

Revegetation Management Plan

Roxanna Reserve, Lot 17
CH312559

CLIENT: JETELD PTY LTD

PROJECT NO. J001796
STATUS FINAL
DATE 17/05/2024

TOOWOOMBA REGIONAL COUNCIL

APPROVED DOCUMENT

referred to in Council's Decision Notice dated

10 October 2024

This plan is subject to conditions of Approval Number

RAL/2024/1617



Assessment Manager

TOOWOOMBA REGIONAL COUNCIL

APPROVED DOCUMENT

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18 December 2024

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RAL/2024/1617/A



Assessment Manager

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Document Control

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1 Introduction

1.1 Background

Range Environmental was engaged by Jeteld Pty Ltd to prepare a Revegetation Management Plan for proposed weed management and replanting works at Roxanna Reserve, Highfields (compensatory environmental works). The site is formally described as Lot 17 on Plan CH312559, with the location of works shown in Figure 1.

The location of proposed works in relation to the development site (Reis Rd, Highfields) is provided in Figure 2.

This Revegetation Management Plan (RMP) has been informed by the South East Queensland Ecological Restoration Framework.

This RMP details the proposed scope of site preparation, revegetation works and three months establishment works. It is envisioned that immediately following planting works that the revegetation area is to be secured under vegetation preservation covenant under the *Land Title Act 1994*. Following the entering into of the Vegetation Covenant over the subject lands an additional Covenant Management Plan details required ongoing management requirements.

1.2 Scope and Objectives

The objectives of this RMP are to:

- Outline the utility of proposed weed management and vegetation replacement activities at the site;
- Identify the areas of vegetation that will be subject to weed management and vegetation replacement activities;
- Outline methods for weed management and vegetation replacement, including the composition and number of plants to be established at the site.
- Identify weed management methods for restricted and invasive weeds present; and
- Describe vegetation replacement/rehabilitation measures for the proposed rehabilitation area (species, density, planting methods and timing, maintenance etc).

1.3 Compensatory Environmental Works

Compensatory environmental works means:

Native vegetation re-establishment works, including:

- a) Weed management and site preparation in accordance with section 3.2.1; and
- b) Replanting and establishment of a minimum of 600 native trees in accordance with section 3.2.2.

Figure 1 Site Overview	Project: Ecological Assessment Report Reis Road, Highfields	Client: Jeteld Pty Ltd	Project No.: J001796	Compiled by: GabiLevy Date: 18/04/2024 Approved by: Will Gibson Date: 18/04/2024	03060Metres	Legend Cadastral Roads Site boundary Replanting extent Weed management extent	The content of this document includes third party data. Range Environmental Consultants does not guarantee the accuracy of such data. Sources: Cadastral data sourced from DNRME (2023). Aerial imagery sourced from NetMap (2024). range environmental consultants



Figure 2

Works Location Context

Project: Ecological Assessment Report
Reis Road, Highfields

Client: Jeteld Pty Ltd

Project No.: J001796

Compiled by: GabiLevy Date: 18/04/2024
Approved by: Will Gibson Date: 18/04/2024

0

175

350

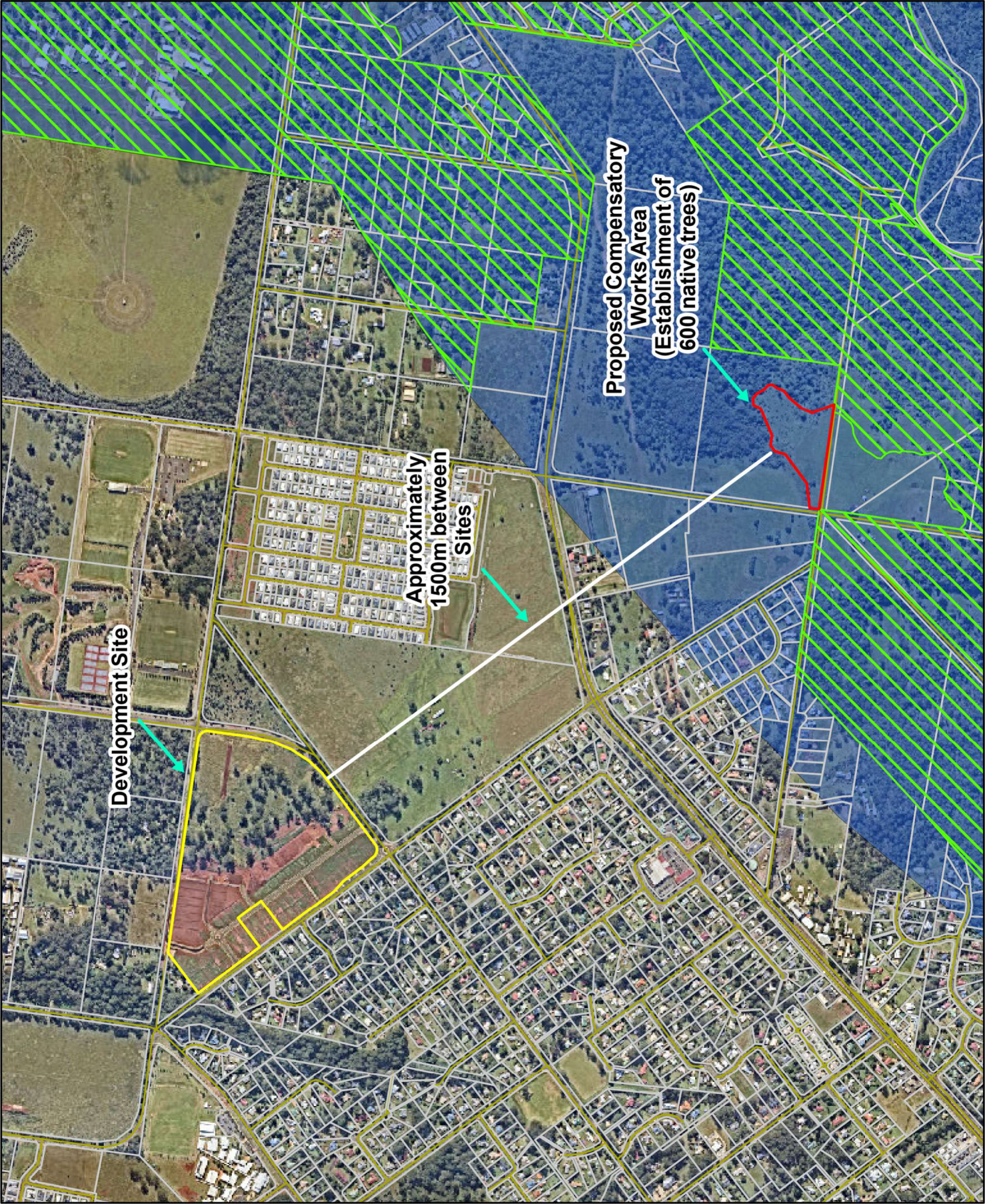
Metres

Legend

- Cadastral
- Roads
- Development
- Site Boundary
- Proposed
- Compensatory
- Works Area (Establishment of 600 native trees)
- TRC Biodiversity Corridor
- Statewide Biodiversity Corridor Buffer

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Sources: Cadastral data sourced from DNRME (2023). Aerial imagery sourced from NetMap (2024).



2 Existing Environment

2.1 The Site

The proposed revegetation area (as shown in Figure 1) is entirely contained within an area of mapped Category X (non-remnant) vegetation with sparse vegetation values dominated by the invasive weed, lantana, with a ground layer of pasture grasses (kikuyu), environmental weeds (purple top verbena, spear thistle, fireweed and cobbler's pegs) and native grasses and low height shrubs (blady grass and bracken fern) (Photograph 1).

Adjacent areas of the site are also identified as Category X (due to an approved historic property map of assessable vegetation (PMAV)) however values are identified to align with the mapped pre-clear regional ecosystem RE 12.5.6 and RE 12.8.14 (Photograph 2).

Descriptions of RE 12.5.6 and RE 12.8.14 are provided in Table 1.

Table 1 Mapped pre-clear regional ecosystems

Description of site Regional Ecosystems	
Regional ecosystem 12.5.6	
VMA Status	Endangered
Short description	<i>Eucalyptus siderophloia</i> , <i>E. propinqua</i> , <i>E. microcorys</i> and/or <i>E. pilularis</i> open forest on remnant Tertiary surfaces. Usually deep red soils
Structure code	Open Forest
Description	<i>Eucalyptus siderophloia</i>, <i>E. propinqua</i> and/or <i>E. pilularis</i> open forest +/- <i>Corymbia intermedia</i>, <i>E. microcorys</i>, <i>E. acmenoides</i>, <i>E. tereticornis</i>, <i>E. biturbinata</i>, <i>Lophostemon confertus</i> with <i>E. saligna</i>, <i>E. montivaga</i> at higher altitudes. Occurs on remnant Tertiary surfaces. Usually deep red soils. Not a Wetland. (BVG1M: 9a). Vegetation communities in this regional ecosystem include: 12.5.6a: <i>Eucalyptus saligna</i> or <i>E. grandis</i> open forest, often with vine forest understorey. Occurs on remnant Tertiary surfaces. Usually deep red soils. Not a Wetland. (BVG1M: 8a). 12.5.6b: <i>Eucalyptus siderophloia</i>, <i>Corymbia intermedia</i>, <i>E. propinqua</i> or <i>E. major</i> or <i>E. longirostrata</i> open forest +/- <i>E. microcorys</i>, <i>E. acmenoides</i>, <i>E. tereticornis</i>, <i>E. biturbinata</i>, <i>E. pilularis</i>, <i>Lophostemon confertus</i>. Occurs on remnant Tertiary surfaces. Usually deep red soils. Not a Wetland. (BVG1M: 9a). 12.5.6c: <i>Eucalyptus pilularis</i> open forest +/- <i>E. siderophloia</i>, <i>E. propinqua</i>, <i>Corymbia intermedia</i>, <i>E. microcorys</i>, <i>E. acmenoides</i>, <i>E. tereticornis</i>, <i>E. biturbinata</i>, <i>Lophostemon confertus</i> with <i>E. saligna</i>, <i>E. montivaga</i> at higher altitudes. Occurs on remnant Tertiary surfaces. Usually deep red soils. Not a Wetland. (BVG1M: 8b). 12.5.6d: <i>Eucalyptus montivaga</i>, <i>Corymbia intermedia</i> woodland +/- <i>E. acmenoides</i>, <i>E. melliodora</i>, <i>Angophora subvelutina</i> and <i>E. eugenioides</i>. Occurs on remnant Tertiary surfaces. Usually deep red soils at higher altitudes. Not a Wetland. (BVG1M: 8b).
Regional Ecosystem 12.8.14	
Short description	<i>Eucalyptus eugenioides</i> , <i>E. biturbinata</i> , <i>E. melliodora</i> +/- <i>E. tereticornis</i> , <i>Corymbia intermedia</i> open forest on Cainozoic igneous rocks
Structure code	Open Forest
Description	<i>Eucalyptus eugenioides</i>, <i>E. biturbinata</i>, <i>E. melliodora</i> +/- <i>E. tereticornis</i>, <i>Corymbia intermedia</i>, <i>E. crebra</i> open forest. <i>Allocasuarina torulosa</i> is a common understorey species. Localised occurrences of <i>Eucalyptus laevopinea</i>, <i>E. quadrangulata</i> and <i>E. banksii</i> may occur. Occurs on Cainozoic igneous rocks, especially basalt. Not a Wetland. (BVG1M: 11a). Vegetation communities in this regional ecosystem include:

12.8.14a: *Eucalyptus moluccana* open forest +/- *E. tereticornis*, *Eucalyptus siderophloia* or *E. crebra*. Understorey generally sparse but can become shrubby in absence of fire. Occurs on Cainozoic igneous rocks. Not a Wetland. (BVG1M: 13d).

12.8.14b: *Eucalyptus quadrangulata*, *E. eugenioides* +/- *E. biturbinata* tall open forest. Commonly has a moist ground layer dominated by ferns e.g. *Blechnum neohollandicum*. Occurs on Cainozoic igneous rocks, especially basalt usually at altitudes >800m. Not a Wetland. (BVG1M: 11a).

12.8.14x1: [RE not in use]²: This regional ecosystem is now mapped as 12.9-10.5d. Woodland of *Eucalyptus eugenioides*, *E. biturbinata/longirostrata*, *E. crebra*, and *Corymbia trachyphloia*. Occurs on Cainozoic and Mesozoic sediments. Not a Wetland. (BVG1M: 8a).



Photograph 1 Proposed revegetation area



Photograph 2 Adjacent areas of RE 12.5.6 (in distance)

2.2 Pest Flora

Two (2) weed species listed as Weeds of National Environmental Significance (WoNS) and two (2) listed as restricted matter under the Queensland *Biosecurity Act 2014* (Biosecurity Act) were recorded within the site (Table 2).

Table 2 Weed species recorded within the site

Species	Common name	Weeds of National Environmental Significance	Biosecurity Act 2014 status
<i>Lantana camara</i>	Lantana	Y	Category 3
<i>Senecio madagascariensis</i>	Fireweed	Y	Category 3
<i>Chloris gayana</i>	Rhodes grass	N	Other invasive
<i>Melinis repens</i>	Red natal	N	Not listed
<i>Cenchrus clandestinus</i>	Kikuyu	N	Not listed
<i>Bidens Pilosa</i>	Cobblers pegs	N	Not listed
<i>Cirsium vulgare</i>	Spear thistle	N	Not listed
<i>Gomphocarpus physocarpus</i>	Balloon cotton	N	Not listed
<i>Verbena bonariensis</i>	Purple top verbena	N	Not listed
<i>Jacaranda sp.</i>	Jacaranda	N	Not listed
<i>Solanum mauritianum</i>	Wild tobacco	N	Other invasive
<i>Verbena aristigera</i>	Maynes pest	N	Not listed

3 Rehabilitation Strategy

3.1 Objectives

Rehabilitation efforts within the site will aim to assist the reconstruction of the area to vegetation that has a similar vegetation structure, composition and diversity to the pre-disturbance vegetation community (i.e. RE 12.5.6/12.8.14). The proposed rehabilitation (which is to be within the nominated area) will also aim to enhance fauna habitat and connectivity values within the surrounding landscape.

Rehabilitation objectives for the proposed rehabilitation area will aim to:

- Conserve and maintain existing native vegetation within the site;
- Enhance the ecological values and processes on site through the removal of weed species and replacement of impacted native vegetation with a preference for koala food and shelter species;
- Control restricted weed species as listed under the Biosecurity Act and environmental weeds through appropriate weed control methods and maintenance; and
- Enhance habitat values of the site for native fauna species by the planting of native canopy vegetation (including species currently not present on site) for nesting, roosting and foraging.

The following sections identify the extent of rehabilitation area, recommended treatment of this area and target vegetation communities. It also provides recommended species to be incorporated within site landscaping to provide a transition between landscaped features and natural areas.

3.2 Rehabilitation Treatment

3.2.1 Weed management

The existing vegetation across the works area contains a predominate shrub cover of lantana, with associated groundcover of native grasses and environmental weeds.

An initial mechanical treatment is proposed to reduce the volume of material at the site, in particular the removal of lantana. Subsequent herbicide treatment will treat slashed grass approximately 3 weeks following mechanical control.

Chemical treatment of fireweed, lantana and other observed environmental weeds across the site is proposed to be undertaken to reduce the occurrence of these species at the site.

Weed management works are to be completed over an area of approximately 4.2ha, including the revegetation area and a 10-20m buffer surrounding this area. The intent of the weed management buffer is to facilitate ongoing suppression and encroachment of dominant environmental weeds (such as lantana) and to allow for potential future management trails within the broader site.

It is noted that broad control of invasive grasses at the site is not proposed and management of grasses is predominately to be completed through slashing and selective spraying of weeds in proximity to planted tube stock.

The proposed location of weed management works is shown in Figure 3.

Works are to be completed in accordance with sections 3.3, 3.4, 3.5, 3.6 and 4 of this management plan.

Figure 3 Weed Management Area	Project: Ecological Assessment Report Reis Road, Highfields	Client: Jeteld Pty Ltd	Project No.: J001796	Compiled by: GabiLevy Date: 18/04/2024 Approved by: Will Gibson Date: 18/04/2024	Legend Cadastre Roads Site boundary Weed management extent	0 20 40 Metres	The content of this document includes third party data. Range Environmental Consultants does not guarantee the accuracy of such data. Sources: Cadastral data sourced from DNRME (2024), Aerial Imagery sourced from NetMap (2024).	



3.2.2 Replanting

The intent of rehabilitation within the works area is to improve ecological values through reestablishment of a native canopy with a maintained understory until trees have reached a semi-mature height (with a corresponding canopy spread). Replanting of native canopy species will form the major component of works within this treatment area. Following completion of site revegetation works and establishment of a native canopy cover the natural regeneration of understory species is expected to occur as site management is reduced. The manual revegetation of understory species is not proposed within this plan.

Revegetation works are proposed over an area of approximately 2.8ha. The proposed location of revegetation works is shown in Figure 4.

To compensate for the loss of 199 native trees within areas of environmental significance and environmental significance buffer at the proposed development site a minimum replacement rate of 3:1 has been nominated (i.e. 597 native trees to be established. To allow for a natural mortality rate of 15%, an allowance for planting of 690 native trees has been made. Noting the siting of the proposed revegetation area and proposed planting quantity (690) a net stem density of 246 native trees per hectare is proposed. This net density falls within the accepted SEQ average stem density for koala habitat area regional ecosystems (250 stems/ha).

Table 3 Species for revegetation

Species	Common name	Quantity
		Total: 690
Canopy		
<i>Eucalyptus saligna</i>	Sydney blue gum	200
<i>Corymbia intermedia</i>	Pink bloodwood	100
<i>Eucalyptus tereticornis</i>	Forest red gum	75
<i>Eucalyptus biturbinata</i>	Grey gum	75
<i>Eucalyptus pilularis</i>	Blackbutt	75
<i>Eucalyptus eugenoides</i>	Thin-leaved stringybark	75
<i>Lophostemon confertus</i>	Brush box	90
Total		690

Works are to be completed in accordance with sections 3.3, 3.4, 3.5, 3.6 and 4 of this management plan.

3.2.2.1 Species substitutions

Where species within Table 2 are required to be substituted due to supply issues, alternative species from RE 12.5.6/12.8.14 are to be utilised on a like-for like basis (i.e. canopy tree replaced by canopy tree). Where canopy trees are required to be substituted, koala habitat trees of similar species utility are required to be utilised. Prior to purchasing substitute plants, the revegetation contractor must seek approval from the supervising ecologist.



Figure 4
Replanting
Extent

Project: Ecological
Assessment Report
Reis Road, Highfields

Client: Jeteld Pty Ltd

Project No.: J001796

Compiled by: Gabi LeVay Date: 18/04/2024
Approved by: Will Gibson Date: 18/04/2024



Legend

Cadastre

Roads

Site boundary

Replanting
extent

The content of this document includes third party data. Range Environmental Consultants does not guarantee the accuracy of such data.
Sources: Cadastral data sourced from DNRME (2024), Aerial Imagery sourced from NetMap (2024).



3.3 Roles and Responsibilities

Contractors undertaking rehabilitation works must be instructed directly of the requirements of this plan. A copy of this RMP is to be retained and displayed on site at all times during rehabilitation activities.

The project manager will ensure that all relevant contractual documents specify the rehabilitation plan as a responsibility to be implemented. The roles and responsibilities assigned to individuals are outlined in Table 4.

Table 4 Roles and Responsibilities

Position	Responsibilities	Activities
Project proponent (Jeteld Pty Ltd)	Facilitation of the project	- Engagement of a project manager (supervising ecologist) - Engagement of rehabilitation contractor
Supervising ecologist and project manager	Ensure the requirements of the rehabilitation plan has been implemented throughout the construction phase and monitoring period.	- Management of tender process in consultation with proponent - Liaison with Local Government Agency in relation to works - Supervision of restoration works and sign off of each rehabilitation stage - Monitoring of rehabilitation works to ensure compliance with the rehabilitation works plan - Sign off at end of maintenance period.
Rehabilitation contractor (must be suitably qualified and competent)	Rehabilitation works	- Implement the requirements of the rehabilitation plan throughout the construction phase and monitoring period - Conduct on-going maintenance works

3.4 Rehabilitation Performance Criteria

The performance criteria for rehabilitation works is outlined in Table 5. Works are considered complete upon the fulfilment of the below criteria.

Table 5 Rehabilitation Performance Criteria

Element	At completion of initial works	At completion of 3 months
Treatment Area - Biosecurity Act listed weeds	Absent or controlled (90% removal)	Absent or controlled (90% removal)
Revegetation Area - Environmental weeds (excluding grasses)	N/A	Absent or controlled within 3m of native tree (90% removal)
Revegetation area - Plant survival and plant density (infill planting only)	N/A	Replace mortalities as required to maintain 85% survival rate
Erosion and Sediment control	Maintain ground cover of 80%. Ground cover can include grass, ground cover vegetation or mulch.	Maintain ground cover of 80%. Ground cover can include grass, ground cover vegetation, mulch or jute matting
Completion of works	Not applicable	Not applicable

*It is noted that while 690 native trees are to be planted in association with the compensatory environmental works scope, an allowance for up to 15% mortality has been allowed. On this basis a minimum of 600 native trees are to be established to non-juvenile status (4m height or 10cm DBH), or for a period of 4 years.

3.5 Rehabilitation Schedule

The proposed rehabilitation schedule including establishment, monitoring, maintenance and reporting requirements, is outlined in Table 6.

Table 6 Schedule for Rehabilitation Works, Monitoring and Maintenance

Stage of works	Frequency	Task	Action	Responsibility
1A	Initial weed treatment	Site inspection	- Locate rehabilitation treatment areas - Identify weeds and rubbish to be removed - Determine appropriate weed treatment measures	Ecologist and rehabilitation contractor
1B		Weed management (primary treatment - mechanical control)	- Mechanical removal of environmental weeds (where required) - Forestry mulching of lantana - Slashing of groundcovers - Removal of mature jacaranda with chainsaw and treatment of base	Rehabilitation contractor
1C	Prior to replanting works	Installation of animal exclusion fencing (if required)	- Engagement of a suitable fencing contractor - Installation of livestock exclusion fencing - Confirmation of installation to a suitable standard	Ecologist/Client
2	3 weeks following initial treatment	Weed management (secondary treatment – herbicide)	- Herbicide treatment of invasive species within weed management area. - Spraying of 690 planting locations (1.2m diameter circles)	Rehabilitation contractor
3A	One month post initial treatment	Planting and initial watering	- Planting of tube stock - Installation of tree guards - Installation of water crystals/fertiliser	Rehabilitation contractor

			Ensure species composition and density is as per the rehabilitation works plan	
3B		Watering	- Watering on same day as planting - Watering as required (approx. 3 weekly waterings for a period of 3 weeks) - Additional waterings to ensure survival (as required). To be determined in consultation between rehabilitation contractor and ecologist.	Rehabilitation contractor
3C		Mulching	Provision of jute mats within the replanting area	Rehabilitation contractor
4A		Monitor seedling health	- Replace damaged seedlings to maintain rehabilitation plan densities/adequate coverage - Water as required	Rehabilitation contractor and ecologist
4B	Monthly for first 3 months following completion of initial planting works	Check for disturbance (e.g. pest fauna, weed incursion, erosion, etc.)	- Treat and manage environmental and Biosecurity Act-listed weeds - Undertake monthly slashing - Undertake appropriate measures to address any disturbances - Undertake appropriate measures to sediment and erosion control devices water if rainfall has not been sufficient - Verify that rehabilitation performance criteria have been met	Rehabilitation contractor

3.6 Rehabilitation Monitoring, Maintenance and Reporting

The rehabilitation monitoring schedule provided in Table 6 outlines actions required to ensure that rehabilitation objectives are fulfilled. The monitoring schedule may be altered to account for changes to rehabilitation success, methods and/or timeframes. Regular monitoring is to be undertaken by the Rehabilitation Contractor with the assistance of a restoration ecologist at the initial pre-planting period and regular intervals (i.e. quarterly) until completion of the rehabilitation schedule.

At a minimum, the following should be monitored:

- Effectiveness of weed control measures;
- Indicators of growth and survival of all plantings;
- Effectiveness of erosion and sediment controls; and
- Adequacy of site preparation, mulching, tree (and plant) protection and maintenance.

Monitoring reports are to be prepared by the rehabilitation contractor and submitted to the project manager. These reports should summarise the findings of monitoring events and identify the performance of rehabilitation activities with reference to the objectives of this plan. Where the objectives are not being achieved, the report should recommend relevant actions required to amend this situation.

4 Rehabilitation Methods

All revegetation works are to be conducted in accordance with: Chenoweth EPLA and Bushland Restoration Services (2012) South East Queensland Ecological Restoration Framework: Manual. Prepared on behalf of SEQ Catchments and South East Queensland Local Governments, Brisbane. Rehabilitation should be conducted in a staged approach to prioritise works as follows:

- Weed control within the restoration area (in preparation for revegetation works);
- Immediate stabilisation of areas of exposed soils;
- Vegetation replacement where required and watering; and
- Ongoing weed management and maintenance of revegetation areas, including additional plantings (if required).

The following sections detail the recommended rehabilitation actions to be implemented in accordance with the rehabilitation schedule outlined in Table 4.

4.1 Weed Management

4.1.1 Existing Environment

Species identified under the Biosecurity Act and environmental weeds identified on the site are outlined in Table 2. Three Biosecurity Act-listed species was recorded within the site. The 'general biosecurity obligation' under Part 1 of the Biosecurity Act states all individuals and organisations are responsible for biosecurity risks and threats under their control. Category 3 species listed under the Biosecurity Act cannot be distributed.

4.1.2 Weed Control Techniques

Weed control techniques applicable to the rehabilitation area is provided in Table 7. These techniques generally fall into two broad weed control methods; mechanical removal and chemical treatment.

Mechanical controls are generally the first actions implemented during weed control. Mechanical control should be restricted to areas not susceptible to soil erosion. Mechanical control methods include:

- Forestry mulching;
- Slashing;
- Manual removal by hand or grubbing using loppers, hatchets or small saws to remove the weed (including roots); and
- Lopping of the weed using an axe or chainsaw.

Chemical control should be used when mechanical controls are not appropriate (i.e. is too costly or within erosion prone areas). Chemical control should only be undertaken by a suitably qualified person (i.e. Agriculture Chemical Distribution Control certified) in accordance with the Safety Data Sheet (SDS). Herbicides used in the vicinity of waterways should be designed accordingly (e.g. Roundup® Bioactive™ Herbicide or Weedmaster® Herbicide) and no broad scale spraying or overspray methods should be used. Mixing of chemicals or rinsing of equipment should never occur adjacent to water bodies.

Table 7 Weed Control Techniques

Plant form	Examples	Method
Woody weeds	Lantana	Control of smaller woody weeds observed within the site, including lantana, through the cut-scrub-paint technique, where stems are cut near the ground and are immediately painted with herbicide. Juvenile woody weeds may be removed by hand or treated with chemical spraying.
Herbs	Purple top verbena Fireweed	Herbaceous plants may be controlled through manual hand weeding, crowning or spraying with herbicide such as in the spot-spray technique.
Grasses	Rhodes grass Red natal	Dense infestations of grasses may require mechanical slashing before applying herbicide to regrowth. Isolated individual plants may be hand pulled or crowned.

Detailed methodology for weed control techniques discussed in Table 7 and herbicide application rates can be found in:

- Queensland Government fact sheets for Biosecurity Act-listed weeds, available at <https://www.business.qld.gov.au/industry/agriculture/species/declared-pests/weeds>; and
- South-east Queensland Ecological Restoration Framework Manual (Prepared on behalf of SEQ Catchments and South East Queensland Local Governments by Chenoweth EPLA and Bushland Restoration Services, 2012).

4.1.3 Weed Disposal

Where offsite disposal of non-native vegetative material is required, weeds should be disposed of at a suitable waste facility.

4.2 Revegetation

Proposed works seek to establish a native vegetation canopy with a net stem density of approximately 246 stems/ha.

4.2.1 Planting Stock and Densities

Species to be utilised are to be selected from those outlined in Table 2. Given the existing site characteristics (a maintained woodland with lawn understory) provision of understory replanting is proposed to be undertaken where adequate separation can be achieved between building location envelopes and rehabilitation areas.

All planting stock are to be:

- Of local provenance
- Healthy and displaying signs of active growth. Plants should be rejected if they display 'yellowing', leaf or stem damage or disease, root curling or restriction related to being 'pot bound', or have weed species in the container
- A minimum of 20 cm tall for (75 mm) tube-stock (larger for potted stock); and
- Sun-hardened.

Recommended individual planting locations are to be determined on the ground, taking into consideration the effectiveness of natural regeneration, and the location of existing canopy trees and existing native understory plants within these areas.

Planting works are to be completed in a staggered grid pattern with spacing of plants of approximately 6.3m. This approach is provided to allow for ongoing slashing of the replanting area. Figure 5 provides a schematic of proposed planting layout.



Figure 5 Layout arrangement (staggered grid - 6.3m spacing)

4.2.2 Site Preparation

The successful growth of plants relies on careful and appropriate preparation of rehabilitation areas prior to planting. Site preparation involves:

- Signage to designate the area as a “Rehabilitation Area”. Signage is to be in place before vegetation replacement commences and all relevant personnel (e.g. contractors) are to be made aware of associated restrictions;
- Exclusion of grazing animals for a minimum period of 4 years;
- Retention of all standing dead trees within the rehabilitation area;
- Treatment of weeds using appropriate methods prior to any supplementary planting;
- Removing rubbish and other foreign material, such as old fencing materials; and
- Carefully clearing a circular area of approximately 60 cm diameter at the site of each planting. The removed ground-cover is to be replaced as natural mulch after planting;
- No burning of any material is to take place. All rubbish, grass and weeds are to be safely removed and suitably disposed of at a waste transfer facility.

4.2.3 Planting

Planting stock is to be planted to accordance with section 4.2.1. The planting holes are to be at least twice the width and half as deep again as the pot size. In the case of tube-stock, plants are to be placed in a hole deeper than the pot, with the root ball just below the soil surface after planting.

Planting is not to be within 5m of a property boundary.

4.2.4 Mulching and tree guards

Jute mats may be utilised around planted trees. The installation of fluted tree guards and one (1) hardwood stake around each plant to prevent herbivory is required.

4.2.5 Fertilising and Watering

Each planting should be fertilised with a 10 g slow release fertiliser pellet (Agriform or similar). The fertiliser pellet should be placed adjacent (but not in contact) with the root ball; 2-4 cm below the soil surface and under the mulch.

4.2.6 Monitoring and Reporting

Annual monitoring reports are to be prepared by a restoration ecologist and submitted to Council for a minimum of 4 years, or until the rehabilitation criteria in Table 5 have been achieved. These reports will summarise the findings of monitoring events with reference to the rehabilitation objectives and the rehabilitation performance criteria. Where the rehabilitation performance criteria are not being achieved, the report will recommend relevant actions required to amend the situation. The restoration ecologist will be responsible for implementing the recommended actions:

- Notify council when all plants have been planted. Council will inspect to ensure Rehabilitation Objectives have been met;
- Notify Council 12 months after planting. Council will inspect to ensure rehabilitation performance criteria have been met.

4.3 Schedule of Resources

Based on the proposed scope of works the following resources have been identified to be required for replanting works (at minimum), as shown in Table 8.

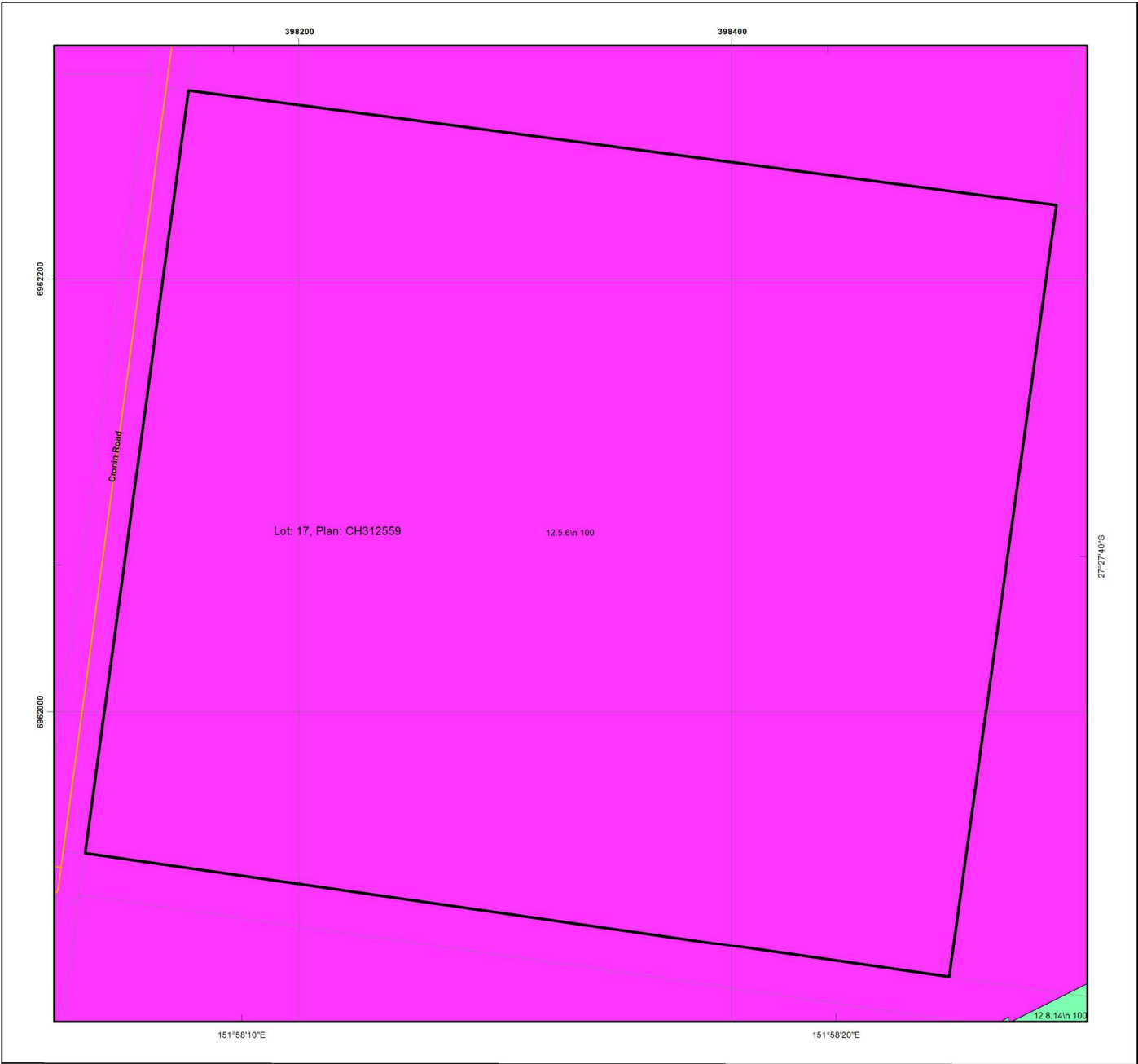
Task	Item	Quantity	Supplier
Planting	Native tube stock (as per Table 3)	690	Revegetation Contractor (note: it is recommended that tube stock be sourced locally from Crows Nest Community Nursery or another locally based supplier)
Planting	Jute mat squares (large – 600mm x 600mm)	690	Revegetation Contractor
Planting	Tree guards – green corflute (600mm high)	690	Revegetation Contractor
Planting	Tree guard stakes (900mm)	690	Revegetation contractor
Planting	Fertiliser – terracotta	As per label instructions	Revegetation contractor

5 Summary

This Revegetation Management Plan has been prepared to identify the extent of mitigation works proposed to be completed. This report identifies the proposed extent of weed management and vegetation replacement at the site and provides details on the proposed methodology of habitat maintenance.

Accordingly, through enactment of the RMP habitat maintenance outcomes associated with the site can be achieved to mitigate the impacts of development.

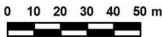
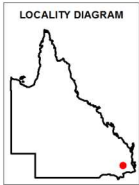
Appendix A Vegetation Management Pre-clear Regional Ecosystem Map



Vegetation Management Pre-clear Regional Ecosystem Map

Legend

- Selected Lot and Plan
- Highway
- Connector
- Street/Local Road
- Other land parcel boundaries
- Pre-clearing area containing Endangered RE
- Pre-clearing area containing Of Concern RE
- Pre-clearing area that is a Least Concern RE
- Water



This product is projected into:
GDA 1994 MGA Zone 56

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Pre-clearing regional ecosystem line-work reproduced at a scale greater than 1:100,000, except in designated areas, should be used as a guide only.

Digital data for the Pre-clearing regional ecosystem map is available from the Queensland Spatial Portal at <http://www.information.qld.gov.au/>

Land parcel boundaries shown are provided as a locational aid only.





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