significance	2	The tree displays fair to poor branch attachment with codominant leaders from ground level and multiple regrowth following past pruning - not considered at risk of failure in the short term.
71	*Melaleuca linariifolia* (Flax-leaved Paperbark, Budjur)	4.5	4 x 5	210, 340	400	440	Good foliage condition	Mature	Twin trunked	Upright trunk	Majority of canopy to the east	Lower limbs pruned in past to 3 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree's past canopy development has been suppressed. The tree displays fair branch attachment with codominant leaders from ground level and multiple regrowth following past pruning - not considered at risk of failure.
72	*Melaleuca linariifolia* (Flax-leaved Paperbark, Budjur)	5	3 x 7	170, 300, 360	500	520	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy on an E x W axis	Lower limbs pruned in past to 2 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate landscape significance	2	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure in the short term.
73	*Callistemon viminalis* (Weeping Bottlebrush)	4	3 x 4	190, 200	280	310	Good foliage condition	Mature	Twin trunked	Upright trunk	Majority of canopy to the east	Lower limbs pruned in past to 2 metres, upper branches pruned for OH wires in centre	Appears stable	Fair to poor branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree displays fair branch attachment with multiple leaders with some evidence of poor attachment - not considered at risk of failure in the short term.
74	*Callistemon viminalis* (Weeping Bottlebrush)	5	5 x 6	Up to 260 (480 x 520 above the root flare)	500	500	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the east	Lower limbs pruned in past to 2 metres, upper branches pruned for OH wires in centre and west	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate landscape significance	2	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
75	*Callistemon viminalis* (Weeping Bottlebrush)	6	5 x 6	Up to 170 (380 x 510 above the root flare)	445	445	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 2 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	1 Long (> 40 years)	Moderate landscape significance	2	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
76	*Callistemon viminalis* (Weeping Bottlebrush)	5.5	4 x 6	Up to 180 (380 above the root flare)	380	380	Good foliage condition	Mature	Multi trunked	Slight trunk lean to the SW	Majority of canopy to the SW	Lower limbs pruned in past to 2 metres, upper branches pruned for OH wires in centre and east	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree's past canopy development has been suppressed. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
77	*Callistemon viminalis* (Weeping Bottlebrush)	5	7	Up to 190 (390 above the root flare)	390	390	Good foliage condition	Mature	Multi trunked	Upright trunk	Balanced canopy area	Lower limbs pruned in past to 1.8 metres, upper branches pruned for OH wires in centre and east	Appears stable	Fair branch attachment	Good health	Good vigour	5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Moderate landscape significance	2	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.

Tree No.	*Genus, Species (Common Name)*	Height (m)	Canopy (m)	DBH (mm)	DBH for TPZ	DGL for SRZ	Foliage Condition	Age Class	Trunk	Trunk Lean	Crown balance	Past Pruning	Stability	Branch Attachment	Health	Vigour	Dead Wood	Pest or disease	ULE	Landscape Significance	Retention Value*	Comments
78	*Callistemon viminalis* (Weeping Bottlebrush)	6	6	Up to 280 (500 x 580 above the root flare)	540	540	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the SE	Lower limbs pruned in past to 2 metres	Appears stable	Fair branch attachment	Good health	Good vigour	5%	No visual evidence of significant pest or disease	1 Long (> 40 years)	Moderate landscape significance	2	Slight canopy bias to the SE. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
79	*Callistemon viminalis* (Weeping Bottlebrush)	6	2 x 4	Up to 110 (4310 above the root flare)	310	310	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy on an E x W axis	Lower limbs pruned in past to 1.5 metres	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low landscape significance	3	The tree's past canopy development has been significantly suppressed.
80	*Callistemon viminalis* (Weeping Bottlebrush)	7	7	200, 290	350	675	Good foliage condition	Mature	Twin trunked	Upright trunk	Majority of canopy to the south	Lower limbs pruned in past to 1.6 metres including removal of large diameter leaders	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	1 Long (> 40 years)	Moderate landscape significance	2	Slight canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
81	*Callistemon viminalis* (Weeping Bottlebrush)	6	4	Up to 130 (430 above the root flare)	430	430	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the north	Lower limbs pruned in past to 1.8 metres	Appears stable	Fair branch attachment	Good health	Fair vigour	5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	The tree's past canopy development has been suppressed. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure. At the time of inspection the tree was of fair vigour and exhibited moderate levels of dieback (mostly shaded/internal dieback). Ringtail Possum drey in upper crown.
82	*Callistemon viminalis* (Weeping Bottlebrush)	4.5	4	Up to 170 (380 above the root flare)	380	380	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the north	Lower limbs pruned in past to 1.7 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	1 Long (> 40 years)	Low to moderate landscape significance	3	The tree's past canopy development has been suppressed. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
83	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	2	Up to 80 (380 above the root flare)	380	380	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the north	Lower limbs and leaders pruned in past to 2 metres, upper branches pruned for OH wires in centre	Appears stable	Fair branch attachment	Moderate health	Poor vigour	<5%	No visual evidence of significant pest or disease	3 Short (5 to 15 years)	Low landscape significance	3	The tree displays fair branch attachment with multiple leaders - not considered at risk of failure. At the time of inspection the tree was of moderate health and poor vigour and exhibited significantly reduced foliage size and density and low levels of dieback.
84	*Callistemon viminalis* (Weeping Bottlebrush)	3.5	3 x 4	Up to 120 (260 above the root flare)	260	260	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the north	Lower limbs pruned in past to 1.8 metres, upper branches pruned for OH wires in centre and south	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
85	*Callistemon viminalis* (Weeping Bottlebrush)	4	4 x 6	Up to 160 (360 above the root flare)	360	360	Good foliage condition	Mature	Multi trunked	Upright trunk	Majority of canopy to the north	Lower limbs pruned in past to 1.7 metres, upper branches pruned for OH wires in centre and south	Appears stable	Fair branch attachment	Good health	Good vigour	<5%	No visual evidence of significant pest or disease	2 Medium (15 to 40 years)	Low to moderate landscape significance	3	Canopy bias due to past pruning. The tree displays fair branch attachment with multiple leaders - not considered at risk of failure.
ca = approximate diameter at breast height (DBH) estimated from nearest property boundary or fence where trees were located on adjoining properties																						
* Retention Values: 1 - High (Priority for retention); 2 - Moderate (Consider for retention); 3 - Low or short ULE (Not warranting specific design consideration) and 4 - Remove (very short ULE, structurally unsound, weed species etc.)																						

M.G.A

DIAL BEFORE YOU DIG www.1100.com.au

A Dial Before You Dig enquiry must be lodged at least two business days prior to starting any excavation or work site project.

DEVON STREET

COLQUHOUN STREET

UNWIN STREET

BOX CULVERT

BUILDING

BRICK WALL

CONCRETE WALL

No.9
100
DP 1168951

2
DP 864567

T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 T11 T12 T13 T14 T15 T16 T17 T18 T19 T20 T21 T22 T23 T24 T25 T26 T27 T28 T29 T30 T31 T32 T33 T34 T35 T36 T37 T38 T39 T40 T41 T42 T43 T44 T45

LEGEND:
BXC–BOX CULVERT
GPIT–GRATED PIT
INV–INVERT LEVEL
OBV–OBVERT LEVEL
VC–VEHICLE CROSSING

6 0 12 24 42 60
SCALE 1:600

THERE ARE LAYERS WITHIN THIS CAD PLAN THAT HAVE BEEN TURNED OFF FOR CLARITY PURPOSES

(B)EASEMENT 6.095 WIDE (B309159)

1 2 3 4 5

(B)

vv

T1, T2 etc = tree numbers as per report by Landscape Matrix

X = removed in past - now a stump

ADJOINS SHEET 3

ADJOINS SHEET 2

CLIENT

CLYDE REFINERY DEVELOPMENT

PROJECT

DETAIL SURVEY
OF
LOT 100 IN
DP1168951
9 DEVON STREET ROSEHILL

NOTES

The title boundaries shown hereon were not marked at the time of survey and have been determined by plan dimensions only and not by field survey.

Services shown hereon have been located where possible by field survey. If not able to be so located, services have been plotted from the records of relevant authorities where available and have been noted accordingly on the plan. Where such records do not exist or are inadequate a notation has been made hereon.

Prior to any demolition, excavation or construction on the site, the relevant authority should be contacted for possible location of further underground services and detailed locations of all services.

TREE DETAIL
HEIGHT (m) ie 12 = 12m
TRUNK (m) ie 0.5 = 450mm DIAMETER
SPREAD (m) ie 12 = 2m SPREAD
TREE SYMBOLS ARE A TRUE REPRESENTATION OF THE SPREAD ie SYMBOL SIZE 2 (0 - 7 VALUE) = 2m SPREAD
2m DIAMETER SPREAD

2	GKO	08/07/2020	CONTOURS UPDATED
1	GKO	02/09/2019	INITIAL ISSUE

SYM	CODE	DESCRIPTION
	BIN	BIN
	BM	BENCH MARK
	BO	BOLLARD
	DJM	DRAINAGE MANHOLE
	EFP	ELEC FUSE BOX
	ELP	ELEC GARDEN LIGHT
	EL	ELEC GREEN PILLAR
	LP	ELEC LIGHT POLE
	EP	ELECT SINGLE PIT
	SPL	ELEC STAY POLE
	PP	ELEC POWER POLE
	ELP	ELEC POLE/LIGHT
	TRANS	ELE POLE/TRANSFORM
	FD	FUEL DIP
	GM	GAS MAIN
	GMR	GAS METER
	GAS	GAS VALVE
	AG	GATE
	GUL	GULLY PIT
	HYD	HYDRANT
	BOR	BOREHOLE

SYM	CODE	DESCRIPTION
	OFM	OPTICAL FIBRE MARKER
	OFP	OPTICAL FIBRE PIT
	TM	PALM TREE
	SE	SEAT
	TS	SHRUB
	TCA	TELSTRA PIT
	SLH	SEWER LAMP HOLE
	SMH	SEWER MANHOLE
	SVP	SEWER VENT PIPE
	SI	SIGN
	BUS	BUS STOP SIGN
	T	TREE
	SGL	TRAFFIC LIGHT
	SCL	TRAFFIC CONTROLLER
	SJX	TRAFFIC JUNCTION BOX
	US	UNKNOWN SERVICE
	WAV	WATER AIR VALVE
	WMR	WATER METER
	WEP	WATER PUMP
	WSV	WATER STOP VALVE
	WTP	WATER TAP

Symbols shown are indicative only. The symbol size and orientation does not necessarily represent the real size or orientation of the feature.

DRAINAGE PIPE U/G
DRAIN
ELECT. CABLE U/G
ELEC. CABLE A/G
GAS PIPE
FENCE LINE
SEWERAGE PIPE
TELSTRA CABLE
WATER PIPE

LANDPARTNERS
built environment consultants

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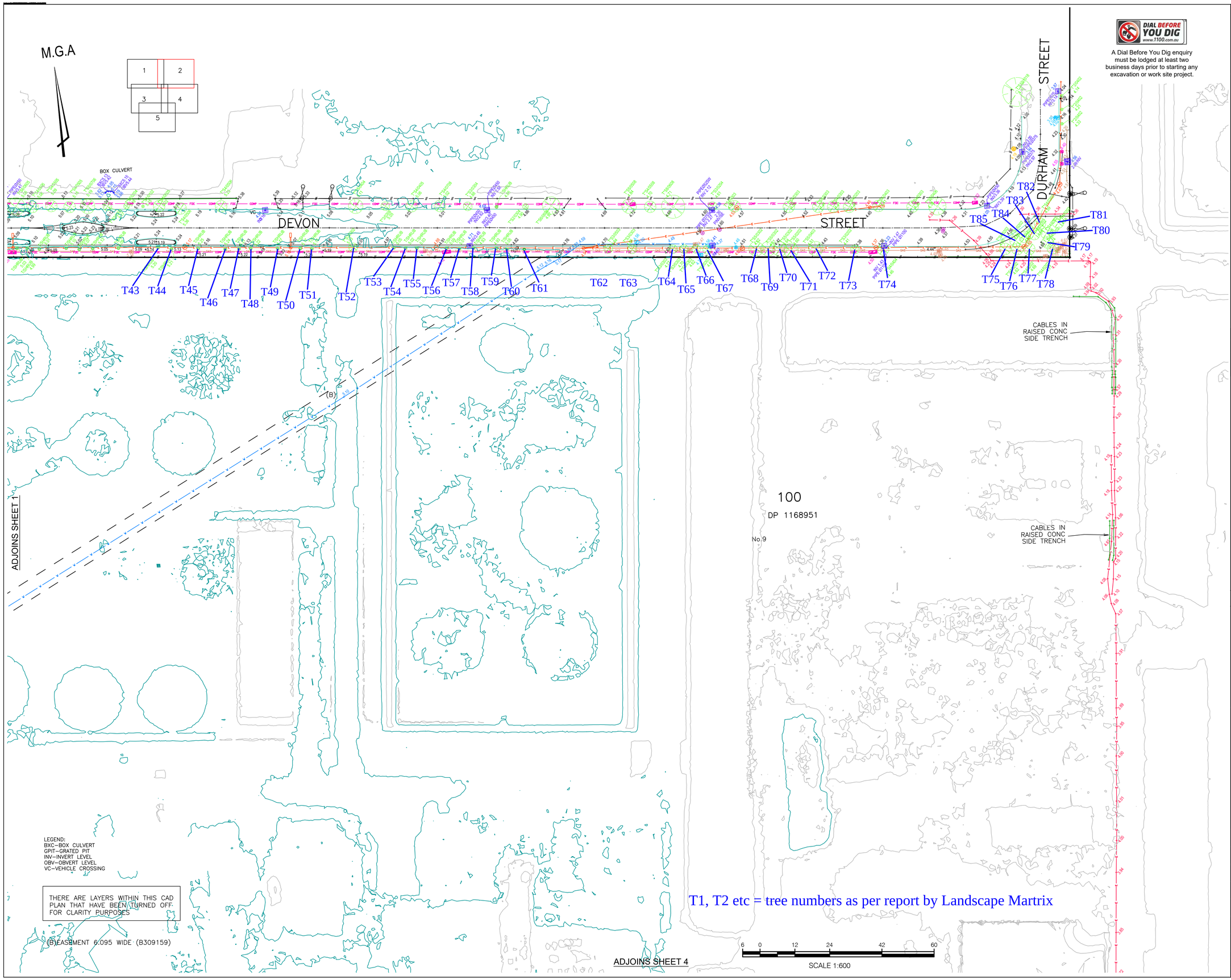
ISO 9001:2008 FS 535063

HEIGHT DATUM: AHD	LOCAL AUTHORITY: CITY OF PARRAMATTA
HEIGHT ORIGIN: SSM76263 RL 4.42	SCALE: 1:600 (A1)
MERIDIAN: 56	CONTOUR INTERVAL: Major:5m Minor:1m
CO-ORD SYSTEM: MGA	SURVEYOR: BB DATE OF SURVEY: 12/08/2019
CCAD FILE: 74707 CLYDE DETAIL	DRAWN: SF DATE: 8/07/2020
AUTOCAD FILE: SY074707.000.3.2	CHECKED: BB DATE: 8/07/2020
ARCHIVE FILE:	APPROVED: GKO DATE: 8/07/2020
PLAN NUMBER: SY074707.000.3.2	SHEET 1 OF 5

PD PM



DIAL BEFORE YOU DIG www.1100.com.au

A Dial Before You Dig enquiry must be lodged at least two business days prior to starting any excavation or work site project.

CLIENT

CLYDE REFINERY DEVELOPMENT

PROJECT

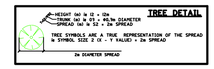
DETAIL SURVEY
OF
LOT 100 IN DP1168951
9 DEVON STREET ROSEHILL

NOTES

The title boundaries shown hereon were not marked at the time of survey and have been determined by plan dimensions only and not by field survey.

Services shown hereon have been located where possible by field survey. If not able to be so located, services have been plotted from the records of relevant authorities where available and have been noted accordingly on the plan. Where such records do not exist or are inadequate a notation has been made hereon.

Prior to any demolition, excavation or construction on the site, the relevant authority should be contacted for possible location of further underground services and detailed locations of all services.



2	GKO	08/07/2020	CONTOURS UPDATED
1	GKO	02/09/2019	INITIAL ISSUE

SYM	CODE	DESCRIPTION
	BIN	BIN
	BM	BENCH MARK
	BO	BOLLARD
	DJM	DRAINAGE MANHOLE
	EFP	ELEC FUSE BOX
	ELP	ELEC GARDEN LIGHT
	EL	ELEC GREEN PILLAR
	LP	ELEC LIGHT POLE
	EP	ELECT SINGLE PIT
	SPL	ELEC STAY POLE
	PP	ELEC POWER POLE
	ELP	ELEC POLE/LIGHT
	TRANS	ELE POLE/TRANSFORM
	FD	FUEL DIP
	GM	GAS MAIN
	GMR	GAS METER
	GAS	GAS VALVE
	AG	GATE
	GUL	GULLY PIT
	HYD	HYDRANT
	BOR	BOREHOLE

SYM	CODE	DESCRIPTION
	OFM	OPTICAL FIBRE MARKER
	OFP	OPTICAL FIBRE PIT
	TM	PALM TREE
	SE	SEAT
	TS	SHRUB
	TCA	TELSTRA PIT
	SLH	SEWER LAMP HOLE
	SMH	SEWER MANHOLE
	SVP	SEWER VENT PIPE
	SI	SIGN
	BUS	BUS STOP SIGN
	T	TREE
	SGL	TRAFFIC LIGHT
	SCL	TRAFFIC CONTROLLER
	SJX	TRAFFIC JUNCTION BOX
	US	UNKNOWN SERVICE
	WAV	WATER AIR VALVE
	WMR	WATER METER
	WEP	WATER PUMP
	WSV	WATER STOP VALVE
	WTP	WATER TAP

Symbols shown are indicative only. The symbol size and orientation does not necessarily represent the real size or orientation of the feature.

DRAINAGE PIPE U/G
DRAIN
ELECT. CABLE U/G
ELEC. CABLE A/G
GAS PIPE
FENCE LINE
SEWERAGE PIPE
TELSTRA CABLE
WATER PIPE

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PD:PM