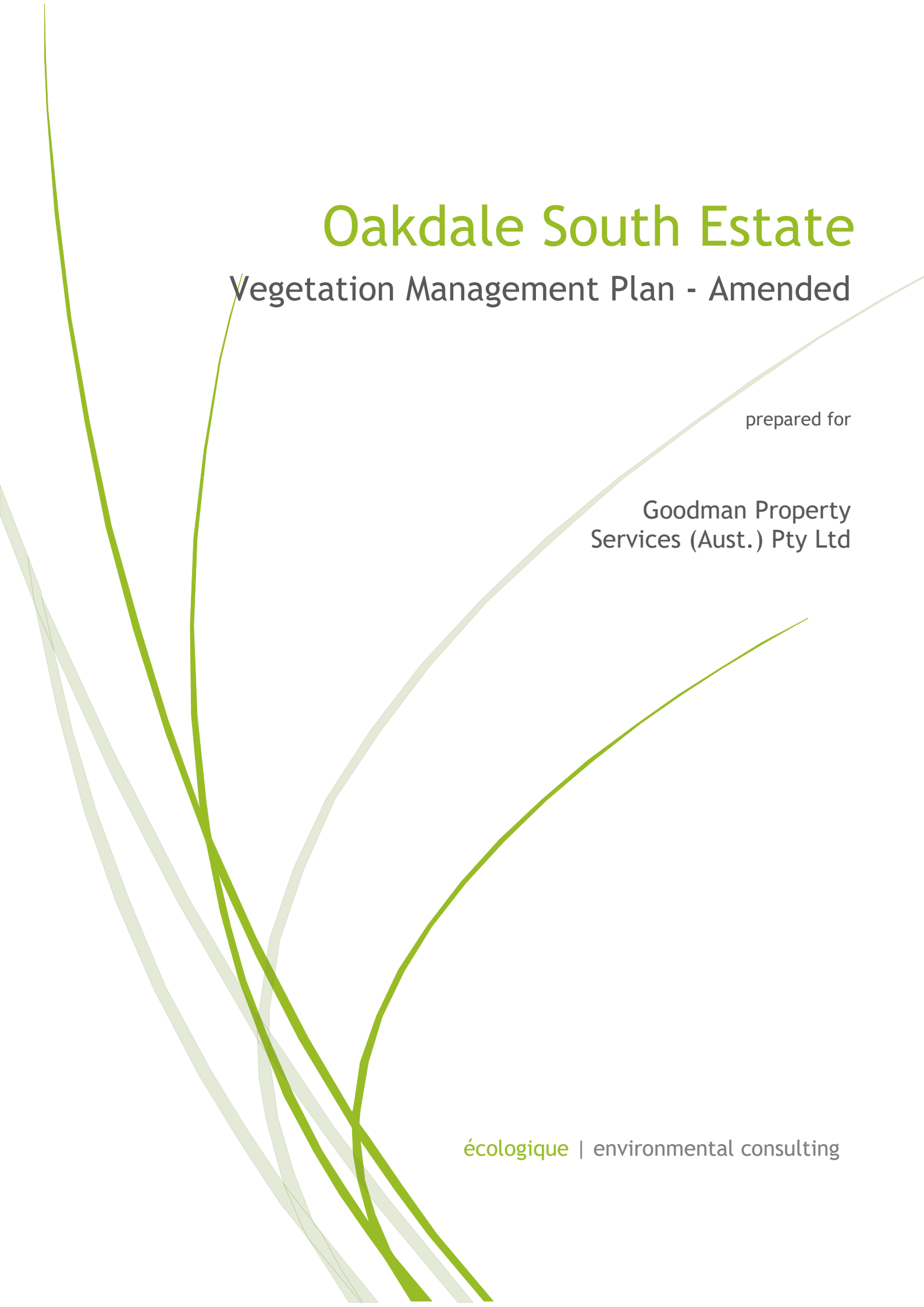


A series of flowing, organic green lines of varying thicknesses sweep across the page from the bottom left towards the top right, creating a sense of movement and growth. The lines are in shades of olive and lime green.

# Oakdale South Estate

## Vegetation Management Plan - Amended

prepared for

Goodman Property  
Services (Aust.) Pty Ltd

écologique | environmental consulting

# Oakdale South Estate

## Vegetation Management Plan - Amended

prepared for

### Goodman Property Services (Aust.) Pty Ltd

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17/06/2019

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## Revision Schedule

| Rev No | Date       | Description                      | Issued to |
|--------|------------|----------------------------------|-----------|
| 1      | 13/06/2019 | Draft VMP Amended for review     | Goodman   |
| 2      | 17/06/2019 | Final VMP Amended for submission | Goodman   |
|        |            |                                  |           |
|        |            |                                  |           |
|        |            |                                  |           |

## Executive Summary

### Background

Goodman Property Services (Aust.) Pty Ltd (Goodman) are currently developing the Oakdale South Industrial Estate (Oakdale South) under State Significant Development approval (SSD6917). Consent approved the removal of native vegetation (3.58 ha), filling of an undefined drainage line, and filling and partial realignment of a first order tributary to Ropes Creek.

Consent conditions have been based on various assessment and strategy reports lodged and approved under the original SSD6917 and two subsequent modifications (MOD 1 and MOD 6), which has included:

- Biodiversity Assessment Reports (2015, 2016, 2017) prepared under the NSW Framework for Biodiversity Assessment (FBA), which calculated that 158 ecosystem credits would need to be retired to offset native vegetation clearing (consent condition E46).
- Biodiversity Offsetting Strategies (2015, 2016, 2018), which detail how ecosystem credits will both be:
  - Establishing a biodiversity offset area to generate and retire 146 ecosystem credits under a biobanking agreement with the NSW Office of Environment and Heritage (OEH), and
  - Purchasing and retiring 12 ecosystem credits, which were considered unable to be generated within the biodiversity offset area.
- Vegetation Management Plans (2015, 2016, 2017), which outlined the revegetation works required to manage the impacts on the riparian areas of Ropes Creek and its tributary thereby meeting the objects of the *Water Management Act 2000* (WM Act).

During this time the *Threatened Species Conservation Act 1995* (TSC Act) was replaced by the *Biodiversity Conservation Act 2016* (BC Act) with transitional arrangements provisioned for under the *Biodiversity Conservation (Savings and Transitional) Regulation 2017*.

Transitional arrangements for Biodiversity Offsetting Strategies prepared under the repealed TSC Act expired in February 2018. This resulted in the redundancy of the Biodiversity Offsetting Strategy for Oakdale South.

This amended Vegetation Management Plan - (Amended VMP) has been prepared to support a development modification (MOD 11) for the Oakdale South. MOD 11 seeks to reinstate parts of the Ropes Creek riparian corridor as detailed in this Amended VMP, which were previously removed from the VMP (2015) in MOD 6.

This was done at the request of the OEH to avoid any perceived existing conservation obligations that may preclude the creation of the biodiversity offset area under the *Threatened Species Conservation (Biodiversity Banking) Regulation 2008* (Biobanking Regulation).

### Proposed Amendments

Two key amendments in MOD 11 are proposed:

- 1) Remove references to the Biodiversity Offset Strategy (BOS) and biodiversity offsetting area (BOA); and
- 2) Include additional management zones associated with the Ropes Creek riparian corridor.

These amendments and the extent of the proposed additional Ropes Creek VMP management zone have been determined through the following:

- Regulatory consultation and advice received to overcome the issue of the BOS no longer being a recognised method for entering into a biobanking agreement (provided in Appendix C).
- The need to reinstate parts of the Ropes Creek riparian corridor into the VMP in order to meet the objects of the WM Act.

- Site constraints including:
  - Areas of Aboriginal heritage sensitivity which preclude active restoration (i.e. planting or any other disturbance of soils in these locations);
  - The alignment of the future Southern Link Road (SLR) which traverses the Ropes Creek riparian corridor;
  - Feasible management boundaries and access constraints, given that Oakdale South's boundaries extend to the western side of Ropes Creek and will conflict with the future development of Oakdale West under SSD7348;
  - The alignment of the existing electricity easement that traverses land on both Oakdale South and Oakdale West, which also precludes restoration works.

This Amended VMP applies to an area of approximately 9.2 hectares, which comprises three separate management areas:

- Watercourse realignment (approximately 4.3 ha) - *completed and now in maintenance phase*;
- Ropes Creek adjacent Precinct 6 (approximately 0.9 ha); and
- Ropes Creek (approximately 4.0 ha).

The proposed additional areas of the Ropes Creek corridor are considered commensurate with the proportion of the SSD6917 development footprint that has encroached onto waterfront land.

The remainder of the biodiversity offsetting area identified in the BOS will continue to be protected for conservation. Goodman may choose to establish this area in the future as a Biodiversity Stewardship Site under agreement with the Biodiversity Conservation Trust (BCT).

In the interim this area will be passively managed to allow natural rehabilitation of native vegetation. Management activities already undertaken in this area include: removal of cattle, fencing and signage installed, habitat placement (large woody debris) and ongoing targeted weed control.

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# 1. Introduction

## 1.1 Overview

Oakdale South Industrial Estate (Oakdale South) is a State Significant Development (SSD) located in the Penrith local government area (LGA) and Precinct 8 of the Western Sydney Employment Area (WSEA). Covering approximately 117 hectares (ha) of land, Oakdale South is predominantly zoned IN1 - General Industrial with E2 - Environmental Protection E2 land located along the riparian corridor of Ropes Creek.

Goodman Property Services (Aust.) Pty Ltd (Goodman) was originally granted consent for the Concept and concurrent Stage 1 DA (SSD6917) by the Department of Planning and Environment (the Department) on 26 October 2016. Consent approval included the following:

- Removal of 3.58 ha of native vegetation;
- Realignment of a first order tributary to Ropes Creek (Drainage Line 1); and
- Filling of an undefined drainage line (Drainage Line 2).

Vegetation offsetting and riparian corridor management have been the subject of various Biodiversity Assessment Reports, Biodiversity Offsetting Strategies and Vegetation Management Plans. These have included the original SSD6917 and two subsequent modifications (MOD 1 and MOD 6) lodged and approved between 2015 and 2018 (refer Section 1.2).

During this time the *Threatened Species Conservation Act 1995* (TSC Act) was replaced by the *Biodiversity Conservation Act 2016* (BC Act). Transitional arrangements were provisioned for under the *Biodiversity Conservation (Savings and Transitional) Regulation 2017*.

Transitional arrangements for Biodiversity Offsetting Strategies prepared under the repealed TSC Act expired in February 2018. This resulted in the redundancy of the Biodiversity Offsetting Strategy Amended (BOS), and the subject of MOD 6, which was approved by the Department in June 2018.

This amended Vegetation Management Plan - Amended (VMP) has been prepared to support a development modification (MOD 11) for the Oakdale South. MOD 11 seeks to reinstate parts of the Ropes Creek riparian corridor as detailed in this Amended VMP, which were included in the now redundant Biodiversity Offset Strategy (refer Section 1.2).

## 1.2 Consent History

SSD6917 Stage 1 Development approval was granted subject to the implementation of the following plans and strategies (as relevant to biodiversity and riparian lands):

- 1) A Biodiversity Assessment Report (BAR) (Cumberland Ecology 2015a) was lodged with and approved under SSD6917. This BAR assessed the ecological impacts associated with vegetation clearing as per the requirements of the Framework for Biodiversity Assessment (FBA). The BAR concluded that 160 ecosystem credits were required to offset the lost on-site vegetation, which was conditioned under Consent Condition E46.
- 2) A Biodiversity Offset Strategy (BOS) (Cumberland Ecology 2015a) was also included and approved under SSD6917. The BOS specified how Goodman would retire the 160 ecosystem credits, which in summary included:
  - a) Establishing a biodiversity offset area adjacent to the development footprint of the Stage 1 DA, which would generate sufficient ecosystem credits to retire 147 ecosystem credits, and

- b) Purchasing and retiring 13 ecosystem credits, which were considered unable to be generated within the biodiversity offset area<sup>1</sup>.
- 3) A VMP which outlined the revegetation works required to manage the impacts of the Stage 1 DA on the riparian areas of Ropes Creek and its tributary (referred to as Drainage Line 1) was also included and approved under SSD6917. The VMP included areas of the Ropes Creek riparian corridor, which overlapped with areas of the BOA.
- 4) The BAR was subsequently updated in MOD1, which reduced the area of impact to vegetation as a result of the refinement of earlier GIS based mapping (that included areas of shading, which inadvertently included areas of exotic grassland). The updated BAR (Cumberland Ecology 2016a) concluded that a total of 158, rather than 160 ecosystem credits, were required to offset vegetation clearing. This due to a decrease to clearing of native vegetation from 3.58 to 3.55 ha.
- 5) The BOS was also subsequently updated in MOD1, due to changes to lot and estate road layout, which nominally reduced the area of the proposed biodiversity offset area (BOA).
- 6) OEH objected to the use of E2 zoned land for biobanking purposes believing it constituted an existing 'conservation obligation' under the *Threatened Species Conservation (Biodiversity Banking) Regulation 2008* (Biobanking Regulation).

As E2 zoning of land provides for environmental conservation to be undertaken without development consent, the Department concluded in its assessment of SSD6917 that the proposed conservation measures on this land does not constitute an existing conservation obligation.

- 7) Subsequent to the Department's determination (as per point 6) OEH objected to the measures proposed under the VMP, believing these would constitute an existing 'conservation obligation' under the Biobanking Regulation. Despite that the proposed VMP:
- Addressed mitigation measures for the same SSD,
  - Was yet to approved and/or conditioned under SSD6917, and
  - No other prior conservation obligations existing for this land.

- 8) The Department responded by amending Consent Condition E47 to include separating the VMP and proposed BOA areas to ensure no geographic overlap.

The above conditions allowed Goodman to commence works on the realignment of Drainage Line 1, while resolving the issues associated with the VMP and the BOA at a later date (via a S.96 application). By separating the geographic overlap of the VMP and the BOA, the Department conditioned the implementation of the VMP without prejudicing the creation of the BOA.

- 9) Following SSD 6917 approval on 26.10.16, the VMP was updated in accordance with Condition E47 (to remove the geographic overlap between the VMP area and the BOA) and was submitted to and approved by the Department on 16.12.16.
- 10) Following the updated VMP approval on 16.12.16, OEH expressed their preference to have the main riparian corridor area of the VMP incorporated into the overarching BOS. The Department envisaged that a S.96 application be lodged in the future to update Condition E47 to remove the requirement that no geographic overlap between the VMP and the BOA take place.
- 11) The VMP and BOS were updated in MOD 6 to:
- Formalise the biodiversity offset and VMP management areas, such that the main area of the Ropes Creek riparian zone was incorporated into the BOA;

---

<sup>1</sup> The 13 ecosystem credits have since been purchased and retired by Goodman

- The smaller and disjunct riparian area adjacent to Precinct 6 and the watercourse realignment were removed from the biodiversity offset area and managed separately under the revised VMP (écologique, 2017). This due to the:
  - Surrounding level of development and relative isolation of both these areas from the proposed biodiversity offset area, and
  - Anticipated difficulties in managing these areas in accordance with the requirements of a biobanking agreement.
- Amended areas of native vegetation to be cleared and number of ecosystem credits required to offset clearing (as detailed in the updated and approved BAR and BOS in MOD 1) were updated in Consent Condition E46 (which was inadvertently not updated in MOD 1 conditions); and
- All areas are amended to reflect more accurate data collected during surveys of Oakdale South's relevant boundaries (LTS Lockley, 2017).

## 1.3 Proposed Amendments

Two key amendments in MOD 11 are proposed:

- 3) Remove references to the BOS (écologique, 2018); and
- 4) Include additional management zones associated with the Ropes Creek riparian corridor previously included in the BOS (écologique, 2018).

These amendments and the extent of the proposed additional VMP management zones, associated with the Ropes Creek riparian corridor, have been determined through the following:

### 1.3.1 Regulatory consultation

On determination that the most recent BOS (écologique, 2018) was no longer a recognised method for entering into a biobanking agreement, consultation was undertaken with the Department (see Appendix C).

In response the Department consulted with OEH on the matter, and issued the following suggestions to address Condition E46 of SSD 6917:

- Purchase of appropriate BBAM credits from the market (i.e. credits assessed and calculated under repealed legislation) available on the market assessed under the repealed legislation), or
- Obtain a statement of reasonable equivalence to convert the existing BBAM credit obligation into BAM credits (i.e. credits assessed and calculated under the BC Act) and,
  - Enter into a biodiversity stewardship agreement under the BC Act on a parcel of land to generate the relevant credit types, then retire the relevant credits, or
  - Pay an amount equivalent to those credits into the Biodiversity Conservation Trust (BCT).

MOD 11 seeks to fulfil Condition E46 of SSD 6917 through the purchase and retirement of appropriate ecosystem credits.

### 1.3.2 Consideration of the WM Act

The Department of Industry (DOI) was consulted during the assessment of MOD 6, which removed geographical overlaps between the pre-existing VMP and biodiversity offset area.

DOI confirmed they had no issue with the revised VMP (subject of MOD 6) no longer applying to that part of the Ropes Creek corridor as in their view the objects of the WM Act were being met by the application of the BOS (écologique 2018).

As the current MOD 11 seeks to remove the BOS, Goodman proposes to restore/rehabilitate and maintain areas of the Ropes Creek riparian corridor to fulfil the objects of the WM Act.

### 1.3.3 Site constraints

The proposed additional areas of the Ropes Creek corridor are considered commensurate with the proportion of the SSD6917 development footprint that has encroached onto waterfront land.

The remainder of the biodiversity offsetting area identified in the BOS will continue to be protected for conservation (see Section 1.3.4).

Other site constraints that have been considered in determining the extent of the Ropes Creek corridor proposed in this Amended VMP are shown on Figure 1-1 and outlined below:

- Areas of Aboriginal heritage sensitivity which preclude active restoration (i.e. planting or any other disturbance of soils in these locations);
- The alignment of the future Southern Link Road (SLR) which traverses the Ropes Creek riparian corridor;
- Feasible management boundaries and access constraints, given that Oakdale South's boundaries extend to the western side of Ropes Creek and will conflict with the future development of Oakdale West under SSD7348; and
- The alignment of the existing electricity easement that traverses land on both Oakdale South and Oakdale West, which precludes restoration works.

### 1.3.4 Protected Conservation Area

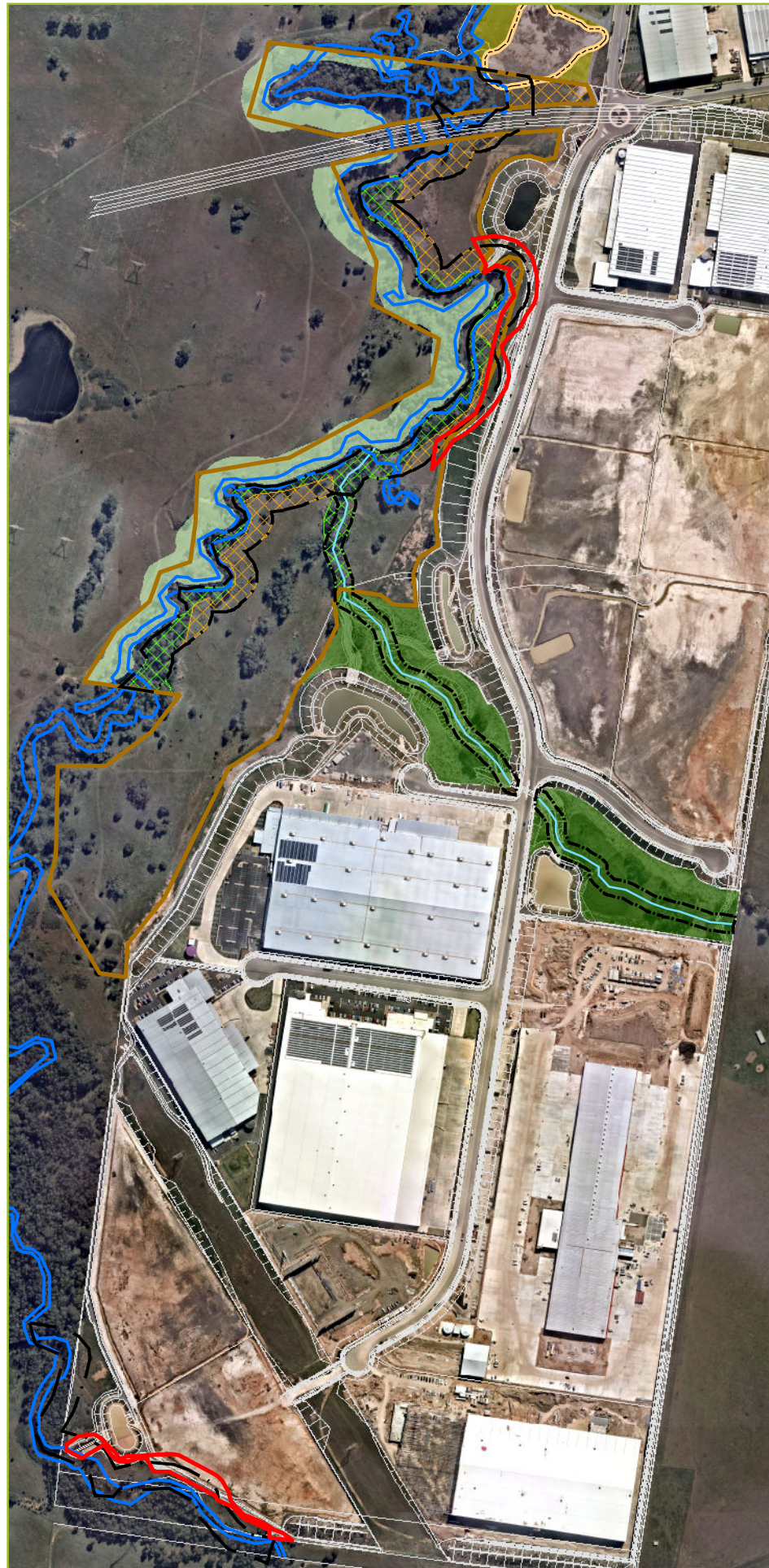
Goodman may choose to use the remainder of the biodiversity offsetting area in the future as a biodiversity stewardship site under agreement with the BCT.

This requires a Biodiversity Stewardship Site Assessment Report (BSSAR) including the collection of new BAM data.

In the interim this area will be passively managed to allow natural rehabilitation of native vegetation. Management activities already undertaken in this area include:

- Removal of cattle;
- Fencing;
- Habitat placement (large woody debris); and
- Targeted weed control (Alligator weed, African Olive and Blackberry)

Targeting of priority weeds, in accordance with the Biosecurity Act 2015, will be ongoing.



## Oakdale South Estate

### Vegetation Management Plan - Amended

#### RIPARIAN GUIDELINES

- Ropes Creek 3rd order
- Tributary 1st order
- Waterfront land
- 30m buffer zone
- 10m buffer zone

#### OAKDALE SOUTH VMP EXISTING

- Precinct 6 VMP zone
- Watercourse VMP zones
- Fenced conservation area

#### OAKDALE SOUTH VMP AMENDMENT

- Regeneration zones
- Revegetation zones

#### OAKDALE WEST VMP PROPOSED

- Separate VMP under SSD7348

#### OAKDALE CENTRAL VMP EXISTING

- VMP area

#### OTHER

- Aboriginal heritage zone

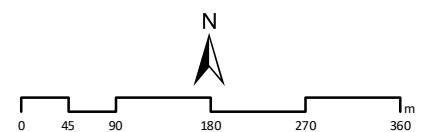


Figure 1-1 Site constraints

Coordinate System: MGA Zone 56 (GDA 94)  
Image sources: Nearmap 7 April 2019

## 2. Site Extent and Features

Oakdale South contains approximately 34.8 hectares of non-developable land that is reserved for biodiversity conservation and various landscaping treatments.

How each area will be managed are detailed in separate management plans which support Oakdale South's Operational Environmental Management Plan (OEMP) as listed in Table 2-1 and shown in Figure 2-1.

Table 2-1. OEMP management zones

| Management zone                                      | Area (ha)   |
|------------------------------------------------------|-------------|
| Basin Management Plan                                | 1.8         |
| Landscape Management Plan                            | 6.3         |
| Landscape Boundary Screening Plan                    | 2.8         |
| <b>Vegetation Management Plan - this plan</b>        | <b>9.2</b>  |
| Biodiversity Conservation Area - refer section 1.3.4 | 14.7        |
|                                                      | <b>34.8</b> |

This Amended VMP applies to an area of approximately 9.2 hectares, which comprises three separate management areas:

- Watercourse realignment (approximately 4.3 ha);
- Ropes Creek adjacent Precinct 6 (approximately 0.9 ha); and
- Ropes Creek (approximately 4.0 ha).

In addition to the above, an area of approximately 14.7 ha will be protected for biodiversity conservation purposes.

### 2.1 Watercourse Realignment

The realigned watercourse is a 1<sup>st</sup> order stream and tributary to Ropes Creek. Its realignment was required to enable a local perimeter road to be incorporated into Oakdale South, as well as providing a location to construct bio-retention basins. A single road crossing has been included in the waterway design, which consists of a single culvert structure under Estate Road 01 (Otellia Road).

The watercourse originates on the neighbouring Lot A DP392643 from the east, flowing through the site in a west and then northerly direction before discharging into Ropes Creek. The northern section of the watercourse has been filled for development and a new section constructed between Otellia Road and the biodiversity offset area (Watercourse west of Otellia Road).

The re-aligned watercourse has been situated to connect at the downstream end with an existing smaller tributary stub of Ropes Creek. The smaller tributary stub is located within the former biodiversity offset area and will be now be restored under this VMP (see Section 2.3).

No change to the VMP (écologique, 2017) is proposed in MOD 11 for this management zone. The VMP management actions for the watercourse realignment achieved practical completion in 2018 and is now in its maintenance phase.

## 2.2 Ropes Creek adjacent Precinct 6

The Precinct 6 VMP management zone is located in the south west corner of Oakdale South between Ropes Creek and either side of the precinct's bio-retention basin and associated inflow to Ropes Creek. This VMP zone covers approximately 0.9 ha.

No change to the VMP (écologique, 2017) is proposed in MOD 11 for this management zone.

## 2.3 Ropes Creek

The Ropes Creek VMP management zone covers approximately 4.0 ha which is additional to that provided for in the VMP (écologique, 2017) and comprises the following:

- A 30m buffer zone from the top of the Ropes Creek eastern bank, where it is located on Oakdale South land, and
- A 10m buffer zone either side of the existing smaller tributary stub of Ropes Creek (at the downstream end of the Watercourse Realignment management zone).

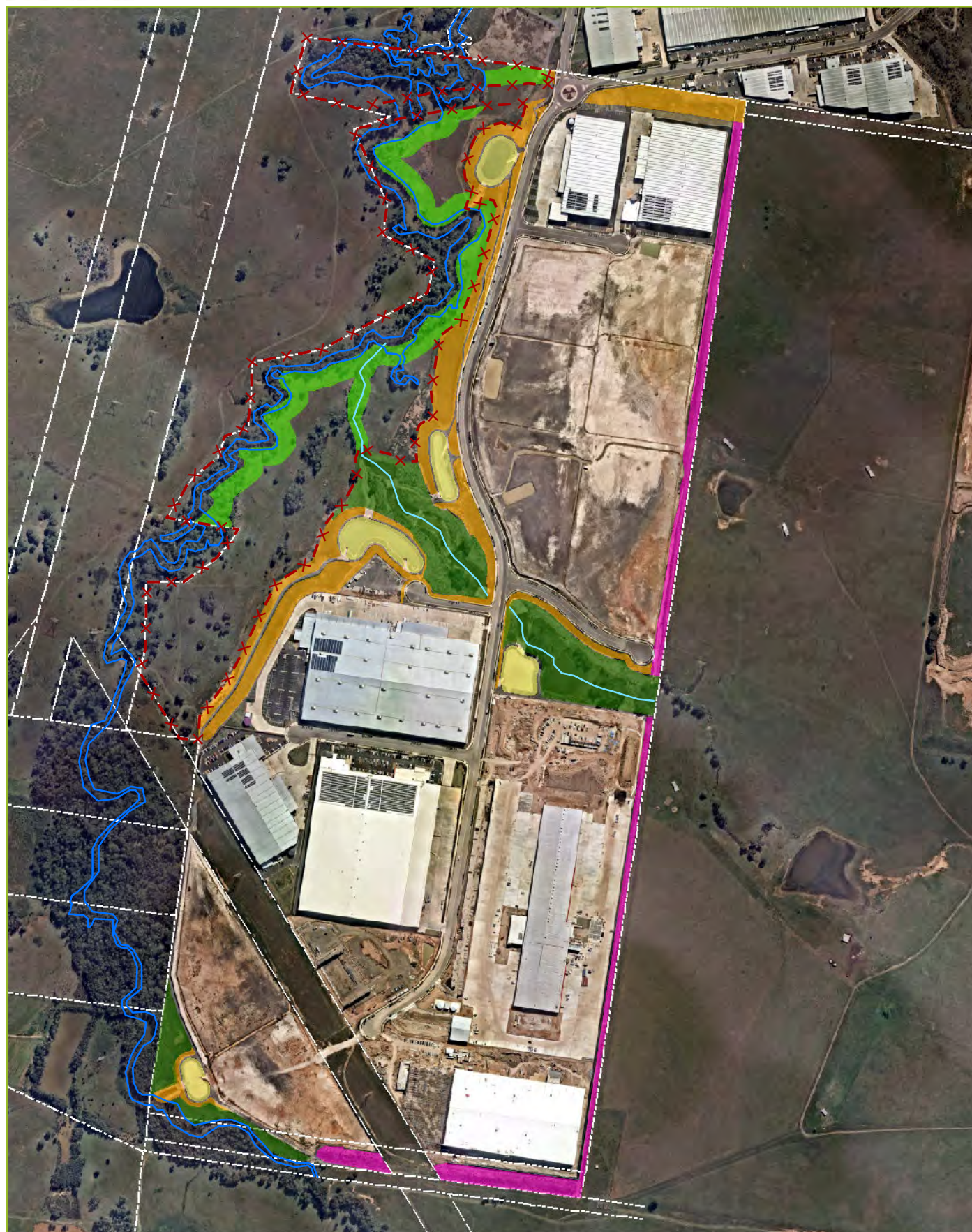
As discussed in Section 1.3.4 the proposed additional Ropes Creek VMP management zone has been delineated to avoid the following:

- Areas of Aboriginal heritage sensitivity;
- The alignment of the future Southern Link Road (SLR);
- Electricity easement; and
- Oakdale South land on the western side of Ropes Creek.

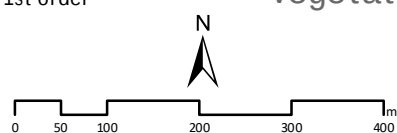
Oakdale South land on the western side of Ropes Creek lies adjacent to the Oakdale West Estate, which would be under construction concurrently with implementation of this Amended VMP. Construction activities associated with Oakdale West would preclude access, which is already impractical from the eastern side of Ropes Creek.

Providing for the restoration of the western Ropes Creek riparian zone under the Oakdale West SSD7348 will both:

- Avoid access issues and delays in the timing of restoration activities; and
- Enable the restoration of an uninterrupted 30m buffer zone, which is located either side of the Oakdale South and Oakdale West boundary fenceline.



- |                                                                                                                                                  |                                                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <span style="display: inline-block; width: 20px; height: 10px; background-color: #90EE90; border: 1px solid black;"></span> Proposed VMP zone    | <span style="display: inline-block; width: 20px; border-bottom: 2px dashed red; position: relative; top: -5px;"><span style="position: absolute; left: 0; top: 50%; transform: translateY(-50%);">x</span></span> Fenced conservation area |
| <span style="display: inline-block; width: 20px; height: 10px; background-color: #9ACD32; border: 1px solid black;"></span> Existing VMP areas   | <span style="display: inline-block; width: 20px; border-bottom: 2px solid blue;"></span> Ropes Creek 3rd order                                                                                                                             |
| <span style="display: inline-block; width: 20px; height: 10px; background-color: #FFFF00; border: 1px solid black;"></span> Basin_Management     | <span style="display: inline-block; width: 20px; border-bottom: 2px solid cyan;"></span> Tributary 1st order                                                                                                                               |
| <span style="display: inline-block; width: 20px; height: 10px; background-color: #FFA500; border: 1px solid black;"></span> Landscape_Management |                                                                                                                                                                                                                                            |
| <span style="display: inline-block; width: 20px; height: 10px; background-color: #FF00FF; border: 1px solid black;"></span> Landscape_Screening  |                                                                                                                                                                                                                                            |



**Oakdale South Estate**  
Vegetation Management Plan - Amended  
Figure 2-1. OEMP Management areas

Coordinate System: MGA Zone 56 (GDA 94)  
Image sources: Nearmap 7 April 2019

## 3. Restoration Approach

### 3.1 Overview

The specific objectives of this VMP align with those prescribed in the NSW Guidelines for vegetation management plans on waterfront land (DPIW July 2012) (the guidelines). The main objective being to provide a stable watercourse and riparian corridor which will emulate local native vegetation communities. Specific issues that need to be addressed within this VMP include:

- Conserve and protect environmentally sensitive areas and biodiversity values;
- Restore and rehabilitate degraded bushland and areas of significant vegetation;
- Ensure the protection of threatened species, populations or ecological communities;
- Limit the impact of development upon existing native vegetation;
- Provide habitat connectivity and fauna corridors;
- Promote sustainable vegetation management;
- Undertake responsive site management and landscaping to ensure that bushland values are conserved; and
- Specify appropriate environmental protection works to enhance the ecological and bushland amenity value of the site.

A combination of assisted bushland regeneration and reconstruction through revegetation shall be undertaken in areas of remnant native vegetation and pasture land within the VMP riparian zones (respectively).

### 3.2 Assisted Bushland Rehabilitation

Assisted bushland regeneration works shall be implemented in areas where natural regeneration is likely, by removing obstacles and making amendments to abiotic conditions to effect the regeneration of remnant native vegetation with varying resilience levels.

The aim of assisted bushland regeneration is to create conditions that favour the ecosystem's own recovery processes. The following principles from OEH's Conservation Management Notes (OEH 2011) apply to this VMP:

- Working where the natives are stronger, i.e. looking after the good areas and creating the conditions that promote their expansion into adjoining more degraded areas. An exception to this approach in the VMP riparian corridors will be targeting priority weed species in accordance with the *Biosecurity Act 2015*;
- Avoiding excessive disturbance because it often favours weed regrowth. But employing some disturbance where it is needed to trigger native plant regeneration or to treat compacted soil;
- Avoiding mulching (mostly) because mulch suppresses germination of seedlings, although it should be used in the following circumstances:
  - Small, low resilience patches within the regeneration area where natural leaf litter is available from nearby sources, and
  - On the edges of bushland areas to define the limits of the regeneration zone, and to suppress the encroachment of exotic grasses.
  - Above all, mulching shall avoid burying resilient areas where natural recruitment from the soil seed bank is evident.

Management activities relating to the assisted bushland regeneration are detailed in Section 4.

### 3.3 Reconstruction through revegetation

Where areas are found to have a low capacity for natural regeneration (i.e. former pasture land), these shall be fully reconstructed through revegetation of canopy, shrub and ground layer plant species constituent of River-flat Eucalypt Forest communities (RFEF). Reconstruction activities generally entail the following:

- Spraying out of introduced pasture grasses, herbs and forbs using a combination of selective and non-selective herbicides and high volume and low volume applications;
- Planting of local RFEF tree, shrub and groundlayer species; and
- Jute matting or mulching, depending on the location.

Section 4 details management activities relating to the reconstruction through revegetation.

### 3.4 Existing vegetation

#### 3.4.1 Remnant Native Vegetation

Existing remnant native vegetation within Oakdale South was assessed by Ecohort (2015), Cumberland Ecology (2015a), ground truthing the riparian corridor of the watercourse realignment in December 2016 and January 2017, ground truthing the riparian corridor of Ropes Creek adjacent Precinct 6 (RC riparian corridor) on the 14<sup>th</sup> February and 22<sup>nd</sup> November 2017.

Native overstory vegetation consists of mature canopy species dominated by *Casuarina glauca* (swamp oak), with scattered *Eucalyptus tereticornis* (forest red gum), *Eucalyptus amplifolia* (cabbage gum), *Angophora floribunda* (rough-barked apple), *Eucalyptus crebra* (narrow-leaved ironbark) and *Melaleuca styphelioides* (prickly-leaved paperbark). With the exception of juvenile swamp oaks, a native shrub layer is absent. The ground layer is dominated by introduced grasses, shrubs and weeds, with the naturalised *Cynodon dactylon* (common couch) dominate in the RC riparian corridor.

Outside of the canopied areas is former pasture land with the ground layer dominated by introduced grasses and occasional small patches of native grass species such as *Themeda triandra* (kangaroo grass), *Austrodanthonia* sp. (wallaby grass) and *Microlaena stipoides* var *stipoides* (weeping meadow grass) and sporadic occurrences of native herbs (*Dichondra repens*, *Wahlenbergia gracilis*, *Oxalis perennans*, *Tricoryne elatior*, *Brunoniella australis*).

Native vegetation associated with the farm dam at the upstream end of the watercourse realignment fluctuates in response to climatic conditions and water levels. Aquatic macrophytes commonly present all year round are the emergent species *Typha orientalis* (cumbungi) and *Juncus usitatus* (common rush) and the floating attached *Potamogeton ochreatus* (blunt pondweed). Other species that have been observed less frequently include *Ottelia ovalifolia* (swamp lily), *Ranunculus inundatus* (river buttercup), *Myriophyllum papillosum*, *Triglochin procerum* (water ribbons), and *Damasonium minus* (starfruit).

#### 3.4.2 Threatened species and ecological communities

Threatened species, populations and ecological communities were assessed during the preparation of the Oakdale South Biodiversity Assessment Report (Cumberland Ecology 2015a). No threatened species or populations were found within the riparian zone of Ropes Creek and its tributaries.

Cumberland Ecology identified two plant community types within the riparian zones:

- HN 594 Swamp Oak swamp forest fringing estuaries, Sydney Basin Bioregion and South East Corner Bioregion; and
- HN 526 Forest Red Gum - Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain, Sydney Basin Bioregion.

Ecohort (2015) and ground truthing for the VMP (écologique 2017) support the presence of HN 526 Forest Red Gum - Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain, Sydney Basin Bioregion.

HN 526 is commensurate with River-flat Eucalypt Forest on the Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions (RFEF). RFEF is listed as an endangered ecological community (EEC) in NSW under the *Threatened Species Conservation Act 1995*.

### 3.3.3 Threatening processes

The most significant threatening processes that contribute or have contributed to degradation of the site's riparian corridors include: past clearing of native vegetation; grazing; weed infestations, and disturbance of soil and soil-stored native seed from various works associated with past and current land uses.

The site's boundary is now securely fenced and grazing cattle removed. The existing natural riparian corridors have been demarcated as 'no go' zones and silt fencing installed to prevent movement of sediments in runoff entering these zones.

### 3.3.4 Weed infestations

Weed infestations will be managed as outlined in this VMP and in accordance with the *Biosecurity Act 2015*. The *Biosecurity Act 2015* replaces the *Noxious Weeds Act 1993*, which was repealed in August 2017.

The *Biosecurity Act 2015* itself is tenure neutral, in that unlike the previous *Noxious Weeds Act 1993* there is no scheduled "list" of weeds. As such all weeds need to be categorised by a risk they pose in relation to human health, biodiversity or agricultural production. The General Biosecurity Duty (GBD) is a key feature of the *Biosecurity Act 2015* (S22). Simply put, it means that all private and public land managers (or anyone who deals with weeds) must prevent, eliminate or minimise the risk those weeds present.

The Greater Sydney Regional Strategic Weed Management Plan 2017-2022 identifies both State level and regionally determined priority weeds and high risk activities that are relevant to the Oakdale South (see Table 3-1). All weed species identified in the VMP riparian zones are listed in Appendix 1.

Table 3-1. Oakdale South VMP priority weed species

| Species / Common names                                                                                                                | Management measures                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| <i>Alternanthera philoxeroides</i> Alligator weed - Weed of National Significance                                                     | Schedule 1: State Priority Weeds                                        |
| <i>Anredera cordifolia</i> Madeira vine                                                                                               | Schedule 1: State Priority Weed                                         |
| <i>Asparagus aethiopicus</i> , <i>A. africanus</i> , <i>A. asparagoides</i> , <i>A. plumosus</i> , <i>A. scandens</i> Asparagus weeds | Schedule 1: State Priority Weed                                         |
| <i>Cestrum parqui</i> Green cestrum                                                                                                   | Schedule 2: Regional Priority Weed, and Schedule 3: Local Priority Weed |
| <i>Dovyalis caffra</i> Kei apple                                                                                                      | Schedule 2: Regional Priority Weed                                      |
| <i>Lantana camara</i> Lantana                                                                                                         | Schedule 1: State Priority Weed                                         |
| <i>Lycium ferocissimum</i> African boxthorn                                                                                           | Schedule 1: State Priority Weed                                         |
| <i>Olea europaea</i> subsp. <i>cuspidata</i> African olive                                                                            | Schedule 2: Regional Priority Weed                                      |
| <i>Rubus fruticosus</i> agg Blackberry                                                                                                | Schedule 1: State Priority Weed                                         |
| <i>Senecio madagascariensis</i> Fireweed                                                                                              | Schedule 1: State Priority Weed                                         |

## 4. Management Actions

### 4.1 Management Zones

The VMP applies to three separate riparian corridor management zones:

- Watercourse Realignment (WR) - *completed and in maintenance phase*
- Ropes Creek adjacent Precinct 6 (P6); and
- Ropes Creek (RC).

Each zone is further divided into two management subzones: (a) assisted bushland regeneration, and (b) reconstruction through revegetation.

#### 4.1.1 Watercourse Realignment (WR)

In its entirety the Watercourse Realignment (WR) works included a range of civil, landscape and restoration activities, which have been completed in accordance with Construction Certification and the following documentation:

- Oakdale South Watercourse Realignment - Specification (AECOM, 8 November 2016); and
- Oakdale South Watercourse Realignment -Drawing Set 60333552 (AECOM, 23 September 2016).

Work activities specific to the management of WR zones 1a and 1b are summarised in Table 4-1 and shown in Figure 4-1.

Table 4-1. Summary of watercourse realignment works and responsibilities

| Work activity               | Tasks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Responsibility               |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Civil Works                 | <ul style="list-style-type: none"> <li>• Stripping, stockpiling, amelioration, and reinstatement of topsoil (A horizon) and B horizon sub-soil</li> <li>• Excavation and/or filling of the site to the levels shown on the Drawings</li> <li>• Supply, delivery and placement of rock material</li> <li>• Provision and installation of erosion control matting to all areas downslope of the 1 in 2 year ARI</li> <li>• Supply and placement of temporary vegetation (cover crop) over all disturbed works areas until restoration can take place</li> <li>• Removal of temporary access tracks, signage and fencing, cleaning up and site restoration</li> </ul> | Civil contractor             |
| Landscape Restoration Works | <ul style="list-style-type: none"> <li>• Provision / installation of large woody debris (LWD) and LWD log clusters</li> <li>• Supply and placement of mulch and jute mesh to be installed over all mulched areas placed in batter areas</li> <li>• Provision of temporary irrigation system.</li> </ul>                                                                                                                                                                                                                                                                                                                                                            | Landscape contractor         |
| VMP Works                   | <ul style="list-style-type: none"> <li>• Procurement of provenance plant material</li> <li>• Weed control</li> <li>• Supply and placement of mulch in reconstruction areas within the riparian corridor</li> <li>• Planting program in all areas</li> <li>• Ongoing maintenance in all areas to achieve performance targets</li> </ul>                                                                                                                                                                                                                                                                                                                             | Bush regeneration contractor |



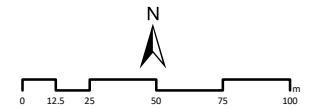
Gate 120m north

Gate

## Oakdale South Estate

Watercourse Realignment  
Practical Completion

- Fence realignment
- Gate
- Prior fence alignment
- Sleeper edge required
- Conservation area



33°50'0"S

Figure 4-1. Watercourse  
Realignment VMP Zone

Coordinate System:  
MGA Zone 56 (GDA 94)

Image sources:  
Nearmap 22 June 2018  
Additional LMP Scope of Works  
dwg SKC461 Issue P3 (AT&L 28.05.18)

150°48'30"E

#### 4.1.2 Precinct 6 (P6)

Riparian rehabilitation and restoration works required in the Precinct 6 management zone (P6 zones a and b) will solely be the responsibility of the Bushland Regeneration Contractor (i.e. there are no civil or landscaping works that overlap with the VMP works areas as is the case for WR zone 1).

Work activities specific to the management of zones P6(a) and P6(b) are summarised in Table 4-2 and detailed in Sections 4.2 to 4.7 with relevant work areas shown in Figure 4-2.

Table 4-2. Summary of watercourse realignment works and responsibilities

| Zone            | Tasks                                    | Summary of works activity                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| P6(a) and RC(a) | Weed control                             | <ul style="list-style-type: none"> <li>Targeted instream spiny rush and alligator weed control and assisted bush regeneration methods, including primary weeding and ongoing follow up weeding</li> </ul>                                                                                                                                                                                                                                          |
|                 | Monitoring and adaptive management       | <ul style="list-style-type: none"> <li>Monitoring of natural plant recruitment following the first year of bush regeneration;</li> <li>Using site resources to assist in native plant recruitment (such as opportunistic collection and direct application of native seeds or brush matting); and</li> <li>Supplemental planting of areas where natural plant recruitment fails to occur following the first year of bush regeneration.</li> </ul> |
| P6(b) and RC(b) | Procurement of provenance plant material | <ul style="list-style-type: none"> <li>Sourcing of seeds and / or plant propagules for growing of plant species (as per Planting Schedule, Appendix B), or sourcing of locally sourced plant stock from a suitable nursery</li> </ul>                                                                                                                                                                                                              |
|                 | Weed control                             | <ul style="list-style-type: none"> <li>Primary broadscale weed control and secondary weeding</li> </ul>                                                                                                                                                                                                                                                                                                                                            |
|                 | Soil amelioration                        | <ul style="list-style-type: none"> <li>As required</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                      |
|                 | Mulching                                 | <ul style="list-style-type: none"> <li>Placement of site mulch to areas where primary and secondary weeding has taken place in preparation of planting program</li> </ul>                                                                                                                                                                                                                                                                          |
|                 | Planting program                         | <ul style="list-style-type: none"> <li>Installation of canopy, shrub and ground layer species and establishment</li> </ul>                                                                                                                                                                                                                                                                                                                         |
|                 | Maintenance                              | <ul style="list-style-type: none"> <li>Recurrent tasks required to meet the VMP performance targets.</li> </ul>                                                                                                                                                                                                                                                                                                                                    |

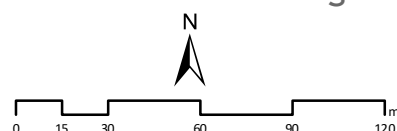
#### 4.1.3 Ropes Creek (RC)

Riparian rehabilitation and restoration works required in the Ropes Creek management zone will also be solely the responsibility of the Bushland Regeneration Contractor as is the case for P6 zones).

Work activities specific to the management of zones RC(a) and RC(b) are summarised in Table 4-2 and detailed in Sections 4.2 to 4.7 with relevant work areas shown in Figure 4-3.

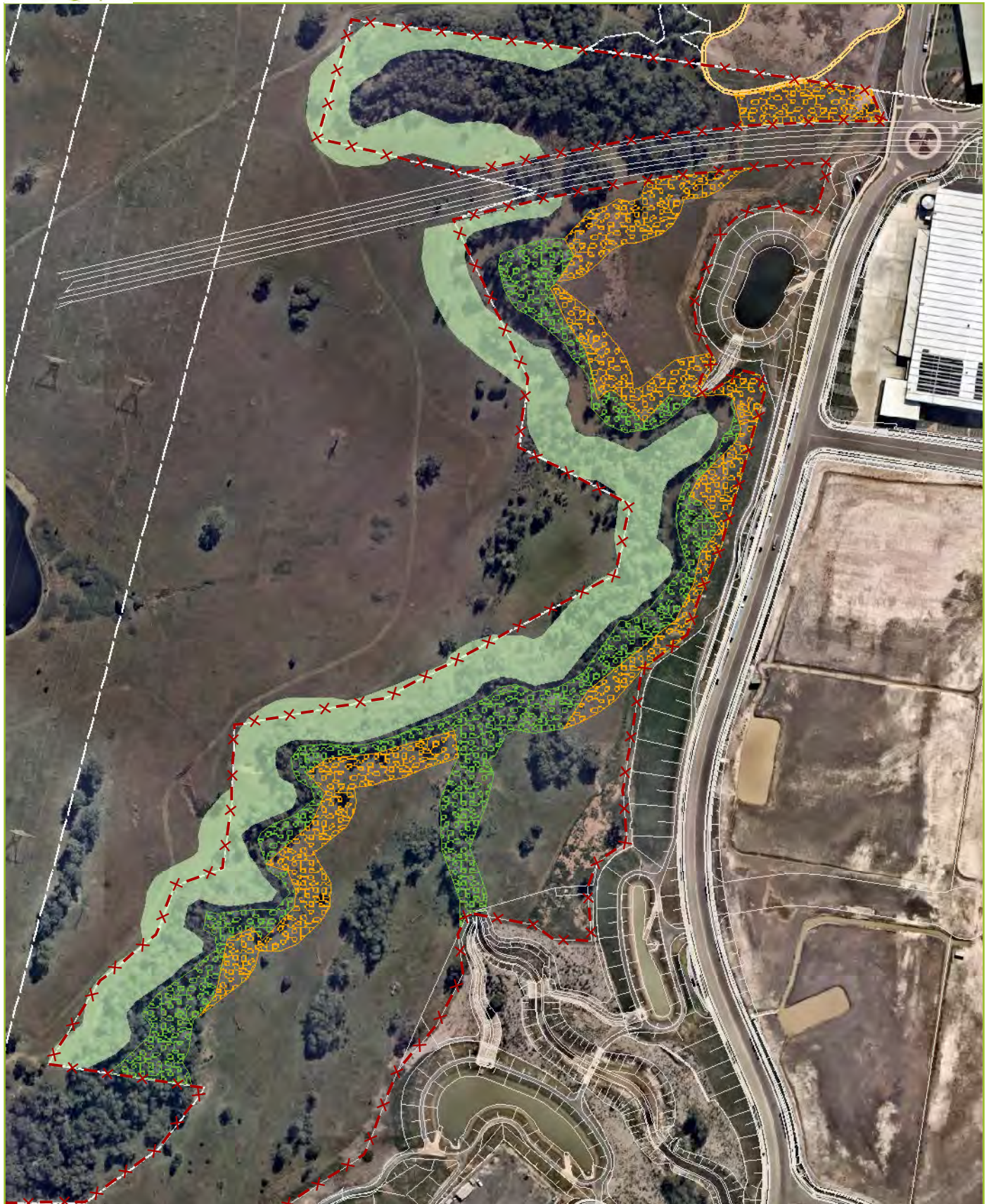


-  Precinct 6 VMP zone, Reconstruction
-  Precinct 6 VMP zone, Regeneration

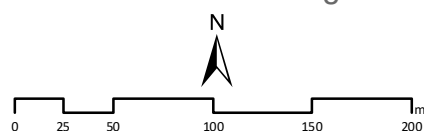


**Oakdale South Estate**  
**Vegetation Management Plan - Amended**  
**Figure 4-2. Precinct 6 VMP Zone**

*Coordinate System: MGA Zone 56 (GDA 94)  
 Image sources: Nearmap 7 April 2019*



-  Ropes Creek Regeneration
-  Ropes Creek Revegetation
-  Aboriginal heritage zone
-  Separate VMP under SSD7348
-  Fenced conservation area



## Oakdale South Estate Vegetation Management Plan - Amended

Figure 4-3. Ropes Creek VMP Zone

Coordinate System: MGA Zone 56 (GDA 94)  
Image sources: Nearmap 7 April 2019

## 4.2 Weed Control

### 4.2.1 Primary weeding

Primary weeding is the first stage of bushland regeneration and reconstruction, which will require a range of techniques such as: the selective spraying of weeds with herbicides; cutting/scraping and painting deep rooted woody weeds and climbers with hand tools, chainsaws and brushcutters and painting cut stumps with herbicide; and selective hand removal of weeds.

Primary weeding is required in all VMP zones with a priority given to:

- Species scheduled under the Biosecurity Act 2015 (see Table A, Appendix A);
- Widespread growth of spiny rush; and
- Woody weeds and climbers.

Additionally:

- Herbicide should not be allowed to fall into a watercourse or when wind conditions could cause drift outside the area to be treated or onto desirable plants.
- Weeds that cannot be removed by hand are to be manually removed, ensuring that the entire weed including all roots is removed;
- Damage to native plant species should be avoided during any weeding works; and
- All seed, flowering and invasive vegetative parts of weeds should be bagged and disposed of appropriately off site.

### 4.2.2 Secondary weeding

Secondary weeding involves the selective removal or treatment of weeds, whilst allowing regenerating or planted native plants to increase in size, abundance and percentage cover.

Secondary weeding should be undertaken at intervals of not more than four weeks following the completion of primary weeding and continue throughout the plant establishment period in reconstruction areas and as an ongoing task in assisted bush regeneration areas.

All herbaceous weeds should be managed to be at very-low percentage cover levels, (as a minimum 5% cover), or better. Particularly problematic herbaceous weeds with wind-blown seeds should be prevented from seeding at all times throughout the site.

### 4.2.3 Maintenance weeding

It can be expected that the remnant and revegetated areas in each VMP zone will always require a certain level of maintenance weeding, as weed seeds and vegetative propagules make their way on site from the soil stored seedbank, via water, wind and bird droppings. However, it can be expected that the amount of weeding required will decrease once the regenerating native plants grow, recover and become more resistant to disturbance and weed colonisation.

Maintenance weeding shall extend for a minimum of three years following the completion of the Plant Establishment / Defects Liability Period (refer Section 4.5.4) or until such time as a minimum 80% survival rate for all plantings and a maximum five percent (5%) weed cover for each VMP management zone.

## 4.3 Soil amelioration

In areas not subject to construction disturbance it is anticipated that existing soils will be suitable for revegetation following weed control without the need for amelioration.

Where construction activities have disturbed site soils (e.g. compaction, loss of topsoil) the following shall apply:

- All debris, stones and left over building materials (arising from the works) are to be removed from site.
- Stones exceeding 25 mm, clods of earth exceeding 50 mm, and weeds, rubbish or other deleterious material brought to the surface during excavation or cultivation, must be removed.
- Supply and cultivate/spread 50mm layer of organic compost within 50mm layer of topsoil.
- Organic compost to be pH neutral; low in phosphorus suitable for planting Australian natives; free from clods of soil, rock, rubbish, and other non-organic matter.

## 4.4 Mulching

The higher elevated parts of VMP reconstruction zones (i.e. P6a and RCa) are to be mulched with a minimum 75mm layer of woodchip/leaf mulch to assist with weed suppression, improve soil water conservation and soil erosion control.

Mulch is to be placed to the required depth, clear of plant stems, and raked to an even surface flush with the surrounding finished levels. Spread mulch so that after settling it is:

- Smooth and evenly graded between design surface levels;
- Flush with adjacent finished levels;
- Of the required depths (75 mm depth); and
- Sloped towards the base of plant stems, but not in contact with the stem.

## 4.5 Planting program

### 4.5.1 Plant procurement

The contractor is responsible for procurement of provenance seed / other propagative materials, and growing on plant species that are consistent with those provided in the Planting Schedule (provided in Appendix B). Plant stock is to be purchased at least four months prior to the anticipated delivery.

Plants that are not: true to species; vigorous and healthy; with a well-developed root system; free from disease / pests; and are not without scars or dead wood; shall be rejected at delivery.

Planting shall be undertaken immediately after acceptance of plant delivery. If this is not possible: appropriate storage to keep the plants in good condition on the site, adequately protected from frost, wind, sun and vermin, and secured from vandals; shall be facilitated.

### 4.5.2 Planting procedure

Planting shall generally entail the following:

- Dig hole sufficient for root ball of plant. The removal from the container and the positioning of the plant is to be done with minimum disturbance to the roots.
- Slow-release native plant fertiliser (low phosphorous formulated native plant fertiliser tablet/granules) and water saving crystals shall be placed into the planting hole.
- After planting, the soil shall be replaced and carefully firmed, leaving a slight depression around each plant to allow for water collection. Soil is to be replaced in the hole so that the base of the stem is level with the soil surface, not set below the soil, or sitting above.
- All plants should be watered-in thoroughly after planting to settle any air pockets around the root ball of the plant and to give the plant a good initial supply of water.

### 4.5.3 Practical completion

It is anticipated that Practical Completion can be achieved within six months from commencement of the bush regeneration/restoration works in each VMP zone. During this time planting

establishment is to be achieved through watering, weeding, pest/disease control, replacing dead plant material and repairing/replacing erosion control matting/mulch. All plants should be watered thoroughly on at least 4 to 6 occasions, during this period.

Failure to maintain each VMP management zone in a stable and healthy condition may result in the Superintendent arranging for the maintenance work to be carried out by others at the expense of the Contractor.

Practical Completion shall require a minimum 80 per cent survival rate of each species planted and a maximum 5 per cent weed cover for each VMP management zone.

#### 4.5.4 Planting establishment /defects liability

The Plant Establishment / Defects Liability Period shall be in force for 18 months after Practical Completion of each stage of the works or until the site is stable, whichever is the longer period.

Any defective work, whether the result of poor workmanship, use of defective materials, damage through carelessness, or of any other cause, shall be removed and replaced at the contractor's expense by work or materials of the required standard.

## 4.6 Performance measures

Performance targets are necessary to objectively measure the progress and the achievement of the VMP objectives. The anticipated timing of VMP management activities and related performance measures are outlined in Table 4-3 and discussed further below.

- 1) All environmental and scheduled weeds are to be continuously suppressed and, if possible, eradicated from the site using recognised appropriate bush regeneration methods in accordance with best practice.
- 2) Weed control and revegetation works are to be carried out by a qualified bushland regeneration contractor for a period of 5 years.
- 3) Regeneration/restoration of RFEF vegetation communities with a minimum 80% cover of native species achieved.
- 4) Weed control targets should eventually progress down to between 5% - 10% (or less) at the end of year 5.

Table 4-3. VMP implementation schedule

| Task                                      | Timing                                               | Performance measure                                                                                                                                                                              |
|-------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Plant procurement                         | Minimum 4mths pre-commencement of VMP implementation | Plants that are not: true to species; vigorous and healthy; with a well-developed root system; free from disease / pests; and are not without scars or dead wood; shall be rejected at delivery. |
| Completion of revegetation planting works | Practical Completion                                 | <ul style="list-style-type: none"> <li>100% of management zones treated</li> <li>100% of plants installed</li> </ul>                                                                             |
| Plant establishment                       | 6 months                                             | <ul style="list-style-type: none"> <li>Minimum 90% per cent survival rate of each species planted in all zones</li> <li>Maximum 10% weed cover in reconstruction zones</li> </ul>                |

| Task                     | Timing    | Performance measure                                                                                                                                                                                                                     |
|--------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |           | <ul style="list-style-type: none"> <li>Maximum 20% weed cover in regeneration zones</li> </ul>                                                                                                                                          |
| Defects Liability Period | 18 months | <ul style="list-style-type: none"> <li>Minimum 80% per cent survival rate of each species planted in all zones</li> <li>Maximum 10% weed cover in reconstruction zones</li> <li>Maximum 20% weed cover in regeneration zones</li> </ul> |
| Maintenance Period       | 36 months | <ul style="list-style-type: none"> <li>Minimum 80% per cent survival rate of each species planted in all zones</li> <li>Maximum 5% weed cover in reconstruction zones</li> <li>Maximum 10% weed cover in regeneration zones</li> </ul>  |

## 4.7 Compliance certification

Site audits, monitoring and reporting on the progress and achievement of the VMP performance targets shall be undertaken by an independent VMP specialist as nominated by Goodman. In general, reporting and compliance certificates shall be issued for the following items:

- Completion of primary weed control works;
- Completion of secondary weed control works;
- Inspection of plant materials delivered to site prior to commencement of planting works;
- Completion of revegetation planting works (Practical Completion);
- Completion of plant establishment period;
- Defects Liability Period; and
- Satisfactory achievement of revegetation/restoration works as per VMP performance targets (Section 4.6).

## 5. References

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- AECOM (2016) Oakdale South Industrial Development Watercourse Design. Report prepared for Goodman, 23 September 2016
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- Cumberland Ecology (2015a) Oakdale South State Significant Development Application Biodiversity Assessment Report, prepared for Goodman Property Services (Aust.) Pty Ltd, 24 August 2015
- Cumberland Ecology (2015b) Oakdale South State Significant Development Application Biodiversity Offsetting Strategy (BOS), prepared for Goodman Property Services (Aust.) Pty Ltd, 24 August 2015
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- DPIW (2012) Controlled activities on waterfront land - Guidelines for vegetation management plans on waterfront land, NSW Office of Water, July 2012
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- Ecohort (2015) Vegetation Management Plan for the Oakdale South Development at Horsley Park. Prepared by Ecohort Pty Ltd for Goodman, 31 August 2015.
- Ecohort (2016) Vegetation Management Plan for the Oakdale South Development at Horsley Park. Prepared by Ecohort Pty Ltd for Goodman, 11 December 2016.
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- écologique (2017) Oakdale South Estate Vegetation Management Plan. Prepared for Goodman Property Services (Aust.) Pty Ltd, 18 December 2017
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- LTS Lockley (2017) Plan of Subdivision of Lot 12 in DP 1178389 and LOT 87 in DP 752041. Draft prepared in December 2017.
- NRAR (2018) Guidelines for controlled activities on waterfront land - Riparian corridors. Natural Resources Access Regulator | NSW Department of Industry | INT19/15607 | May 2018
- Office of Environment and Environment (OEH) (2011) Conservation Management Notes - Managing bushland and wildlife habitat. Office of Environment and Heritage, Department of Premier and Cabinet NSW. ISBN 978 1 74293 316 0 OEH 2011/0659

## Appendix A. Weeds of the riparian zone

| Species / Common names                         | Management measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Shrubs</b>                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <i>Cestrum parqui</i><br>Green cestrum         | <p><b>Schedule 2: Regional Priority Weed</b></p> <p><b>Regional Priority Weed Objective - ASSET PROTECTION:</b></p> <p>Land managers mitigate the risk of the plant being introduced to land used for grazing of livestock.</p> <p>Land managers prevent spread from their land where feasible.</p> <p>The plant or parts of the plant are not traded, carried, grown or released into the environment.</p> <p>The plant should be fully and continuously suppressed and destroyed on grazing land</p> <p>Implement quarantine and/or hygiene protocols</p> <p><b>Schedule 3: Local Priority Weed</b></p> <p>Land managers have mitigated the risk of the plant being introduced to land used for grazing of livestock</p> <p>The plant should be fully suppressed and destroyed on grazing land.</p> |
| <i>Dovyalis caffra</i> Kei apple               | <p><b>Schedule 2: Regional Priority Weed</b></p> <p><b>Regional Priority Weed Objective - ERADICATION</b></p> <p>The plant is eradicated from the land and the land is kept free of the plant.</p> <p>Destruction of all infestations where feasible.</p> <p>Manage in accordance with New Weed Incursion Plan.</p> <p>Detailed surveillance and mapping to locate all infestations</p> <p>Local Control Authority is notified if the plant is found on the land.</p> <p>The plant or parts of the plant are not traded, carried, grown or released into the environment.</p>                                                                                                                                                                                                                         |
| <i>Lantana camara</i><br>Lantana               | <p><b>Schedule 1: State Priority Weed</b></p> <p><b>State Priority Weed Objective - ASSET PROTECTION (Whole of State):</b></p> <p>Mandatory Measure (Division 8, Clause33, Biosecurity Regulation 2017): A person must not move, import into the State or sell.</p> <p><b>Regional Strategic Response:</b> Identify priority assets for targeted management.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <i>Lycium ferocissimum</i><br>African boxthorn | <p><b>Schedule 1: State Priority Weed</b></p> <p><b>State Priority Weed Objective - ASSET PROTECTION (Whole of State):</b></p> <p>Mandatory Measure (Division 8, Clause33, Biosecurity Regulation 2017): A person must not move, import into the State or sell.</p> <p><b>Regional Strategic Response:</b> Identify priority assets for targeted management.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Species / Common names                                                               | Management measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Olea europaea</i> subsp. <i>cuspidata</i><br>African olive                        | <p><b>Schedule 2: Regional Priority Weed</b></p> <p><b>Regional Priority Weeds Objective - CONTAINMENT:</b></p> <p>Oakdale south lies within the region classified as the core infestation area, the following applies:</p> <p>The plant or parts of the plant are not traded, carried, grown or released into the environment.</p> <p>Implement quarantine and/or hygiene protocols.</p> <p>Surveillance and mapping to locate all infested properties.</p> <p>Monitor change in current distribution to ensure containment of spread.</p> <p>Land managers prevent spread from their land where feasible.</p> <p>Land managers reduce the impact on priority assets.</p> <p>Identify priority assets for targeted management</p> |
| <i>Rubus fruticosus</i> agg<br>Blackberry                                            | <p><b>Schedule 1: State Priority Weed</b></p> <p><b>State Priority Weed Objective - ASSET PROTECTION (Whole of State):</b></p> <p>Mandatory Measure (Division 8, Clause33, Biosecurity Regulation 2017): A person must not move, import into the State or sell.</p> <p><b>Regional Strategic Response:</b> Identify priority assets for targeted management.</p>                                                                                                                                                                                                                                                                                                                                                                   |
| <i>Ulex europaeus</i><br>Gorse                                                       | <p><b>Schedule 1: State Priority Weed</b></p> <p><b>State Priority Weed Objective - ASSET PROTECTION (Whole of State):</b></p> <p>Mandatory Measure (Division 8, Clause33, Biosecurity Regulation 2017): A person must not move, import into the State or sell.</p> <p><b>Schedule 2: Regional Priority Weed</b></p> <p><b>Regional Priority Weeds Objective - CONTAINMENT:</b></p> <p>Land managers prevent spread from their land where feasible</p> <p>Destruction of all infestations, aiming at local eradication where feasible.</p> <p>Detailed surveillance and mapping to locate all infestations.</p> <p>Implement quarantine and/or hygiene protocols.</p> <p>Monitor progress towards eradication</p>                  |
| <b>Aquatic and semi-aquatic</b>                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <i>Alternanthera philoxeroides</i><br>Alligator weed - Weed of National Significance | <p><b>Schedule 1: State Priority Weeds</b></p> <p><b>State Priority Weed Objective - CONTAINMENT:</b></p> <p>Mandatory Measure (Division 8, Clause 33, Biosecurity Regulation 2017): A person must not move, import into the State or sell.</p> <p><b>Schedule 2: Regional Priority Weed</b></p> <p><b>Regional Priority Weeds Objective - CONTAINMENT:</b></p>                                                                                                                                                                                                                                                                                                                                                                    |

| Species / Common names                                                                                                                                                          | Management measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                 | <p>Oakdale south lies within the region classified as the core infestation area, the following applies:</p> <p>Prevent spread from their land where feasible.</p> <p>Mitigate the risk of the plant being introduced to their land.</p> <p>Reduce the impact on priority assets.</p> <p>Implement quarantine and/or hygiene protocols.</p> <p>Manage in accordance with the Priorities for the control of Alligator Weed in the Sydney Region.</p>                                                                                                                                  |
| <i>Cyperus difformis</i><br>Dirty Dora                                                                                                                                          | Other                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <i>Cyperus eragrostis</i><br>Umbrella sedge                                                                                                                                     | Other                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <i>Juncus acutus</i> Spiny rush                                                                                                                                                 | Other                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Vines/scramblers</b>                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <i>Anredera cordifolia</i><br>Madeira vine                                                                                                                                      | <p><b>Schedule 1: State Priority Weed</b></p> <p><b>State Priority Weed Objective - ASSET PROTECTION (Whole of State):</b></p> <p>Mandatory Measure (Division 8, Clause33, Biosecurity Regulation 2017): A person must not move, import into the State or sell.</p> <p><b>Regional Strategic Response:</b></p> <p>Identify priority assets for targeted management.</p>                                                                                                                                                                                                             |
| <i>Araujia sericifera</i><br>Moth vine                                                                                                                                          | Other                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <i>Asparagus aethiopicus</i> ground asparagus<br><i>†A. africanus</i> climbing asparagus<br><i>A. asparagoides</i> bridal creeper<br><i>A. plumosus</i> climbing asparagus fern | <p><b>Schedule 1: State Priority Weed</b></p> <p><b>State Priority Weed Objective - ASSET PROTECTION (Whole of State):</b></p> <p>Mandatory Measure (Division 8, Clause33, Biosecurity Regulation 2017): A person must not move, import into the State or sell.</p> <p><b>Regional Strategic Response:</b> Identify priority assets for targeted management.</p> <p><i>†A. africanus</i></p> <p>Destruction of all infestations where feasible.</p> <p>Manage in accordance with New Weed Incursion Plan.</p> <p>▫ Detailed surveillance and mapping to locate all infestations</p> |
| <i>Asparagus virgatus</i><br>Asparagus fern                                                                                                                                     | <p><b>Schedule 3: Local Priority Weed</b></p> <p>The plant or parts of the plant have not been traded, carried, grown or released into the environment.</p> <p>Surveillance and mapping to locate all infested properties and maintain currency of exclusion zone and objectives.</p>                                                                                                                                                                                                                                                                                               |
| <i>Modiola caroliniana</i><br>Creeper mallow                                                                                                                                    | Other                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

| Species / Common names                                 | Management measures                                                                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Grasses</b>                                         |                                                                                                                                                                                                                                                                                                                                               |
| <i>Axonopus fissifolius</i><br>Carpet grass            | Other                                                                                                                                                                                                                                                                                                                                         |
| <i>Briza subaristata</i><br>hilean quaking grass       | Other                                                                                                                                                                                                                                                                                                                                         |
| <i>Bromus catharticus</i><br>Prairie grass             | Other                                                                                                                                                                                                                                                                                                                                         |
| <i>Ehrharta erecta</i><br>Panic veldtgrass             | Other                                                                                                                                                                                                                                                                                                                                         |
| <i>Lolium perenne</i><br>Ryegrass                      | Other                                                                                                                                                                                                                                                                                                                                         |
| <i>Paspalum dilatatum</i><br>Paspalum                  | Other                                                                                                                                                                                                                                                                                                                                         |
| <i>Pennisetum clandestinum</i> Kikuyu                  | Other                                                                                                                                                                                                                                                                                                                                         |
| <i>Sporobolus africanus</i><br>Parramatta grass        | Other                                                                                                                                                                                                                                                                                                                                         |
| <b>Herbs</b>                                           |                                                                                                                                                                                                                                                                                                                                               |
| <i>Anagallis arvensis</i><br>Scarlet pimpernel         | Other                                                                                                                                                                                                                                                                                                                                         |
| <i>Brassica fruticulosa</i><br>Twiggy turnip           | Other                                                                                                                                                                                                                                                                                                                                         |
| <i>Cirsium vulgare</i><br>Spear thistle                | Other                                                                                                                                                                                                                                                                                                                                         |
| <i>Hypochaeris radicata</i><br>Catsear                 | Other                                                                                                                                                                                                                                                                                                                                         |
| <i>Senecio madagascariensis</i><br>Fireweed            | <b>Schedule 1: State Priority Weed</b><br><b>State Priority Weed Objective - ASSET PROTECTION (Whole of State):</b><br>Mandatory Measure (Division 8, Clause33, Biosecurity Regulation 2017): A person must not move, import into the State or sell.<br><b>Regional Strategic Response:</b> Identify priority assets for targeted management. |
| <i>Sida rhombifolia</i><br>Paddy's lucerne             | Other                                                                                                                                                                                                                                                                                                                                         |
| <i>Solanum americanum</i><br>American black nightshade | Other                                                                                                                                                                                                                                                                                                                                         |
| <i>Solanum linnaeanum</i><br>Apple of Sodom            | Other                                                                                                                                                                                                                                                                                                                                         |
| <i>Sonchus oleraceus</i><br>Common sowthistle          | Other                                                                                                                                                                                                                                                                                                                                         |

## Appendix B. Planting Schedule

### B1. Watercourse realignment (WR) planting schedule

| Zone | Location Type                                       | Species                      | Density (m <sup>2</sup> ) | Plant qty    | % mix      |
|------|-----------------------------------------------------|------------------------------|---------------------------|--------------|------------|
| PM1  | PERMANENT POOLS (177m <sup>2</sup> )                | Bolboschoenus caldwellii     | 3                         | 133          | 25         |
|      |                                                     | Eleocharis gracilis          | 3                         | 133          | 25         |
|      |                                                     | Carex appressa               | 3                         | 133          | 25         |
|      |                                                     | Juncus usitatus              | 3                         | 133          | 25         |
|      |                                                     | <b>Subtotal plants</b>       |                           | <b>531</b>   | <b>100</b> |
| PM2  | LOW FLOW CHANNEL BASE (1033m <sup>2</sup> )         | Bolboschoenus caldwellii     | 4                         | 1,033        | 25         |
|      |                                                     | Eleocharis gracilis          | 4                         | 1,033        | 25         |
|      |                                                     | Carex appressa               | 3                         | 775          | 25         |
|      |                                                     | Juncus usitatus              | 3                         | 775          | 25         |
|      |                                                     | <b>Subtotal plants</b>       |                           | <b>3,616</b> | <b>100</b> |
| PM3  | LOW FLOW CHANNEL BATTER EDGES (1424m <sup>2</sup> ) | Carex appressa               | 3                         | 854          | 20         |
|      |                                                     | Entolasia marginata          | 4                         | 1,139        | 20         |
|      |                                                     | Imperata cylindrica          | 4                         | 1,139        | 20         |
|      |                                                     | Juncus usitatus              | 3                         | 854          | 20         |
|      |                                                     | Lomandra longifolia          | 3                         | 854          | 20         |
|      |                                                     | <b>Subtotal plants</b>       |                           | <b>4,842</b> | <b>100</b> |
| PM4  | LOW BENCHES (641m <sup>2</sup> )                    |                              |                           |              |            |
|      | Trees                                               | Melaleuca linariifolia       | 0.04                      | 8            | 30         |
|      |                                                     | Melaleuca styphelioides      | 0.04                      | 20           | 70         |
|      |                                                     |                              |                           | <b>28</b>    | <b>100</b> |
|      | Ephemeral species                                   | Carex appressa               | 3                         | 385          | 20         |
|      |                                                     | Entolasia marginata          | 4                         | 513          | 20         |
|      |                                                     | Imperata cylindrica          | 4                         | 513          | 20         |
|      |                                                     | Juncus usitatus              | 3                         | 385          | 20         |
|      |                                                     | Lomandra longifolia          | 3                         | 385          | 20         |
|      |                                                     |                              |                           | <b>2,179</b> | <b>100</b> |
|      | <b>Subtotal plants</b>                              |                              |                           | <b>2,207</b> |            |
| PM5  | BATTERS SUBJECT TO MATTING (2171m <sup>2</sup> )    |                              |                           |              |            |
|      | Trees                                               | Casuarina glauca             | 0.11                      | 239          | 100        |
|      |                                                     |                              |                           | <b>239</b>   | <b>100</b> |
|      | Smaller shrubs                                      | Acacia falcata               | 0.25                      | 8            | 2          |
|      |                                                     | Acacia floribunda            | 0.25                      | 16           | 3          |
|      |                                                     | Breynia oblongifolia         | 0.25                      | 27           | 5          |
|      |                                                     | Bursaria spinosa             | 0.25                      | 27           | 5          |
|      |                                                     | Clerodendrum tomentosum      | 0.25                      | 27           | 5          |
|      |                                                     | Daviesia genistifolia        | 0.25                      | 54           | 10         |
|      |                                                     | Dillwynia sieberi            | 0.25                      | 54           | 10         |
|      |                                                     | Dodonea viscosa spp. cuneata | 0.25                      | 54           | 10         |
|      |                                                     | Goodenia ovata               | 0.25                      | 27           | 5          |
|      |                                                     | Hardenbergia violacea        | 0.25                      | 27           | 5          |

| Zone       | Location Type                                           | Species                      | Density (m <sup>2</sup> ) | Plant qty    | % mix        |
|------------|---------------------------------------------------------|------------------------------|---------------------------|--------------|--------------|
|            |                                                         | Indigophora australis        | 0.25                      | 54           | 10           |
|            |                                                         | Notelaea longifolia          | 0.25                      | 27           | 5            |
|            |                                                         | Ozothamnus diosmifolium      | 0.25                      | 54           | 10           |
|            |                                                         | Pultenea microphylla         | 0.25                      | 54           | 10           |
|            |                                                         | Rubus parviflorus            | 0.25                      | 27           | 5            |
|            |                                                         |                              |                           | <b>539</b>   | <b>100</b>   |
|            | <b>Ephemeral species</b>                                | Carex appressa               | 3                         | 651          | 10           |
|            |                                                         | Danthonia spp                | 4                         | 868          | 10           |
|            |                                                         | Dianella spp                 | 4                         | 868          | 10           |
|            |                                                         | Entolasia marginata          | 4                         | 868          | 10           |
|            |                                                         | Imperata cylindrica          | 4                         | 868          | 10           |
|            |                                                         | Juncus usitatus              | 3                         | 651          | 10           |
|            |                                                         | Lomandra longifolia          | 3                         | 1,303        | 20           |
|            |                                                         | Microlaeana stipoides        | 4                         | 868          | 10           |
|            |                                                         | Poa labillardieri            | 3                         | 651          | 10           |
|            |                                                         |                              |                           | <b>7,599</b> | <b>100</b>   |
|            | <b>Broadleaf herbs, grasses and sedges</b>              | Centella asiatica            | 0.25                      | <b>543</b>   | as available |
|            |                                                         | Commelina cyanea             | 0.25                      |              |              |
|            |                                                         | Dichondra repens             | 0.25                      |              |              |
|            |                                                         | Oplismenus spp.              | 0.25                      |              |              |
|            |                                                         | Einadia spp.                 | 0.25                      |              |              |
|            |                                                         |                              |                           | <b>543</b>   |              |
|            | <b>Subtotal plants</b>                                  |                              |                           | <b>8,920</b> |              |
| <b>PM6</b> | <b>BATTERS SUBJECT TO MULCHING (5,310m<sup>2</sup>)</b> |                              |                           |              |              |
|            | <b>Canopy and subcanopy trees / large shrubs</b>        | Acacia decurrens             | 0.11                      | 29           | 5            |
|            |                                                         | Acacia parramattensis        | 0.11                      | 12           | 5            |
|            |                                                         | Angophora floribunda         | 0.11                      | 48           | 20           |
|            |                                                         | Eucalyptus amplifolia        | 0.11                      | 24           | 10           |
|            |                                                         | Eucalyptus moluccana         | 0.11                      | 48           | 20           |
|            |                                                         | Eucalyptus tereticornis      | 0.11                      | 96           | 40           |
|            |                                                         |                              |                           | <b>256</b>   | <b>100</b>   |
|            |                                                         | Acacia falcata               | 0.25                      | 66           | 5            |
|            |                                                         | Acacia floribunda            | 0.25                      | 66           | 5            |
|            |                                                         | Breynia oblongifolia         | 0.25                      | 66           | 5            |
|            |                                                         | Bursaria spinosa             | 0.25                      | 66           | 5            |
|            |                                                         | Clerodendrum tomentosum      | 0.25                      | 27           | 2            |
|            |                                                         | Daviesia genistifolia        | 0.25                      | 133          | 10           |
|            |                                                         | Dillwynia sieberi            | 0.25                      | 133          | 10           |
|            |                                                         | Dodonea viscosa spp. cuneata | 0.25                      | 133          | 10           |
|            |                                                         | Goodenia ovata               | 0.25                      | 66           | 5            |
|            |                                                         | Hardenbergia violacea        | 0.25                      | 40           | 3            |
|            |                                                         | Indigophora australis        | 0.25                      | 133          | 10           |
|            | <b>Smaller shrubs</b>                                   | Notelaea longifolia          | 0.25                      | 66           | 5            |

| Zone | Location Type                       | Species                     | Density (m <sup>2</sup> ) | Plant qty     | % mix        |
|------|-------------------------------------|-----------------------------|---------------------------|---------------|--------------|
|      |                                     | Ozothamnus diosmifolium     | 0.25                      | 133           | 10           |
|      |                                     | Pultenea microphylla        | 0.25                      | 133           | 10           |
|      |                                     | Rubus parviflorus           | 0.25                      | 66            | 5            |
|      | Broadleaf herbs, grasses and sedges |                             |                           | <b>1,328</b>  | <b>100</b>   |
|      |                                     | Aristida ramosa or vagans   | 4                         | 1,062         | 5            |
|      |                                     | Bothriochloa decipiens      | 4                         | 425           | 2            |
|      |                                     | Capillipedium parviflorum   | 4                         | 637           | 3            |
|      |                                     | Chloris truncata/ventricosa | 4                         | 1,062         | 5            |
|      |                                     | Danthonia spp               | 4                         | 2,124         | 10           |
|      |                                     | Dianella spp                | 4                         | 1,062         | 5            |
|      |                                     | Dicanthium sericeum         | 4                         | 637           | 3            |
|      |                                     | Dichelachne micrantha       | 4                         | 1,062         | 5            |
|      |                                     | Elymus scaber               | 4                         | 425           | 2            |
|      |                                     | Eragrostis leptostachyos    | 4                         | 1,062         | 5            |
|      |                                     | Eriochloa pseudoachritcha   | 4                         | 1,062         | 5            |
|      |                                     | Eremophila debilis          | 4                         | 1,062         | 5            |
|      |                                     | Entolasia marginata         | 4                         | 1,062         | 5            |
|      |                                     | Imperata cylindrica         | 4                         | 1,062         | 5            |
|      |                                     | Lomandra longifolia         | 3                         | 797           | 5            |
|      |                                     | Microlaeana stipoides       | 4                         | 2,124         | 10           |
|      |                                     | Poa labillardieri           | 3                         | 797           | 5            |
|      |                                     | Sorghum leiocladum          | 4                         | 1,062         | 5            |
|      |                                     | Themeda triandra            | 4                         | 2,124         | 10           |
|      |                                     |                             |                           | <b>20,709</b> | <b>100</b>   |
|      | Herbs / vine / creepers             | Arthropodium spp            | 0.25                      | 1,328         | as available |
|      |                                     | Caesia spp                  | 0.25                      |               |              |
|      |                                     | Centella asiatica           | 0.25                      |               |              |
|      |                                     | Clematis glycinoides        | 0.25                      |               |              |
|      |                                     | Commelina cyanea            | 0.25                      |               |              |
|      |                                     | Convolvulus erubescens      | 0.25                      |               |              |
|      |                                     | Dichondra repens            | 0.25                      |               |              |
|      |                                     | Einadia spp.                | 0.25                      |               |              |
|      |                                     | Geitonoplesium cynosum      | 0.25                      |               |              |
|      |                                     | Glycine tabacina            | 0.25                      |               |              |
|      |                                     | Hydrocotyle peduncularis    | 0.25                      |               |              |
|      |                                     | Mentha diemenica            | 0.25                      |               |              |
|      |                                     | Oplismenus spp.             | 0.25                      |               |              |
|      |                                     | Polymeria calycina          | 0.25                      |               |              |
|      |                                     | Pratia purpurascens         | 0.25                      |               |              |
|      |                                     | Ranunculus plebius          | 0.25                      |               |              |
|      |                                     | Rumex brownii               | 0.25                      |               |              |
|      |                                     | Scaveola albida             | 0.25                      |               |              |
|      |                                     | Solanum prinophyllum        | 0.25                      |               |              |
|      |                                     | Vittadinia spp              | 0.25                      |               |              |

| Zone | Location Type                                                     | Species                  | Density (m <sup>2</sup> ) | Plant qty | % mix |
|------|-------------------------------------------------------------------|--------------------------|---------------------------|-----------|-------|
|      |                                                                   | Wahlenbergia spp         | 0.25                      |           |       |
|      |                                                                   |                          |                           | 1,328     |       |
|      |                                                                   | Subtotal plants          |                           | 23,621    |       |
| PM7  | HIGH FLOW CHANNEL BASE / BATTER EDGES (679m <sup>2</sup> )        |                          |                           |           |       |
|      | Ephemeral species                                                 | Bolboschoenus caldwellii | 4                         | 679       | 25    |
|      |                                                                   | Eleocharis gracilis      | 4                         | 679       | 25    |
|      |                                                                   | Carex appressa           | 3                         | 509       | 25    |
|      |                                                                   | Juncus usitatus          | 3                         | 509       | 25    |
|      | Subtotal plants                                                   |                          |                           | 2,377     | 100   |
| PM8  | BIORETENTION BASIN ROCK LINED OUTLET SWALES (1948m <sup>2</sup> ) |                          |                           |           |       |
|      | Ephemeral species                                                 | Carex appressa           | 3                         | 1,461     | 25    |
|      |                                                                   | Juncus usitatus          | 3                         | 1,461     | 25    |
|      |                                                                   | Lomandra longifolia      | 3                         | 1,461     | 25    |
|      | Grasses                                                           | Poa labillardieri        | 3                         | 1,461     | 25    |
|      | Subtotal plants                                                   |                          |                           | 5,844     | 100   |
| PM9  | TEMPORARY HAUL ROAD RESTORATION (1361m <sup>2</sup> )             |                          |                           |           |       |
|      | Trees                                                             | Casuarina glauca         | 0.11                      | 42        | 70    |
|      |                                                                   | Melaleuca linariifolia   | 0.11                      | 6         | 10    |
|      |                                                                   | Melaleuca styphelioides  | 0.11                      | 12        | 20    |
|      |                                                                   |                          |                           | 60        | 100   |
|      | Ephemeral species                                                 | Carex appressa           | 3                         | 286       | 35    |
|      |                                                                   | Juncus usitatus          | 3                         | 286       | 35    |
|      |                                                                   | Lomandra longifolia      | 3                         | 286       | 30    |
|      |                                                                   |                          |                           | 857       | 100   |
|      | Grasses and sedges                                                | Aristida spp.            | 4                         | 218       | 5     |
|      |                                                                   | Bothriochloa decipiens   | 4                         | 218       | 5     |
|      |                                                                   | Chloris spp.             | 4                         | 218       | 5     |
|      |                                                                   | Danthonia spp            | 4                         | 435       | 10    |
|      |                                                                   | Dianella spp.            | 4                         | 435       | 10    |
|      |                                                                   | Dicanthium sericeum      | 4                         | 435       | 10    |
|      |                                                                   | Dichelachne micrantha    | 4                         | 435       | 10    |
|      |                                                                   | Elymus scaber            | 4                         | 218       | 5     |
|      |                                                                   | Eragrostis leptostachyos | 4                         | 218       | 5     |
|      |                                                                   | Entolasia marginata      | 4                         | 218       | 5     |
|      |                                                                   | Imperata cylindrica      | 4                         | 435       | 10    |
|      |                                                                   | Oplismenus spp.          | 4                         | 218       | 5     |
|      |                                                                   | Poa labillardieri        | 3                         | 162       | 5     |
|      |                                                                   | Themeda triandra         | 4                         | 435       | 10    |
|      |                                                                   |                          |                           | 4,298     | 100   |
|      | Subtotal plants                                                   |                          |                           | 5,215     |       |
| SPM1 | AREA = 23339 sqm                                                  |                          |                           |           |       |
|      | Trees                                                             | Acacia decurrens         | 0.11                      | 128       | 5     |
|      |                                                                   | Acacia parramattensis    | 0.11                      | 128       | 5     |
|      |                                                                   | Angophora floribunda     | 0.11                      | 642       | 25    |

| Zone | Location Type             | Species                      | Density (m <sup>2</sup> ) | Plant qty      | % mix      |
|------|---------------------------|------------------------------|---------------------------|----------------|------------|
|      |                           | Eucalyptus amplifolia        | 0.11                      | 642            | 25         |
|      |                           | Eucalyptus tereticornis      | 0.11                      | 1,027          | 40         |
|      |                           |                              |                           | <b>2,567</b>   | <b>100</b> |
|      | <b>Shrubs</b>             | Acacia falcata               | 4                         | 292            | 5          |
|      |                           | Acacia floribunda            | 4                         | 292            | 5          |
|      |                           | Breynia oblongifolia         | 4                         | 292            | 5          |
|      |                           | Bursaria spinosa             | 4                         | 292            | 5          |
|      |                           | Clerodendrum tomentosum      | 4                         | 117            | 2          |
|      |                           | Daviesia genistifolia        | 4                         | 583            | 10         |
|      |                           | Dillwynia sieberi            | 4                         | 583            | 10         |
|      |                           | Dodonea viscosa spp. cuneata | 4                         | 583            | 10         |
|      |                           | Goodenia ovata               | 4                         | 292            | 5          |
|      |                           | Hardenbergia violacea        | 4                         | 175            | 3          |
|      |                           | Indigophora australis        | 4                         | 583            | 10         |
|      |                           | Notelaea longifolia          | 4                         | 292            | 5          |
|      |                           | Ozothamnus diosmifolium      | 4                         | 583            | 10         |
|      |                           | Pultenea microphylla         | 4                         | 583            | 10         |
|      |                           | Rubus parviflorus            | 4                         | 292            | 5          |
|      |                           |                              |                           | <b>5,835</b>   | <b>100</b> |
|      | <b>Grasses and sedges</b> | Aristida ramosa or vagans    | 4                         | 5,057          | 5          |
|      |                           | Bothriochloa decipiens       | 4                         | 2,023          | 2          |
|      |                           | Capillipedium parviflorum    | 4                         | 3,034          | 3          |
|      |                           | Chloris truncata/ventricosa  | 4                         | 5,057          | 5          |
|      |                           | Danthonia spp                | 4                         | 10,115         | 10         |
|      |                           | Dianella spp                 | 4                         | 5,057          | 5          |
|      |                           | Dicanthium sericeum          | 4                         | 3,034          | 3          |
|      |                           | Dichelachne micrantha        | 4                         | 5,057          | 5          |
|      |                           | Elymus scaber                | 4                         | 2,023          | 2          |
|      |                           | Eragrostis leptostachyos     | 4                         | 5,057          | 5          |
|      |                           | Eriochloa pseudoachritcha    | 4                         | 5,057          | 5          |
|      |                           | Eremophila debilis           | 4                         | 5,057          | 5          |
|      |                           | Entolasia marginata          | 4                         | 5,057          | 5          |
|      |                           | Imperata cylindrica          | 4                         | 5,057          | 5          |
|      |                           | Lomandra longifolia          | 4                         | 5,057          | 5          |
|      |                           | Microlaeana stipoides        | 4                         | 10,115         | 10         |
|      |                           | Poa labillardieri            | 4                         | 5,057          | 5          |
|      |                           | Sorghum leiocladum           | 4                         | 5,057          | 5          |
|      |                           | Themeda triandra             | 4                         | 10,115         | 10         |
|      |                           |                              |                           | <b>101,148</b> | <b>100</b> |
|      |                           | <b>Subtotal plants</b>       |                           | <b>109,550</b> |            |

**TOTAL PLANTS WR ZONE 1**

**166,721**

## B2. Precinct 6 (P6) planting schedule

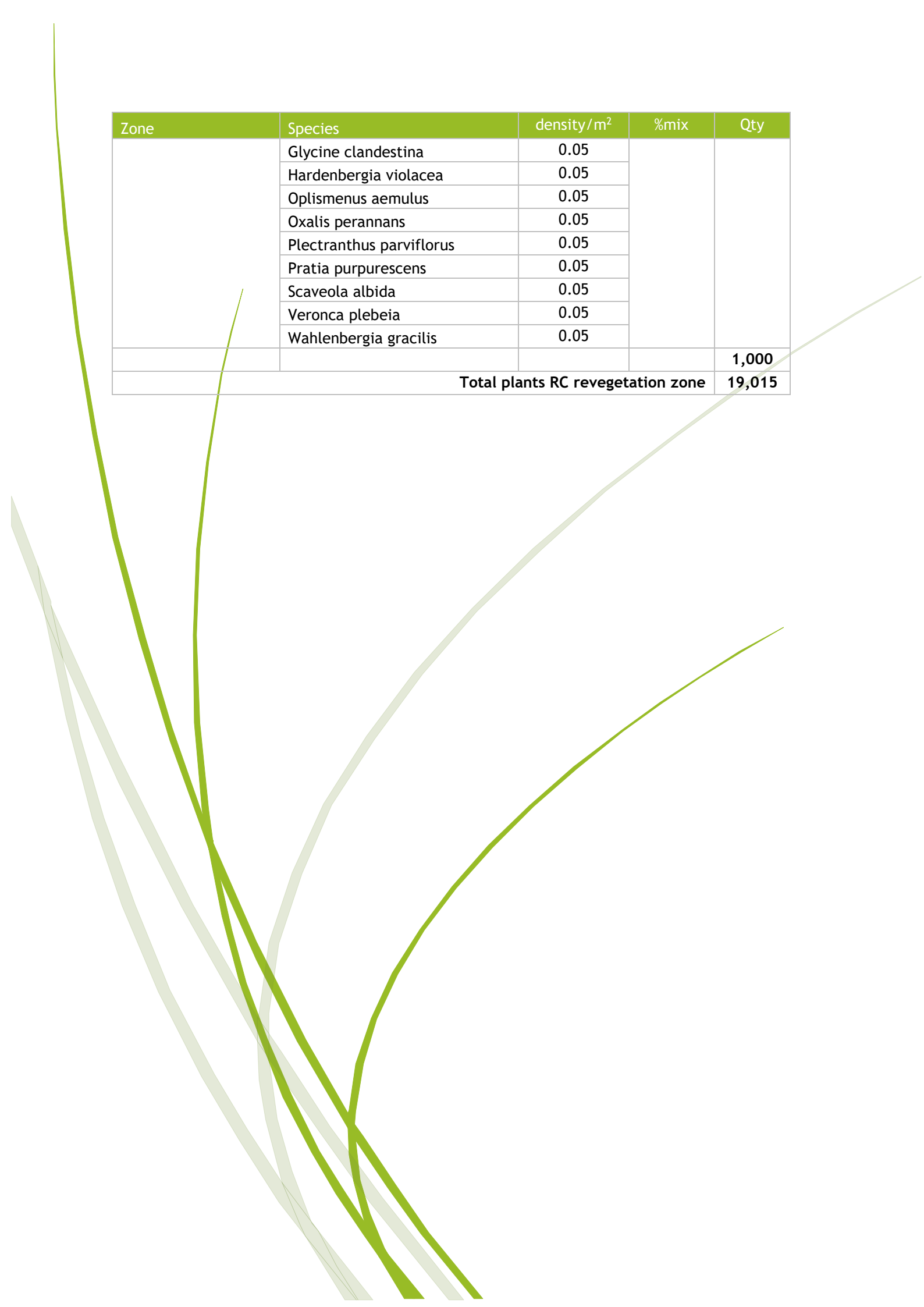
| Zone                                   | Species                      | density/m <sup>2</sup> | % mix        | Qty           |
|----------------------------------------|------------------------------|------------------------|--------------|---------------|
| <b>PC Zone 2b (7,550m<sup>2</sup>)</b> |                              |                        |              |               |
| <b>Trees / large shrubs</b>            | Acacia decurrens             | 0.0625                 | 5            | 24            |
|                                        | Acacia parramattensis        | 0.0625                 | 5            | 24            |
|                                        | Eucalyptus amplifolia        | 0.0625                 | 20           | 94            |
|                                        | Eucalyptus eugeniodes        | 0.0625                 | 20           | 94            |
|                                        | Eucalyptus moluccana         | 0.0625                 | 20           | 94            |
|                                        | Eucalyptus tereticornis      | 0.0625                 | 20           | 94            |
|                                        | Melaleuca stypheloidies      | 0.0625                 | 10           | 94            |
|                                        |                              |                        | <b>100</b>   | <b>519</b>    |
| <b>Smaller shrubs</b>                  | Breynia oblongifolia         | 0.25                   | 10           | 189           |
|                                        | Bursaria spinosa             | 0.25                   | 10           | 189           |
|                                        | Clerodendrum tomentosum      | 0.25                   | 10           | 189           |
|                                        | Daviesia genistifolia        | 0.25                   | 10           | 189           |
|                                        | Dillwynia sieberi            | 0.25                   | 10           | 189           |
|                                        | Dodonea viscosa spp. cuneata | 0.25                   | 10           | 189           |
|                                        | Goodenia ovata               | 0.25                   | 10           | 189           |
|                                        | Indigophora australis        | 0.25                   | 10           | 189           |
|                                        | Ozothamnus diosmifolium      | 0.25                   | 10           | 189           |
|                                        | Pultenea microphylla         | 0.25                   | 10           | 189           |
|                                        |                              |                        | <b>100</b>   | <b>1,888</b>  |
| <b>Grasses / sedges</b>                | Aristida ramosa or vagans    | 4                      | 3            | 906           |
|                                        | Austrodanthonia sp.          | 4                      | 5            | 1510          |
|                                        | Carex appressa               | 4                      | 5            | 1510          |
|                                        | Chloris truncata/ventricosa  | 4                      | 5            | 1510          |
|                                        | Cymbopogon refractus         | 4                      | 5            | 1510          |
|                                        | Dicanthium sericeum          | 4                      | 5            | 1510          |
|                                        | Dichelachne micrantha        | 4                      | 5            | 1510          |
|                                        | Eriochloa pseudoachritcha    | 4                      | 2            | 604           |
|                                        | Eremophila debilis           | 4                      | 5            | 1510          |
|                                        | Imperata cylindrica          | 4                      | 20           | 6040          |
|                                        | Lomandra longifolia          | 3                      | 10           | 3020          |
|                                        | Poa labillardieri            | 3                      | 10           | 2265          |
|                                        | Themeda triandra             | 4                      | 20           | 6040          |
|                                        |                              |                        | <b>100</b>   | <b>29,445</b> |
| <b>Herbs, scramblers, vines</b>        | Arthropodium spp             | 0.25                   | as available | <b>1,888</b>  |
|                                        | Burchardia umbellata         | 0.25                   |              |               |
|                                        | Brunoniella australis        | 0.25                   |              |               |
|                                        | Caesia parviflora            | 0.25                   |              |               |
|                                        | Clematis glycinoides         | 0.25                   |              |               |
|                                        | Dichopogon fimbriatus        | 0.25                   |              |               |
|                                        | Etinadia spp.                | 0.25                   |              |               |
|                                        | Glycine spp.                 | 0.25                   |              |               |
|                                        | Mentha diemenica             | 0.25                   |              |               |

| Zone                                   | Species                        | density/m <sup>2</sup> | % mix        | Qty           |
|----------------------------------------|--------------------------------|------------------------|--------------|---------------|
|                                        | Oplismenus spp.                | 0.25                   |              |               |
|                                        | Polymeria calycina             | 0.25                   |              |               |
|                                        | Scaveola albida                | 0.25                   |              |               |
|                                        | Solanum prinophyllum           | 0.25                   |              |               |
|                                        | Tricoryne elatior              | 0.25                   |              |               |
|                                        | Wahlenbergia spp               | 0.25                   |              |               |
|                                        |                                |                        |              | <b>1,888</b>  |
|                                        | <b>Total plants P6 Zone 2a</b> |                        |              | <b>33,740</b> |
|                                        |                                |                        |              |               |
| <b>P6 Zone 2b (1,450m<sup>2</sup>)</b> |                                |                        |              |               |
| <b>Grasses / sedges</b>                | Dianella longifolia            | 4                      | 20           | 1,160         |
|                                        | Echinopogon ovatus             | 4                      | 10           | 580           |
|                                        | Juncus usitatus                | 4                      | 10           | 580           |
|                                        | Imperata cylindrica            | 4                      | 20           | 1,160         |
|                                        | Lomandra longifolia            | 3                      | 20           | 870           |
|                                        | Entolasia marginata            | 4                      | 10           | 580           |
|                                        | Microlaeana stipoides          | 4                      | 10           | 580           |
|                                        |                                |                        | <b>100</b>   | <b>5,510</b>  |
| <b>Herbs, scramblers, vines</b>        | Brunoniella australis          | 0.25                   | as available | 363           |
|                                        | Clematis glycinoides           | 0.25                   |              |               |
|                                        | Dichondra repen                | 0.25                   |              |               |
|                                        | Einadia spp.                   | 0.25                   |              |               |
|                                        | Glycine spp.                   | 0.25                   |              |               |
|                                        | Parsonsia straminea            | 0.25                   |              |               |
|                                        |                                |                        |              | <b>363</b>    |
|                                        |                                |                        |              |               |
|                                        | <b>Total plants P6 Zone 2B</b> |                        |              | <b>5,873</b>  |
|                                        |                                |                        |              |               |
|                                        | <b>TOTAL PLANTS P6 ZONE 2</b>  |                        |              | <b>39,613</b> |

### B3. Ropes Creek (RC planting schedule)

| Zone                                           | Species                     | density/m <sup>2</sup> | %mix         | Qty           |
|------------------------------------------------|-----------------------------|------------------------|--------------|---------------|
| <b>RC reconstruction (20,561m<sup>2</sup>)</b> |                             |                        |              |               |
| <b>Trees/large shrubs</b>                      | Acacia decurrens            | 0.05                   | 5            | 50            |
|                                                | Acacia parramattensis       | 0.05                   | 5            | 50            |
|                                                | Angophora floribunda        | 0.05                   | 15           | 150           |
|                                                | Eucalyptus amplifolia       | 0.05                   | 15           | 150           |
|                                                | Eucalyptus eugenioides      | 0.05                   | 15           | 150           |
|                                                | Eucalyptus moluccana        | 0.05                   | 15           | 150           |
|                                                | Eucalyptus tereticornis     | 0.05                   | 15           | 150           |
|                                                | Melaleuca styphelioides     | 0.05                   | 15           | 150           |
|                                                |                             |                        | <b>100</b>   | <b>1,000</b>  |
| <b>Smaller shrubs</b>                          | Acacia floribunda           | 0.20                   | 8            | 328           |
|                                                | Breynia oblongifolia        | 0.20                   | 10           | 411           |
|                                                | Clerodendrum tomentosum     | 0.20                   | 10           | 411           |
|                                                | Daviesia genistifolia       | 0.20                   | 8            | 328           |
|                                                | Daviesia ulicifolia         | 0.20                   | 8            | 328           |
|                                                | Dillwynia sieberi           | 0.20                   | 8            | 328           |
|                                                | Dodonaea spp.               | 0.20                   | 10           | 411           |
|                                                | Goodenia ovata              | 0.20                   | 10           | 411           |
|                                                | Indigofera australis        | 0.20                   | 10           | 411           |
|                                                | Ozothamanthus diosmifolium  | 0.20                   | 10           | 411           |
|                                                | Pultenea spp.               | 0.20                   | 8            | 328           |
|                                                |                             |                        | <b>100</b>   | <b>4,106</b>  |
| <b>Grasses</b>                                 | Aristida ramosa/vagans      | 2                      | 5            | 2,056         |
|                                                | Cymbogon refractus          | 2                      | 10           | 4,112         |
|                                                | Chloris truncata/ventricosa | 2                      | 5            | 2,056         |
|                                                | Dicanthium sericeum         | 2                      | 5            | 2,056         |
|                                                | Dichelachne micrantha       | 2                      | 10           | 4,112         |
|                                                | Echinopogon ovata           | 2                      | 10           | 4,112         |
|                                                | Eriochloa pseudochritcha    | 2                      | 5            | 2,056         |
|                                                | Imperata cylindrica         | 2                      | 10           | 4,112         |
|                                                | Microlaeana stipoides       | 2                      | 10           | 4,112         |
|                                                | Poa labillardieri           | 2                      | 10           | 4,112         |
|                                                | Rytidosperma racemosum      | 2                      | 10           | 4,112         |
|                                                | Themeda triandra            | 2                      | 10           | 4,112         |
|                                                |                             |                        | <b>100</b>   | <b>41,120</b> |
| <b>Sedges/Sedge-like</b>                       | Lomandra longifolia         | 1                      | 50           | 10,281        |
|                                                | Dianella longifolia         | 1                      | 50           | 10,281        |
|                                                |                             |                        | <b>100</b>   | <b>20,561</b> |
| <b>Herbs</b>                                   | Arthropodium spp.           | 0.05                   | as available | 1,000         |
|                                                | Bulbine bulbosa             | 0.05                   |              |               |
|                                                | Clematis spp.               | 0.05                   |              |               |
|                                                | Desmodium varians           | 0.05                   |              |               |
|                                                | Dichondra repens            | 0.05                   |              |               |

| Zone                                           | Species                     | density / m <sup>2</sup> | %mix         | Qty    |
|------------------------------------------------|-----------------------------|--------------------------|--------------|--------|
|                                                | Glycine clandestina         | 0.05                     |              |        |
|                                                | Hardenbergia violacea       | 0.05                     |              |        |
|                                                | Oplismenus aemulus          | 0.05                     |              |        |
|                                                | Oxalis perannans            | 0.05                     |              |        |
|                                                | Plectranthus parviflorus    | 0.05                     |              |        |
|                                                | Pratia purpurescens         | 0.05                     |              |        |
|                                                | Scaveola albida             | 0.05                     |              |        |
|                                                | Veronca plebeia             | 0.05                     |              |        |
|                                                | Wahlenbergia gracilis       | 0.05                     |              |        |
|                                                |                             |                          |              | 1,000  |
| Total plants RC reconstruction                 |                             |                          |              | 67,787 |
| RC Regeneration (30% of 19,731m <sup>2</sup> ) |                             |                          |              |        |
| Smaller shrubs                                 | Acacia floribunda           | 0.20                     | 8            | 23     |
|                                                | Breynia oblongifolia        | 0.20                     | 10           | 30     |
|                                                | Clerodendrum tomentosum     | 0.20                     | 10           | 30     |
|                                                | Daviesia genistifolia       | 0.20                     | 8            | 23     |
|                                                | Daviesia ulicifolia         | 0.20                     | 8            | 23     |
|                                                | Dillwynia sieberi           | 0.20                     | 8            | 23     |
|                                                | Dodonaea spp.               | 0.20                     | 10           | 30     |
|                                                | Goodenia ovata              | 0.20                     | 10           | 30     |
|                                                | Indigofera australis        | 0.20                     | 10           | 30     |
|                                                | Ozothamanthus diosmifolium  | 0.20                     | 10           | 30     |
|                                                | Pultenea spp.               | 0.20                     | 8            | 23     |
|                                                |                             |                          | 100          | 295    |
| Grasses                                        | Aristida ramosa/vagans      | 2                        | 5            | 590    |
|                                                | Cymbogon refractus          | 2                        | 10           | 1,180  |
|                                                | Chloris truncata/ventricosa | 2                        | 5            | 590    |
|                                                | Dicanthium sericeum         | 2                        | 5            | 590    |
|                                                | Dichelachne micrantha       | 2                        | 10           | 1,180  |
|                                                | Echinopogon ovata           | 2                        | 10           | 1,180  |
|                                                | Eriochloa pseudochritcha    | 2                        | 5            | 590    |
|                                                | Imperata cylindrica         | 2                        | 10           | 1,180  |
|                                                | Microlaeana stipoides       | 2                        | 10           | 1,180  |
|                                                | Poa labillardieri           | 2                        | 10           | 1,180  |
|                                                | Rytidosperma racemosum      | 2                        | 10           | 1,180  |
|                                                | Themeda triandra            | 2                        | 10           | 1,180  |
|                                                |                             |                          | 100          | 11,800 |
| Sedges/Sedge-like                              | Lomandra longifolia         | 1                        | 50           | 2,960  |
|                                                | Dianella longifolia         | 1                        | 50           | 2,960  |
|                                                |                             |                          | 100          | 5,920  |
| Herbs                                          | Arthropodium spp.           | 0.05                     | as available | 295    |
|                                                | Bulbine bulbosa             | 0.05                     |              |        |
|                                                | Clematis spp.               | 0.05                     |              |        |
|                                                | Desmodium varians           | 0.05                     |              |        |
|                                                | Dichondra repens            | 0.05                     |              |        |



| Zone                              | Species                  | density /m <sup>2</sup> | %mix | Qty    |
|-----------------------------------|--------------------------|-------------------------|------|--------|
|                                   | Glycine clandestina      | 0.05                    |      |        |
|                                   | Hardenbergia violacea    | 0.05                    |      |        |
|                                   | Oplismenus aemulus       | 0.05                    |      |        |
|                                   | Oxalis perannans         | 0.05                    |      |        |
|                                   | Plectranthus parviflorus | 0.05                    |      |        |
|                                   | Pratia purpurescens      | 0.05                    |      |        |
|                                   | Scaveola albida          | 0.05                    |      |        |
|                                   | Veronca plebeia          | 0.05                    |      |        |
|                                   | Wahlenbergia gracilis    | 0.05                    |      |        |
|                                   |                          |                         |      | 1,000  |
| Total plants RC revegetation zone |                          |                         |      | 19,015 |

## Appendix C. Consultation



**From:** [Nikki Matthews](#)  
**To:** [Guy Smith](#)  
**Cc:** [Kelly McNicol](#); [Chris Ritchie](#); [Kym Dracopoulos](#); [Luke Ridley](#); [Kathryn Duchatel](#)  
**Subject:** RE: Oakdale South SSD6917, Condition E46 - Biodiversity Credits  
**Date:** Thursday, 21 March 2019 4:05:09 PM  
**Attachments:** [image014.png](#)  
[image015.png](#)  
[image016.png](#)

---

Hi Guy,

The Department has reviewed your enquiry and consulted with OEH on the matter.

To address Condition E46 of SSD 6917, the following is suggested:

- Purchase of appropriate BBAM credits from the market.
- Obtain a statement of reasonable equivalence to convert the existing biobanking based credit obligation into BAM credits and:
  - Enter into a biodiversity stewardship agreement under the *Biodiversity Conservation Act 2016* on a parcel of land to generate the relevant credit types, then retire the relevant credits. This will require application of the Biodiversity Assessment Method (BAM) by an accredited assessor. The BCT now manages the biodiversity stewardship agreement process.
  - Pay an amount equivalent to those credits into the Biodiversity Conservation Trust.

Information on applying for an assessment of reasonable equivalence is available here:  
<https://www.environment.nsw.gov.au/biodiversity/reasonable-equivalence-assessment.htm>

Please be aware that the above may require a further modification to SSD 6917, particularly in relation to Condition B4(g) as you pointed out in your letter.

If you have any questions or wish to discuss the above further, please don't hesitate to contact me at the details below.

Regards,

**Nikki Matthews**  
Planning Officer  
Industry Assessments

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T 02 8289 6679 | E [nikki.matthews@planning.nsw.gov.au](mailto:nikki.matthews@planning.nsw.gov.au)



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**From:** Guy Smith <[Guy.Smith@goodman.com](mailto:Guy.Smith@goodman.com)>  
**Sent:** Monday, 25 February 2019 3:07 PM  
**To:** Chris Ritchie <[Chris.Ritchie@planning.nsw.gov.au](mailto:Chris.Ritchie@planning.nsw.gov.au)>

**Cc:** Kym Dracopoulos <[Kym.Dracopoulos@goodman.com](mailto:Kym.Dracopoulos@goodman.com)>; Luke Ridley  
<[Luke.Ridley@goodman.com](mailto:Luke.Ridley@goodman.com)>; Kathryn Duchatel <[kat@ecologique.com.au](mailto:kat@ecologique.com.au)>  
**Subject:** Oakdale South SSD6917, Condition E46 - Biodiversity Credits

Hi Chris,

Good to chat earlier. As discussed, please see attached our letter explaining the difficulty we are having retiring our ecosystem credits we're obliged to under Condition E46 of SSD6917, for Oakdale South

Be grateful if you're able to review and let us know whether you can assist.

Thanks for your help.

Guy



+ **Guy Smith**  
Planning Manager

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Goodman  
Level 17  
60 Castlereagh Street  
Sydney NSW 2000  
Attn: Kym Dracopoulos  
CC: Brendon Quinn, Luke Ridley

February 21, 2019

## Oakdale South Estate - biodiversity stewardship agreement

Dear Kym,

As discussed there are two outstanding issues in fulfilling Oakdale South Estate (OSE) SSDA 6917 consent condition E46. Condition E46 as amended in SSDA 6917 MOD 6 requires the retirement of 158 ecosystem credits to offset the removal of native vegetation on-site.

As you are aware, 12 ecosystem credits<sup>1</sup> have already been retired by Goodman with the remaining 146 ecosystem credits intended to be retired by way of onsite offsetting and entering into a Biodiversity Stewardship Agreement (BSA) with the Biodiversity Conservation Trust (BCT).

The two outstanding issues are as follows:

1. Biodiversity credit obligations calculated under the provisions of the repealed *Threatened Species Conservation Act 1995* (TSC Act) may need to be assessed for reasonable equivalence of biodiversity credits under the new *Biodiversity Conservation Act 2016* (BC Act), and
2. The BCT have advised that the Biodiversity Offsetting Strategy (BOS) prepared for OSE is no longer able to be used to support a Biodiversity Stewardship Agreement (BSA) application. This is due to the transitional period for lodgment of biobanking agreements under the repealed TSC Act having closed.

Consultation with the NSW Office of Environment and Heritage (OEH)<sup>2</sup> confirmed that biobanking agreements under the repealed TSC Act are no longer being accepted.

### Biodiversity credit obligations

In accordance with the *Biodiversity Conservation (Savings and Transitional) Regulation 2017* Part 6 Clause 22 requires that obligations to retire biodiversity credits under the repealed TSC Act become obligations to retire biodiversity credits under the BC Act.

It is noted that Clause 22 (3) states that:

*“The Environment Agency Head **may**, for the purposes of this clause, determine the biodiversity credits under the new Act that are reasonably equivalent to the remaining biodiversity credits under the Threatened Species Conservation Act 1995 that remain to be retired.”*

---

<sup>1</sup> Goodman actually purchased 13 ecosystem credits but only 12 were required as amended in SSD 6917 MOD 6.

<sup>2</sup> Telephone discussion 20/02/2019 with Michele Cox, OEH.

The process to have reasonable equivalence assessed requires an application be submitted to the OEH, who thereafter will provide a statement which sets out the number and class of biodiversity credits that are reasonably equivalent under the BC Act.

No additional investigations or data collection is required. The form provided is able to be populated with information already at hand.

The implications of a reasonable equivalence assessment are not certain, i.e. whether an increased credit obligation may result.

### BSA application

BSA applications will not be accepted unless submitted via the Biodiversity Obligations and Agreements Management System (BOAMS). In order to submit a BSA application via the BOAMS, additional data would need to be collected in accordance the new Biodiversity Assessment Method (BAM).

This will require additional field and office based work to collect data from survey sites, enter the data into the BOAMS, prepare a Biodiversity Stewardship Site Assessment Report (BSSAR) and resubmit the application via BOAMS.

However, it should be noted that Goodman would have been in a position to enter into a timely biobanking agreement if not required to submit Section 96 SSDA modifications to amend the BOS in response to both the following aspects:

1. OEH's concern that a Vegetation Management Plan (VMP) that accompanied the SSDA, which overlapped with the proposed biobanking area, constituted an 'existing' conservation obligation and in their opinion would preclude the overlapping area from its end use as a biobanking area.

At the time, the VMP had been prepared for two reasons:

- a) Restoration of a riparian corridor other side of a realigned 1<sup>st</sup> order tributary to Ropes Creek, and
- b) Also considered the objects of the *Water Management Act 2000* (WM Act) by demonstrating that the Ropes Creek riparian corridor (within the proposed biobanking area) would be conserved and restored.

To mitigate this issue the Department of Planning and Environment (DP&E) issued consent condition no. E47(c), which required:

- o Prior to the issue of any Construction Certificate that includes creek realignment works, the Applicant shall submit a revised VMP. The revised VMP shall remove any geographic overlap with Figure 4.3 in the Biodiversity Offset Strategy, prepared by Cumberland Ecology, dated 16 September 2015.

DP&E's consent condition E47 noted that: The intent of this condition is to ensure the 5 year vegetation management restoration/rehabilitation measures proposed under the VMP are not included within the proposed biobank area to avoid precluding the creation of the proposed biobank site under clause 11 of the *Threatened Species Conservation (Biodiversity Banking) Regulation 2008*.

During the assessment of the OSE (SSD 6917), OEH advised it preferred an approach where the BOS encompassed both the proposed offset area and riparian corridor to ensure the lands are managed comprehensively.

2. As a consequence, Goodman submitted a revised VMP and BOS (SSD 6917 MOD 6) to reflect the revised management zones in the proposed biobanking and VMP management areas.

This was done in consultation with OEH and the now Natural Resource Access Regulatory authority (NRAR). The NRAR confirmed they had no issue with the VMP no longer applying to that part of the

Ropes Creek corridor as in their view the objects of the WM Act were being met by the application of a biobanking agreement and in perpetuity conservation and management of the subject riparian corridor.

Feedback provided to the DP&E from OEH (in April 2018) in relation to MOD 6 noted that “.. *the reference to a biobank agreement should now be considered to be a stewardship agreement under the BC Act as the transitional period for the lodgment of biobanking agreements under the TSC Act had closed.* “

Given the sole purpose of MOD 6 was to amend the BOS, at no time did either the DP&E or OEH point out that the BOS would be in effect obsolete. Only OEH feedback stating the ‘reference’ to such.

This is of particular issue, as the subject of the modification was only to address amendments to the BOS at the bequest of OEH. MOD 6 was approved by the DP&E in June 2018, some five months after the transitional period for lodgment of biobanking agreements had closed.

It should also be noted that the implementation of the BOS has been conditioned within the original SSDA, i.e. Consent condition B4(g). The Applicant shall carry out the Development in accordance with the Management and Mitigation Measures provided in Appendix 3. These measures included the creation of the offset area as specified in the BOS.

## Conclusion

Given Goodman has fulfilled all necessary actions as required by DP&E and OEH and wishes to have this matter finalised as soon as possible, a way forward may be to seek a ruling from the Environment Minister given the circumstances. The Minister is responsible for the BC Act and will be the only person able to decide on how these matters can be resolved.

A ruling on both the matters could be sought:

1. The outstanding biodiversity credit obligation of 148 ecosystem credits remain as such, without the need for a reasonable equivalent assessment<sup>3</sup>, and
2. The existing and approved MOD 6 BOS remain valid for use in entering a BSA agreement without the need to undertake additional assessment.

An additional consideration will be that the BSA application and fee was lodged and paid for before the deadline after which a reduced discount rate would apply to the total fund deposit. It would be reasonable to request that the discounted rate prior to the deadline applies to the agreement once it can be established.

Yours faithfully



Kat Duchatel

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<sup>3</sup> “The Environment Agency Head **may**, for the purposes of this clause, determine the biodiversity credits under the new Act that are reasonably equivalent to the remaining biodiversity credits under the Threatened Species Conservation Act 1995 that remain to be retired.”



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