25 May 2026

Lachlan Macgregor
Director
Development Directive
Email: lachlan@developmentdirective.com.au

Dear Lachlan,

RE: Response to Information Request – 198 & 202 Gardner Road, Rochedale 4123

Dear Lachlan,

Thank you for providing a copy of the Information Request (IR) issued by Brisbane City Council (BCC) dated 2 March 2026. The subject IR Application Reference is A006761597 which seeks to realign the waterway that traverses 198 and 202 Gardner Road

BAAM is pleased to provide responses to the relevant ecological issues raised in IR, providing further information to the Ecological Assessment Report (December 2025) for this proposed development.

We note that a separate development application (reference A006940193) has been submitted for a reconfiguration of a lot (RoL) and preliminary approval for warehouse, low impact industry and low-medium density residential uses over the subject lands. An information request for the RoL (reference A006940193) has also recently been received, which, from an ecological perspective is very similar to the IR dated 2 March 2026.

Due to the overlapping of these applications, this response to the IR covers the four lots that are subject to both applications (Lots 3 and 4 on RP 114765, Lot 6 on RP114765 and Lot 102 on SP226721)

This response also draws on and re-iterates the relevant approval conditions imposed on the historic development approval (reference A005747839) which was the subject of a Planning and Environment Court Judgment dated 10 June 2025 (QLD P&E Court - 3402 of 2024) and remain relevant to this IR.

Yours sincerely

Adrian Caneris
Managing Director and Principal Wildlife Specialist
Biodiversity Assessment and Management Pty Ltd

File No	Author	Reviewer
0575-005		

BCC Information Request Response

This Information Request (IR) response (Application References A006761597 and A006940193) has been prepared by BAAM Ecology, specifically responding to the ecological issues raised in two IRs, providing further information to the BAAM Ecological Assessment Reports for this proposed development.

Due to the overlapping of these applications and subject lands, this response to both IRs covers the four lots that are subject to both applications (Lots 3 and 4 on RP 114765, Lot 6 on RP114765 and Lot 102 on SP226721) to inform assessment of the overall development.

This response also draws on and re-iterates the relevant approval conditions imposed on the historic development approval (reference A005747839) which was the subject of a Planning and Environment Court Judgment dated 10 June 2025 (QLD P&E Court - 3402 of 2024) and remain relevant to this IR.

1.0 Ecological Values

Section 4 (page 4) of the IR States:

4. The submitted 'Tree Plot' does not provide for the development impacts e.g. stormwater outlet, earthworks, works required for the fringe waterway corridor and the plan also did not identify tree numbers to correspond with the Tree Survey Data.

a. *Submit a revised Vegetation Retention Plan in accordance with the Biodiversity Planning Scheme Policy including:*
   i. *All trees 100 mm DBH or greater within the proposed development footprint/works area and within 6 m of proposed development footprint/works area.*
   ii. *The proposed development plan (as an overlay) including all services/infrastructure/stormwater outlets and the full extent of all earthworks (cut/fill) required during construction of the development.*
   iii. *A description of vegetation communities and species compositions for ground, shrub and subcanopy layers. Any species or vegetation communities of State / National significance to be clearly identified.*
   iv. *A clear indication of which trees are to be retained, and which trees are to be removed, including the following information: Scientific name; Height; Diameter of tree trunk at breast height (DBH); Crown diameter; Habitat features including hollows and scratch marks, nests etc. Tree Protection Zones (TPZs) (in accordance with AS4970); General health assessment; Associated tree numbers clearly shown on the plan.*

b. *If works encroach into the TPZs of any trees identified to be retained, a report from a qualified arborist (AQF level 5 Arboriculture) is required to demonstrate no negative impacts on the long-term health of the trees.*

c. *Removal of native vegetation within the mapped Biodiversity areas overlay – high ecological significance strategic subcategory (HESS) will require environmental offsets in accordance with PO9 of the Biodiversity areas overlay code, the Environmental Offsets Act 2014 and the Offsets Planning Scheme Policy. Provide an Offset Impact Area plan that confirms total area to be offset for the removal of native vegetation within the mapped High Ecological Significance Strategic area.*

d.	*Fauna movement solutions proposed include shelves/ledges within existing culverts however no further information has been provided. Provide detail of fauna movement solutions to enable safe movement of fauna throughout the site and within the ecological corridor and are cognisant of engineering requirements (e.g. box culverts). Note: Development Approval A005747839 which requires a minimum 3600mm wide and 1800mm high box culvert for fauna movement and specifications as per DTMR Fauna Sensitive Transport Infrastructure Delivery manual.*
e.	*The Concept Rehabilitation Plan states the planting strategy is introduce scattered plantings of water-tolerant native tree species spaced at 6-10m intervals. The waterway corridor must be fully rehabilitated with all strata to achieve compliance. Selective canopy tree species only is not supported. Maintenance access is to be provided via the fringe waterway corridor. Provide a revised Concept Rehabilitation Plan for the rehabilitation of the core waterway corridor:*
i.	*Inclusive of full strata plantings to the pre-clearance Regional Ecosystem at 1/10m2 for canopy species, 1/5m2 for shrub species and minimum 1/1m2 for groundcover species.*
ii.	*Proposed location and description of wildlife movement solutions (culverts, glider poles, koala refuge poles, fencing), lockrail/bollards, maintenance access.*

1.1 BAAM Response to 4a & 4b/23f & 23g:

4a): A revised Vegetation Retention Plan is illustrated in **Figures 0 to 5**, showing all trees 100mm DBH or greater within the site. The figures also include the proposed development plan including services and the extent of all earthworks (cut/fill) required for construction of the development.

Schedule 1 provides a schedule of 484 trees to be retained and removed, along with Scientific name; Height; diameter of tree trunk at breast height (DBH); habitat features including hollows and scratch marks, Tree Protection Zones (TPZs) (in accordance with AS4970); general health assessment; and associated tree numbers clearly shown on the plan. A total of 116 trees are weeds or planted native trees not local to the area.

A total of 371 trees are proposed to be removed as part of the overall development, noting no actual tree removal is proposed by this application. Trees within the waterway corridor and beyond civil works disturbance will be retained as illustrated in **Figures 0-5**. The retained trees in the waterway are native and the extant habitat values will be enhanced through revegetation proposed in the Concept Rehabilitation Plan (refer **Schedule 2**).

The Concept Rehabilitation Plan (refer **Schedule 2**) provides an updated Concept Rehabilitation Plan which covers all lots (Lots 3 and 4 on RP 114765, Lot 6 on RP114765 and Lot 102 on SP226721) due to the overlapping of development applications on these lands.

The concept rehabilitation plan has been specifically designed to provide native habitats which align with the preclearance vegetation and to maximise the extant habitat values for Koala.

4b): No trees proposed to be retained will have works encroaching on their TPZs therefore a report from a qualified arborist is not required.

A project arborist will be engaged to oversee tree retention as part of operational works and all relevant actions and reporting requirements will be prescribed in the required vegetation management plan.

1.2 BAAM Response to 4c/23h

… Provide an Offset Impact Area plan that confirms total area to be offset for the removal of native vegetation within the mapped High Ecological Significance Strategic area.

As outlined in the BAAM Ecological Assessment Report (December 2025), the waterway corridor is mapped as HESS and comprises the lowest part of the site. As part of this development application, the applicant has demonstrated that the Waterway mapping is incorrectly mapped and therefore the HESS mapping (which seems to follow the Waterway mapping) would also not be correctly mapped. Notwithstanding this, the waterways are dominated by a dense cover of the exotic *Urochloa mutica* (Para grass) with *Pennisetum purpureum* (Elephant grass) and *Neonotonia wightii* (Glycine) also common and dominant in some portions. These weed species preclude native regrowth and significantly reduce the waterway/wetland habitat values.

There is limited native vegetation currently growing in the waterway corridor which is limited to:

- Scattered medium to large native trees including *Eucalyptus tereticornis*
- A small patch of native *Typha orientalis* (bullrush) with two mature *Melaleuca linariifolia* trees and one *Melaleuca quinquenervia* tree on the southern boundary of the site.
- A small patch of native *Typha orientalis* (bullrush) with a small number of immature *Melaleuca quinquenervia* trees on the northern boundary of the site.

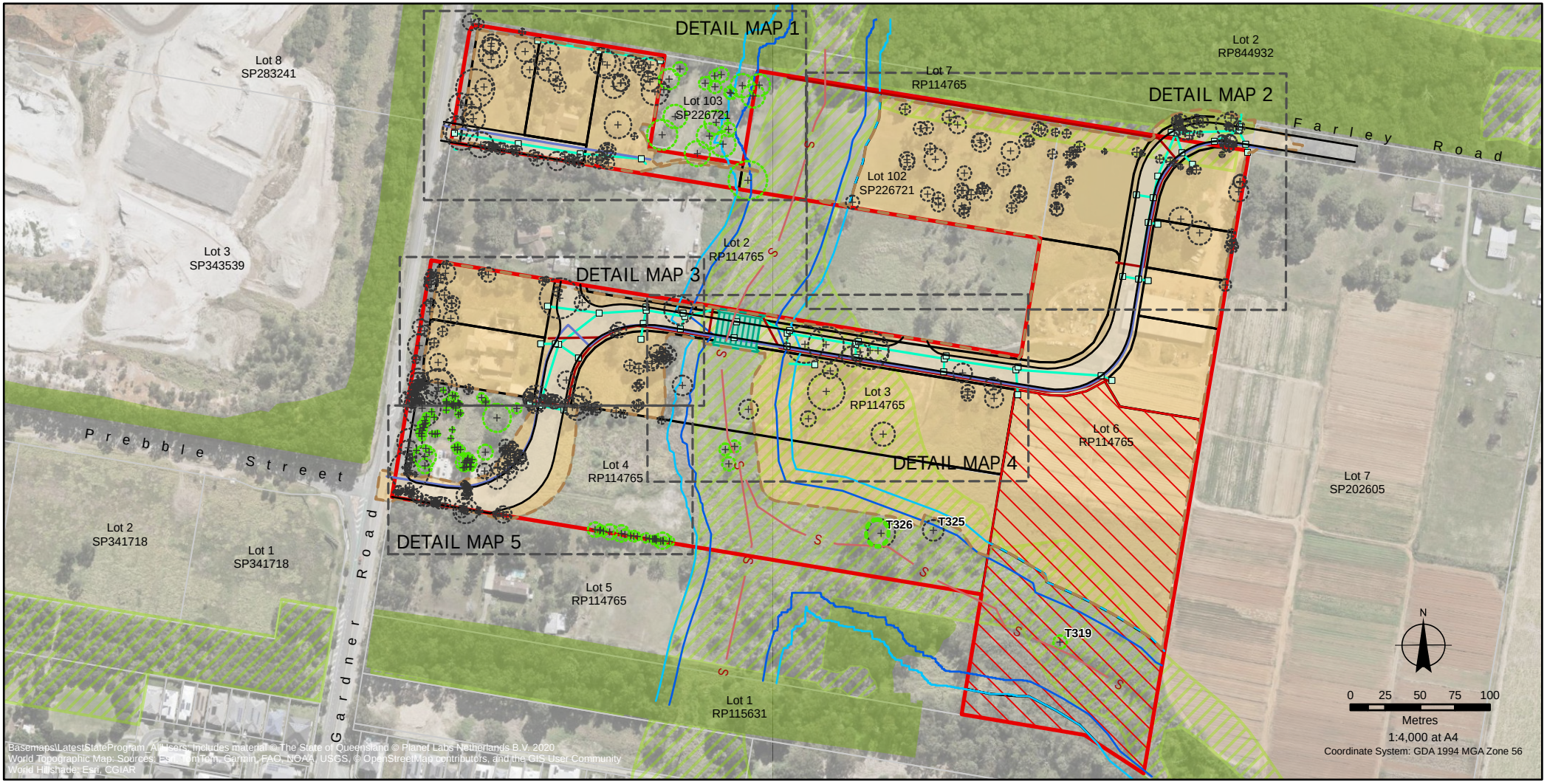
These two small patches are surrounded by recognised environmental weeds and apart from individual native trees shown on **Figures 0-5**, are the only native vegetation growing in the mapped HESS area and waterway corridor. They are wholly located within the revised alignment of the waterway corridor and are to be retained and enhanced by the proposed rehabilitation actions. We note that, if trees are required to be removed as part of the construction of the road, this has been considered and approved under the June 10, 2025, Planning and Environment Court judgment (A005747839) and dealt with in accordance with the conditions of approval on that development approval. Six trees are to be removed in this area (associated with the road).

There is also a narrow strip of HESS mapping that follows the northern boundary of lots 6 & 102 (**Figure 0**). This HESS mapping appears to be from aerial photo shadowing of native vegetation in adjoining bushland directly to the north of the site. Site inspection found this area to primarily consist of mown grassland with occasional native trees (**Photos 1 & 2**).


Photos 1 & 2 – Showing views along the northern boundary where the area is mapped as HESS with no native vegetation present.

Review of the actual native canopy cover identified for removal within the HESS areas, against the proposed rehabilitation actions and coverage results in a clear observation that the proposed actions will entirely mitigate any loss and no offsets should be triggered.

The total area to be rehabilitated in the waterway corridor is approximately 2.2 hectares. Therefore, the proposed rehabilitation of the revised and correct waterway corridor will result in a significant increase in the HESS habitat values on the sites, which provides an outcome greater than the offset requirements in part 2.3.1 of the Brisbane City Council Offsets Planning Scheme Policy (SC6.22) and therefore no offset requirements will be required under future operational works.



Data Sources:
Tree plot/survey
Supplied by client
Proposed development layout
Supplied by client, May 2026
Biodiversity Areas
Brisbane City Council City Plan 2014 - Biodiversity Overlay, downloaded 01/10/2025
Cadastral data - Queensland , published 12 May 2025
Watercourse lines - Queensland, published 28 Jul 2025
Queensland roads and tracks, Published: 22 Nov 2021
State of Queensland (Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development) 2026

LEGEND

- Tree location
- Trees to be retained
- Trees to be removed

Biodiversity areas

- High ecological significance
- High ecological significance strategic
- Waterway core
- Waterway fringe
- Proposed lot boundaries
- Proposed road
- Extent of earthworks
- Site boundary
- Outside application
- Existing sewer line
- Existing lot boundaries

Proposed services

- Sewer pipe
- Water main
- Stormwater pipe
- Stormwater pit
- Stormwater culvert

Figure: 0

Title: Vegetation Retention Plan - Overall

Project: 184, 198 & 202 Gardner Rd & 56 Farley Rd, Rochedale Qld (Lot 102 on SP226721, Lots 3 & 4 on RP114765, and part of Lot 6 on RP114765)

Client: Rochedale Development Partners

Drawn By: The MapLass P/L **Reviewed by: PS** **Date: 25/05/2026**

BAAM ECOLOGICAL CONSULTANTS

Data Sources:
Tree plot/survey
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LEGEND

- Tree location
- Trees to be retained
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Biodiversity areas

- High ecological significance
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- Waterway core
- Waterway fringe
- Proposed lot boundaries
- Proposed road
- Extent of earthworks
- Site boundary
- Outside application

- Existing sewer line
- Existing lot boundaries

Proposed services

- Sewer pipe
- Water main
- Stormwater pipe
- Stormwater pit
- Stormwater culvert

Drawn By: The MapLass P/L **Reviewed by: PS** **Date: 25/05/2026**

Figure: 1

Title: Vegetation Retention Plan (Detail Map 1)

Project: 184, 198 & 202 Gardner Rd & 56 Farley Rd, Rochedale Qld (Lot 102 on SP226721, Lots 3 & 4 on RP114765, and part of Lot 6 on RP114765)

Client: Rochedale Development Partners

BAAM ECOLOGICAL CONSULTANTS

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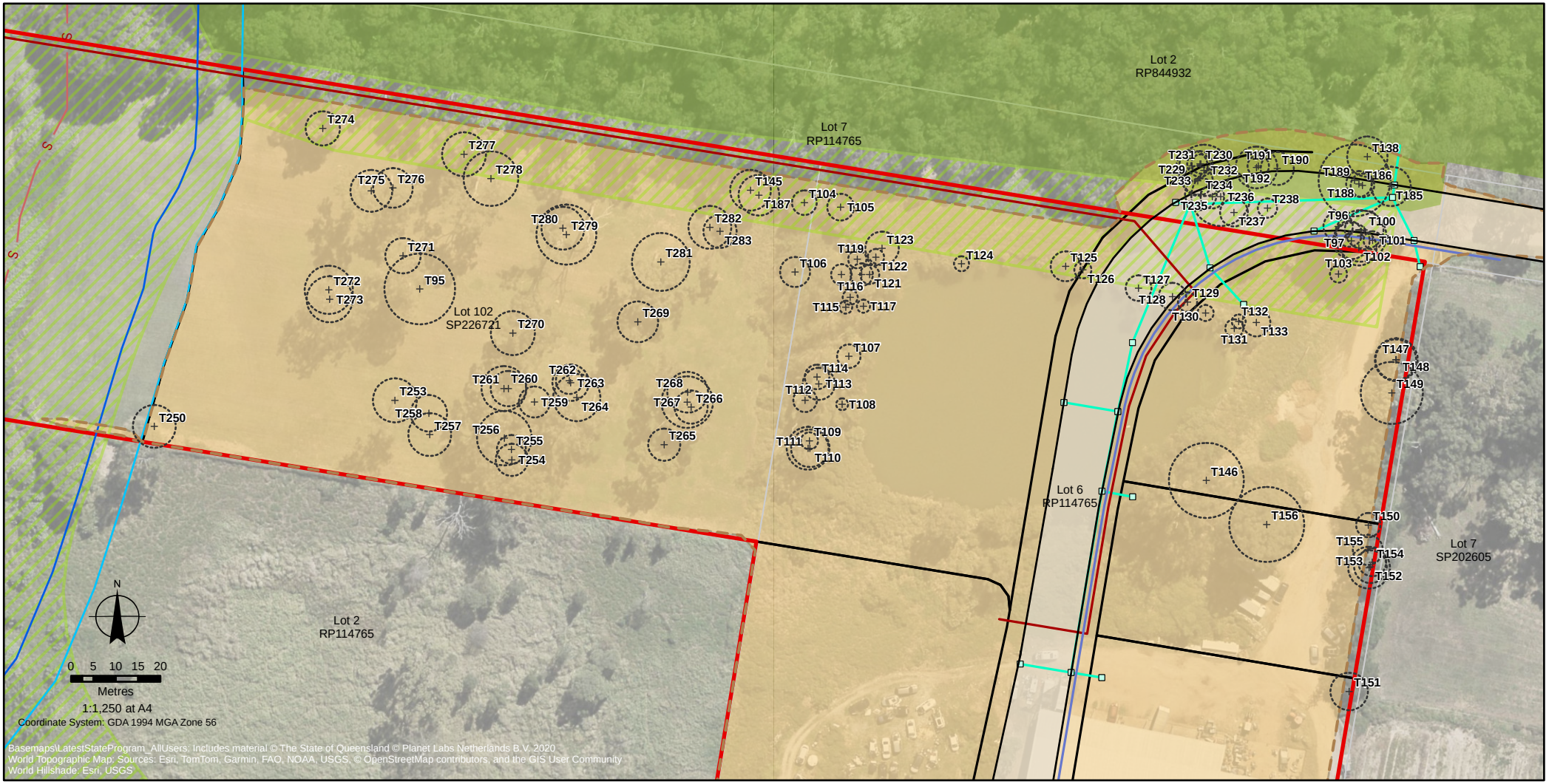

Data Sources:
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Supplied by client
Proposed development layout
Supplied by client, May 2026
Biodiversity Areas
Brisbane City Council City Plan 2014 - Biodiversity Overlay, downloaded 01/10/2025
Cadastral data - Queensland , published 12 May 2025
Watercourse lines - Queensland, published 28 Jul 2025
Queensland roads and tracks, Published: 22 Nov 2021
State of Queensland (Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development) 2026

LEGEND

- \+ Tree location
- Trees to be retained
- Trees to be removed

Biodiversity areas

- High ecological significance
- High ecological significance strategic
- Waterway core
- Waterway fringe
- Proposed lot boundaries
- Proposed road
- Extent of earthworks
- Site boundary
- Outside application
- Existing sewer line
- Existing lot boundaries

Proposed services

- Sewer pipe
- Water main
- Stormwater pipe
- Stormwater pit
- Stormwater culvert

Figure: 2

Title: Vegetation Retention Plan (Detail Map 2)

Project: 184, 198 & 202 Gardner Rd & 56 Farley Rd, Rochedale Qld
(Lot 102 on SP226721, Lots 3 & 4 on RP114765, and part of Lot 6 on RP114765)

Client: Rochedale Development Partners

BAAM ECOLOGICAL CONSULTANTS

Drawn By: The MapLass P/L **Reviewed by: PS** **Date: 25/05/2026**

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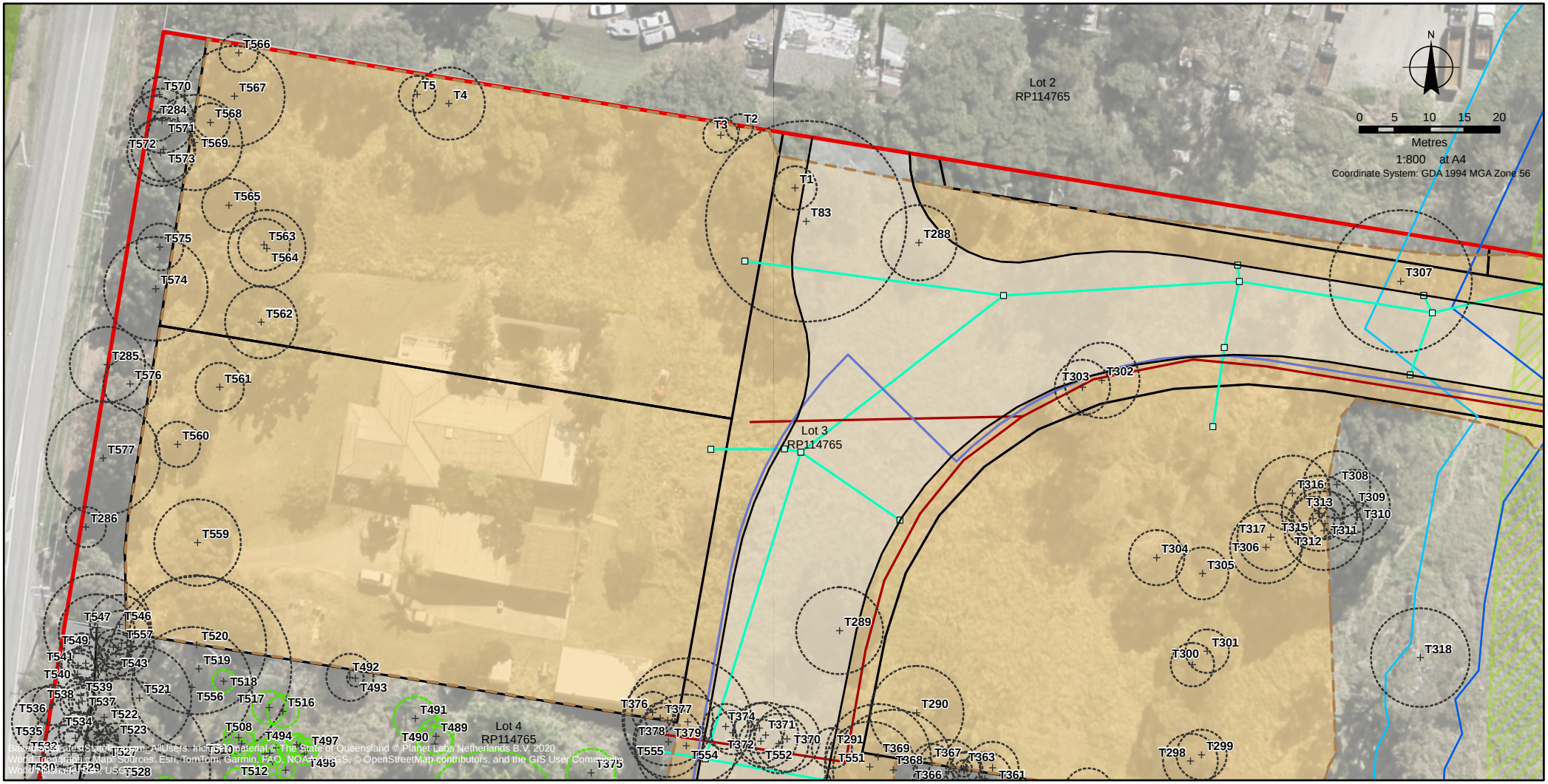

Data Sources:
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State of Queensland (Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development) 2026

LEGEND

- Tree location
- Trees to be retained
- Trees to be removed

Biodiversity areas

- High ecological significance
- High ecological significance strategic

- Waterway core
- Waterway fringe
- Proposed lot boundaries
- Proposed road
- Extent of earthworks
- Site boundary
- Outside application

- Existing sewer line
- Existing lot boundaries

Proposed services

- Sewer pipe
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Figure: 3

Title: Vegetation Retention Plan (Detail Map 3)

Project: 184, 198 & 202 Gardner Rd & 56 Farley Rd, Rochedale Qld
(Lot 102 on SP226721, Lots 3 & 4 on RP114765, and part of Lot 6 on RP114765)

Client: Rochedale Development Partners

BAAM ECOLOGICAL CONSULTANTS

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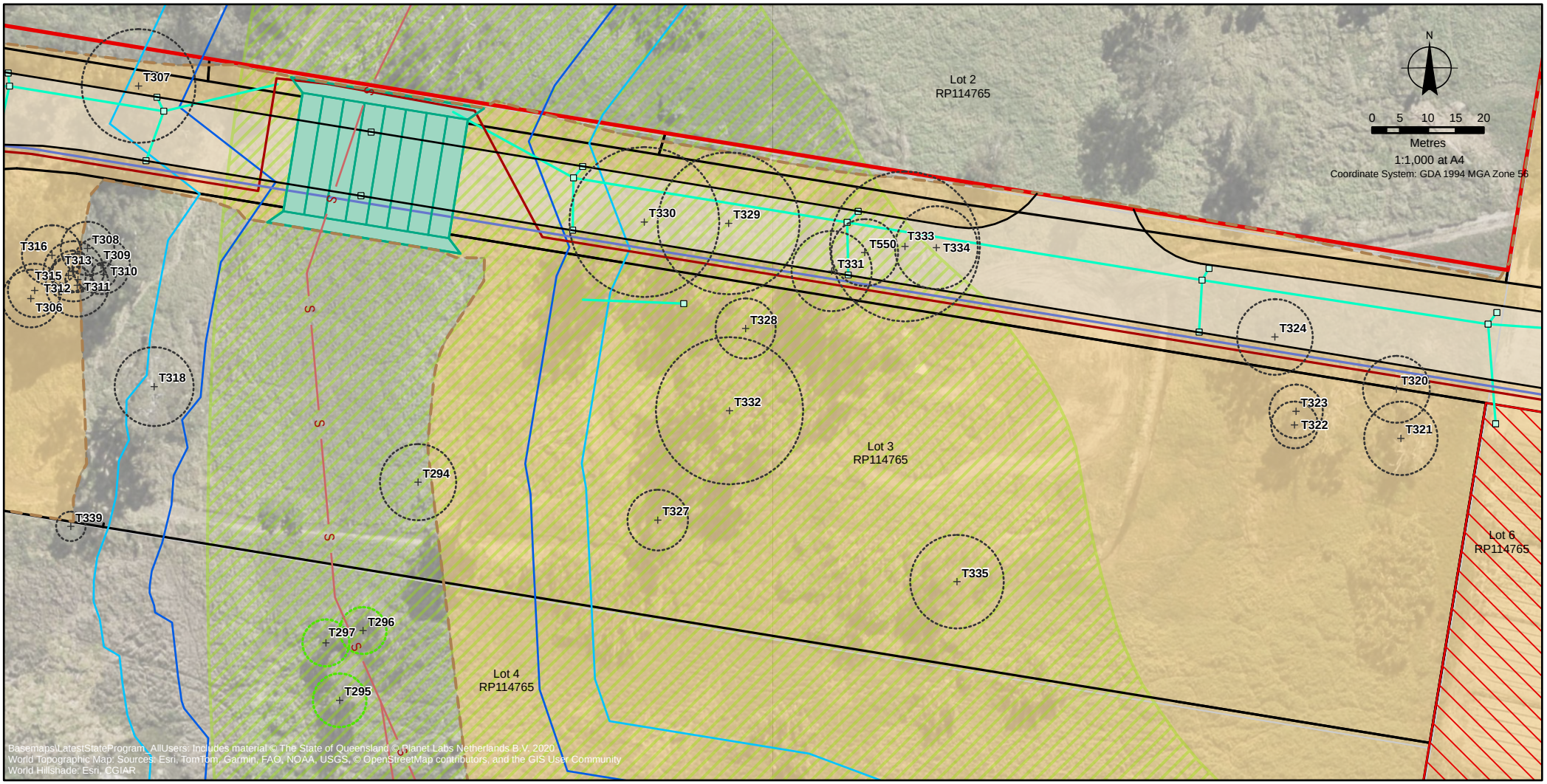

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LEGEND

- Tree location
- Trees to be retained
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Biodiversity areas

- High ecological significance
- High ecological significance strategic

- Waterway core
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- Proposed road
- Extent of earthworks
- Site boundary
- Outside application

- Existing sewer line
- Existing lot boundaries

Proposed services

- Sewer pipe
- Water main
- Stormwater pipe

Layer

- Stormwater culvert
- Stormwater pit

Drawn By: The MapLass P/L **Reviewed by: PS** **Date: 25/05/2026**

Figure: 4

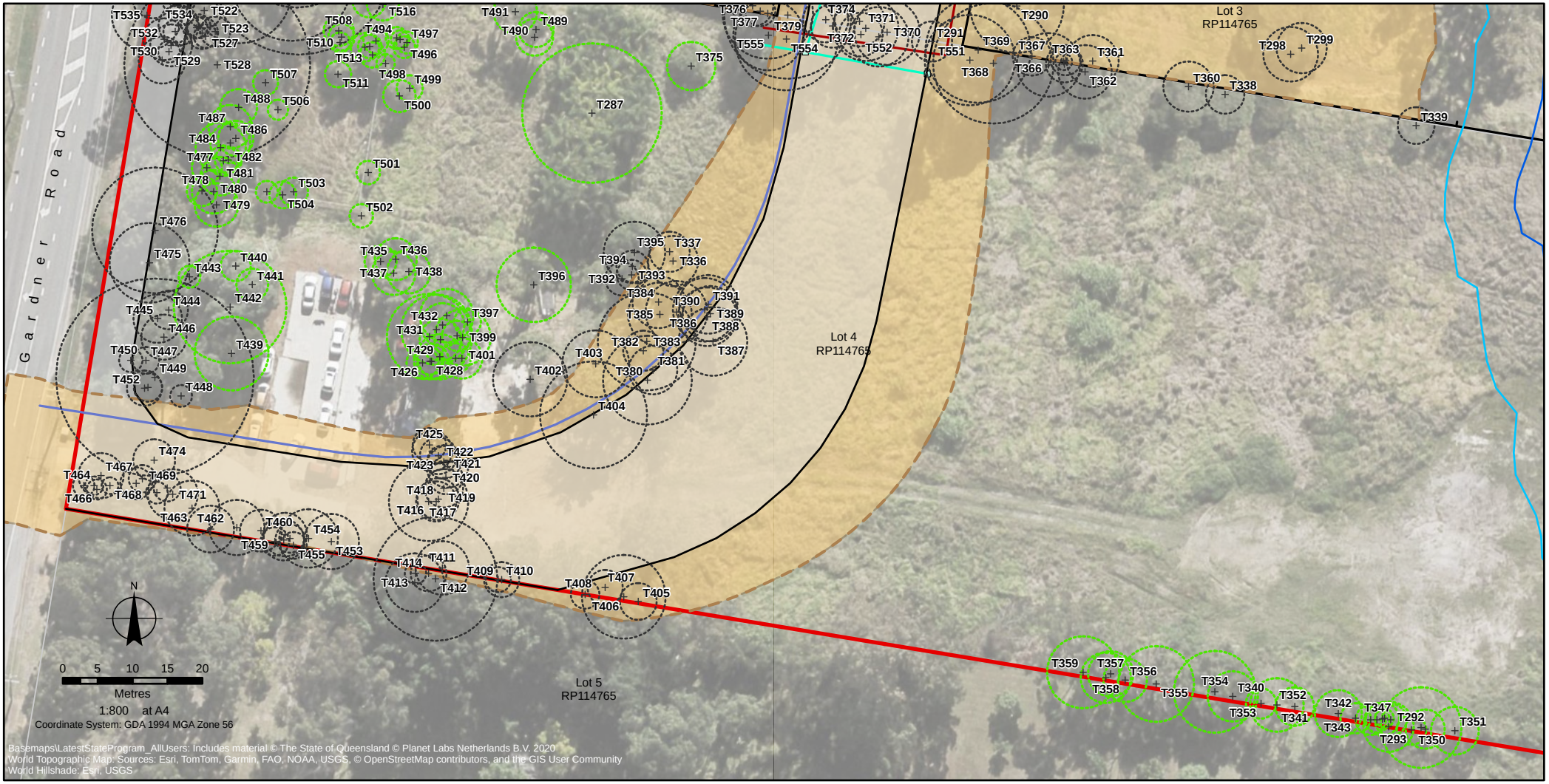
Title: Vegetation Retention Plan (Detail Map 4)

Project: 184, 198 & 202 Gardner Rd & 56 Farley Rd, Rochedale Qld (Lot 102 on SP226721, Lots 3 & 4 on RP114765, and part of Lot 6 on RP114765)

Client: Rochedale Development Partners

BAAM ECOLOGICAL CONSULTANTS

Document Location: D:\Projects\BAAM\BAAM 2026-006 Rochdale Nth - Response to BCC\Output\0575-005-2001d-C (ROL Veg Retention Plan - Map 4).aprxDate: 25/05/2026 5:58 PM



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Drawn By: The MapLass P/L **Reviewed by: PS** **Date: 25/05/2026**

Figure: 5

Title: Vegetation Retention Plan (Detail Map 5)

Project: Gardner Rd & 56 Farley Rd,Rochedale Qld (Lot 102 on SP226721, Lots 3 & 4 on RP114765,and part of Lot 6 on RP114765)

Client: Rochedale Development Partners

BAAM ECOLOGICAL CONSULTANTS

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1.3 BAAM Response to 4d/23i

In accordance with Development Approval A005747839 condition 11, and with reference to the Wildlife Movement Solutions identified in the Infrastructure design planning scheme policy of the City Plan 2014 and Queensland Department of Transport and Main Road's Fauna Sensitive Road Design Manual Volume 2, a Wildlife Movement Solutions Plan will be submitted to BCC Development Services for approval prior to site/operational works occurring. On this basis, the applicant will accept a similar condition to that imposed by Condition 11 on A005747839.

1.4 BAAM Response to 23a & b

A small farm dam is located in the north-eastern part of the site and was used to support cropping horticultural activities on adjacent land. The dam has a surface area of approximately 0.4 hectares and while the depth was not able to be measured, it is estimated to be no more than two metres deep, resulting in a water volume of 8 megalitres or less.

The dam has a raised embankment on the eastern and northern boundaries, which is vegetated by exotic weeds including Leucaena *Leucaena leucocephala* and Glycine *Neonotonia wightii*. Occasional small native trees including Pink Bloodwood *Corymbia intermedia* have also colonised the dam embankment however these are minor occurrences compared to the proliferation of weed species.

This highly modified dam has limited aquatic habitat and would be utilised by common, wide-ranging waterbirds. The dam is also expected to contain resident turtles, eels and native fish.

To facilitate the proposed development, this dam will be de-watered in accordance with the following preliminary Dewatering Management Plan:

1.4.1 Preliminary Dewatering Management Plan - Introduction

This Preliminary Dewatering Management Plan (DMP) outlines the actions and controls to be implemented for the dewatering of the dam located at the Rochdale site. The plan has been prepared to respond to BCC IR (reference A006940193) and associated requirements and conditions relevant for the project.

The dewatering of dams has the potential to generate environmental impacts that must be carefully managed. Key environmental considerations associated with the proposed works include:

- The quality and volume of water proposed to be released;
- The sensitivity, location, and capacity of receiving environments;
- Potential impacts on native flora and fauna;
- The safe retrieval and relocation of displaced native fauna; and
- The prevention of the spread of nuisance or invasive flora and fauna species.

1.4.2 Relevant Approvals

Under the Queensland *Nature Conservation Act 1992* (NC Act), a Species Management Program (SMP) is required where an animal breeding place is identified and construction activities are likely to disturb or destroy that breeding place. Animal breeding places may include conspicuous structures such as bird nests or tree hollows, as well as less obvious habitats, including locations used by amphibians or reptiles for breeding.

Given the potential for active breeding, it is recommended that an SMP be obtained to authorise the proposed dewatering works, covering common native fauna species listed as Least Concern.

1.4.3 Dewatering Plan

Water Quality Testing

Immediately prior to commencement of dewatering, the dam water must be tested by a suitably qualified person to confirm that it is suitable for release in accordance with this plan. Baseline water quality testing must also be undertaken for the receiving areas. Follow up testing is to be carried out following completion of dewatering to confirm that no deterioration in receiving water quality has occurred.

Water quality is to be assessed against the ANZECC Guidelines, with the following parameters measured and reported in a summary table. Any exceedances must be clearly identified:

- Temperature;
- Turbidity;
- Dissolved Oxygen;
- pH;
- Salinity;
- Nutrients (Total Nitrogen and Total Phosphorus);
- Presence of Heavy Metals.

Site Preparation and Dewatering Controls

Prior to dewatering, as much fringing terrestrial and aquatic vegetation as practicable will be mechanically removed from the dam to facilitate effective dewatering and fauna retrieval. All removed aquatic weed material must be disposed of appropriately in accordance with local waste requirements.

To minimise the risk of off-site impacts, dewatering will be undertaken progressively over several days. The duration of dewatering will depend on dam water levels, rainfall during works, and inflow from surrounding land. Pumping rates will be managed to avoid uncontrolled discharge and erosion.

Where practicable, pumped water will be discharged and allowed to flow overland to provide additional filtration prior to entering the waterway. Due to the size and volume of the dam being dewatered, supplementary discharge locations may also be utilised.

It is understood that discharged waters will not enter any adjoining properties.

During dewatering:

- Pump inlets must be fitted with approved fauna exclusion devices;
- Pump outlets must incorporate a diffuser system to reduce flow velocity and minimise erosion or scouring;
- Discharge points must be monitored regularly for signs of waterlogging, erosion, or uncontrolled runoff; and
- Outlets must be relocated to alternate areas if saturation becomes evident.
- Fauna spotter is to check dam daily for fauna and fauna retrieval opportunities.

Dewatering must cease immediately if discharge areas become overly waterlogged or if runoff is likely to cause ponding on any adjoining properties. Dewatering may only recommence once the risk of off site impacts has been fully mitigated.

Fauna Retrieval

Once dam water levels have been reduced to less than 0.5 metres at the deepest point, all further dewatering must be undertaken under the supervision of a suitably experienced and licenced fauna spotter catcher.

A sump pit is to be excavated to enable continued pumping while preventing fauna access. Nets, barriers, or other exclusion measures must be installed around the sump pit. The fauna spotter catcher may enter the dam once it is safe to do so. Prior to entering deeper areas, sediment depth is to be checked using a pole or similar tool to ensure safe footing.

The fauna spotter catcher will systematically work through remaining vegetation to flush any frogs or other fauna. Sterile gloves must be worn if frogs are captured.

The fauna spotter catcher will adhere to the following principles:

- Captured fish and tadpoles are to be collected using dip nets and placed in sorting trays on the dam embankment for identification by a suitably qualified fauna spotter.A
- All native fauna will be released into nearby dams or waterways.
- Native fish and tadpoles will be held in containers with a minimum of 10 litres of dam water and released within two hours of capture.
- Tadpoles must be kept separately from fish.
- Containers must be shaded and artificial aeration is not required if release timeframes are met.
- Eels and turtles are to be captured using appropriate nets or wire baskets and immediately released into the suitable receiving sites.
- All exotic fish and tadpoles will be humanely euthanised using clove oil, then disposed of in sealed containers at an approved waste facility.

All works must cease immediately if the fauna spotter catcher identifies a risk of harm to native fauna. Works may only recommence once appropriate mitigation measures have been implemented to the satisfaction of the fauna spotter catcher.

Compliance Reporting

It is recommended that a Dewatering Completion Report be prepared by the attending fauna spotter catchers. The report should confirm that dewatering and fauna management activities

were undertaken in accordance with this DMP and should be submitted to BCC following completion of the works.

1.5 BAAM Response to 4e/23j: Revised Concept Rehabilitation Plan

A revised Concept Rehabilitation Plan is presented in Schedule 2. The plan provides a revised outline of the proposed rehabilitation that establishes a clear framework for managing and rehabilitating the waterway corridor to re-establish its pre-clear regional ecosystem (RE) and support long-term ecological function and natural waterway management.

2.0 Waterway Corridor and LGIP Stormwater Values

Section 2/13 of both IRs state:

The submitted documentation does not provide detailed information required to demonstrate compliance with PO4, PO5, PO7, PO8 and PO9 of the Biodiversity areas overlay code, Overall outcome 3(h), PO2, PO4, PO5 of the Rochdale community neighbourhood Plan, and PO19 of the Subdivision code

BAAM Response: We view the proposed waterway realignment to be the correct location as meeting the relevant PO's. The realignment of the waterway positions the HESS in the correct location which furthers protects, conserves and allows for the restoration of the actual HESS area to ensure the waterway corridors long-term viability.

Tables 5-8 below provide responses to the above listed performance outcomes (PO), incorporating revised concept rehabilitation plan and wildlife movement solution plan elements, relevant to each PO.

Table 5: Biodiversity Areas Overlay Code Responses

PO	AO	BAAM Response
PO4 Development ensures that ecological features and ecological processes, koala habitat trees, areas of strategic biodiversity value, waterways and wetlands within the High ecological significance sub-category or the High ecological significance strategic sub-category are protected, conserved and restored to ensure the area's long-term viability.		**PO4:** The HESS area corresponds with the local waterway corridor which is heavily infested with exotic grasses and weeds, with little to no ecological values. A concept rehabilitation plan proposes to control these exotic grasses and weeds and to provide a vegetated waterway that is fringed by open areas with water-tolerant native trees including *Eucalyptus tereticornis, Melaleuca quinquenervia* and *Lophostemon suaveolens*. The realignment of the waterway locates the HESS in the correct location which furthers protects, conserves and allows for the restoration of the actual HESS area to ensure the area's long-term viability.
PO5 Development for a road is designed and constructed to facilitate the safe movement of native fauna.	**AO5** Development incorporates location-specific wildlife movement solutions, on any roads which dissect an area within the High ecological significance sub-category or the High ecological significance strategic sub-category	**PO5:** As set out in section 1.3, a Wildlife Movement Solutions Plan is required to be prepared within the area identified on the approved 'Plan of Reconfiguration – Interim, Reference 21-0260U_03 Sheet 1 of 1 Version O, received 19/12/2023 as amended in red 20/12/2023'. The Wildlife Movement Solutions Plan will contain fauna movement infrastructure and exclusion fencing, glider poles and koala refuge poles located within the waterway corridor. The proposed locations for these poles will be set out in the Wildlife Movement Solutions Plan. The Concept Rehabilitation Plan has been developed with knowledge of the required fauna movement solutions, and no conflict has been identified for the required actions. An ecological assessment has been completed for the site which discusses use of the site by native fauna. The approved roadway will cross the waterway corridor and during periods of low to no-flow, the

PO	AO	BAAM Response
		culverts will allow for the safe movement of native fauna under the road and along the waterway corridor. A concept rehabilitation plan with stated objectives includes prescribed actions to control the exotic grasses and weeds that are currently restricting fauna movement. Rehabilitation will provide a vegetated waterway that is fringed by open areas with water-tolerant native trees including Eucalyptus tereticornis, Melaleuca quinquenervia and Lophostemon suaveolens.
PO7 PO7: Development is located and designed to protect and enhance Koala habitat by: a. reducing threats to resident and transient Koalas; b. protecting the maximum number of non-juvenile Koala habitat trees in the Koala habitat area sub-category; c. consolidating and maximising the size of areas to be conserved on site and in combination with adjoining sites; d. minimising the edge-to-area ratio of areas to be conserved, to limit edge effects; e. providing connectivity and safe Koala movement between Koala habitat areas. f. minimising fragmentation by infrastructure, particularly roads;	**AO7.1** Development ensures that the development footprint, design and layout, including roads, are informed by an ecological assessment which identifies Koala habitat trees, movement corridors and the likely impacts to Koala habitat as a result of the development. **AO7.2** Development ensures that the development footprint, design and layout: a. protects non-juvenile Koala habitat trees; b. maximises the size and consolidates areas to be conserved as Koala habitat on site and in combination with adjoining sites; c. maximises connectivity between non-juvenile Koala habitat trees which will be conserved on site and with adjoining sites;	**AO7.1:** An ecological assessment has been completed for the site which discusses use of the site by Koalas. Despite thorough searches of all Koala trees present on site, no characteristic evidence of Koala was recorded. It is possible that locally present Koalas may access the site and move through the site; however this is expected to be rare and overall, it is considered that there is low potential that the species may occur on site. Locally present Koalas are more likely to be recorded in denser areas of bushland to the north and south of the site. This dense bushland is more likely to offer local movement corridors for the species. The site is considered to offer poor movement/corridor opportunities. It is further noted that site vegetation is not included in state core Koala habitat mapping. Development of the site is not expected to significantly impact upon Koalas or koala habitat values. The Concept rehabilitation Plan provides for a complete restoration of the waterway corridor which will result in an overall improvement of the extant habitats and habitat connections for the species. **AO7.2:** Koala use of the site is expected to be low, with no Koala evidence recorded during a targeted field assessment. Even so, the

PO	AO	BAAM Response
g. excluding filling or excavation from areas to be conserved.	d. excludes filling or excavation from the tree protection zone of non-juvenile Koala habitat trees. **AO7.3** Development ensures that landscaping and open space areas incorporate Koala habitat trees.	retention of Koala habitat trees and control of weed infestations along the waterway corridor will provide improved movement opportunities through the site. **AO7.3:** The proposed rehabilitation of the waterway corridor will ensure landscaping and open space areas to incorporate Koala habitat trees. A landscape plan will be delivered as part of the RaL operational works application.
PO8 Development design and layout facilitates the safe movement of Koalas through the landscape.	**AO8.1** Development ensures that fencing or other barriers are designed to allow safe Koala movement, and to exclude Koalas from areas containing domestic or security dogs. **AO8.2** Development incorporates infrastructure solutions which facilitate the movement of Koalas across a road which dissects bushland within the Koala habitat area sub-category.	**AO8.1:** Koala use of the site is expected to be low, with no Koala evidence recorded during a targeted field assessment. Even so, the development footprint allows the retention of potential Koala habitat trees along the waterway corridor thereby retaining movement opportunities along this existing corridor. The corridor will have exclusion fencing which will limit access by dogs. The proposed rehabilitation of the waterway corridor will ensure landscaping and open space areas incorporate Koala habitat trees. **AO8.2:** Although not applicable to this development application, we note the proposed roadway is approved and as set out in section 1.3, a Wildlife Movement Solutions Plan is required to be prepared. The Wildlife Movement Solutions Plan will contain fauna movement infrastructure and exclusion fencing, glider poles and koala refuge poles located within the waterway corridor. The proposed locations for these poles will be set out in the Wildlife Movement Solutions Plan. Rehabilitation Plan has been developed with knowledge of the required fauna movement solutions, and no conflict has been identified for the required actions.
PO9 Development which has or is likely to have significant residual impact on a	**AO9** No acceptable outcomes is prescribed.	Whilst the subject application does not seek any impacts on any MNES, MSES or MLES, the broader development will result in some impacts.

PO	AO	BAAM Response
matter of State environmental significance or a matter of local environmental significance, after all reasonable on-site mitigation measures have been or will be undertaken, provides an environmental offset.		The proposed rehabilitation would result in ecological outcomes well above that required for compliance with the Queensland environmental offsets framework and the Offsets planning scheme policy proposed actions

Table 6: Rochedale Urban Community Neighbourhood Plan Code Responses

PO	AO	Response
Overall Outcome 3h: Core and fringe waterway corridors are located along the existing creek networks of Rochedale and provide for multifunctional uses. Through rehabilitation: i. the core waterway corridor provides for water conveyance, protection of waterway health, wildlife movement, vegetation protection, urban amenity and low-impact recreation; ii. the fringe waterway corridor, located either side of the core waterway corridor and protecting the core waterway corridor from adverse impacts; iii. provides for pedestrian/cycle movement, essential infrastructure and where shown, local parks.		The subject application seeks to protect and enhance the waterway corridor through the correcting of the actual alignment and undertaking of restoration to improve habitat values. The application seeks to ensure the core waterway corridor is protected. The proposed layout provides for water conveyance, improvement and protection of waterway habitats and provision of dedicated wildlife movement facilities. The concept rehabilitation plan proposes to remove the exotic grasses and weeds that are currently restricting fauna movement. The proposed corridor has a 10m wide access strip on either side which provides for maintenance and passive recreational uses. The proposed rehabilitation will provide a fully vegetated waterway suitable for all species known of expected to occur.
PO2 Development protects significant existing vegetation.	**AO2** No acceptable outcome is prescribed.	**PO2:** An ecological assessment has been undertaken, and the site does not contain any significant vegetation communities. The site does hold scattered eucalypt trees. All native trees and shrubs within the realigned waterway corridor will be retained. The concept rehabilitation plan proposes restoration actions which will result in an overall ecological net benefit and the proposed rehabilitation will result in the waterway corridor developing into a recognised threatened ecosystem (subtropical eucalypt floodplain forest) which is also recognised as high value habitat for many native fauna species including Koala.

PO4 Development protects Koala habitat within the neighbourhood plan area.	**AO4.1** Development including the development footprint and roads does not adversely impact on Koalas or their habitat. **AO4.2** Development including the development footprint, design and layout: a. protects non-juvenile Koala habitat trees; b. maximises the size and consolidates areas to be conserved as Koala habitat on-site and in combination with adjoining sites; c. maximises connectivity between non-juvenile Koala habitat trees which will be conserved on site and with adjoining sites; d. excludes filling or excavation from the tree protection zone of non-juvenile Koala habitat trees **AO4.3** a. Development incorporates Koala habitat trees in landscaping and open space areas.	**AO4.1, AO4.2:** An ecological assessment has been completed for the site which addressed use of the site by Koalas and extant koala habitat values. Despite thorough searches of all Koala trees present on site, no characteristic evidence of Koala was recorded. It is possible that locally present Koalas may access the site and move through the site; however this is expected to be rare and overall, it is considered that there is low potential that the species may occur on site. The dense weed coverage significantly reduces the species likelihood to occur within the waterway corridor. Koalas are expected to occur or occasion the dryer more accessible bushland to the north and south of the site. These more intact bushland patches are more likely to provide suitable habitat values and localised movement. The site is considered to currently hold poor movement/corridor opportunities. The proposed realignment of the waterway corridor does not present any additional risks to the species and the retained habitats will provide suitable movement opportunities post restoration activities. We note that the sites vegetation is not identified by the states core Koala habitat mapping. Development of the site is not expected to significantly impact upon Koalas. **AO4.3:** The proposed developments over the subject lands will ensure that landscaping and open space areas incorporate Koala habitat trees. The proposed rehabilitation will provide a fully restored vegetated waterway with species indigenous to the site. The planting schedule includes water-tolerant native trees including *Eucalyptus tereticornis, Melaleuca quinquenervia and Lophostemon suaveolens,* which will ultimately provide high value core habitat.

PO	AO	Response
PO5 Development design and layout facilitates the safe movement of Koalas through the landscape.	**AO5** Development, if including fencing or other barriers (including during construction phase), is designed: a. to allow safe Koala movement where there is direct threat of injury or death to Koalas from incompatible land use activities; b. to exclude Koalas from areas containing domestic or security dogs.	The proposed rehabilitation of the waterway corridor will ensure landscaping and open space areas incorporate Koala habitat trees. Although not applicable to this development application, we note the proposed roadway crossing is approved and as set out in section 1.3, a Wildlife Movement Solutions Plan is required to be prepared. The Wildlife Movement Solutions Plan will contain fauna movement infrastructure and exclusion fencing, glider poles and koala refuge poles located within the waterway corridor. The proposed locations for these poles will be clearly defined and set out in the Wildlife Movement Solutions Plan. The Concept Rehabilitation Plan has been developed with knowledge of the required fauna movement solutions, and no conflict has been identified for the required actions.

Table 8. Subdivision code responses

PO	AO	Response
PO19 Development ensures that the layout retains and responds to: a. physical features such as topography, natural drainage systems and significant vegetation; b. existing heritage or character buildings; c. adjoining existing uses and the transport and public park networks.	**AO19.1** Development retains and incorporates significant vegetation within a park, the road reserve, waterways or corridors, common property or private open space areas. Note—The Vegetation planning scheme policy provides guidance on determining what significant vegetation is to be considered in demonstrating achievement of this outcome **AO19.2** Development integrates heritage or character buildings with community facilities or shared facilities.	**PO1**: The subject application seeks to correct the alignment of the waterway corridor based on detailed ground truthing and modelling. The subject application seeks to ensure the actual physical features of the natural drainage system and associated vegetation are retained. The application seeks to ensure that subsequent urban uses are outside of the actual waterway habitats. The applications seek to provide development that retains and incorporates significant vegetation within a dedicated park. We do not provide comment on **AO19.2**

Schedule 1

Tree Survey Table

(refer to Figures 1-5)

Schedule 1 – Tree Survey Table (refer to Figures 0-5)

Tree label	Species	Common_name	Weed /cultivated native	Diameter at Breast Height (mm)	Tree Protection Zone (m)	Tree height (m)	Health and habitat features	Retain/Remove
T1	Lophostemon suaveolens	Swamp box		260	3.12	12	Generally healthy	Remove
T2	Corymbia intermedia	Pink Bloodwood		160	1.92	6	Generally healthy	Remove
T3	Corymbia intermedia	Pink Bloodwood		210	2.52	14	Generally healthy	Remove
T4	Melaleuca quinquenervia	Broad-leaved paperbark		290,320	5.18	8	Generally healthy	Remove
T5	Corymbia torelliana	Cadaghi	*	220	2.64	11	Generally healthy	Remove
T6	Eucalyptus propinqua	Small-Fruited Grey Gum		330	3.96	17	Generally healthy	Remove
T7	Eucalyptus seeana	Fine-leaved Red Gum		350	4.20	13	Generally healthy	Retain
T8	Angophora leiocarpa	Smooth Bark Apple		190	2.28	5	Generally healthy	Remove
T9	Corymbia intermedia	Pink Bloodwood		200,200,190,120	4.33	14	Generally healthy	Remove
T10	Angophora leiocarpa	Smooth Bark Apple		250,250	4.24	6	Generally healthy	Remove
T11	Angophora leiocarpa	Smooth Bark Apple		500	6.00	18	Generally healthy	Remove
T12	Lophostemon suaveolens	Swamp box		280	3.36	10	Generally healthy	Remove
T13	Lophostemon suaveolens	Swamp box		300	3.60	12	Generally healthy, Arboreal termite mound	Remove
T14	Eucalyptus tereticornis	Forest Red Gum		500	6.00	18	Generally healthy	Remove
T15	Corymbia intermedia	Pink Bloodwood		390	4.68	14	Generally healthy	Remove
T16	Corymbia intermedia	Pink Bloodwood		240	2.88	14	Generally healthy	Remove
T17	Angophora leiocarpa	Smooth Bark Apple		250	3.00	11	Generally healthy	Remove
T18	Angophora leiocarpa	Smooth Bark Apple		270	3.24	13	Generally healthy	Remove
T19	Corymbia intermedia	Pink Bloodwood		290	3.48	15	Generally healthy	Remove
T20	Corymbia intermedia	Pink Bloodwood		320	3.84	16	Generally healthy	Remove
T21	Lophostemon confertus	Brush Box		310	3.72	10	Generally healthy	Remove
T22	Corymbia intermedia	Pink Bloodwood		250	3.00	11	Generally healthy	Remove
T23	Corymbia intermedia	Pink Bloodwood		210	2.52	10	Generally healthy	Remove
T24	Eucalyptus siderophloia	Grey Ironbark		310	3.72	15	Generally healthy	Remove
T25	Corymbia intermedia	Pink Bloodwood		340	4.08	14	Generally healthy	Remove

Tree label	Species	Common_name	Weed /cultivated native	Diameter at Breast Height (mm)	Tree Protection Zone (m)	Tree height (m)	Health and habitat features	Retain/Remove
T26	Corymbia intermedia	Pink Bloodwood		210	2.52	10	Generally healthy	Remove
T27	Eucalyptus siderophloia	Grey Ironbark		260	3.12	11	Generally healthy	Remove
T28	Corymbia intermedia	Pink Bloodwood		220	2.64	12	Generally healthy	Remove
T29	Corymbia intermedia	Pink Bloodwood		260	3.12	10	Generally healthy	Remove
T30	Corymbia intermedia	Pink Bloodwood		300	3.60	14	Generally healthy	Remove
T31	Eucalyptus propinqua	Small-Fruited Grey Gum		370	4.44	15	Generally healthy	Remove
T32	Eucalyptus siderophloia	Grey Ironbark		500	6.00	17	Generally healthy	Remove
T36	Corymbia intermedia	Pink Bloodwood		400	4.80	15	Generally healthy	Remove
T39	Lophostemon confertus	Brush Box		550	6.60	17	Poor health - leader trunk dead	Remove
T40	Eucalyptus siderophloia	Grey Ironbark		750	9.00	18	Generally healthy	Retain
T41	Eucalyptus siderophloia	Grey Ironbark		750	9.00	17	Generally healthy	Retain
T42	Eucalyptus tereticornis	Forest Red Gum		1150	13.80	19	Significant Landscape Tree, Generally healthy	Retain
T43	Eucalyptus siderophloia	Grey Ironbark		700	8.40	19	Generally healthy	Retain
T44	Eucalyptus siderophloia	Grey Ironbark		350	4.20	12	Generally healthy	Retain
T45	Lophostemon confertus	Brush Box		380	4.56	13	Generally healthy	Retain
T46	Corymbia intermedia	Pink Bloodwood		430	5.16	16	Generally healthy	Retain
T49	Eucalyptus seeana	Fine-leaved Red Gum		410	4.92	10	Generally healthy	Retain
T50	Eucalyptus seeana	Fine-leaved Red Gum		700	8.40	14	Generally healthy	Retain
T51	Eucalyptus seeana	Fine-leaved Red Gum		700	8.40	14	Generally healthy	Retain
T52	Corymbia intermedia	Pink Bloodwood		650	7.80	17	Generally healthy	Retain
T53	Lophostemon suaveolens	Swamp box		290	3.48	12	Generally healthy	Remove
T54	Corymbia intermedia	Pink Bloodwood		370	4.44	15	Generally healthy	Retain
T55	Lophostemon suaveolens	Swamp box		340	4.08	14	Generally healthy	Retain
T56	Lophostemon suaveolens	Swamp box		410	4.92	14	Generally healthy	Retain
T57	Corymbia intermedia	Pink Bloodwood		410	4.92	18	Generally healthy	Remove
T58	Angophora leiocarpa	Smooth Bark Apple		430	5.16	20	Generally healthy	Remove

Tree label	Species	Common_name	Weed /cultivated native	Diameter at Breast Height (mm)	Tree Protection Zone (m)	Tree height (m)	Health and habitat features	Retain/Remove
T59	Angophora leiocarpa	Smooth Bark Apple		430	5.16	17	Generally healthy	Remove
T60	Angophora leiocarpa	Smooth Bark Apple		320	3.84	16	Generally healthy	Remove
T61	Corymbia intermedia	Pink Bloodwood		380,390	6.53	18	Generally healthy	Remove
T62	Corymbia intermedia	Pink Bloodwood		350	4.20	15	Generally healthy	Remove
T63	Lophostemon suaveolens	Swamp box		500	6.00	13	Generally healthy	Remove
T64	Eucalyptus seeana	Fine-leaved Red Gum		600	7.20	17	Generally healthy	Remove
T65	Eucalyptus siderophloia	Grey Ironbark		800	9.60	18	Generally healthy	Remove
T66	Eucalyptus seeana	Fine-leaved Red Gum		750	9.00	15	Generally healthy	Remove
T67	Eucalyptus seeana	Fine-leaved Red Gum		950	11.40	17	Generally healthy	Remove
T68	Eucalyptus seeana	Fine-leaved Red Gum		900	10.80	14	Generally healthy	Retain
T69	Eucalyptus tereticornis	Forest Red Gum		750	9.00	17	Significant Landscape Tree, Generally healthy	Retain
T70	Angophora leiocarpa	Smooth Bark Apple		700	8.40	14	Generally healthy	Retain
T71	Erythrina crista gallii	Coral tree	*	800	9.60	6	Generally healthy	Remove
T72	Eucalyptus siderophloia	Grey Ironbark		800	9.60	20	Generally healthy	Remove
T73	Corymbia intermedia	Pink Bloodwood		700	8.40	17	Generally healthy	Remove
T74	Eucalyptus siderophloia	Grey Ironbark		750	9.00	20	Generally healthy	Remove
T75	Eucalyptus seeana	Fine-leaved Red Gum		700	8.40	18	Generally healthy	Remove
T76	Eucalyptus seeana	Fine-leaved Red Gum		700	8.40	18	Generally healthy	Remove
T77	Eucalyptus tereticornis	Forest Red Gum		1150	13.80	21	Significant Landscape Tree, Generally healthy	Remove
T78	Eucalyptus seeana	Fine-leaved Red Gum		610	7.32	17	Generally healthy	Retain
T79	Eucalyptus propinqua	Small-Fruited Grey Gum		450	5.40	14	Generally healthy	Remove
T80	Angophora leiocarpa	Smooth Bark Apple		800	9.60	18	Generally healthy	Remove
T81	Corymbia intermedia	Pink Bloodwood		450	5.40	15	Generally healthy	Remove
T82	Angophora leiocarpa	Smooth Bark Apple		500	6.00	16	Generally healthy	Remove
T83	Eucalyptus seeana	Fine-leaved Red Gum		1200	14.40	14	Generally healthy	Remove
T84	Eucalyptus propinqua	Small-Fruited Grey Gum		400	4.80	17	Generally healthy	Remove

Tree label	Species	Common_name	Weed /cultivated native	Diameter at Breast Height (mm)	Tree Protection Zone (m)	Tree height (m)	Health and habitat features	Retain/Remove
T85	Eucalyptus propinqua	Small-Fruited Grey Gum		680	8.16	18	Generally healthy	Remove
T86	Corymbia intermedia	Pink Bloodwood		480	5.76	18	Generally healthy	Remove
T87	Eucalyptus propinqua	Small-Fruited Grey Gum		500	6.00	19	Generally healthy	Remove
T88	Angophora leiocarpa	Smooth Bark Apple		520	6.24	12	Generally healthy	Remove
T89	Eucalyptus siderophloia	Grey Ironbark		190	2.28	12	Generally healthy	Remove
T90	Corymbia intermedia	Pink Bloodwood		600	7.20	15	Generally healthy	Remove
T91	Corymbia intermedia	Pink Bloodwood		550	6.60	16	Generally healthy	Remove
T92	Eucalyptus propinqua	Small-Fruited Grey Gum		500	6.00	16	Generally healthy	Remove
T93	Eucalyptus microcorys	Tallowwod		850	10.20	17	Significant Landscape Tree, Generally healthy	Remove
T94	Eucalyptus propinqua	Small-Fruited Grey Gum		520	6.24	17	Generally healthy	Remove
T95	Eucalytpus acmenoides	White Mahogany		660	7.92	8	Generally healthy	Remove
T96	Schefflera actinophylla	Umbrella Tree	*	273	3.28	6	Generally healthy	Remove
T97	Celtis sinensis	Chinese Celtis	*	240	2.88	10	Generally healthy	Remove
T98	Celtis sinensis	Chinese Celtis	*	340	4.08	10	Generally healthy	Remove
T99	Celtis sinensis	Chinese Celtis	*	480	5.76	10	Generally healthy	Remove
T100	Schefflera actinophylla	Umbrella Tree	*	361	4.33	9	Generally healthy	Remove
T101	Celtis sinensis	Chinese Celtis	*	170	2.04	5	Generally healthy	Remove
T102	Celtis sinensis	Chinese Celtis	*	331	3.97	10	Generally healthy	Remove
T103	Celtis sinensis	Chinese Celtis	*	160	1.92	6	Generally healthy	Remove
T104	Corymbia torelliana	Cadaghi	*	230	2.76	10	Generally healthy	Remove
T105	Acacia concurrens	Curracabah		250	3.00	10	Generally healthy	Remove
T106	Corymbia torelliana	Cadaghi	*	280	3.36	10	Generally healthy	Remove
T107	Acacia concurrens	Curracabah		220	2.64	6	Generally healthy but overgrown with vines	Remove
T108	Leucaena leucocephala	Leucaena	*	110	1.32	3	Leaning towards pond, overgrown with vines	Remove
T109	Cinnamomum camphora	Camphor Laurel	*	160	1.92	5	Generally healthy but overgrown with vines	Remove

Tree label	Species	Common_name	Weed /cultivated native	Diameter at Breast Height (mm)	Tree Protection Zone (m)	Tree height (m)	Health and habitat features	Retain/Remove
T110	Celtis sinensis	Chinese Celtis	*	350	4.20	7	Generally healthy but overgrown with vines	Remove
T111	Corymbia intermedia	Pink Bloodwood		400	4.80	8	Generally healthy but overgrown with vines	Remove
T112	Celtis sinensis	Chinese Celtis	*	220	2.64	7	Generally healthy but overgrown with vines	Remove
T113	Corymbia intermedia	Pink Bloodwood		300	3.60	9	Generally healthy but overgrown with vines	Remove
T114	Corymbia intermedia	Pink Bloodwood		230	2.76	8	Generally healthy but overgrown with vines	Remove
T115	Leucaena leucocephala	Leucaena	*	120	1.44	6	Generally healthy	Remove
T116	Leucaena leucocephala	Leucaena	*	140	1.68	6	Generally healthy	Remove
T117	Leucaena leucocephala	Leucaena	*	122	1.46	4	Generally healthy, leaning over water	Remove
T118	Leucaena leucocephala	Leucaena	*	192	2.30	8	Generally healthy	Remove
T119	Acacia concurrens	Curracabah		170	2.04	6	Generally healthy	Remove
T120	Acacia concurrens	Curracabah		210	2.52	7	Generally healthy	Remove
T121	Acacia concurrens	Curracabah		178	2.14	6	Generally healthy	Remove
T122	Leucaena leucocephala	Leucaena	*	153	1.84	6	Generally healthy	Remove
T123	Leucaena leucocephala	Leucaena	*	312	3.74	6	Generally healthy	Remove
T124	Leucaena leucocephala	Leucaena	*	140	1.68	6	Generally healthy	Remove
T125	Leucaena leucocephala	Leucaena	*	280	3.36	5	Generally healthy	Remove
T126	Leucaena leucocephala	Leucaena	*	160	1.92	5	Generally healthy	Remove
T127	Eucalyptus pilularis	Blackbutt		240	2.88	8	Generally healthy	Remove
T128	Leucaena leucocephala	Leucaena	*	256	3.07	6	Generally healthy	Remove
T129	Leucaena leucocephala	Leucaena	*	180	2.16	7	Generally healthy	Remove
T130	Leucaena leucocephala	Leucaena	*	150	1.80	7	Generally healthy	Remove
T131	Schinus terebinthifolius	Brazilian Peppertree	*	169	2.03	6	Generally healthy	Remove
T132	Leucaena leucocephala	Leucaena	*	130	1.56	6	Generally healthy	Remove
T133	Leucaena leucocephala	Leucaena	*	260	3.12	6	Generally healthy	Remove

Tree label	Species	Common_name	Weed /cultivated native	Diameter at Breast Height (mm)	Tree Protection Zone (m)	Tree height (m)	Health and habitat features	Retain/Remove
T138	Corymbia trachyphloia	Brown bloodwood		377	4.52	17	Generally healthy	Remove
T145	Eucalyptus propinqua	Small-fruited Grey Gum		380	4.56	5	Generally healthy	Remove
T146	Eucalyptus seeana	Fine-leaved Red Gum		700	8.40	8	Generally healthy	Remove
T147	Cinnamomum camphora	Camphor Laurel	*	380	4.56	4	Generally healthy	Remove
T148	Corymbia intermedia	Pink Bloodwood		400	4.80	5	Generally healthy	Remove
T149	Eucalyptus microcorys	Tallowwood		580	6.96	10	Generally healthy	Remove
T150	Cinnamomum camphora	Camphor Laurel	*	227	2.72	5	Generally healthy	Remove
T151	Cinnamomum camphora	Camphor Laurel	*	350	4.20	4	Generally healthy	Remove
T152	Celtis sinensis	Chinese Celtis	*	305	3.66	6	Generally healthy	Remove
T153	Eucalyptus acmenoides	White Mahogany		390	4.68	6	Generally healthy	Remove
T154	Corymbia intermedia	Pink Bloodwood		260	3.12	5	Generally healthy	Remove
T155	Corymbia torelliana	Cadaghi	*	280	3.36	5	Generally healthy	Remove
T156	Eucalyptus seeana	Fine-leaved Red Gum		700	8.40	10	Generally healthy	Remove
T185	Lophostemon suaveolens	Swamp box		367	4.40	15	Generally healthy	Remove
T186	Eucalyptus seeana	Narrow-leaved red gum		220	2.64	18	Generally healthy, fauna scratches on trunk	Remove
T187	Eucalyptus propinqua	Small-Fruited Grey Gum		380	4.56	5	Generally healthy	Remove
T188	Eucalyptus seeana	Narrow-leaved red gum		240	2.88	18	Generally healthy, fauna scratches on trunk	Remove
T189	Eucalyptus seeana	Narrow-leaved red gum		670	8.04	23	Generally healthy, fauna scratches on trunk	Remove
T190	Corymbia trachyphloia	Brown bloodwood		310	3.72	15	Generally healthy	Remove
T191	Corymbia intermedia	Pink bloodwood		200	2.40	15	Generally healthy	Remove
T192	Eucalyptus microcorys	Tallowwood		390	4.68	17	Generally healthy	Remove
T229	Eucalyptus microcorys	Tallowwood		290	3.48	18	Generally healthy	Remove
T230	Melaleuca quinquenervia	Broad-leaved paperbark		180	2.16	13	Generally healthy	Remove
T231	Lophostemon suaveolens	Swamp box		239	2.87	13	Generally healthy	Remove
T232	Eucalyptus microcorys	Tallowwood		480	5.76	18	Generally healthy	Remove

Tree label	Species	Common_name	Weed /cultivated native	Diameter at Breast Height (mm)	Tree Protection Zone (m)	Tree height (m)	Health and habitat features	Retain/Remove
T233	Eucalyptus grandis	Rose gum		280	3.36	17	Generally healthy, fauna scratches on trunk	Remove
T234	Corymbia trachyphloia	Brown bloodwood		297	3.56	16	Generally healthy	Remove
T235	Corymbia trachyphloia	Brown bloodwood		220	2.64	9	Generally healthy	Remove
T236	Eucalyptus microcorys	Tallowwood		550	6.60	20	Generally healthy	Remove
T237	Glochidion sumatranum	Umbrella cheese tree		260	3.12	8	Generally healthy	Remove
T238	Lophostemon suaveolens	Swamp box		180	2.16	8	Generally healthy	Remove
T250	Corymbia intermedia	Pink Bloodwood		400	4.80	10	Generally healthy	Remove
T253	Eucalyptus propinqua	Small-Fruited Grey Gum		410	4.92	7	Generally healthy	Remove
T254	Eucalyptus propinqua	Small-Fruited Grey Gum		300	3.60	6	Generally healthy	Remove
T255	Angophora leiocarpa	Smooth Bark Apple		270	3.24	4	Generally healthy	Remove
T256	Corymbia intermedia	Pink Bloodwood		510	6.12	7	Generally healthy	Remove
T257	Corymbia intermedia	Pink Bloodwood		400	4.80	7	Generally healthy	Remove
T258	Eucalyptus propinqua	Small-Fruited Grey Gum		340	4.08	6	Generally healthy	Remove
T259	Eucalyptus propinqua	Small-Fruited Grey Gum		290	3.48	6	Generally healthy	Remove
T260	Eucalyptus propinqua	Small-Fruited Grey Gum		330	3.96	6.5	Generally healthy	Remove
T261	Eucalyptus propinqua	Small-Fruited Grey Gum		420	5.04	8	Generally healthy	Remove
T262	Eucalyptus acmenoides	White Mahogany		250	3.00	4	Generally healthy	Remove
T263	Eucalyptus propinqua	Small-Fruited Grey Gum		340	4.08	6	Generally healthy	Remove
T264	Eucalyptus propinqua	Small-Fruited Grey Gum		440	5.28	6	Generally healthy	Remove
T265	Eucalyptus propinqua	Small-Fruited Grey Gum		300	3.60	5	Generally healthy	Remove
T266	Angophora leiocarpa	Smooth Bark Apple		310	3.72	5	Generally healthy	Remove
T267	Eucalyptus acmenoides	White Mahogany		480	5.76	7	Generally healthy	Remove
T268	Eucalyptus crebra	Narrow-leaved Iron Bark		380	4.56	7	Generally healthy	Remove
T269	Eucalyptus acmenoides	White Mahogany		380	4.56	7	Generally healthy	Remove
T270	Eucalyptus acmenoides	White Mahogany		412	4.94	7	Generally healthy	Remove
T271	Eucalyptus propinqua	Small-Fruited Grey Gum		330	3.96	4.5	Generally healthy	Remove

Tree label	Species	Common_name	Weed /cultivated native	Diameter at Breast Height (mm)	Tree Protection Zone (m)	Tree height (m)	Health and habitat features	Retain/Remove
T272	Eucalyptus propinqua	Small-Fruited Grey Gum		450	5.40	6	Generally healthy	Remove
T273	Angophora woodsiana	Smudgee		430	5.16	6	Generally healthy	Remove
T274	Corymbia intermedia	Pink Bloodwood		320	3.84	6	Generally healthy	Remove
T275	Corymbia intermedia	Pink Bloodwood		390	4.68	8	Generally healthy	Remove
T276	Corymbia citriodora	Spotted Gum		370	4.44	7.5	Generally healthy, fauna scratches on trunk	Remove
T277	Corymbia intermedia	Pink Bloodwood		410	4.92	7	Generally healthy	Remove
T278	Corymbia intermedia	Pink Bloodwood		510	6.12	8	Poor health, damage to trunk	Remove
T279	Eucalyptus acmenoides	White Mahogany		560	6.72	6.5	Generally healthy	Remove
T280	Corymbia intermedia	Pink Bloodwood		400	4.80	7	Generally healthy	Remove
T281	Corymbia intermedia	Pink Bloodwood		540	6.48	6	Generally healthy	Remove
T282	Eucalyptus propinqua	Small-Fruited Grey Gum		400	4.80	6	Generally healthy	Remove
T283	Corymbia citriodora	Spotted Gum		310	3.72	6	Generally healthy	Remove
T284	Eucalyptus microcorys	Tallowwood		270	3.24	4.5	Generally healthy	Remove
T285	Angophora woodsiana	Smudgee		450	5.40	9	Generally healthy	Remove
T286	Angophora leiocarpa	Smooth Bark Apple		240	2.88	5	Generally healthy, fauna scratches on trunk	Remove
T287	Grove of cocos palms (Syagrus romanzoffiana)	Cocos Palm	*		10.00		Generally healthy	Retain
T288	Eucalyptus racemosa	Scribbly Gum		450	5.40	12	Generally healthy	Remove
T289	Angophora leiocarpa	Spotted Gum no		520	6.24	6	Generally healthy	Remove
T290	Angophora leiocarpa	Spotted Gum no		560	6.72	7.5	Generally healthy	Remove
T291	Eucalyptus tereticornis	Forest Red Gum		240	2.88	8	Generally healthy, fauna scratches on trunk	Remove
T292	Melaleuca quinquenervia	Broad-leaved Paperbark		190	2.28	9	Generally healthy	Retain
T293	Lophostemon suaveolens	Swamp Box		120, 130	2.12	11	Generally healthy	Retain
T294	Eucalyptus tereticornis	Forest Red Gum		570	6.84	8 (12)	Generally healthy	Remove
T295	Melaleuca quinquenervia	Broad-leaved Paperbark		400	4.80	7	Generally healthy	Retain

Tree label	Species	Common_name	Weed /cultivated native	Diameter at Breast Height (mm)	Tree Protection Zone (m)	Tree height (m)	Health and habitat features	Retain/Remove
T296	Melaleuca linariifolia	Narrow-leaved Paperbark		350	4.20	5	Generally healthy	Retain
T297	Melaleuca linariifolia	Narrow-leaved Paperbark		350	4.20	5	Generally healthy	Retain
T298	Lophostemon suaveolens	Swamp Box		326.5	3.92	6	Generally healthy	Remove
T299	Eucalyptus tereticornis	Forest Red Gum		300	3.60	10	Generally healthy	Remove
T300	Eucalyptus tereticornis	Forest Red Gum		260	3.12	10	Generally healthy	Remove
T301	Eucalyptus tereticornis	Forest Red Gum		260	3.12	8	Generally healthy	Remove
T302	Lophostemon suaveolens	Swamp Box		450	5.40	6	Generally healthy	Remove
T303	Eucalyptus tereticornis	Forest Red Gum		330	3.96	11	Generally healthy	Remove
T304	Eucalyptus racemosa	Scribbly Gum		330	3.96	7	Generally healthy	Remove
T305	Eucalyptus racemosa	Scribbly Gum		310	3.72	7	Generally healthy	Remove
T306	Eucalyptus tereticornis	Forest Red Gum		430	5.16	12	Generally healthy	Remove
T307	Eucalyptus tereticornis	Forest Red Gum		850	10.20	16	Significant Landscape Tree, Generally healthy	Remove
T308	Eucalyptus tereticornis	Forest Red Gum		400	4.80	12	Generally healthy	Remove
T309	Eucalyptus tereticornis	Forest Red Gum		250,350	5.16	12	Generally healthy	Remove
T310	Eucalyptus tereticornis	Forest Red Gum		180	2.16	10	Generally healthy	Remove
T311	Eucalyptus tereticornis	Forest Red Gum		190	2.28	7	Generally healthy	Remove
T312	Eucalyptus tereticornis	Forest Red Gum		470	5.64	11	Generally healthy	Remove
T313	Eucalyptus tereticornis	Forest Red Gum		450	5.40	12	Generally healthy	Remove
T314	Eucalyptus tereticornis	Forest Red Gum		310	3.72	11	Generally healthy	Remove
T315	Eucalyptus tereticornis	Forest Red Gum		260	3.12	8.5	Generally healthy	Remove
T316	Corymbia intermedia	Forest Red Gum		450	5.40	10	Generally healthy	Remove
T317	Eucalyptus tereticornis	Forest Red Gum		400	4.80	13	Generally healthy	Remove
T318	Eucalyptus tereticornis	Forest Red Gum		590	7.08	20	Generally healthy	Remove
T319	Eucalyptus seeana	Fine-leaved Red Gum		400	4.80	6	Generally healthy	Retain
T320	Eucalyptus microcorys	Tallowwood		500	6.00	8	Generally healthy	Remove
T321	Eucalyptus seeana	Fine-leaved Red Gum		550	6.60	7	Generally healthy	Remove

Tree label	Species	Common_name	Weed /cultivated native	Diameter at Breast Height (mm)	Tree Protection Zone (m)	Tree height (m)	Health and habitat features	Retain/Remove
T322	Eucalyptus acmenoides	White Mahogany		350	4.20	9	Generally healthy	Remove
T323	Eucalyptus acmenoides	White Mahogany		400	4.80	9	Generally healthy	Remove
T324	Corymbia intermedia	Pink Bloodwood		400,400	6.79	15	Poor health, vines	Remove
T325	Coymbia intermedia	Pink Bloodwood		250,350,450	7.47	15	Three healthy pink bloodwood trees growing close together	Remove
T326	Clump of 10 native eucalypt trees	Eucalypts		Multiple dbh	10.00	18	Clump of 10 healthy medium to large eucalypt trees in waterway corridor	Retain
T327	Lophostemon suaveolens	Swamp Box		453.43	5.44	4	Generally healthy	Remove
T328	Eucalyptus acmenoides	White Mahogany		450	5.40	8	Generally healthy	Remove
T329	Eucalyptus microcorys	Tallowwood		750,750	12.73	8.5	Significant Landscape Tree, Generally healthy	Remove
T330	Eucalyptus microcorys	Tallowwood		1120	13.44	12	Significant Landscape Tree, Generally healthy	Remove
T331	Corymbia intermedia	Pink Bloodwood		600	7.20	8	Significant Landscape Tree, Generally healthy	Remove
T332	Eucalyptus microcorys	Tallowwood		1100	13.20	14	Significant Landscape Tree, Generally healthy	Remove
T333	Eucalyptus seeana	Fine-leaved Red Gum		1120	13.44	18	Generally healthy	Remove
T334	Eucalyptus acmenoides	White Mahogany		620	7.44	7.5	Generally healthy	Remove
T335	Eucalyptus seeana	Fine-leaved Red Gum		700	8.40	9	Generally healthy	Remove
T336	Syagrus romanzoffiana	Cocos Palm	*	300	3.60	9	Generally healthy	Remove
T337	Syagrus romanzoffiana	Cocos Palm	*	240	2.88	9	Generally healthy	Remove
T338	Acacia concurrens	Curracabah		230	2.76	8	Generally healthy	Remove
T339	Acacia concurrens	Curracabah		220	2.64	12	Generally healthy	Remove
T340	Lophostemon suaveolens	Swamp Box		300	3.60	14	Generally healthy	Retain
T341	Lophostemon suaveolens	Swamp Box		230	2.76	10	Generally healthy	Retain
T342	Lophostemon suaveolens	Swamp Box		280	3.36	13	Generally healthy	Retain
T343	Lophostemon suaveolens	Swamp Box		180	2.16	9	Generally healthy	Retain

Tree label	Species	Common_name	Weed /cultivated native	Diameter at Breast Height (mm)	Tree Protection Zone (m)	Tree height (m)	Health and habitat features	Retain/Remove
T344	Lophostemon suaveolens	Swamp Box		180	2.16	11	Generally healthy	Retain
T345	Lophostemon suaveolens	Swamp Box		150	1.80	11	Generally healthy	Retain
T346	Melaleuca quinquenervia	Weeping paperbark		200	2.40	13	Generally healthy	Retain
T347	Lophostemon suaveolens	Swamp Box		110	1.32	9	Generally healthy	Retain
T348	Lophostemon suaveolens	Swamp Box		300	3.60	13	Generally healthy	Retain
T349	Melaleuca linariifolia	Narrow-leaved Paperbark		220, 190, 150, 340, 100	5.79	12	Generally healthy	Retain
T350	Lophostemon suaveolens	Swamp Box		200, 120	2.80	12	Generally healthy	Retain
T351	Melaleuca linariifolia	Narrow-leaved Paperbark		160, 170, 100, 130	3.42	13	Generally healthy	Retain
T352	Melaleuca quinquenervia	Broad-leaved paperbark		320	3.84	15	Generally healthy	Retain
T353	Lophostemon suaveolens	Swamp Box		180	2.16	12	Generally healthy	Retain
T354	Melaleuca quinquenervia	Broad-leaved paperbark		400, 280	5.86	15	Generally healthy	Retain
T355	Melaleuca quinquenervia	Broad-leaved paperbark		210, 400	5.42	15	Generally healthy	Retain
T356	Lophostemon suaveolens	Swamp Box		260	3.12	13	Generally healthy	Retain
T357	Corymbia intermedia	Pink bloodwood		270	3.24	15	Generally healthy	Retain
T358	Lophostemon suaveolens	Swamp Box		300	3.60	12	Generally healthy	Retain
T359	Corymbia intermedia	Pink bloodwood		430	5.16	16	Generally healthy	Retain
T360	Lophostemon suaveolens	Swamp Box		300	3.60	13	Generally healthy	Remove
T361	Eucalyptus microcorys	Tallowwood		310	3.72	15	Generally healthy	Remove
T362	Lophostemon suaveolens	Swamp Box		320	3.84	15	Generally healthy	Remove
T363	Lophostemon suaveolens	Swamp Box		180	2.16	12	Generally healthy	Remove
T364	Ficus elastica	Rubber Plant	*	100	1.20	12	Generally healthy	Remove
T365	Lophostemon confertus	Brush Box		220	2.64	12	Generally healthy	Remove
T366	Melaleuca quinquenervia	Broad-leaved paperbark		380	4.56	15	Generally healthy	Remove
T367	Lophostemon suaveolens	Swamp Box		230	2.76	13	Generally healthy	Remove
T368	Lophostemon confertus	Brush Box		720	8.64	25	Generally healthy	Remove

Tree label	Species	Common_name	Weed /cultivated native	Diameter at Breast Height (mm)	Tree Protection Zone (m)	Tree height (m)	Health and habitat features	Retain/Remove
T369	Eucalyptus tereticornis	Forest Red Gum		630	7.56	24	Significant Landscape Tree, Generally healthy	Remove
T370	Lophostemon confertus	Brush Box		90, 300, 200, 120	4.69	13	Generally healthy	Remove
T371	Melaleuca quinquenervia	Broad-leaved paperbark		390	4.68	14	Generally healthy	Remove
T372	Schefflera actinophylla	Umbrella tree	*	110, 120, 80, 100, 160	3.14	9	Generally healthy	Remove
T373	Lophostemon suaveolens	Swamp Box		260	3.12	13	Generally healthy	Remove
T374	Syagrus romanzoffiana	Cocos Palm	*	270	3.24	15	Generally healthy	Remove
T375	Macadamia integrifolia	Macadamia	*	90, 60, 40, 50, 150, 170, 60, 110	3.46	6	Generally healthy	Retain
T376	Wodyetia bifurcata	Foxtail Palm	*	210, 130	2.96	11	Generally healthy	Remove
T377	Lophostemon suaveolens	Swamp Box		180	2.16	14	Generally healthy	Remove
T378	Corymbia intermedia	Pink bloodwood		540	6.48	17	Generally healthy	Remove
T379	Corymbia intermedia	Pink bloodwood		760	9.12	27	Generally healthy	Remove
T380	Celtis sinensis	Chinese Celtis	*	530	6.36	18	Generally healthy	Remove
T381	Wodyetia bifurcata	Foxtail Palm	*	290	3.48	16	Generally healthy	Remove
T382	Archontophoenix alexandrae	Alexandra palm	*	240	2.88	17	Generally healthy	Remove
T383	Celtis sinensis	Chinese Celtis	*	410, 280, 310	7.02	13	Stag with small regrowths, hollows present	Remove
T384	Syagrus romanzoffiana	Cocos Palm	*	200, 140, 110, 160	3.74	12	Generally healthy	Remove
T385	Archontophoenix alexandrae	Alexandra palm	*	380	4.56	12	Generally healthy	Remove
T386	Archontophoenix alexandrae	Alexandra palm	*	370	4.44	18	Generally healthy	Remove
T387	Archontophoenix alexandrae	Alexandra palm	*	410	4.92	14	Generally healthy	Remove
T388	Archontophoenix alexandrae	Alexandra palm	*	350	4.20	18	Generally healthy	Remove
T389	Archontophoenix alexandrae	Alexandra palm	*	330	3.96	17	Generally healthy	Remove
T390	Archontophoenix alexandrae	Alexandra palm	*	380	4.56	17	Generally healthy	Remove
T391	Archontophoenix alexandrae	Alexandra palm	*	350	4.20	15	Generally healthy	Remove

Tree label	Species	Common_name	Weed /cultivated native	Diameter at Breast Height (mm)	Tree Protection Zone (m)	Tree height (m)	Health and habitat features	Retain/Remove
T392	Celtis sinensis	Chinese Celtis	*	200	2.40	14	Generally healthy	Remove
T393	Celtis sinensis	Chinese Celtis	*	180	2.16	14	Generally healthy	Remove
T394	Wodyetia bifurcata	Foxtail Palm	*	190	2.28	12	Generally healthy	Remove
T395	Macadamia integrifolia	Macadamia		210, 110, 120, 120, 200, 100	4.41	12	Generally healthy	Remove
T396	Wodyetia bifurcata	Foxtail Palm	*	240, 170, 170, 230, 170	5.33	17	Generally healthy	Retain
T397	Archontophoenix alexandrae	Alexandra palm	*	160	1.92	13	Generally healthy	Retain
T398	Archontophoenix alexandrae	Alexandra palm	*	180	2.16	14	Generally healthy	Retain
T399	Archontophoenix alexandrae	Alexandra palm	*	190, 120, 250	4.03	18	Generally healthy	Retain
T400	Wodyetia bifurcata	Foxtail Palm	*	180	2.16	9	Generally healthy	Retain
T401	Archontophoenix alexandrae	Alexandra palm	*	150, 190	2.90	10	Generally healthy	Retain
T402	Flindersia australis	Crow's Ash		430, 60, 80, 40	5.32	14	Generally healthy	Remove
T403	Ficus coronata	Creek Fig		400	4.80	17	Generally healthy	Remove
T404	Spathodea campanulata	African Tulip Tree	*	640	7.68	19	Generally healthy	Remove
T405	Wodyetia bifurcata	Foxtail Palm	*	220	2.64	12	Generally healthy	Remove
T406	Corymbia intermedia	Pink bloodwood		500	6.00	22	Generally healthy	Remove
T407	Wodyetia bifurcata	Foxtail Palm	*	210	2.52	15	Generally healthy	Remove
T408	Syagrus romanzoffiana	Cocos Palm	*	170	2.04	13	Generally healthy	Remove
T409	Syagrus romanzoffiana	Cocos Palm	*	150	1.80	12	Generally healthy	Remove
T410	Syagrus romanzoffiana	Cocos Palm	*	210	2.52	15	Generally healthy	Remove
T411	Eucalyptus carnea	White Mahogany		320	3.84	13	Generally healthy	Remove
T412	Corymbia intermedia	Pink bloodwood		740	8.88	27	Poor health, central stag leader	Remove
T413	Celtis sinensis	Chinese Celtis	*	350	4.20	12	Generally healthy	Remove
T414	Cinnamomum camphora	Camphor Laurel	*	100, 80	1.54	10	Generally healthy	Remove
T415	Cinnamomum camphora	Camphor Laurel	*	100, 140, 90, 90	2.57	10	Generally healthy	Remove
T416	Livistona australis	Cabbage Palm	*	330, 340	5.69	16	Generally healthy	Remove

Tree label	Species	Common_name	Weed /cultivated native	Diameter at Breast Height (mm)	Tree Protection Zone (m)	Tree height (m)	Health and habitat features	Retain/Remove
T417	Wodyetia bifurcata	Foxtail Palm	*	240	2.88	14	Generally healthy	Remove
T418	Wodyetia bifurcata	Foxtail Palm	*	250	3.00	15	Generally healthy	Remove
T419	Wodyetia bifurcata	Foxtail Palm	*	230	2.76	14	Generally healthy	Remove
T420	Syagrus romanzoffiana	Cocos Palm	*	200	2.40	14	Generally healthy	Remove
T421	Wodyetia bifurcata	Foxtail Palm	*	250	3.00	12	Generally healthy	Remove
T422	Wodyetia bifurcata	Foxtail Palm	*	200	2.40	13	Generally healthy	Remove
T423	Syagrus romanzoffiana	Cocos Palm	*	220	2.64	14	Generally healthy	Remove
T424	Syagrus romanzoffiana	Cocos Palm	*	240	2.88	14	Generally healthy	Remove
T425	Archontophoenix alexandrae	Alexandra palm	*	200	2.40	10	Generally healthy	Remove
T426	Syagrus romanzoffiana	Cocos Palm	*	190	2.28	12	Generally healthy	Retain
T427	Wodyetia bifurcata	Foxtail Palm	*	160	1.92	6	Generally healthy	Retain
T428	Syagrus romanzoffiana	Cocos Palm	*	210	2.52	14	Generally healthy	Retain
T429	Syagrus romanzoffiana	Cocos Palm	*	270	3.24	14	Generally healthy, overgrown with vines	Retain
T430	Syagrus romanzoffiana	Cocos Palm	*	250	3.00	16	Generally healthy, overgrown with vines	Retain
T431	Corymbia intermedia	Pink bloodwood		370, 350	6.11	22	Generally healthy	Retain
T432	Syagrus romanzoffiana	Cocos Palm	*	260	3.12	18	Generally healthy	Retain
T433	Corymbia intermedia	Pink bloodwood		420	5.04	8	Generally healthy	Retain
T434	Cinnamomum camphora	Camphor Laurel	*	90, 90, 80, 60, 100, 70, 100, 90, 120, 100, 90, 70, 70	3.82	14	Generally healthy	Retain
T435	Syagrus romanzoffiana	Cocos Palm	*	190	2.28	14	Generally healthy	Retain
T436	Wodyetia bifurcata	Foxtail Palm	*	250	3.00	13	Generally healthy	Retain
T437	Syagrus romanzoffiana	Cocos Palm	*	260	3.12	14	Generally healthy	Retain
T438	Syagrus romanzoffiana	Cocos Palm	*	260	3.12	15	Generally healthy	Retain
T439	Melaleuca bracteata	Black Tea-tree	*	180, 350, 130, 150	5.29	14	Generally healthy	Retain

Tree label	Species	Common_name	Weed /cultivated native	Diameter at Breast Height (mm)	Tree Protection Zone (m)	Tree height (m)	Health and habitat features	Retain/Remove
T440	Phoenix dactylifera	Date Palm	*	180	2.16	8	Generally healthy	Retain
T441	Acacia concurrens	Curracabah		190	2.28	9	Generally healthy	Retain
T442	Lophostemon confertus	Brush Box	*	450, 500	8.07	25	Generally healthy	Retain
T443	Spathodea campanulata	African Tulip Tree	*	130	1.56	11	Generally healthy	Retain
T444	Syagrus romanzoffiana	Cocos Palm	*	230	2.76	17	Generally healthy	Remove
T445	Syagrus romanzoffiana	Cocos Palm	*	290	3.48	15	Generally healthy	Remove
T446	Wodyetia bifurcata	Foxtail Palm	*	270	3.24	17	Generally healthy	Remove
T447	Corymbia torelliana	Cadaghi	*	160	1.92	14	Generally healthy	Remove
T448	Acacia concurrens	Curracabah		130	1.56	10	Generally healthy	Remove
T449	Lophostemon confertus	Brush Box		1180	14.16	26	Generally healthy	Remove
T450	Wodyetia bifurcata	Foxtail Palm	*	140	1.68	6	Generally healthy	Remove
T451	Wodyetia bifurcata	Foxtail Palm	*	170	2.04	10	Generally healthy	Remove
T452	Wodyetia bifurcata	Foxtail Palm	*	210	2.52	13	Generally healthy	Remove
T453	Syagrus romanzoffiana	Cocos Palm	*	330	3.96	12	Generally healthy	Remove
T454	Syagrus romanzoffiana	Cocos Palm	*	350	4.20	15	Generally healthy	Remove
T455	Acacia concurrens	Curracabah		160	1.92	12	Generally healthy	Remove
T456	Wodyetia bifurcata	Foxtail Palm	*	170	2.04	12	Generally healthy	Remove
T457	Wodyetia bifurcata	Foxtail Palm	*	140, 200	2.93	12	Generally healthy	Remove
T458	Syagrus romanzoffiana	Cocos Palm	*	260	3.12	13	Generally healthy	Remove
T459	Acacia concurrens	Curracabah		170	2.04	7	Generally healthy	Remove
T460	Syagrus romanzoffiana	Cocos Palm	*	250	3.00	12	Generally healthy	Remove
T461	Syagrus romanzoffiana	Cocos Palm	*	330	3.96	13	Generally healthy	Remove
T462	Acacia concurrens	Curracabah		280	3.36	14	Poor health	Remove
T463	Syagrus romanzoffiana	Cocos Palm	*	330	3.96	13	Generally healthy	Remove
T464	Acacia concurrens	Curracabah		130	1.56	7	Generally healthy	Remove
T465	Acacia concurrens	Curracabah		110	1.32	10	Generally healthy	Remove
T466	Acacia concurrens	Curracabah		120	1.44	12	Generally healthy	Remove

Tree label	Species	Common_name	Weed /cultivated native	Diameter at Breast Height (mm)	Tree Protection Zone (m)	Tree height (m)	Health and habitat features	Retain/Remove
T467	Syagrus romanzoffiana	Cocos Palm	*	270	3.24	12	Poor health	Remove
T468	Phoenix dactylifera	Date Palm	*	100	1.20	3	Generally healthy	Remove
T469	Archontophoenix alexandrae	Alexandra palm	*	90, 80, 110	1.96	11	Generally healthy	Remove
T470	Syagrus romanzoffiana	Cocos Palm	*	190	2.28	16	Generally healthy	Remove
T471	Syagrus romanzoffiana	Cocos Palm	*	300	3.60	12	Generally healthy	Remove
T472	Acacia concurrens	Curracabah		130	1.56	9	Generally healthy	Remove
T473	Acacia concurrens	Curracabah		160	1.92	5	Generally healthy	Remove
T474	Syagrus romanzoffiana	Cocos Palm	*	250	3.00	8	Generally healthy	Remove
T475	Delonix regia	Poinciana	*	250, 200, 200, 290	5.71	13	Generally healthy	Remove
T476	Corymbia intermedia	Pink bloodwood		500, 560	9.01	26	Generally healthy	Remove
T477	Archontophoenix alexandrae	Alexandra palm	*	180	2.16	12	Generally healthy	Retain
T478	Archontophoenix alexandrae	Alexandra palm	*	180	2.16	13	Generally healthy	Retain
T479	Syagrus romanzoffiana	Cocos Palm	*	260	3.12	17	Generally healthy	Retain
T480	Syagrus romanzoffiana	Cocos Palm	*	260	3.12	17	Generally healthy	Retain
T481	Syagrus romanzoffiana	Cocos Palm	*	230	2.76	12	Generally healthy	Retain
T482	Acacia concurrens	Curracabah		160	1.92	7	Generally healthy	Retain
T483	Syagrus romanzoffiana	Cocos Palm	*	180	2.16	13	Generally healthy	Retain
T484	Syagrus romanzoffiana	Cocos Palm	*	300	3.60	16	Generally healthy	Retain
T485	Syagrus romanzoffiana	Cocos Palm	*	240	2.88	10	Generally healthy	Retain
T486	Acacia concurrens	Curracabah		210	2.52	9	Generally healthy	Retain
T487	Wodyetia bifurcata	Foxtail Palm	*	260	3.12	15	Generally healthy	Retain
T488	Syagrus romanzoffiana	Cocos Palm	*	220	2.64	10	Generally healthy	Retain
T489	Syagrus romanzoffiana	Cocos Palm	*	210	2.52	13	Generally healthy	Retain
T490	Syagrus romanzoffiana	Cocos Palm	*	220	2.64	12	Generally healthy	Retain
T491	Syagrus romanzoffiana	Cocos Palm	*	260	3.12	11	Generally healthy	Retain
T492	Acacia concurrens	Curracabah		130, 250	3.38	10	Generally healthy	Remove

Tree label	Species	Common_name	Weed /cultivated native	Diameter at Breast Height (mm)	Tree Protection Zone (m)	Tree height (m)	Health and habitat features	Retain/Remove
T493	Acacia concurrens	Curracabah		100	1.20	7	Generally healthy	Remove
T494	Acacia concurrens	Curracabah		130	1.56	10	Generally healthy	Retain
T495	Acacia concurrens	Curracabah		110	1.32	9	Generally healthy	Retain
T496	Acacia concurrens	Curracabah		130	1.56	7	Generally healthy	Retain
T497	Acacia concurrens	Curracabah		90, 40, 60, 60	1.56	7	Generally healthy	Retain
T498	Acacia concurrens	Curracabah		110	1.32	9	Generally healthy	Retain
T499	Acacia concurrens	Curracabah		110, 110	1.87	8	Generally healthy	Retain
T500	Acacia concurrens	Curracabah		180, 70	2.32	11	Poor health	Retain
T501	Acacia concurrens	Curracabah		140	1.68	6	Generally healthy	Retain
T502	Acacia concurrens	Curracabah		140	1.68	9	Generally healthy	Retain
T503	Acacia concurrens	Curracabah		170	2.04	11	Generally healthy	Retain
T504	Acacia concurrens	Curracabah		160	1.92	8	Generally healthy	Retain
T505	Acacia concurrens	Curracabah		130	1.56	10	Generally healthy	Retain
T506	Acacia concurrens	Curracabah		120	1.44	8	Generally healthy	Retain
T507	Acacia concurrens	Curracabah		110, 100	1.78	8	Generally healthy	Retain
T508	Acacia concurrens	Curracabah		180	2.16	10	Generally healthy	Retain
T509	Acacia concurrens	Curracabah		110, 90, 70	1.90	8	Generally healthy	Retain
T510	Acacia concurrens	Curracabah		120	1.44	9	Generally healthy	Retain
T511	Acacia concurrens	Curracabah		100, 90, 80	1.88	9	Generally healthy	Retain
T512	Acacia concurrens	Curracabah		90, 100, 70	1.82		Generally healthy	Retain
T513	Acacia concurrens	Curracabah		170	2.04	12	Generally healthy	Retain
T514	Acacia concurrens	Curracabah		140	1.68	8	Generally healthy	Retain
T515	Acacia concurrens	Curracabah		150	1.80	9	Generally healthy	Retain
T516	Acacia concurrens	Curracabah		190	2.28	10	Generally healthy	Retain
T517	Acacia concurrens	Curracabah		110, 120, 90, 70	2.38	9	Generally healthy	Retain
T518	Acacia concurrens	Curracabah		90, 100	1.61	8	Generally healthy, wrapped in wire fence	Retain

Tree label	Species	Common_name	Weed /cultivated native	Diameter at Breast Height (mm)	Tree Protection Zone (m)	Tree height (m)	Health and habitat features	Retain/Remove
T519	Acacia concurrens	Curracabah		110, 110	13.27	7	Generally healthy, wrapped in wire fence	Remove
T520	Eucalyptus tereticornis	Forest Red Gum		830	9.96	28	Significant Landscape Tree, Generally healthy	Remove
T521	Eucalyptus microcorys	Tallowwood		620	7.44	24	Significant Landscape Tree, Generally healthy, termites nest	Remove
T522	Syagrus romanzoffiana	Cocos Palm	*	210	2.52	17	Generally healthy, termite infested	Remove
T523	Syagrus romanzoffiana	Cocos Palm	*	180	2.16	16	Generally healthy	Remove
T524	Syagrus romanzoffiana	Cocos Palm	*	130	1.56	11	Generally healthy	Remove
T525	Syagrus romanzoffiana	Cocos Palm	*	140	1.68	11	Generally healthy	Remove
T526	Syagrus romanzoffiana	Cocos Palm	*	190	2.28	17	Generally healthy	Remove
T527	Syagrus romanzoffiana	Cocos Palm	*	140	1.68	12	Generally healthy	Remove
T528	Eucalyptus microcorys	Tallowwood		1110	13.32	28	Significant Landscape Tree, Generally healthy	Remove
T529	Syagrus romanzoffiana	Cocos Palm	*	130	1.56	11	Generally healthy	Remove
T530	Syagrus romanzoffiana	Cocos Palm	*	280	3.36	15	Generally healthy	Remove
T531	Syagrus romanzoffiana	Cocos Palm	*	250	3.00	14	Generally healthy	Remove
T532	Syagrus romanzoffiana	Cocos Palm	*	250	3.00	18	Generally healthy	Remove
T533	Syagrus romanzoffiana	Cocos Palm	*	140	1.68	7	Generally healthy	Remove
T534	Syagrus romanzoffiana	Cocos Palm	*	240	2.88	16	Generally healthy	Remove
T535	Corymbia intermedia	Pink bloodwood		420	5.04	25	Generally healthy	Remove
T536	Corymbia citriodora	Spotted Gum		240	2.88	20	Generally healthy, fauna scratches on trunk	Remove
T537	Syagrus romanzoffiana	Cocos Palm	*	160	1.92	16	Generally healthy	Remove
T538	Syagrus romanzoffiana	Cocos Palm	*	220	2.64	17	Generally healthy	Remove
T539	Syagrus romanzoffiana	Cocos Palm	*	220	2.64	16	Generally healthy	Remove
T540	Syagrus romanzoffiana	Cocos Palm	*	250	3.00	12	Generally healthy	Remove
T541	Syagrus romanzoffiana	Cocos Palm	*	200	2.40	14	Generally healthy	Remove

Tree label	Species	Common_name	Weed /cultivated native	Diameter at Breast Height (mm)	Tree Protection Zone (m)	Tree height (m)	Health and habitat features	Retain/Remove
T542	Syagrus romanzoffiana	Cocos Palm	*	210	2.52	13	Generally healthy	Remove
T543	Syagrus romanzoffiana	Cocos Palm	*	180	2.16	12	Generally healthy	Remove
T544	Syagrus romanzoffiana	Cocos Palm	*	170	2.04	15	Generally healthy	Remove
T545	Syagrus romanzoffiana	Cocos Palm	*	209	2.51	14	Generally healthy	Remove
T546	Melaleuca quinquenervia	Broad-leaved paperbark		250, 250	4.24	15	Generally healthy	Remove
T547	Corymbia intermedia	Pink bloodwood		150, 180, 310, 480, 170	7.69	17	Generally healthy	Remove
T548	Syagrus romanzoffiana	Cocos Palm	*	290	3.48	14	Generally healthy	Remove
T549	Syagrus romanzoffiana	Cocos Palm	*	210	2.52	14	Generally healthy	Remove
T550	Eucalyptus microcorys	Tallowwood		500	6.00	7	Generally healthy	Remove
T551	Eucalyptus seeana	Fine-leaved Red Gum		540	6.48	7	Generally healthy	Remove
T552	Lophostemon confertus	Brush Box		355.11	4.26	2.5	Generally healthy	Remove
T553	Melaleuca quinquenervia	Broad Leaved Paperbark		300	3.60	5	Generally healthy	Remove
T554	Corymbia trachyphloia	Brown Bloodwood		612.7	7.35	5	Generally healthy	Remove
T555	Corymbia intermedia	Pink Bloodwood		420	5.04	8	Generally healthy	Remove
T556	Eucalyptus seeana	Fine-leaved Red Gum		720	8.64	4	Generally healthy	Retain
T557	Melaleuca quinquenervia	Broad Leaved Paperbark		388.97	4.67	5	Generally healthy	Remove
T558	Corymbia intermedia	Pink Bloodwood		455.52	5.47	4	Generally healthy	Remove
T559	Melaleuca stypheloides	Prickly Paperbark	*	517.01	6.20	4	Generally healthy	Remove
T560	Corymbia intermedia	Pink Bloodwood		270	3.24	3	Generally healthy	Remove
T561	Araucaria cunninghamii	Hoop Pine	*	290	3.48	5	Generally healthy	Remove
T562	Ficus benjamina	Weeping Fig	*	433.01	5.20	3	Generally healthy, fauna scratches on trunk	Remove
T563	Corymbia torelliana	Cadaghi	*	310	3.72	4	Generally healthy, fauna scratches on trunk	Remove
T564	Lophostemon confertus	Brush Box		462.28	5.55	4	Generally healthy	Remove
T565	Lophostemon confertus	Brush Box		320	3.84	4.5	Generally healthy	Remove
T566	Corymbia intermedia	Pink Bloodwood		230	2.76	5	Generally healthy	Remove

Tree label	Species	Common_name	Weed /cultivated native	Diameter at Breast Height (mm)	Tree Protection Zone (m)	Tree height (m)	Health and habitat features	Retain/Remove
T567	Eucalyptus microcorys	Tallowwood		600	7.20	6.5	Significant Landscape Tree, Generally healthy	Remove
T568	Eucalyptus microcorys	Tallowwood		230	2.76	4	Generally healthy	Remove
T569	Eucalyptus microcorys	Tallowwood		570	6.84	6	Generally healthy	Remove
T570	Corymbia intermedia	Pink Bloodwood		210	2.52	5	Generally healthy	Remove
T571	Corymbia intermedia	Pink Bloodwood		384.84	4.62	5	Generally healthy	Remove
T572	Lophostemon confertus	Brush Box		400	4.80	6	Generally healthy	Remove
T573	Corymbia intermedia	Pink Bloodwood		380	4.56	6.5	Generally healthy	Remove
T574	Corymbia intermedia	Pink Bloodwood		619.84	7.44	7	Generally healthy	Remove
T575	Araucaria bidwilli	Bunya Pine	*	280	3.36	4.5	Generally healthy	Remove
T576	Araucaria bidwilli	Bunya Pine	*	320	3.84	5	Generally healthy	Remove
T577	Corymbia intermedia	Pink Bloodwood		680	8.16	6	Generally healthy	Remove

Schedule 2

Concept Rehabilitation Plan

Revised Concept Rehabilitation Plan

1.0 Rehabilitation Plan Objectives

The following provides a revised outline of the proposed rehabilitation that establishes a clear framework for managing and rehabilitating the waterway corridor to re-establish its pre-clear regional ecosystem (RE) and support long-term ecological function and natural waterway management. Refer to **Figure 6** which illustrates the Concept Rehabilitation Plan.

The following provides the five stated objectives.

1.1 Protect and Restore Riparian Vegetation Structure

The works will protect existing native vegetation, limited to scattered trees and patches of native waterway vegetation, and build the long-term structure of the riparian corridor through vegetation retention and rehabilitation.

- Retain existing native riparian vegetation wherever practicable.
- Minimise vegetation clearing within the corridor.
- Reinforce the natural riparian vegetation structure through supplementary planting of locally endemic species.

1.2 Restore Degraded Areas

The waterway corridor will be rehabilitated to its pre-clearance RE to improve ecological condition and habitat connectivity.

- Undertake riparian revegetation planting using locally appropriate native species consistent with the technical description of the RE.
- Support full strata plantings to establish long-term canopy, mid-storey and groundcover structure.

1.3 Remove Weeds and Rubbish from the Corridor

Existing degradation caused by weeds and rubbish will be addressed as part of the rehabilitation works.

- Undertake weed removal and management within the waterway corridor.
- Remove rubbish, debris and dumped material from the riparian area.
- Implement weed control measures during establishment of rehabilitation planting.
- Support ongoing weed monitoring during the establishment and maintenance phases.

1.4 Maintain Natural Hydrology and Creek Function

Works will maintain natural drainage patterns and support the ecological functioning of the waterway corridor.

- Maintain natural overland flow paths.
- Avoid concentration of stormwater flows that may cause erosion.
- Design stormwater infrastructure to replicate natural hydrological behaviour where practicable.

1.5 Support Long-Term Management of the waterway corridor

The design will facilitate ongoing protection, maintenance and ecological processes within the realigned waterway corridor.

- Provide maintenance access to enable rehabilitation, weed control and monitoring activities.
- Stabilise stormwater outlets and disturbed areas to prevent erosion.
- Ensure rehabilitation works utilise endemic species and will be maintained during the vegetation establishment period.
- Support the long-term ecological processes and function of the waterway corridor.

2.0 Description of the Waterway Corridor

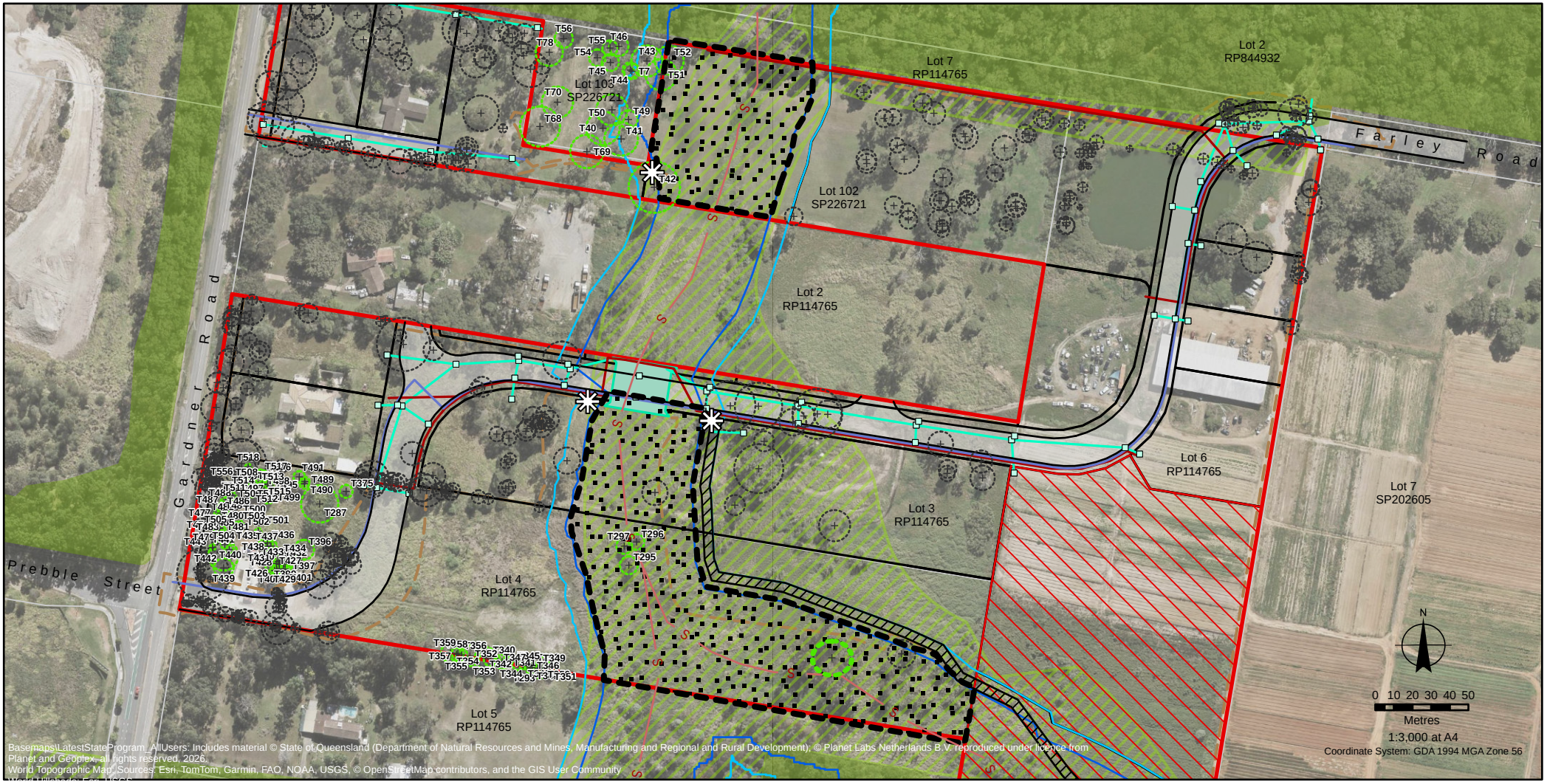
The central waterway corridor, mapped as HESS, is the lowest part of the site and is dominated by a dense cover of the exotic Urochloa mutica (para grass) with *Pennisetum purpureum* (elephant grass) and *Neonotonia wightii* (glycine) also common (**Photos 3 & 4**). These weed species preclude the retention of most wetland and habitat values.

There is limited native vegetation currently growing in the waterway corridor which is generally limited to:

- Scattered native trees including Eucalyptus tereticornis.
- A small patch of native Typha orientalis (bullrush) with two mature Melaleuca linariifolia trees and one Melaleuca quinquenervia tree on the southern boundary of the site.
- A small patch of native Typha orientalis (bullrush) with a small number of young Melaleuca quinquenervia trees on the northern boundary of the site.


Photos 3 & 4 – Waterway corridor dominated by exotic grass

Queensland Government pre-clear regional ecosystem mapping (Queensland Globe) indicates that the waterway corridor's pre-clear RE is 12.3.6 (*Melaleuca quinquenervia +/- Eucalyptus tereticornis, Lophostemon suaveolens, Corymbia intermedia* open forest on coastal alluvial plains). While the native vegetation in this area does not form the ecological structure and function to be currently classed as an RE, during site inspections, the floristic elements observed on the site and adjacent native bushland supports the pre-clear mapping and RE 12.3.6 being the correct RE for this waterway corridor.



Data Sources:
Tree plot/survey
Supplied by client
Proposed development layout
Supplied by client, May 2026
Biodiversity Areas
Brisbane City Council City Plan 2014 - Biodiversity Overlay, downloaded 01/10/2025
Cadastral data - Queensland , published 12 May 2025
Watercourse lines - Queensland, published 28 Jul 2025
Queensland roads and tracks, Published: 22 Nov 2021
State of Queensland (Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development) 2026

LEGEND

- Rehabilitation maintenance access points
- Rehabilitation areas
- Trees to be retained
- Trees to be removed

Biodiversity areas

- High ecological significance
- High ecological significance strategic
- Waterway core
- Waterway fringe
- Proposed lot boundaries
- Proposed footpath
- Extent of earthworks
- Proposed road
- Site boundary
- Outside application
- Existing sewer line
- Existing lot boundaries

Proposed services

- Sewer pipe
- Water main
- Stormwater pipe
- Stormwater pit
- Stormwater culvert

Figure: 6

Title: Concept Rehabilitation Plan

Project: 184, 198 & 202 Gardner Rd & 56 Farley Rd, Rochedale Qld (Lot 102 on SP226721, Lots 3 & 4 on RP114765, and part of Lot 6 on RP114765)

Client: Rochedale Development Partners

Drawn By: The MapLass P/L **Reviewed by: PS** **Date: 25/05/2026**

BAAM ECOLOGICAL CONSULTANTS

3.0 Rehabilitation Requirements

3.1 Vegetation Protection

To ensure the protection of native vegetation located within the waterway corridor, the waterway corridor outside of the road construction area will be clearly defined as a 'No-Go' zone.

To maintain the viability of retained vegetation, tree protection measures in accordance with AS 4970–2025: *Protection of Trees on Development Sites* will be implemented. Temporary exclusion fencing will be installed in accordance with the TPZ.

Prior to works commencing, retained vegetation areas are to be clearly identified and marked in the field using temporary fencing. This fencing is to remain in place for the duration of all works to ensure sensitive areas remain clearly identifiable to all machinery operators and site personnel. Flagging tape or similar, can be used to identify the weed trees to be removed/mulched or poisoned.

Where heavy machinery is required to undertake site preparation activities, including the use of equipment such as tree mulchers or excavators, defined access points and machinery tracks will be established prior to works commencing within the riparian area.

The establishment of controlled access routes, which will also be used for maintenance during the rehabilitation establishment period will be defined and established to minimise unnecessary ground disturbance, reduce soil compaction and assist in protecting retained vegetation and stabilised surfaces.

3.2 Induction and training:

Prior to the commencement of rehabilitation works, all contractors and site personnel will be required to undertake a site-specific environmental induction. The purpose of the induction is to ensure that personnel are aware of the requirements of this rehabilitation plan.

The induction will identify the location and significance of TPZ's, retained vegetation and the waterway corridor.

3.3 Tree retention

Demarcation of all trees identified for retention will be undertaken prior to works commencing. Trees requiring removal for civil works are identified in **Figures 1 to 5.**

3.4 Clearing protocols

The removal of native vegetation will form part of the rehabilitation site preparation process. Where practicable, woody material generated during clearing activities within the civil works disturbance areas will be processed on site using mechanical mulching equipment and reused within rehabilitation areas to assist with soil protection, weed suppression and moisture retention during the rehabilitation establishment phase.

Where larger logs or stumps are generated during clearing activities, some material may be retained and relocated within rehabilitation areas or retained vegetation zones as coarse woody

debris (CWD). Retaining a proportion of larger woody material contributes to habitat complexity, assists in stabilising soil surfaces and can reduce the velocity of surface runoff across disturbed areas.

Mulch generated during clearing will be reused within rehabilitation areas where appropriate. Mulch will be applied to disturbed soils to suppress weed growth, improve soil moisture retention and reduce the potential for erosion during the establishment phase of vegetation. However, mulch will not be applied immediately adjacent to the creek in areas that are subject to periodic flooding. In these locations, tubestock planted within the lower areas of the waterway corridor will utilise jute matting for weed suppression, rather than loose mulch to reduce the risk of organic material being mobilised and transported downstream during localised flood events.

Temporary stockpiling of mulch or organic material may be required during site preparation works. Stockpiles will be located away from retained vegetation and outside drainage lines and flood-prone areas to prevent unintended impacts on vegetation or watercourses. Where practicable, mulched material will be stored for a minimum period of approximately six weeks prior to reuse within rehabilitation areas, allowing partial decomposition of organic matter and reducing the potential for phytotoxic effects associated with freshly mulched vegetation.

3.5 Erosion Control and Gully Stabilisation

Erosion and sediment control measures will be implemented during rehabilitation works to minimise soil loss and prevent the movement of sediment into the waterway corridor. Stabilisation of exposed soils will be achieved through a combination of ground protection measures, including the application of mulch, geotextile materials and the strategic placement of coarse woody debris.

3.6 Fauna friendly wildlife movement solutions

As set out in **section 1.3**, of the BAAM IR response, a Wildlife Movement Solutions Plan is required to be prepared within the area identified on the approved 'Plan of Reconfiguration – Interim, Reference 21-0260U_03 Sheet 1 of 1 Version O, received 19/12/2023 as amended in red 20/12/2023'.

The Wildlife Movement Solutions Plan will contain fauna movement infrastructure and exclusion fencing, glider poles and koala refuge poles located within the waterway corridor. The proposed locations for these poles will be set out in the Wildlife Movement Solutions Plan. Rehabilitation Plan has been developed with knowledge of the required fauna movement solutions, and no conflict has been identified for the required actions.

3.7 Rehabilitation Methodology

Rehabilitation is to be undertaken utilising current best-practice methods in the restoration industry in south-east Queensland, as outlined in the South East Queensland (SEQ) Ecological Restoration Framework Manual (Chenoweth 2012).

3.8 Rehabilitation Team

All works in the Rehabilitation Zones associated with the rehabilitation methodology, as set out in this Concept Rehabilitation Plan, must be carried out by a registered revegetation/rehabilitation contractor.

The rehabilitation contractor will undertake site preparation, weed treatments, infill plantings and maintenance.

3.9 Demarcation of Rehabilitation Area

Prior to the start of site works the rehabilitation area (waterway corridor) is to be clearly defined as a 'No Go' area and signage is to be readily visible to all personnel undertaking any works on site. No removal or damage to any existing native vegetation outside of the civil works footprint is to occur.

Any unauthorised incurrences must be inspected by the project ecologist to advise on restoration actions required, if any.

3.10 Pest and Weed Management

The site contains a diverse range of exotic shrubs, grasses and herbs. Many of these are recognised environmental weeds. **Table 1** summarises the weed species and their status across the site. In accordance with the *Biosecurity Act 2014***,** Category 3 restricted matters must not be distributed into the environment unless authorised under regulation or permit. Landowners are responsible for taking all reasonable and practical steps to minimise the risks associated with invasive plants under their control.

Table 1. Weeds currently identified across the site

Name	Common Name	Biosecurity Status
Ageratum houstonianum	Blue billygoat weed	Not declared
Bidens pilosa	Cobbler's pegs	Not declared
Chloris gayana	Rhodes grass	Council Pest Vegetation (BCC Natural Asset Local Law)
Cirsium vulgare	Scotch thistle	Not declared
Crassocephalum crepidioides	Thickhead	Not declared
Gomphocarpus physocarpus	Balloon cotton bush	Not declared
Lantana camara	Lantana	Weed of National Significance (WoNS) Category 3 (QLD Biosecurity Act 2014)
Leucaena leucocephala	Leucaena	Council Pest Vegetation (BCC Natural Asset Local Law)
Megathyrsus maximus	Guinea grass	Council Pest Vegetation (BCC Natural Asset Local Law)
Neonotonia wightii	Glycine	Council Pest Vegetation (BCC Natural Asset Local Law)
Pennisetum purpureum	Elephant grass	Council Pest Vegetation (BCC Natural Asset Local Law)
Ricinus communis	castor oil plant	Council Pest Vegetation (BCC Natural Asset Local Law)

Sida rhombifolia	Arrow leaf sida	Not declared
Solanum nigrum	Blackberry nightshade	Council Pest Vegetation (BCC Natural Asset Local Law)
Solanum torvum	Devil's fig	Council Pest Vegetation (BCC Natural Asset Local Law)
Syagrus romanzoffiana	Cocos palm	Council Pest Vegetation (BCC Natural Asset Local Law)
Urochloa decumbens	Signal grass	Council Pest Vegetation (BCC Natural Asset Local Law)
Urochloa mutica	Para grass	Council Pest Vegetation (BCC Natural Asset Local Law)

Within the waterway corridor, all weeds should be treated. Lantana **(**WoNS) must be removed from the site and disposed of at an appropriate facility. Non-woody exotic vegetation, such as grasses, may be treated with approved herbicides suitable for use near waterways (e.g. Roundup Biactive®), applied strictly according to label directions. Spraying will avoid rainy or windy conditions and care will be taken to protect native vegetation both within and outside the Rehabilitation Areas.

Herbicides must be applied by appropriately qualified/supervised persons in accordance with the Agricultural Chemicals and Distribution Control Act 1966, at rates as identified on registered product labels, or on an Australian Pesticides and Veterinary Medicines Authority (APVMA) issued off-label permit, where applicable.

Weed removal methods will be selected according to species and site conditions, as outlined in **Attachment 1**, which follows recommendations from the South East Queensland Ecological Restoration Framework (SEQERF). Follow-up maintenance should suppress regrowth without excessively disturbing the soil.

In general terms, site preparation & weed control must occur 6-8 weeks before planting to ensure the site is ready for planting. This should involve:

1. Blanket spray high-biomass grassy species such as *Pennisetum purpureum* (elephant grass) and annual/perennial herbaceous weeds with appropriate glyphosate (aquatic approved) herbicide. For heavy infestations, spray again 3-4 weeks later and target weed regrowth.
2. Slash or mulch dead biomass.
3. Repeat spray if regrowth is noted.
4. Lay weed matting (biodegradable jute/coir matting) over high pressure weed zones.

All treated vegetation must be monitored, with retreatment undertaken if resprouting occurs. While many weed species in the soil seed bank will decline within one to two years, others may persist for a decade or more. Persistent species, require ongoing, long-term attention to achieve effective control.

Weed invasion will continue due to the presence of environmental weeds on adjoining lands and mobilisation during flood events.

3.11 Fire Ant Compliance and Safe Practice

All rehabilitation works will be undertaken in accordance with the Queensland *Biosecurity Act 2014* and the National Fire Ant Eradication Program (NFAEP) requirements, noting that the site is located within a declared Fire Ant Restricted Area and fire ants have been identified and treated, on the site.

- Plant sourcing
  - All nursery stock will be obtained from suppliers accredited under the Fire Ant Approved Nursery Certification Program.
  - All plants are to be sourced from trees within the South East Queensland Bioregion.
- Soil and mulch sourcing
  - Mulch, soil, and other organic materials will only be sourced from suppliers operating under approved Fire Ant Biosecurity Instrument Permits.
  - Materials will be inspected upon delivery to confirm compliance and to ensure no evidence of fire ant infestation is present.
- On-site handling
  - Movement of soil or organic material within the site will be minimised to reduce the risk of inadvertent spread.
  - Any suspected fire ant activity encountered during works will be immediately reported to the NFAEP hotline (13 25 23) and works in the affected area will cease until clearance is provided.
  - Stockpiled mulch is to be inspected regularly for the presence of fire ants and nests

3.12 Species selection and spacing

Species to be planted, as well as spacing and required quantities, are indicated in **Table 2** Species selection is based on species recorded on site and identified in the Queensland Herbarium pre-clearing Regional Ecosystems (RE 12.3.6) Technical Description (https://www.publications.qld.gov.au/dataset/re-technical-descriptions/resource/1771f391-44b9-4d25-8315-f92033610a9b).

Table 2. Rehabilitation planting list – RE 12.3.6

Planting list – RE 12.3.6	
Canopy species (planting density 1 per 10m2)	**Groundcovers** (planting density 1 per 1m2) #wet area species – plant in drainage lines
Melaleuca quinquenervia (dominant)	*#Baumea articulata*
Eucalyptus seeana	*Oplismenus aemulus*
Lophostemon suaveolens	*#Lomandra hystrix*
Corymbia intermedia	*#Philydrum lanuginosum*
Eucalyptus tereticornis	*#Cyperus polystachyos*
Shrub species (planting density 1 per 5m2)	*Imperata cylindrica*
Melaleuca linariifolia	*#Gahnia aspera*
Allocasuarina littoralis	*#Fimbristylis dichotoma*
Alphitonia excelsa	*Billardiera scandens*
Glochidion sumatranum	*Commelina diffusa*
Acacia disparrima subsp. disparrima	*Themeda triandra*
Leptospermum polygalifolium	*Ottochloa gracillima*
Acacia leiocalyx	*Dianella caerulea*
Commersonia bartramia	*#Juncus kraussii*
Cyclophyllum coprosmoides	*Heteropogon contortus*

To ensure this density is achieved, tube stock planting should include an over-planting allowance of 10–20% to account for natural seedling losses.

Should any species be commercially unavailable, the rehabilitation contractor should select alternative, suitable species that are native to the locality and are contained within the RE technical description. Details of any alternative plantings, and justification on selected alternative species, must be provided in monitoring reporting.

3.13 Planting methods, fertilising and watering

All plants will be supplied as 75 mm native tube stock or equivalent, with grasses and groundcover graminoids provided in smaller 65–105 cell trays.

Plant stock will be sourced from local nurseries using local-provenance parent material where possible. All stock must be free of defects and pathogens, demonstrate good root structure, and exhibit healthy vigour. The nursery source of material must be certified to verify provenance and quality.

All tube stock plants are to be planted into prepared holes that measure the depth and twice the width of the tubes. There must be a minimum amount of cultivated topsoil to accommodate the seedlings; tube stock seedlings are not to be planted into rock or clay substrate. If no adequate topsoil is present, imported topsoil is required to a depth of 150mm or the minimum height of the tube stock seedling root ball. Tube stock is to be planted in cultivated or augured soil as soon as practicable. Care is to be taken to prevent damage to the roots of existing trees.

Where practicable, planting should occur in late winter/spring following rainfall, and immediately following removal of weeds, to allow plants to become established prior to summer, avoiding significant rainfall events and extreme heat.

Each hole will be pre-watered (depending on soil moisture at time of planting) and can be dosed with water crystals to improve moisture retention around the root ball if required.

To remove seedlings from tubes, the tubes are to be upended, and the root ball lightly tapped out – i.e. do not pull out of the tube by the plant's stem.

Soil is to be backfilled around tube stock, once placed in the hole, and firmed in to ensure soil contact with root ball. To avoid ringbarking, the stem of the tube stock is not to be covered with soil or mulch. A small water catchment ring/dammed area is to be built up at the outside edge of the root ball, at the surface, to ensure water is captured and will flow down into the root zone and not runoff the soil pile.

Each species is to be planted in a random, 'natural' manner across the revegetation zone; the appropriate spacing is provided in **Table 2**. Groupings of 3, 5, and 7 plants are recommended for the ground cover species especially to create this randomised effect.

Upon completion of planting, soak water around the root ball to ensure no air spaces remain. A minimum of 5-10 L of water will be applied to each tube stock directly after planting. This is to occur within a reasonable time frame post planting, ensuring no wilting takes place between planting and watering-in. Tubes may need re-firming after initial watering if they develop leans.

Fertilising

Prior to revegetation, as part of civil works, soil fertility should be tested and assessed. Where deficiencies are identified, ameliorants or fertilisers may be applied. If fertiliser is required, each planting hole should receive a suitable controlled-release fertiliser tablet, positioned adjacent to - but not touching - the root ball.

Regardless of soil assessment results, a diluted solution of SeaSol® Seaweed Solution or an equivalent product may be applied during initial watering to reduce transplant shock and promote root growth. Follow-up fertiliser applications are generally unnecessary, as native plants are typically adapted to low-nutrient soils. Exceptions may occur where subsoil or overburden material is used as topsoil, in which case nutrient supplementation may be warranted.

Mulching

Mulching of the planting sites fulfils two main requirements:

- It suppresses weeds around the plants, reducing competition for resources such as light, moisture and nutrients; and
- It assists in water retention, keeping plant roots cool and moist. Depending on the type of mulch used, mulching may also help improve soil structure by increasing the organic content.

Following planting, a mulch layer of chipped, mulch is to be applied to a minimum depth of 10 cm and across exposed soils as a layer across all Rehabilitation Areas. If mulching is applied in

rings around individual trees the ring should be 1m in diameter minimum. There must be a gap of 10 cm mulch free area immediately around the trunk base of existing vegetation and planted tube stock trees and shrubs. Mulch is to be certified as weed and pathogen free and is not to be applied right up against the trunks of any planted or retained native trees and shrubs.

Mulch stockpiled from felled and mulched timber generated during the clearing within the development footprint may be reused, provided it has been allowed to decompose in situ for a minimum of six weeks. All remaining on-site handling of mulch must comply with relevant fire ant management requirements, as outlined in **Section 3.11,** to ensure both environmental and biosecurity standards are met.

Jute squares and weed matting should be used instead of mulch in zones subject to flooding or where ongoing weed regrowth will continue and result in competition with native species.

Tree Guards

If any tree or shrub tube stock vegetation is deemed to be susceptible to macropod, cervid or lagomorph grazing, tree guards (600 mm corflute and stake, or biodegradable equivalent- particularly in areas that may be subject to flooding) should be positioned around each plant at the time of planting. Guards are to be removed from the site at the end of the maintenance period or when the plant has reached a suitable level of establishment.

3.14 Maintenance and Monitoring

Watering regime

The watering schedule should follow the recommendations in **Table 3** although may be subject to change depending on rainfall frequency. Adjustments to watering frequency and quantity should also be made according to visual inspection of site condition and plant health. Watering should be carried out early in the morning or late in the afternoon to avoid excessive water loss from evaporation.

Table 3. Watering schedule

Week	Frequency*
1 – 2	One cycle every second day
2 – 7	Two cycles per week
7 – 12	Once cycle per week
12-20+	Site to be monitored for wilting of plants and watering to be undertaken as required.

*During periods where sufficient rainfall events occur. watering will not be required.

Maintenance and Monitoring Schedule

Maintenance and monitoring of the rehabilitation areas will be undertaken over a period minimum 24-month as outlined in **Table 4** to ensure the successful establishment of vegetation and long-term habitat functionality. This work will be undertaken by the rehabilitation contractor or another suitably qualified professional to verify that the correct species and densities have been achieved.

From three to twenty-four months after planting, monitoring and maintenance will continue with regular weed control, replacement planting where necessary, and protection of any natural regeneration occurring within the rehabilitation areas.

General maintenance will include monitoring for erosion, replenishing mulch where depleted, removing rubbish or garden waste, and removing tree guards once plants are sufficiently established. Where mulch is depleted and weed growth increases, forest mulch will be reinstated to a depth of approximately 100 mm within a minimum 1 m diameter around plants, ensuring mulch does not contact stems.

Monitoring will generally occur every two months, with additional inspections following storms or significant weather events to assess damage. Key parameters include vegetation survival and health, canopy development, weed suppression, erosion stability, and evidence of fauna use.

Table 4. Monitoring and maintenance schedule

Timing	Maintenance Task
First 3 months after revegetation rehabilitation works	**Control weeds** – Check for weeds monthly and control as required, taking care not to damage planted and regenerating native species, including grasses and forbs. Ensure emphasis is placed on control of identified invasive species **Watering** – Water each planted stock as per **Table 8.1**, depending upon prevailing weather conditions and then monthly or as necessary until seedlings are established and self-sustaining (approximately 3 – 6 months). **General Site Maintenance** – e.g. remove any rubbish found on site; check for signs of erosion; replace mulch as required. **Replacement Planting –** Replace dead or senescent plants according to the methods in this plan and continue replacement planting until 100% survival rate for the required stem density as specified in **Table 7.3** is achieved. **Monitoring** – Monitor health of planted and retained vegetation on a monthly basis.
3-24 months after planting	**Control weeds** – Continue weed checks and control as required. Ensure emphasis is placed on control of identified invasive species (including site removal if warranted). **Watering** – Continue to water each seedling as necessary until seedlings are established (approximately 3 – 6 months). Any replacement seedlings should be watered weekly during the first month following planting, then water as necessary until seedlings are established (approximately 3 – 6 months after planting). **Replacement Planting** – Replace dead or senescent plants according to the methods detailed in this plan and continue replacement planting until 100% survival rate for the required stem density as specified in **Table 2** is achieved. **Regeneration identification –** Identify, monitor and protecting natural recruitment of revegetated seedlings within the rehabilitation areas **General Site Maintenance** – Check for signs of erosion; replace mulch as required. Remove any rubbish dumped on site; check for signs of garden waste dumping and manage as required. Remove tree guards when tube stock plants have reached a suitable level of establishment. **Mulching** – If mulch is depleted thereby allowing significant weed growth, replace mulch around affected plants with forest mulch to a depth of 100 mm and at least 1m diameter, ensuring mulch does not contact any stems/trunks of native species.

	Monitoring – Monitor health of planted and retained vegetation on a regular basis (suggested quarterly minimum), ensure replacement plantings for dead plantings receive more regular (suggested monthly) monitoring. **Incident monitoring** – Monitor after storm or inclement weather event, ensure any required removal of damaged limbs and trees from downed timber remains on site as coarse woody debris for habitat value.

3.15 Reporting

Upon completion of the maintenance period, a monitoring report, including photographic evidence, to demonstrate compliance with this RMP should be submitted to Council.

Attachment 1

South East Queensland Ecological Restoration Framework Weed Management Techniques

SOUTH EAST QUEENSLAND ECOLOGICAL RESTORATION FRAMEWORK:

MANUAL

SOUTH EAST QUEENSLAND ECOLOGICAL RESTORATION FRAMEWORK:

MANUAL

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The South East Queensland Ecological Restoration Framework consists of three documents being the:

1. Code of Practice 2. Guideline 3. Manual

The Framework will be subject to periodic review. If you have any suggestions for improvement we invite your feedback.
Please provide feedback to SEQ Catchments, PO Box 13204, Brisbane, Qld, 4003.

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DISCLAIMER:

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Bushland Restoration Services

ON BEHALF OF:

Brisbane City — Dedicated to a better Brisbane

Gold Coast City Council

Redland City Council

Somerset Regional Council

SEQ Catchments — Healthy Land – Healthy Water

Logan City Council

Sunshine Coast Council

Moreton Bay Regional Council

Scenic Rim Regional Council

Lockyer Valley Regional Council

City of Ipswich

Toowoomba Regional Council

CONTENTS

APPENDICES

1 INTRODUCTION

"Ecological restoration is the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed."

1.1 PURPOSE OF THE SEQ ECOLOGICAL RESTORATION FRAMEWORK

The South East Queensland (SEQ) Ecological Restoration Framework Project was originally proposed by the Environmental Managers Technical Reference Group (EMTRG), a group of environmental managers representing SEQ Councils. The EMTRG recognised that the high growth experienced in SEQ, combined with the diversity of stakeholders undertaking ecological restoration, required the development of a standard to ensure consistent ecological restoration delivery. In April 2011, the Council of Mayors (SEQ) subsequently endorsed the Framework as a regional standard for undertaking restoration projects. Ultimately, ecological restoration projects delivered under the Framework will:

- Conserve and enhance biodiversity through increasing the extent and improving the condition of native vegetation;
- Ensure long-term environmental and economic sustainability; and
- Ensure ongoing improvement and maintenance of ecosystem services.

The SEQ region, as defined by the SEQ Regional Plan 2009 – 2031 is made up of 11 Local Government Areas, including:

- Brisbane City Council
- Gold Coast City Council
- Ipswich City Council
- Lockyer Valley Regional Council
- Logan City Council
- Moreton Bay Regional Council
- Redland City Council
- Scenic Rim Regional Council
- Somerset Regional Council
- Sunshine Coast Regional Council
- Toowoomba Regional Council

The Framework is comprised of three key documents to guide the delivery of vegetation/ecological restoration works in the SEQ region including:

- **Code of Practice** – a policy document providing a head of power for the subsequent Guideline and Manual. The code of practice reflects the SEQ policy environments where it is to be housed.
- **Guideline** – a decision making tool to guide users to the most appropriate course of action in their project. This document guides application of the policy and links to current best practice and examples demonstrated in the Manual element.
- **Manual** – a technical but easy to use guide to all aspects of ecological restoration. This document is reflective of current best practice, and provides the minimum acceptable solutions to ecological restoration.

1.2 THE MANUAL

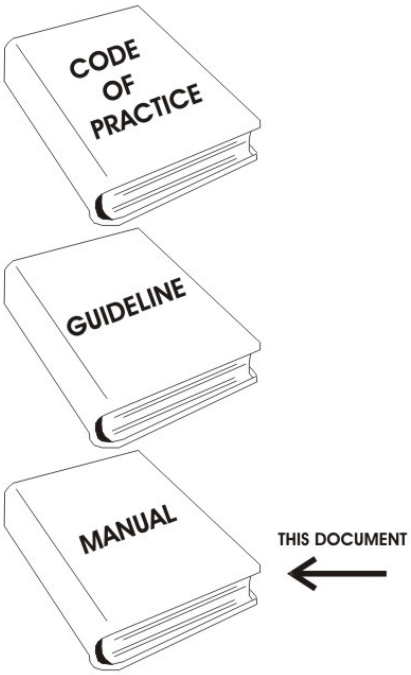
This document constitutes the Manual component of the SEQ Ecological Restoration Framework.

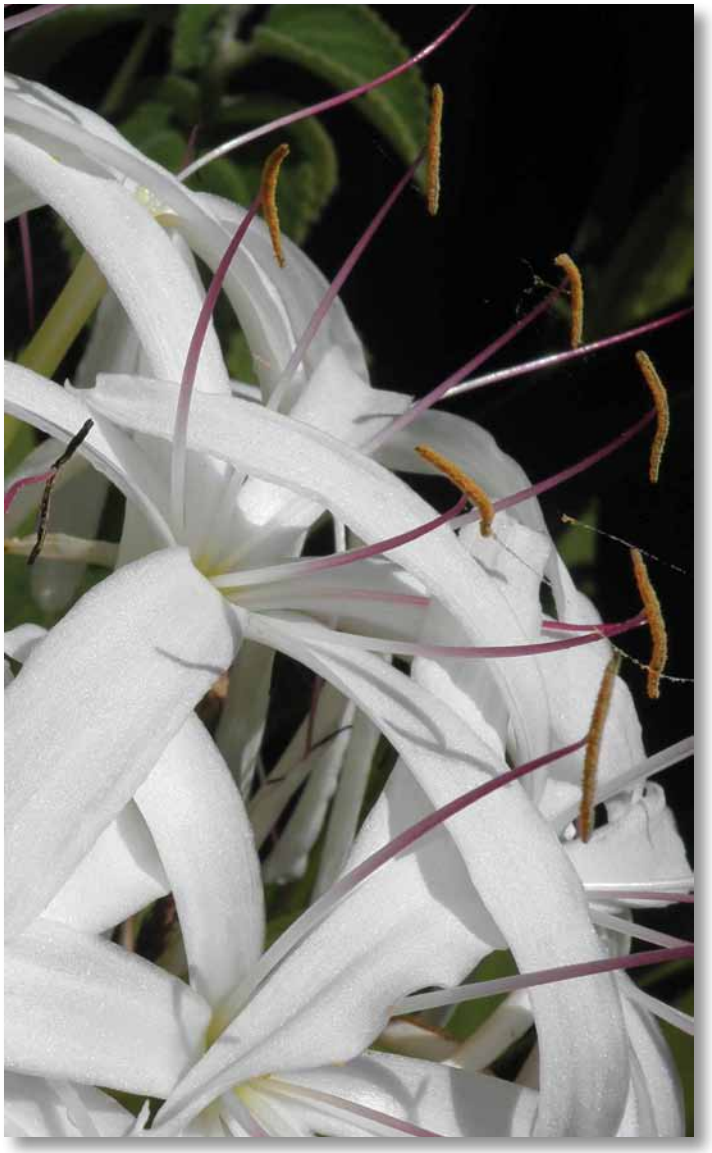
1.3 PURPOSE OF THE SEQ ECOLOGICAL RESTORATION MANUAL

The South East Queensland (SEQ) Ecological Restoration Manual has been prepared as a technical, easy to use guide to all aspects of ecological restoration in south east Queensland. It is intended that it be used in conjunction with the SEQ Ecological Restoration Guidelines and the Code of Practice. The Manual briefly explains what ecological restoration is and why it is practiced, before going on to discuss the four major ecological restoration approaches.

The Manual deals with ecological restoration techniques, providing detailed information about current best-practice in the restoration industry in South East Queensland.

SEQ ECOLOGICAL RESTORATION FRAMEWORK





A section on the importance of monitoring and evaluation, together with suggestions on how to incorporate monitoring into your project, is included at the end of the Manual. Case studies are incorporated throughout to show how the techniques described have been successfully applied in real-world situations in SEQ.

1.4 APPLICATION

This Manual applies to anyone undertaking ecological restoration works in SEQ, including but not limited to, contractors and employees of local councils, other government organisations and utility providers, as well as volunteers, community groups and private landholders. This document can be used to inform policies and strategies implemented by local government.

2 ECOLOGICAL RESTORATION

"Ecological restoration is an activity directed by humans that attempts to reinstate attributes of ecosystems that are considered to be of value."

2.1 WHAT IS ECOLOGICAL RESTORATION?

The Society for Ecological Restoration International (SERI) defines ecological restoration as:

> *"... the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed."*

A key aspect of ecological restoration is that it returns structure and function to a site, which in turn improves habitat for fauna. Structure includes components such as vegetation height and density, canopy cover and appropriate species assemblages, as well as habitat features such as fallen logs. Function refers to the natural and self-sustaining processes which occur within the site, such as regeneration capacity, succession, and cycling of nutrients.

Without the return of structure and function to a site, the amount of ongoing maintenance which is required may never be reduced as the site is unable to develop to the stage where there is only a requirement for minimum maintenance. Although a highly degraded site may require many years of follow-up, the ultimate goal is for the level of human-directed activity to become less over time, as the site becomes self-sustaining. Natural processes must be restored if the site is to regain functionality.

2.2 WHY DO WE UNDERTAKE ECOLOGICAL RESTORATION?

Ecological restoration is an activity directed by humans that attempts to reinstate attributes of ecosystems that are considered to be of value. Activities that achieve these desired attributes are likely to include the control of environmental weeds, the re-establishment of wildlife corridors and/or the stabilisation of creek banks. As society's values change, so too will the priority placed on ecological restoration. Generally, however, the desire to maintain the integrity of our natural environment and improve the ecological function of areas previously subjected to disturbance remains constant.

To resolve the often competing objectives of preserving natural environments and development, the implementation of offsets has become an increasingly common solution. Ecological restoration can be used in the establishment of offset areas with the aim of maintaining (i.e. no net loss) or increasing (i.e. net gain) the level of biodiversity within a region.

2.3 WHAT IS THE DIFFERENCE BETWEEN RESTORATION AND REHABILITATION?

'Restoration' and 'rehabilitation' are two terms that are often used interchangeably but in this Manual they have quite distinct meanings. Restoration requires that the re-establishing plant community be similar to the original vegetation in structure, function and composition. On the other hand, rehabilitation involves the creation of structure and function, without the reinstatement of the original vegetation community. However, rehabilitation does require that the establishing planted community be similar to a naturally occurring plant community of the same type (e.g. a constructed freshwater wetland should resemble a natural system in terms of structure, composition and diversity). In essence, rehabilitation falls short of full restoration as it reinstates functioning of an ecosystem without preserving the pre-existing biotic integrity.

Of the four ecological restoration approaches described in the next section of this Manual, Natural Regeneration, Assisted Natural Regeneration and Reconstruction are classed as 'restoration' and Fabrication (or Type Conversion) is considered to be 'rehabilitation'.

But what about revegetation? 'Revegetation' is often used as a comprehensive term that covers all of the four restoration approaches. The thinking behind this is that each of these restoration approaches is concerned with returning vegetation communities to the site – hence, revegetation. Even when planting and direct seeding are not utilised, the specialised techniques employed (such as weed control or soil disturbance) are still encouraging the reinstatement of vegetation. However, in other sectors, revegetation is simply regarded as being about installing vegetation on a site, without consideration of any ecological restoration principles to re-establish natural functioning. For this reason, and to circumvent any potential confusion, the use of the term 'revegetation' has been avoided in this Manual.

3 APPROACHES TO ECOLOGICAL RESTORATION

"Regeneration capacity (commonly referred to as resilience) is a measure of the natural capacity for the re-establishment of vegetation that exists on a site."

3.1 BACKGROUND

The Guideline document introduces and describes the four approaches to ecological restoration. These are summarised in Table 1 below.

Table 1. Four common restoration approaches and their application.

NATURAL REGENERATION	
Applies:	• To relatively large, intact and weed-free areas of native vegetation. • Where native plants are healthy and capable of regenerating without human intervention. • When native plant seed is stored in the soil or will be able to reach the site from nearby natural areas, by birds or other animals, wind or water. • Where the plant community has a high potential for recovery after any short-lived disturbance, such as a fire or cyclonic winds. • When preventative action is all that is required to avert on-going disturbance e.g. erection of fencing to prevent intrusion by cattle.
Role of planting:	• Planting in such areas can work against the aims of restoration by interfering with natural regeneration.
Goal vegetation community:	• The re-establishing plant community will be similar in structure, composition and diversity to the original vegetation.
ASSISTED NATURAL REGENERATION	
Applies:	• To natural areas where the native plant community is largely healthy and functioning. • When native plant seed is still stored in the soil or will be able to reach the site from nearby natural areas, by birds or other animals, wind or water. • Where the natural regeneration processes (seedling germination, root suckering, etc.) are being inhibited by external factors, such as weed invasion, soil compaction, cattle grazing, mechanical slashing, etc. • When limited human intervention, such as weed control, minor amelioration of soil conditions, erection of fencing, cessation of slashing, etc. will be enough to trigger the recovery processes through natural regeneration. • When the main management issue is weed infestation and/or current land use practices.
Role of planting:	• Planting in such areas can work against the aims of restoration by interfering with natural regeneration except where species cannot return to site without direct intervention.
Goal vegetation community:	• The re-establishing plant community will be substantially similar in structure, composition and diversity to the original vegetation.

Table 1 cont'd

RECONSTRUCTION	
Applies:	• Where the site is highly degraded or altered. • When the degree of disturbance has been so great and long-standing that the pre-existing native plant community cannot recover by natural means. • To sites such as areas of fill, sites affected by stormwater flow, areas that have been drastically cleared, even though there may be a few remaining native trees or shrubs. • When a greater degree of human intervention is required, such as weed control, cessation of grazing and/or slashing, amelioration of soil conditions such as importation of soils, drainage works or re-shaping of the landscape
Role of planting:	• Importation of native species to the area is required, either through planting or direct seeding (in some situations). Natural regeneration and recruitment is insufficient to initially re-establish the original vegetation. Depending on the prevailing circumstances, the planting of a broad diversity of species from the target ecosystem may be unnecessary and the use of pioneers may be sufficient to re-establish ecological processes.
Goal vegetation community:	• The re-establishing planted community should be similar to the original vegetation in structure, composition and diversity.
FABRICATION (TYPE CONVERSION)	
Applies:	• Where site conditions have been irreversibly changed. • When it is not possible to restore the original native plant community. • Where a better-adapted local plant community can be planted that will function within the changed conditions. • In situations such as the construction of a wetland plant community to mitigate increased urban storm-water run-off.
Role of planting:	• Revegetation (planting) is the major component in a fabrication program.
Goal vegetation community:	• The re-establishing planted community should be similar to a naturally occurring plant community of the same type (e.g. a constructed freshwater wetland should resemble a natural system in terms of structure, composition and diversity)

(Table 1 adapted from a table in the Gold Coast City Council's "Guideline for the preparation of a Rehabilitation Plan")

Any one project is likely to require a combination of the above approaches, dependent on the particular site.

The techniques in the Manual focus on weed control primarily because exotic species are one of the greatest threats to biodiversity and a common thread between most or all restoration approaches. However, planting remains an important approach in ecological restoration. There are many instances where planting is warranted including sites where there is a rapid need to stabilise eroding soils or where important floristic elements cannot return to the site due to ecological barriers.

CASE STUDY 1

NUMINBAH CONSERVATION AREA (CA) ASSISTED REGENERATION - GOLD COAST CITY COUNCIL

BACKGROUND

The 560ha Numinbah CA ranges from degraded open areas to riparian zones (cleared and remnant), vegetated gullies, large areas of dry and wet sclerophyll vegetation types as well as dry and sub-tropical rainforest. The site varies in its level of degradation from open pasture to native vegetation that is a mixture of regrowth and remnant. The resilience of the site is estimated to be high due to existing vegetation, diversity of flora and fauna and where the site sits in the landscape. There are however large open areas including a section of creek that will require planting due to previous disturbance, a lack of forest structure in some areas and the lack of an intact soil profile in other areas.

After a desktop analysis where Regional Ecosystem mapping, flora and fauna records and fire mapping were interrogated, a number of site visits were conducted and a restoration plan was developed. The site was divided into precincts, zones and sub-zones to assist workers and managers with the direction of works. Once primary and follow-up works stabilise in one zone, works continue into the next zone after ensuring previous works are consolidated. Due to the size of the site coupled with competing priorities, works have simultaneously commenced in four different precincts designed to join up significant areas in the most ecologically and cost effective way possible while ensuring workers are provided with psychological boosts by seeing whole areas complete.

Most of the site will be restored via the 'assisted regeneration' approach where key areas are encouraged to regenerate with native species from the seedbank or surrounding biomass. Weeds are controlled in such a way that soil, habitat and water quality is protected and methods used continue to encourage the succession of native species. One section of creek will be planted in the next couple of years to assist with stabilisation, water quality and connectivity to other forested areas. The remaining open areas will be encouraged to reduce over time (maximising resilience while minimising costs) and any large gaps still remaining by year 8-10 of the project may be planted using locally collected seed.

IMPLEMENTATION

Primary works involved cutting and painting lantana (*Lantana camara*) from around natives (starting in zone 1) and to assist with creating access, as well as other primary weed control such as cutting glycine (*Neonotonia wightii*) and other exotic vines off native plants, spray preparation (hand weeding around seedlings or on immediate toe of bank) or isolating lantana for subsequent over-spraying activities. Secondary works included spot-spraying ground weeds such as mistflower (*Ageratina riparia*), broad-leaved paspalum (*Paspalum mandiocanum*), blue billy-goat weed (*Ageratum houstonianum*), crofton weed (*Ageratina adenophora*) and re-shooting lantana as well as over-spraying dense lantana. Maintenance has consisted of ensuring exotic and vigorous native vines do not take advantage of the trellis of dead lantana, following up on weed growth while ensuring the timing of maintenance activities is not left too long nor carried out so frequently that further ground is hard to gain. Monitoring the success of the zone is essential to expanding works. The weed control techniques included:

- Cut-Scrape-Paint (CSP) – used in the control of lantana when it is mixed with native vegetation. Loppers were used for accuracy, durability and safety and the plant is chopped up into approximately 50cm pieces and left on the ground to break down over time. The base is then treated and painted with glyphosate at a rate of 1:1 glyphosate:water. This is also used for exotic vines such as glycine. Anything above the head is left to breakdown and fall over time i.e. pulling it from the mid-storey or canopy will damage the native host.
- Spot-spraying – used for controlling ground weeds and weeds that have re-shot. Care was taken to prepare sensitive areas by hand-pulling or pushing down weeds from around native seedlings and ferns. An adjustable nozzle that allows the practitioner to delicately spot-spray weeds amongst native plants is required. This technique is also the most efficient way to maintain whole areas which is a necessary part of the restoration process especially on a large site like this.
- Over-spraying – used for over-spraying large sections of lantana that had been previously prepared by cutting it away from natives and creating tracks so all clumps could be reached and maintained.

Case Study 1 cont'd

- Stem Injection – used on larger tobacco bush once natives are present and are able to take their place.
- Manual removal – used for weeding mistflower from the immediate creek zone and near sensitive plants. Care needs to be taken so as to retain vegetation on the creek bank for stabilisation and habitat i.e. removal must be done over time or be guided by the level of native vegetation present. Steep and erosive areas were also considered when hand pulling lantana.

As of July 2010 after only 3 years effort of restoration, 55ha is under active management i.e. at maintenance level. This has been achieved by utilising a number of professional bush regeneration teams that work as a 3-4 person crew 1 day per week for two of the areas and one day a fortnight for the campground and high altitude forest. It is estimated that at this rate, all forested areas will be under a level of management within 10 years and the more open areas will be under reconstruction.

2008 - prior to work starting

2008

2010

(Case study courtesy of Jen Ford. Images supplied)

3.2 ECOLOGICAL RESTORATION PRINCIPLES

3.2.1 ECOLOGICAL RESTORATION AS A PROCESS

The primary goal of restoration work is to implement techniques on a site that will assist with creating or re-establishing natural processes. The role that the restoration worker plays is a preliminary trigger to the natural activity that will subsequently eventuate. The key to understanding the role that humans play is to emphasise that ecological restoration interventions are designed to eventually be phased out when the ecosystem has once again become self-sustaining. Comprehension of this concept is assisted by a sound understanding of succession and ecological processes.

3.2.2 SUCCESSION

As restoration work progresses on a site, ongoing changes to the structure and diversity of the vegetation will become apparent. These changes tend to occur in a cyclical manner, with the initial disturbance to the vegetation (either natural or man-made) being the trigger for changes. Even though our goal as restoration workers is to assist with the formation of a mature, fully-functioning community, it is important to recognise that the vegetation will have to pass through a variety of stages of succession first, over a period of many years.

Although initially triggered by disturbance, the lack of disturbance events in the long-term also contributes to succession. As an example, Kerosene bush *(Pultenaea villosa*) will dominate a site immediately following fire, but if fire is excluded over a period of years, its presence will decline as other species succeed it.

Note that, even on sites where plant re-introductions are considered necessary (the Reconstruction and Fabrication approaches to ecological restoration) the process of succession will still occur. Over time planted sites show changes in the overall composition. Some of the plants mature and reproduce as they fulfil their role as colonisers, and other plants are inhibited until conditions are created meeting their requirements for growth.

Additionally, introduction of seeds by birds, bats and other animals will result in further changes to vegetation composition over time. Therefore, a planted vegetation community does not necessarily mean a static, unchanging ecosystem – a planting, too, is subject to the natural processes that promote succession.

Patience is an important attribute for the restoration worker to possess. We cannot force the restoration processes to occur, but can take the actions that prompt its initiation.

There are project aims that may require more direct action. For instance, if the goal of the project is to restore koala habitat, then the need to rapidly establish a feeding resource for an at risk species may require intervention in the natural succession process.

3.2.3 DISTURBANCE AND DEGRADATION

Disturbance, often has negative connotations, however is an integral part of the functioning of a vegetation community. In the absence of degradation, such as the loss of biotic or abiotic components, an ecosystem is able to cope with disturbances such as the fall of a large tree or a flood event. Disturbance can be an essential part of the functioning of the ecosystem, without which further recruitment of native plants may not occur. Disturbance such as fire can be an integral part of the ecology of many native species and is a requirement to release seed or trigger germination. Disturbance, even on a very small scale (e.g. a brush turkey scratching leaf mulch away from the topsoil), creates the niches that allow seeds to germinate and establish. Certain species are reliant on some level of disturbance for their existence, such as the nationally endangered native jute (*Corchorus cunninghamii*) (Saunders, 2001).

As restoration workers, our role is to utilise techniques that reduce degradation on sites (such as controlling environmental weeds), while creating disturbances that mimic natural disturbances the vegetation community is adapted to.

Disturbance can be useful as a restoration or management tool, but must be implemented with great care.

Native jute (*Corchorus cunninghamii*) is a herbaceous plant species occurring in the narrow ecotone between subtropical rainforest and open eucalypt forest. It has a restricted distribution and is known from only four locations in South East Queensland.

3.2.4 HOW DO WE MIMIC NATURAL DISTURBANCE?

Regeneration of native plant species is stimulated by mimicking natural disturbances. The techniques used will depend on the individual species and vegetation community, as they have evolved to respond to disturbances in different ways. Some examples of these techniques are:

- Control of competing vegetation, especially environmental weeds;
- Controlled burns or burn piles in vegetation communities adapted to fire;
- Soil disturbances such as ripping or raking; and/or
- Alterations to hydrology in wetlands to reinstate natural movement.

More details on these techniques can be found in Section 5 of the Manual.

3.2.5 REGENERATION CAPACITY

Regeneration capacity (commonly referred to as resilience) is a measure of the natural capacity for the re-establishment of vegetation that exists on a site. It can be difficult to predict and often only becomes apparent once disturbance techniques have been applied. Generally, the less degraded a site is, the more likely it is to have high regeneration capacity. Regeneration capacity is also influenced by the type of disturbance and the length of time the disturbance has been occurring.

The potential for regeneration is often "hidden", in that it may consist of seed that is stored in the soil seed bank, or of seed that migrates to a site via the movement of wind, water, gravity, birds, mammals or insects. The close proximity of remnant vegetation will make the migration of seed and other vegetative material to the site more likely.

Assessing the resilience of a site helps us to determine which restoration approach is appropriate. Do not assume that a site has low regeneration capacity until you have assessed the site and carried out some restoration activity. Even a largely cleared paddock that has been grazed for years could possess some regeneration capacity. The presence of just one or two paddock trees, producing seed and attracting birds and bats, will increase regeneration capacity, and may form the core of restoration works using the Assisted Natural Regeneration approach or a combination of approaches.

Assisted natural revegetation after control of Lantana

Prior to control April 2007

June 2008

June 2009

3.2.6 NEED FOR CONSISTENT FOLLOW-UP

It is essential for consistent follow-up to be applied to a site once primary work has commenced, so as gains are not lost e.g. native species germinating from the seed bank are not out competed by weeds. Many weed species in the soil seed bank will be exhausted within a year or two, but some weed seeds (e.g. Easter cassia (*Senna pendula* var. *glabrata*) may have longevity of at least ten years. Particularly difficult weeds to treat such as madeira vine (*Anredera cordifolia*) and glory lily (*Gloriosa superba*) require a long-term commitment (of ten or more years) of constant attention. The take-home message here, is that it is ineffectual to do a little work on a site, simply walk away, and then expect that good results will be obtained. Follow-up and maintenance will always be necessary, and these elements should be considered right at the start of the planning process, before any physical work has even commenced.

3.2.7 PERMANENT CHANGES TO THE VEGETATION COMMUNITY

It may be necessary to accept permanent changes to the vegetation community that you are working in. For example, the exclusion of fire from urban remnants of sclerophyll forest may see a shift toward more rainforest species, such as tuckeroo (*Cupaniopsis anacardioides*) and pink euodia (*Melicope elleryana*). If this successional change is acceptable, the aims of the restoration project may need to be reviewed and updated. There is a case for arguing that these particular plants, although native, are invasive species and that they should be controlled, as they are not part of the original plant assemblage.

It is extremely unlikely that planned ecological burns would be permitted in urban-interface sites. In the absence of fire a shift toward higher prevalence of rainforest species will be permanent and in this case it may be pointless continuing to control these 'out-of-place' plants.

As long as the vegetation community maintains strong historical links with that which existed there previously (e.g. remnant canopy of sclerophyll species), the work being carried out can still be considered ecological restoration.

3.2.9 RECOGNISING OUR 'IGNORANCE' IN RESTORATION

Ecological restoration is a complicated and developing field, and it is often the case that the more we learn, the more we realise how much there is to learn. Ecological restoration requires that we consider carefully, the multiple aspects involved in an ecosystem, and the complex, unpredictable and often unseen interactions that exist between components. We cannot assume that we have a thorough knowledge of everything that is occurring in an ecosystem.

With this awareness of our 'ignorance', it obviously becomes necessary to remain flexible, and to be prepared to change the approach as restoration progresses on the site. By implementing monitoring techniques, in order to gather data that is not always obtainable from informal observations, you may gain a better understanding of some of the more complex processes that are occurring on the site.

See Section 7 on how to incorporate monitoring into a project.