

Biodiversity Management Plan

Wee Waa High School

105-107 Mitchell St, Wee Waa NSW

NCA23R158276

10 January 2024



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Biodiversity Management Plan

Wee Waa High School 105-107 Mitchell St, Wee Waa NSW

Kleinfelder Project: 24002459

Kleinfelder Document: NCA23R158276

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Document Control:

Version	Description	Date
1.0	Draft	22 September 2023
2.0	Final	9 November 2023
2.1	Final	6 December 2023
2.2	Final	10 January 2024
Prepared	Reviewed	Endorsed

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EXECUTIVE SUMMARY

The Wee Waa High School (WWHS) is undertaking a redevelopment, on a new site, that will include new infrastructure and buildings, the refurbishment of buildings, and associated landscaping. A Biodiversity Management Plan (BMP) is required for the WWHS. This is required under Condition D36 of the SSD-21854025 for the WWHS that requires the BMP must address, but not be limited to, the conditions in **Table 1**.

Table 1: Compliance Table for SSD-21854025 Condition D36

Condition	Compliance
Prepared by a suitably qualified and experienced ecologist or bushland regeneration expert	Prepared by Dr Kevin Wormington (PhD Ecology, BAsc (Environmental Science). Kevin has over 25 years of experience in wildlife ecology and wildlife management in Queensland and NSW. Cassandra Bugir, PhD has been working in terrestrial and aquatic ecology for 5 years in NSW. CVs in Appendix 1.
Prepared in consultation with Environment and Heritage Group (EHG).	The draft documents of the BMP were sent to the EHG for their comments which were received and then discussed with EHG. The Final version of the report was accepted by EHG (Appendix 5).
Comply with the relevant recommendations of the Biodiversity Development Assessment Report V8, prepared by Ecological Australia and dated 22 August 2022.	Management recommendations from the BDAR will be incorporated into Section 4.2 and 4.4 of this BMP.
Include targeted management actions for maintaining the nominated future vegetation integrity score for all partial impact zones assessed in the Biodiversity Development Assessment Report V8, prepared by Ecological Australia and dated 22 August 2022	Targeted management actions for maintaining the nominated future Vegetation Score will be incorporated into Section 5 of this BMP.
Include a program to monitor and report on the effectiveness of the above measures which includes tailored, quantitative performance measures and targets, completion criteria, monitoring and trigger points for corrective action which adhere to the SMART principles (specific, measurable, achievable, realistic, timely)	The monitoring program containing the required elements in the condition column will be in Sections 5 of this BMP.
Meeting held with EHG on the 16 November 2023.	The meeting discussed the best way to meet the requirements of the BMP. The BMP was updated and sent to EHG on the 24 November and was accepted by EHG. The Acceptance has been added in Appendix 5



TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
1 INTRODUCTION	1
1.1 OVERVIEW	1
1.2 SITE DESCRIPTION	1
1.3 PROPOSED DEVELOPMENT	2
1.4 LEGISLATION AND GUIDELINES	2
1.5 INFORMATION SOURCES	2
2 BIODIVERSITY VALUES.....	4
2.1 VEGETATION COMMUNITIES	4
2.2 FLORA SPECIES	4
2.3 FAUNA SPECIES	6
2.3.1 Habitat	6
2.3.2 Species	6
2.4 PRIORITY INVESTMENT AREAS.....	6
3 KEY THREATS.....	7
3.1 WEED INCURSIONS.....	7
3.2 EXCESSIVE VEGETATION CLEARING.....	7
3.2.1 Erosion and Sedimentation.....	7
3.2.2 Increased Nutrient Loading.....	7
3.2.3 Lighting, Noise, Dust and Water Pollution	8
4 BIODIVERSITY MANAGEMENT DURING CONSTRUCTION PHASES	9
4.1 OVERVIEW	9
4.2 VEGETATION AND FAUNA MANAGEMENT	9
4.3 HABITAT AUGMENTATION (OPTIONAL).....	11
4.4 WEEDS, SEDIMENT AND PEST MANAGEMENT FOR CONSTRUCTION PHASE.....	12
4.5 UNEXPECTED FINDS	13
4.6 MONITORING PROGRAM.....	13
4.6.1 Overview.....	13
4.6.2 General Monitoring	13
4.6.3 Reporting	13
5 VEGETATION MANAGEMENT PLAN OPERATIONAL PHASE.....	14
5.1 ESTABLISHMENT OF NATURAL RETAINED LANDSCAPE	14
5.2 MANAGEMENT FOR NATURAL RETAINED AREA.....	14
5.2.1 Overview	14
5.2.2 Monitoring Program Methods	14
5.2.3 Baseline Data	16
5.2.4 Performance Criteria.....	18
5.2.5 Action Triggers.....	18
5.2.6 Corrective Actions (Management)	18
5.2.7 Response.....	20
5.3 WEED MANAGEMENT	21
5.3.1 Overview	21
5.3.2 Monitoring Program Methods	21
5.3.3 Baseline Data	21
5.3.4 Performance Criteria.....	21
5.3.5 Action Trigger	21



5.3.6	Corrective Actions (Management)	22
5.3.7	Response	22
6	REPORTING	23
7	REFERENCES	24
	ECOLOGIST	3
	PROJECT EXPERIENCE	3

TABLES

Table 1:	Compliance Table for SSD-21854025 Condition D36	i
Table 2:	Weed species requiring control within the Development Site	7
Table 3:	Generic Safeguards for Vegetation and Fauna Prior to Construction	9
Table 4:	Generic Safeguards for Vegetation and Fauna During Construction	10
Table 5:	Generic Safeguards for Vegetation and Fauna Post Construction	11
Table 6:	Generic Safeguards for Weed, Sediment and Pest Management prior to Construction	12
Table 7:	Generic Safeguards for Weed, Sediment and Pest Management during Construction	12
Table 8:	Monitoring and Reporting Summary	13
Table 9:	Predicted Future Scores for the NRL	16
Table 10:	Action Trigger Scores for the NRL	18
Table 11:	Corrective Actions Required if Trigger Score is activated	19

FIGURES

Figure 1:	Wee Waa School Development and Vegetation Zones	3
Figure 2:	Plant Community Types	5
Figure 3:	Landscape Plan	17

APPENDICES

Appendix 1:	Ecologists CV
Appendix 2:	Native Flora List
Appendix 3:	Exotic Species List
Appendix 4:	Landscape Plan
Appendix 5:	BMP Approval



1 INTRODUCTION

1.1 OVERVIEW

The Wee Waa High School (WWHS) is undertaking a redevelopment, on a new site, to modernise the outdated infrastructure and buildings on the old site and increase its capacity. Kleinfelder Australia Pty Ltd was engaged by TSA to prepare a Biodiversity Management Plan (BMP) for the project at WWHS. The BMP is required under Condition D36 of SSD-21854025 for the WWHS.

Condition D36 States:

- a) *prepared by a suitably qualified and experienced ecologist or bushland regeneration expert;*
- b) *prepared in consultation with the Environmental Heritage Group (EHG);*
- c) *comply with the relevant recommendations of the Biodiversity Development Assessment Report V8, prepared by Ecological Australia and dated 22 August 2022; and*
- d) *include targeted management actions for maintaining the nominated future vegetation integrity score for all partial impact zones assessed in the Biodiversity Development Assessment Report V8, prepared by Ecological Australia and dated 22 August 2022; and*
- e) *include a program to monitor and report on the effectiveness of the above measures which includes tailored, quantitative performance measures and targets, completion criteria, monitoring and trigger points for corrective action which adhere to the SMART principles (specific, measurable, achievable, realistic, timely).*

The BMP should address, but not be limited to, the following:

- Provide information and maps that define the biodiversity values across the site.
- Outline priority investment areas on-site where biodiversity will benefit from active management and restoration.
- Map potential areas for management of threatened and significant species.
- Measures to minimise the loss of key fauna habitat, including tree hollows.
- Measures to minimise the impacts to fauna on site, including conducting fauna pre-clearance surveys prior to vegetation clearing, and building/structure demolition.
- Engagement of an appropriately qualified ecologist with experience in capturing native wildlife, to be on site for all vegetation removal activities.
- Controlling weeds and feral pests.
- An Unexpected Finds Procedure, detailing procedures and management measures to be implemented if flora and fauna is uncovered in any area not identified in the updated Biodiversity Assessment Report (BAR).
- Measures to ensure biodiversity values, not intended to be impacted, are protected, including barriers and mapping of protected/'no-go' areas.
- A program to monitor the effectiveness of the measures in the BMP.

1.2 SITE DESCRIPTION

The new Wee Waa High School (Study Area) is located at 105-107 Mitchell St., Wee Waa NSW on Lot 1 DP577294 and Lot 2 DP550633 (**Figure 1**). The Study Area is approximately 2 ha in size, and the subject land is approximately 1.66 ha in size and occurs within the Narrabri Shire local government area. The terrain is flat, low lying and would have originally been prone to flooding prior to installation of the towns levee bank. Large open grasslands feature across most of the site, with irregular patches of remnant woodland throughout. A constructed drainage line intersects the subject land from the west to east. The entirety of the subject land is zoned *R1 General Residential* under the Narrabri Local Environmental Plan 2012 and occurs within the Darling Riverine Plains IBRA region, Castlereagh IBRA sub-region.



1.3 PROPOSED DEVELOPMENT

The proposed development seeks to upgrade Wee Waa High School. The upgrade consists of the following alterations and additions:

- Construction of a new high school in the form of a two-storey building.
- Construction of an Indigenous learning centre, sporting fields, agricultural plots and associated civil and utilities works.
- Construction footprint indicating clearing associated with temporary construction facilities and infrastructure.
- The proposed development areas are detailed in **Figure 2**.

1.4 LEGISLATION AND GUIDELINES

The following Commonwealth and State Government legislation and policies and Local Government environment and control plans have been considered in the preparation of this BMP:

- *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).
- *Environment Planning and Assessment Act 1979* (EP&A Act).
- *Biosecurity Act 2015* (Biosecurity Act).
- *Biosecurity Regulation 2017* (BR).
- *Biodiversity Conservation Act 2016* (BC Act).
- *Biodiversity Conservation Regulation 2017* (BCR).
- *Fisheries Management Act 1994*.
- *Local Land Services Amendment Act 2016*.
- *Water Management Act 2000*.

Local Environmental Planning Instruments include:

- State Environmental Planning Policy (SEPP: Koala Habitat Protection) 2021 (NSW).
- SEPP (State and Regional Development) 2011.
- SEPP (Educational Establishments and Child Care Facilities) 2017.
- Narrabri Local Environmental Plan (2012).
- Wee Waa Levee Risk Management Plan and Study Report (2019).

1.5 INFORMATION SOURCES

Information sources utilised in the development of this management plan include:

- Biodiversity Development Assessment Report (BDAR) for the Wee Waa High School (Eco Logical 2022).
- BioNet Vegetation Classification System (Accessed August and October 2021).
- BioNet/Atlas of NSW Wildlife 5km database search (Department of Planning, Industry, and Environment, DPIE 2020a; accessed July 2021).
- Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) Protected Matters Search Tool 5km database search (Department of Agriculture, Water, and Environment DAWE 2020a; accessed August 2011).
- Threatened Species profiles and recovery plans (Accessed October 2021).
- Biodiversity Assessment Methodology Calculator (Accessed October 2021).
- Threatened Biodiversity Data Collection (Accessed October 2021).
- SSD-21854025 Conditions for Wee Waa High School.
- NSW Government Biodiversity Values Map (DPIE 2020c; Accessed on 6 August 2021).
- Previous vegetation mapping datasets.
- State Vegetation Type Map: Border Rivers Gwydir/Namoi Region Version 2.0. VIS_ID 4467 (DPIE 2018).
- Threatened Species Guidelines (Accessed October 2021).

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Legend

- Study Area
- 1500m Buffer
- Native Vegetation Extent
- Local Government Area
- IBRA Subregions

0 75 150 300 450 600 750
Scale 1:22,000 Meters



PROJECT REFERENCE: 24002459
DATE DRAWN: 25/09/2023 Version 1
DRAWN BY: RHourigan
DATA SOURCE: ESRI - 2023

Location Map

TSA Management Pty Ltd
BMP - Wee Waa High School
Wee Waa, NSW 2388

FIGURE:

1





2 BIODIVERSITY VALUES

2.1 VEGETATION COMMUNITIES

A desktop assessment and a flora survey were conducted for vegetation communities and threatened plants at the WWHS in the BDAR. The field surveys determined that the vegetation within the site is characterised as mostly degraded. The vegetation within the Study Area was assigned to two (2) vegetation zones based on floristics and vegetation condition (**Figure 2**). These were:

- **Vegetation Zone 1:** PCT 40- Coolibah open woodland wetland with chenopod/grassy ground cover on grey and brown clay floodplains (No canopy). Groundcover consists of: *Alternanthera angustifolia*, Queensland Bluegrass (*Dichanthium sericeum* subsp. *sericeum*), Common Nardoo (*Marsilea drummondii*), *Sclerolaena* spp.
- **Vegetation Zone 2:** PCT 40- Coolibah open woodland wetland with chenopod/grassy ground cover on grey and brown clay floodplains (Moderate). Groundcover consists of: *Alternanthera angustifolia*, Queensland Bluegrass (*Dichanthium sericeum* subsp. *sericeum*), Common Nardoo (*Marsilea drummondii*), *Sclerolaena* spp. Canopy and mid-storey consist of: Coolibah (*Eucalyptus coolibah* subsp. *coolibah*), Cooba (*Acacia salicina*), and Western Boobialla (*Myoporum montanum*).

The Native Vegetation within the Development Site has one threatened vegetation communities: *Coolibah-Black Box Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Penepplain and Mulga Lands Bioregions*.

Native vegetation communities were identified within the Development Site. Vegetation Zone 1 was characterised as PCT40 but with no canopy and consists of native groundcover (*Alternanthera angustifolia*, Queensland Bluegrass (*Dichanthium sericeum* subsp. *sericeum*), Common Nardoo (*Marsilea drummondii*), *Sclerolaena* spp.) interspersed with exotics- Rhodes Grass (*Chloris gayana*) and African Lovegrass (*Eragrostis curvula*). A total of 0.63 ha of Vegetation Zone 1 will be impacted as part of the proposed development. Vegetation Zone 2 was characterised as PCT40 with moderate canopy of Coolibah, Cooba, and Western Boobialla but contained native groundcover interspersed with exotics- Rhodes Grass (*Chloris gayana*), African Lovegrass (*Eragrostis curvula*), and African Boxthorn (*Lycium ferocissimum*). A total of 1.03 ha of Vegetation Zone 2 will be impacted as part of the proposed development. Section 3.4 of the WWHS BDAR contains full details of some impacts to threatened ecological communities, although the land is degraded; Proposed mitigation measures to minimise indirect impacts to vegetation are detailed (Section 6.1.1 WWHS BDAR). The proposed development does not pose a risk of SAIL to any entities.

2.2 FLORA SPECIES

Habitat for threatened flora species was generally absent within the WWHS grounds, given the vegetation was a mixture of native and exotic species.

The desktop assessment determined that there were 4 threatened flora species- Creeping Tick-trefoil (*Desmodium campylocaulon*), Finger Panic Grass (*Digitaria porrecta*), Belson's Panic (*Homopholis belsonii*), Winged Peppergrass (*Lepidium monoplacoides*) which were 'assumed present' in the vicinity (5 km) of the WWHS, but the Likelihood of Occurrence determined that all species had a nil or low likelihood to occur at the WWHS. Details are provided in Appendix F of the WWHS BDAR as well as **Appendix 2** of this report.

The flora survey did not find any threatened flora at the WWHS. However, a total of 62 flora species were identified during desktop search and field surveys in three vegetation strata. Forty flora species were native, and 21 species were exotic to the area or considered weed species.

The Assessment of Impacts for threatened flora undertaken in the WWHS BDAR determined that no threatened species would be significantly impacted and therefore no direct impacts. Sections 6 and 7 of the WWHS BDAR contain full details. Proposed mitigation measures to minimise indirect impacts to other vegetation are detailed in Section 6 of the WWHS BDAR.

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Legend	
Study Area	Plant Community Types (ELA 2021)
Subject Land	Zone 1: PCT 40 Coolabah open woodland
Construction Footprint	wetland with chenopod/grassyground cover on grey and brown clay floodplains (No canopy)
BAM Plots	Zone 2: PCT 40 Coolabah open woodland
Hollow-bearing Trees	wetland with chenopod/grassy ground cover on grey and brown clay floodplains (Moderate)
	To be managed

0 5 10 20 30 40
Scale 1:1,200 Metres

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DATA SOURCE: ESRI - 2023

Plant Community Types (ELA 2021)

TSA Management Pty Ltd
BMP - Wee Waa High School
Wee Waa, NSW 2388

FIGURE:
2



2.3 FAUNA SPECIES

2.3.1 Habitat

Several surveys were conducted for targeted species, as listed in Section 4.2.2 of WWHS BDAR, to determine the presence of species based on hollow-bearing trees and stick nests within the Development Site. No other key terrestrial habitat features such as rocks or logs were identified within the Development Site in the WWHS BDAR. The subject land exists as an isolated patch and is considered too distant from nearby vegetation, additionally site is considered too degraded for many species.

The Study Area is existing Department of Education owned land and adjacent Crown land.

2.3.2 Species

Table 11 of the WWHS BDAR determined that there were 24 bird, five mammal, and two reptile species that were considered candidate species within the vicinity (5 km) of WWHS Subject Land, and an Assessment of Impacts was required. The Likelihood of Occurrence determined that all species had a nil, low or moderate likelihood to occur at the WWHS. Details in Table E3 of the WWHS BDAR.

No threatened fauna species were identified within the Study Area during the site assessment.

The Assessment of Impacts for threatened fauna determined that no threatened fauna would be significantly impacted. Proposed mitigation measures to minimise indirect impacts to fauna habitat and vegetation are detailed in Section 7 of the WWHS BDAR.

2.4 PRIORITY INVESTMENT AREAS

Due to the vegetation at the WWHS being historically cleared and managed vegetation with little microhabitat for denning, roosting or nesting for any threatened species. However, large passerine birds could nest in the retained trees and hollow-dependent birds could use the two hollow-bearing trees that will be retained in the Natural Retained Landscape (NRL). The WWHS BDAR determined the candidate species only had nil, low or moderate likelihood to occur at the WWHS and no areas that could be considered priority investment areas.



3 KEY THREATS

3.1 WEED INCURSIONS

Six priority weed species which require control prior to and post construction of the Project include the high threat species listed in **Table 2**. However, other priority weed species could be brought onto the Subject Land during the prior to, during and after the construction phase. To ensure the existing weeds are not spread due to the works or other weeds are carried to the construction site controls and measures will be required for all construction phases.

Table 2: Weed species requiring control within the Development Site

Family	Scientific Name	Common Name	Weeds of National Significance (WONS)	High Threat Weeds (BAM)
Poaceae	<i>Chloris gayana</i>	Rhodes Grass	-	✓
Poaceae	<i>Eragrostis curvula</i>	African Lovegrass	-	✓
Solanaceae	<i>Lycium ferocissimum</i>	African Boxthorn	✓	✓
Asteraceae	<i>Parthenium hysterophorus</i>	Parthenium Weed	✓	✓
Poaceae	<i>Paspalum dilatatum</i>	Paspalum		✓
Verbenaceae	<i>Phyla canescens</i>	Lippia		✓

3.2 EXCESSIVE VEGETATION CLEARING

Vegetation clearing of is considered a primary threat to the conservation of TECs and habitat. The areas of TECs to be cleared has been determined (Section 2.1) and Offset requirements recorded in the WWHS BDAR. Vegetation clearing determined in the BDAR will not impact any hollow bearing trees identified within the Subject Land that may represent nesting habitat for a variety of native bird and arboreal mammal species. Incursions into areas of native woodland and grassland may exacerbate existing weed management threats and adversely impact threatened species and ecological communities occurring within the Subject Area. Threats could occur due to:

- Construction Phase: Other than the direct impacts to native vegetation and fauna habitat detailed above, construction activities within the Subject Land have the potential to impact retained vegetation through accidental incursions, and the introduction and facilitation of weed incursions.
- Operational Phase: The proposed development may further exacerbate habitat loss and degradation of vegetation through inappropriate management of retained vegetation.

3.2.1 Erosion and Sedimentation

Mature vegetation is considered integral in preventing erosion through bank stabilisation and sediment control. Erosion resulting from earthworks such as the operation of machinery during the construction phase may facilitate the movement of water-borne sediments that have the potential to adversely impact important biodiversity values on site. This may include impacts on the condition of native vegetation, threatened ecological communities and threatened species habitat.

3.2.2 Increased Nutrient Loading

An excess nutrient load can negatively impact bushland by encouraging the growth of exotic plant species, some of which may have been introduced via vehicle entry to the Subject Land and water runoff into the Natural Retained Landscape.



Increased nutrient loading represent a threat to biodiversity values during:

- Construction Phase: Construction activities within the Subject Land have the potential to reduce soil stability and cause erosion. Suitable conditions could result in potential impacts to retained vegetation via runoff, and the introduction/facilitation of weed incursions.
- Operational Phase: The proposed education facility may further exacerbate nutrient loading within native vegetation through fertilisation of fields and gardens, in turn facilitating habitat degradation through the introduction/facilitation of weed incursions.

3.2.3 *Lighting, Noise, Dust and Water Pollution*

Urban developments can result in a number of indirect impacts pertaining to PCT40 and the habitat it provides, including increased lighting (light pollution) and noise (noise pollution), and changes to surface water runoff and quality. Threats to local biodiversity values pertaining to the proposed development include the following:

- Construction Phase: Increased noise and from construction activities and changes to surface water runoff patterns and quality.
- Operational Phase: The proposed development action may result in increased/inappropriate lighting within the woodland area; and increased noise from traffic.



4 BIODIVERSITY MANAGEMENT DURING CONSTRUCTION PHASES

4.1 OVERVIEW

Management measures include the generic environmental safeguards from the SINSW Planning Compliance Team and Section 7 of the WWHS BDAR which contains the general mitigation and management measures for biodiversity values of the WWHS. In many cases the generic environmental safeguards and the BDAR management measures are aligned. These have been incorporated into this BMP. It should be noted that there were not any Exclusion Zones at the WWHS.

4.2 VEGETATION AND FAUNA MANAGEMENT

There are no threatened vegetation communities or flora in the WWHS Development Site but management of the existing areas containing native vegetation is necessary. Although no threatened fauna is likely to be impacted by the development, foraging and nesting habitat for birds, foraging habitat for insectivorous bats and general habitat for ground dwelling reptiles could be disturbed. Management of hollow-bearing trees will be required, as there are a few on site. Generic environmental safeguards prior to construction are included in **Table 3**.

Table 3: Generic Safeguards for Vegetation and Fauna Prior to Construction

No.	Environmental Safeguard
Vegetation Clearing	
1*	Clearing limits will be clearly marked and all site personnel made aware of the clearing limits (Figure 1).
2	Trees to be retained on site will be protected with a protective barrier (e.g., paraweb fencing) so that stockpiling, parking of vehicles and other construction activities do not occur within the dripline of trees.
3	A tree protection zone (TPZ) will be established around trees to be retained. The TPZ will extend from the dripline of trees and be erected for the duration of works.
4	Native vegetation cleared from the site shall be mulched and used for revegetation, erosion protection or landscaping works.
5	Weed and exotic species shall be disposed of off-site at a nearby legally operating landfill site.
6	Trees to be retained shall be clearly identified for preservation and temporarily protected by "paraweb" fencing placed not less than 3 metres clear of trees where possible, as some retained trees may be less than 3 metres from new and refurbished buildings. There will be no stockpiling or parking of plant/machinery 3 metres from this area.
7*	No vegetation shall be burnt.
8	All trees and stumps on or within the limits of clearing which are unable to be removed by clearing methods, shall be removed by grubbing.
9	Vegetation, where practical shall be retained to the greatest extent.
10*	Contact shall be made with a trained wildlife handler / ecologist least 2 weeks prior to the commencement of clearing operations to allow them to prepare for the clearing and construction period.
11*	All removed trees shall be replaced with local native species of trees, shrubs and groundcover as part of the rehabilitation / landscaping plan.
12	Vehicle wash down should be coordinated with wash down for <i>Phytophthora</i> where possible.
13	Cover crops for the purpose of soil stabilisation be limited to certified clean seed of non-invasive annuals
14*	All trees to be cleared shall be checked for animals before and after felling.



No.	Environmental Safeguard
15*	Ensure clearing works are conducted outside of known seasonal breeding times for candidate species.
Inductions	
15*	Plant operators and employees shall be informed of the above requirement through the induction process for the site.

Note: * denotes WWHS BDAR **Section 7** safeguards.

The BDAR has also included these environmental safeguards prior to construction:

- Pre-clearance surveys to be carried out by an ecologist prior to any vegetation clearing to identify potential breeding/roosting habitat and clearly mark habitat trees with flagging tape and demarcate the area to be cleared.
- This would include surveying for large stick nests and any missed hollows.

Generic environmental safeguards during construction for vegetation and fauna management are listed in **Table 4**.

Table 4: Generic Safeguards for Vegetation and Fauna During Construction.

No.	Environmental Safeguard
Vehicles and Equipment	
1	All vehicles used during the construction process are to stay on existing or constructed roads and tracks, where practicable.
2*	All earthmoving machinery accessing the Construction Site be cleaned of all soil and vegetable matter prior to entry.
3	Construction vehicle reduction in speed limits to 10 km/h in areas regarded as having higher levels of fauna activity or considered to have increased safety risk.
4*	Dust suppression measures will be implemented during construction works to limit dust on site.
Vegetation	
5*	Demarcate 'no go zones', to protect retained vegetation during construction works.
6	Monitor works and ensure the TPZ has been appropriately established and protected.
7	*All trees to be cleared shall be checked for animals before and after felling.
8	All tree pruning works will be carried out in accordance with AS 4373-1996 Pruning of amenity trees and the Code of Practice Amenity Tree Industry August 1998.
9	If additional tree clearing or substantial tree pruning is required, an arborist will be consulted prior to undertaking the works.
10	In the event of fire or vandalism resulting in the loss of tags or boundary indicators, the Contractor shall re-survey and mark where appropriate.
11	Within temporary disturbance areas that will later be allowed to regenerate, trees are to be cut off at ground level to facilitate coppicing (new growth from the base).
12	The Contractor shall implement protective measures to prevent damage to TPZs and shall ensure that no mechanical damage from plant and equipment occurs to protected areas such as: <ul style="list-style-type: none"> ▪ fencing to restrict access in the immediate vicinity of an area or an individual tree. ▪ barriers to protect trunks and exposed surface roots. ▪ hand digging where excavation by a mechanical digger is likely to cause damage to roots and limbs. ▪ ground cultivation to restore soil within the dripline. ▪ tying back overhanging branches.



No.	Environmental Safeguard
13*	Locating ancillary facilities in areas where there are no biodiversity values.
Fauna	
14*	A wildlife carer shall be promptly notified if any native fauna is inadvertently injured during the construction works
15	The taking of domestic animals, particularly dogs and cats, onto the construction site is prohibited.
16*	Ensure ongoing maintenance and monitoring of any threatened species or significant trees within the Construction Site.
17	If threatened species not identified in previous surveys are found during clearing surveys, and removal of individuals of these species is necessary, liaison with Department of Planning, Industry and Environment (DPIE) and further assessment is required.
18*	Appropriate wildlife handling and care equipment such as leather gloves, breathable bags, blankets, ropes/ties and buckets (as recommended by the fauna handling specialist) is to be on site and with each clearing crew prior to the commencement of any clearing.
19*	Installing artificial habitats for fauna in adjacent retained vegetation and habitat or human-made structures to replace the habitat resources lost and encourage animals to move from the impacted site, e.g., nest boxes, fallen timber.
20*	Daily timing of construction activities is recommended in accordance with Table 1 of Interim Noise Guidelines (2009)
21*	Structures to enable species and genetic material to move across barriers will not be constructed.

Note: * denotes WWHS BDAR Section 7 safeguards.

The BDAR has also included these environmental safeguards during construction:

- Clear areas around habitat trees first and allow the habitat tree to remain standing overnight. Prior to removal organise a spotter to look for signs of animal movement in the vegetation to be cleared.
- Daily timing of construction activities is recommended in accordance with Table 1 of Interim Noise Guidelines (2009).
- Dust suppression measures will be implemented during construction works to limit dust on site.

Generic environmental safeguards post construction for regeneration and landscaping in relation to vegetation management are listed in **Table 5**.

Table 5: Generic Safeguards for Vegetation and Fauna Post Construction

No.	Environmental Safeguard
1	Regeneration / Landscaping of appropriate areas to begin as soon as possible after clearing and/or construction.
2*	All removed trees shall be replaced with local native species of trees, shrubs and groundcover as part of the rehabilitation / landscaping plan.
3	All exposed earthworks areas shall be revegetated with lawns, gardens and/or trees as per the Landscape Plan (Appendix 4).
4	Cover plants for the purpose of soil stabilisation will be limited to certified clean seed of non-invasive annuals.

Note: * denotes WWHS BDAR Section 7 safeguards.

4.3 HABITAT AUGMENTATION (OPTIONAL)

Fallen and standing timber (coarse woody debris and dead branches, snags, stumps etc.) provides essential or important breeding, foraging or shelter habitat for many threatened species. Tree trunks and larger branches (over 10 cm diameter) deemed suitable by the project ecologist supervising clearing could be removed from the development area during vegetation clearing. Where suitable these trunks and larger branches can then be cut



up into long pieces (i.e., over 4 m where possible) and carefully placed into woodland and grassland areas within the NRL. Placement of logs and branches are to be in such a way as to look natural, not add to bushfire risks, and to provide benefit to native fauna (on instruction from the project ecologist).

It should be noted that Students may be able to access the NRL if fencing is not installed. The above timber could provide a risk to students if they ignore the signage and enter the NRL. The habitat augmentation should be at the discretion of the schools Safety Officer.

4.4 WEEDS, SEDIMENT AND PEST MANAGEMENT FOR CONSTRUCTION PHASE

Generic environmental safeguards Prior to Construction are in **Table 6**.

Table 6: Generic Safeguards for Weed, Sediment and Pest Management prior to Construction.

#	Environmental Safeguard
1	Weed survey to be undertaken by suitably qualified and experienced persons prior to commencement of any construction activities, including site inspections and survey. The consultant is to advise on best practice weed management techniques.
2	Weed or exotic species shall be identified and removed from the site during construction as per methods in Table 7.
3	Fertilisers and manures to be used sparingly as they can stimulate weed growth, seed set and spread.
4	Vegetation to be cleared carefully to minimise the risk of spreading weed propagules.
5	Care must be taken that weeds are not introduced to the area in manures or as contaminants in seed of the desirable species.
6*	Waste bins to be present on site. Covers to be used to prevent blown litter and the entry of pest animals or rain. Removal and appropriate disposal of general waste generated during the works.

Note: * denotes WWHS BDAR Section 7 safeguards.

Generic environmental safeguards during Construction are included in **Table 7**

Table 7: Generic Safeguards for Weed, Sediment and Pest Management during Construction.

#	Environmental Safeguard
1*	Where possible, vehicle movement is to proceed from areas that are relatively weed free and undisturbed to more heavily weed infested areas to ensure that weed spread is not facilitated by the movement of vehicles and machinery.
2	Ongoing monitoring of the construction areas and immediate surrounds to be undertaken to check for weed growth and implement eradication measures if required.
3	Any straw bales used for erosion and sediment control must contain no seed or be wrapped in geofabric.
4*	Appropriate controls will be utilised and maintained to manage exposed soil surfaces and stockpiles to prevent sediment discharge into waterways. Soil and erosion measures such as sediment fencing, clean water diversion must be in place prior the commencement of the construction work.
5	All weed species and spoil from heavily weed infested areas to be disposed off-site.
6	Pre-emergent herbicides registered for the application to be used to prevent the growth of weeds. As these may also inhibit the regeneration of native species, pre-emergent herbicides shall only be used in conjunction with planting and where weed growth is likely to be a problem, i.e., in areas with existing infestations of weeds that are significant problems for agriculture or the environment.
7	Selective grass herbicides to be used for grass weeds in areas re-vegetated with non-grass species.



#	Environmental Safeguard
9	Remove any weed waste material and have a reasonable period of site maintenance so that weeds do not re-establish.

Note: * denotes WWHS BDAR Section 7 safeguards.

4.5 UNEXPECTED FINDS

Appropriate actions required for unexpected finds will be discussed between the construction contractor and the project ecologist and include contact and reporting to the NSW Department of Environment. Unexpected finds of any threatened flora or fauna species shall be recorded with the location it was found and the location it was translocated to, recorded with a GPS. An Unexpected Finds register shall be kept by TSA.

4.6 MONITORING PROGRAM

4.6.1 Overview

A monitoring program will be implemented to ensure that the measures detailed within this BMP are implemented and successful. The program will be completed throughout the construction period, a summary of the key monitoring event and deliverable are shown in **Table 8**. Monitoring program methods are detailed below.

Table 8: Monitoring and Reporting Summary

Monitoring Event	Timing	Scope	Deliverable
Clearance Supervision	During vegetation clearing	Supervision of vegetation clearing of habitat features to be removed.as per Section 4.2	Clearance Supervision Letter Report

4.6.2 General Monitoring

The monitoring program will assess condition of the Coolabah trees within the subject area through a general meander of the Subject Land and notes on the following features:

- Condition of the boundary and signage around the NRL.
- Signs of degradation e.g., dumping of waste (inc. garden waste), infiltration of exotic species and priority weeds in the Subject Land.
- Condition of habitat features (i.e. existing hollows) and Coolabah trees in the Central Courtyard and the southern boundary of the Subject land. Condition should include at the number of dead or broken branches, damage to the bark and the leaf cover.
- Condition and composition of native vegetation within the drainage swale and the cover of weed species using a % of cover.

4.6.3 Reporting

Reporting requirements and timing of deliverables are summarised within **Table 8**, all monitoring and reporting will be completed by a suitably qualified person (i.e., Ecologist), content of reporting deliverables are detailed below:

- **Clearance Supervision:** This report will detail the results of the clearance supervision including identification of any fauna recorded during clearing works and the location of habitat features re-distributed within the NRL to provide for habitat.



5 VEGETATION MANAGEMENT PLAN OPERATIONAL PHASE

5.1 ESTABLISHMENT OF NATURAL RETAINED LANDSCAPE

The NRL will be managed to be kept in as natural undisturbed state as possible so that the traditional practices of the Kamilaroi People can be practiced/demonstrated within the school grounds. The management techniques for this area will be informed by the on-going 'Designing with Country' process and the SMART principles (specific, measurable, achievable, realistic, timely).

The Designing with Country revolves around nature, people and design. The design of the of any structures associated with the has already occurred and will not be a part of this VMP. However, nature and people can be included. Any plants that may be planted will need to meet the criteria of the PCT 40 but can have input from the Kamilaroi People. The Smart principles will be set out in the management and monitoring sections of this document.

Fencing occurs along the boundary of the WWHS but not around the NRL. Additionally, the Landscape Plan does not show any fencing around the NRL. The boundary is delineated by concrete paths and other infrastructure but there would be easy access by students to the NRL. It recommended that:

- The boundaries of the NRL should be fenced and/or demarked with signage to deter the entry of students and other unauthorised people unless accompanied for learning events.
- The NRL boundaries should be designed not to allow runoff water from other parts of the school to enter the NRL to limit the influx of weed seeds and nutrients from the gardens and lawn areas.

In addition, there are measure prescribed in the BDAR (Table 23) associated with vegetation management of the NRL. These include:

- Weeds should be managed and controlled within the adjacent vegetation.
- Weed control targets are to be determined in consultation with the 'Designing With Country' and bush regenerator.
- Slashing frequency is to be determined through the 'Designing with Country' process to allow for seed harvesting and the re-setting of seeds and the perpetual natural reseedling of the native grasses in the area.

5.2 MANAGEMENT FOR NATURAL RETAINED AREA

5.2.1 Overview

The SMART criteria for the PCT 40 management of the NRL will be required to meet or be above the future Integrity Score. PCT 40 SMART management principals in the NRL will be:

- Monitoring – Methods to determine the baseline Integrity Score, and Composition, Structure and Function Scores.
- Baseline data – The Integrity Score at the time of the first monitoring after the Construction Phase is completed.
- Performance Criteria/target – the improvement Integrity Score, and Composition, Structure and Function Scores each year of treatment measured at the next monitoring event.
- Action Trigger – The Future Integrity Score predicted in the BDAR will be used as the value that will trigger appropriate actions to lift the Integrity Score. Values over the Future Integrity Score will be acceptable and not require actions to be triggered.
- Corrective Actions – Management Actions to lift the Integrity Score above the Future Integrity Score.
- Response – The expected outcomes over a defined time period i.e. the Integrity Score component is above the Future Integrity Score within the five year period of the VMP.

5.2.2 Monitoring Program Methods

5.2.2.1 Overview



A monitoring program will be implemented to ensure that the measures detailed within this BMP are implemented and successful. The program will be completed throughout the implementation period, a summary of key monitoring events and deliverables are shown in **Table 9**. Monitoring program methods are detailed below.

Table 9: Monitoring and Reporting Summary

Monitoring Event	Timing	Scope	Deliverable
Baseline Monitoring Survey	Completed within one (1) month following the completion of works	Establishment of one permanent monitoring plots and completion of the Monitoring Programme	Baseline Monitoring Report
Annual Monitoring Survey	Completed one (1) year following the completion of construction. Completed annually until the fourth year of the monitoring program.	Completion of the Monitoring Programme	Annual Monitoring Survey Report
Final Summary Report	Completed at the end of the 5-year implementation period.	Completion of the Monitoring Programme Summary of the Monitoring Programme throughout implementation period.	Final Annual Summary Report inclusive of Year 5 results.

Monitoring will be completed within the NRL throughout the implementation period as per the schedule detailed in **Table 9**. Monitoring methods address key performance criterion listed in Section 7.6 of the BDAR, and are informed by the following resources:

- The Biodiversity Assessment Method 2020 (DPE 2020).
- Vegetation Benchmarks for PCT 40 as per the NSW BioNet Vegetation Classification (DPE 2022).

The Monitoring Program is comprised of three (3) key components: *Vegetation Extent*, *Vegetation Condition*, and *NRL Maintenance* detailed below.

It should be noted that there is a discrepancy on the main tree species, a Coolabah, associated with PCT40. The BDAR has it listed as *Eucalyptus coolabah ssp. coolabah*, while the Amended Landscape Plans and SSD-21854025 have it listed as *Eucalyptus microtheca*. This document will use *Eucalyptus coolabah/microtheca* as it cannot be determined which is correct from the information made available.

The NRL was surveyed for the BDAR in BAM Plot 1 (**Figure 2**), but seating infrastructure placed at its northern end in the Landscape Plans means the BAM Plot in the NRL will need to be inverted and moved to avoid the 20x20 m plot overlaying the seating during future monitoring (**Figure 3**). However, there will be a concrete path through the middle of the transect of the BAM Plot that will have to be accounted for by adding the width of the path to the length of the transect and treating the concrete path as null space.

The above seating and concrete path were contained in the construction plan considered in the BDAR and should have been accounted for in the impacts to vegetation integrity in the BDAR. It is unknown why the BAM Pot was placed in the original position.

5.2.2.2 Vegetation Extent

The mapped extent of native canopy species in the NRL, particularly *Eucalyptus coolabah/microtheca*, and weed infestation are to be updated during every monitoring event using a hand-held GPS.

5.2.2.3 Vegetation Condition

A total of one (1) 20 m x 20 m quadrats is to be established within the NRL for the baseline monitoring including *Eucalyptus coolabah/microtheca*. The quadrat is to be sampled as per Section 5.3.4 of the NSW Biodiversity Assessment Method (BAM), excluding the implementation of a central 50 m transect (DPE, 2020). The midline



at the starting point of each quadrat is to be marked with a stake to ensure accuracy of repeat monitoring. The location and bearing of the quadrats are to be recorded in a GPS device.

Within each plot the following metrics are collected:

- Floristic diversity (number of native and exotic species within the nested 20 m x 20 m quadrat).
- Floristic cover and abundance for each species in accordance with the BAM (20 m x 20 m quadrat).
- Stem size classes and the presence of native canopy regeneration (as per BAM 2020) (within the 20 m x 20 m quadrat).
- Cover of litter and bare ground (as per adjusted BAM method) (within the 20 m x 20 m quadrat).
- Total length of fallen logs (dbh <10 cm) (as per adjusted BAM method) (within the 20 m x 20m quadrat).
- Photo monitoring: a single photo is to be taken at the staked point facing into the quadrat.

5.2.2.4 Weed Cover

High threat exotic (HTE) weed cover will require the whole NRL to be searched at each monitoring event and the HTE weed cover recorded. All HTE will be marked or flagged and a GPS location taken for the weed management team to find.

5.2.3 Baseline Data

The baseline data will be collected the first monitoring event after the Construction Phases is completed and the Wee Waa High School goes into Operational Phase. It is expected that the Integrity Score, and Composition, Structure and Function Scores will be similar to the predicted future scores (**Table 9**) but may vary depending on outcomes from the Construction Phase.

Table 9: Predicted Future Scores for the NRL

Integrity Score	Future Composition Score Change	Future Structure Score Change	Future Function Score Change
Present = 61.3 Future = 56.1 Change = -5.2	Tree = No Change (2) Shrub = 0 Grass = From 8 to 6 Forb = From 9 to 5 Fern =No change (1) Other = No change (1)	Tree = From 22% to 15% cover Shrub = 0 Grass and Grasslike = From 24.3 to 20 Forb =From 0.9 to 0.5 Fern = No Change (0.1%) Other = No Change (0.1%)	Large Trees = From 3 to 2 Hollows = No change (2) Litter = 30 Tree stems = No Change (4) Regen stems = 0 High threat exotics = no change (6.1%)

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Legend

- Subject Land
- Construction Footprint
- Turf
- Natural Retained Landscape
- Mass Planting

Infrastructure

- Asphalt
- Building
- Concrete
- BAM Monitoring Plot

0 5 10 20 30 40
Scale 1:1,200 Metres

N

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PROJECT REFERENCE: 24002459
DATE DRAWN: 25/09/2023 Version 1
DRAWN BY: RHourigan
DATA SOURCE: ESRI - 2023

Landscape Plan

TSA Management Pty Ltd
BMP - Wee Waa High School
Wee Waa, NSW 2388

FIGURE:
3



5.2.4 Performance Criteria

Performance criteria on an annual basis for Composition, and most of the Structure and Function components should be maintained between the Action Trigger Score on an annual basis other, while some are a mid-term proposition and others are a much longer term proposition. The components that would not be able to change in the short term of this BMP would be Tree Canopy Cover and Large Trees which could take 20-50 years for a newly planted tree to have sufficient growth to increase the canopy cover and usable hollows do not from in eucalypt trees until 120-200 years of age. The performance criteria for the remainder of the components should remain between the Trigger Scores and the Benchmark (**Table 10**) on an annual basis for the 5 year life of the BMP. Observations on the health trees is the only measure of the mid and long term components in a 5 year period. If a Tree dies it would need to be replaced either by an existing regeneration seedling/sapling or be planted (**Section 5.2.6.2**)

5.2.5 Action Triggers

NRL was meant to be managed to meet the Future Integrity Score, and Composition, Structure and Function Scores predicted in Management Zone 2b in the BDAR and shown in **Table 9**. In most cases these are equal to or lower than the existing values. Managing a natural area to reduce the Integrity Score and other values was deemed counter intuitive and the author determined that the Future Integrity Scores should be used as the Action Trigger where management actions would be required. The Trigger Scores were determined in **Table 10** using values from Appendix E of the BDAR. The determination included:

- Where the Score was not changed from the value at the time of the BDARs a '<' symbol was used in front of the value from the BDAR.
- Where the Score was a lower than the value at the time of the BDAR a '≤' symbol was used in front of the value from the BDAR.
- Where there was not a value for the Integrity Score in the BDAR 'n.a.' (not applicable) was used.
- The High Threat Exotics would be triggered if the Score becomes greater than that from the BDAR.
- The Benchmark Score for each attribute is included in brackets to show what would constitute a mature patch of PCT40.

Table 10: Action Trigger Scores for the NRL

Integrity Score Trigger	Species Composition Score Trigger (Benchmark)	Structure Score Trigger (Benchmark)	Function Score Trigger (Benchmark)
Future ≤56.1	Tree <2 (3) Shrub 0 (6-7) Grass ≤6 (3-5) Forb ≤5 (7-9) Fern <1 (1) Other <1 (1)	Tree ≤15% (13-15%) Shrub = 0 (12-13%) Grass and Grasslike ≤20% (3-18%) Forb ≤0.5% (2-5%) Fern <0.1 (0%) Other <0.1 (0%)	Large Trees ≤2 (5) (threshold 30 cm dbh) Hollow trees = 2 Litter ≤30% (32%) Logs <5 m (29 m) Tree stems = <4 Regen stems = n.a. High threat exotics >6.1%

5.2.6 Corrective Actions (Management)

5.2.6.1 Overview

The management techniques in the NRL will be informed by the on-going 'Designing with Country' process that has been put in place. Management options in the NRL are likely to require the maintenance of the native grasslands, and canopy maintenance and/or replacement of overstorey native trees, habitat augmentation and weed management. The design of any buildings and other infrastructure has occurred prior to the implementation of this BMP. Therefore input by the Kamilaroi People for the NRL will be in the form of helping to determine the species of any plants that may be planted in the NRL in the future.



The list of species in **Appendix 2** could be used for any planting in the NRL. However, if there are other species that occur in PCT40 that the Kamilaroi People would prefer, it should be discussed between the parties involved.

The corrective actions for the Trigger Scores are listed in **Table 11**.

Table 11: Corrective Actions Required if Trigger Score is activated

Trigger	Corrective Action
Tree Species <2 or tree cover ≤15% or large tree ≤2	Plant a second trees species from the species list in Appendix 2 or by choice of the Kamilaroi People.
Grass species ≤6 or grass cover ≤20%	Plant the appropriate number of grass species from the species list in Appendix 2 or by choice of the Kamilaroi People.
Forb species ≤5 or forb cover ≤0.5%	Plant the appropriate number of forb species from the species list in Appendix 2 or by choice of the Kamilaroi People.
Fern species <1 or fern cover <0.1%	Plant the appropriate number of a fern species from the species list in Appendix 2 or by choice of the Kamilaroi People.
Other species <1 or other species cover <0.1%	Plant the appropriate number of an other species from the species list in Appendix 2 or by choice of the Kamilaroi People.
Litter ≤30%	Litter levels should be maintained through the litter fall from the canopy. If the litter does fall below 30%, management regimes would need to be assessed to see if there is removal of the litter by management regimes. Action to prevent the reduction in litter would be designed from those findings and followed.
Logs <5 m	Habitat augmentation in the NRL (Section 4.3) during the Construction Phase should provide >5 m of logs in the NRL. If the above occurs the logs would last for the duration of this VMP (5 years). However, if enough logs are not placed in the NRL during the Construction Phase, the should be increased within the year after the initial monitoring.
Tree Stems <4	Plant the required number of trees from the species list in Appendix 2 or by choice of the Kamilaroi People.
High threat exotics >6.1%	The management of the high threat exotics listed in Table 2 will be dealt with in Section 5.2.7 .

5.2.6.2 Supplementary Planting

The NRL is characterised by sparse mature woodland and a high cover of native groundcover species (i.e. grasses and herbs). It occurs within a moderately developed landscape in a disturbed condition. The improvement of fencing and signage aims to further restrict entry by students (except on supervised learning) and reduce weed incursion, in turn aiding the process of natural regeneration. This regeneration is expected to be further assisted through the control and suppression of weeds throughout the BMP implementation period and the planting of native species in the NRL should existing native trees or groundcover die.

All planting shall utilise the native species listed within **Appendix 2**, with preference for local provenance stock but also in consultation with the Kamilaroi People. These species should local species indicative of PCT 40. Planting will occur as required, including direct seeding as well as the placement of tubestock and 5L tree stock.

Planting of canopy tree species using 5L tree stock should be placed approximately 5 m apart in the NRL. The 5L tree stock should not be placed under the canopy of existing trees.

Seed mixes for native ground cover should be sown at the recommended rate by the supplier in any bare soil patches, including those created by the control and spraying of exotic species.

The hole for each tube stock shrub or 5L tree stock should be:



- Twice the depth of the tube stock and minimum 7.5cm diameter to allow for root development.
- Twice the depth of the 5L tree stock and 1.5 its diameter to allow for root development.
- Watered with a minimum of 10 litres at time of installation to remove any air pockets and provide adequate moisture levels for the recently installed plant.
- The plant will be planted with the root/stem interface at the soil surface.
- Create a small depression (bowl) at the surface to allow water flow to infiltrate to the plant root zone.

After planting, the trees and shrubs should be watered with minimum six litres of water at the following intervals:

- Twice a week for the first two weeks.
- Once a week for the next four weeks.
- Once a fortnight for the next six weeks.

Following the above period of watering, the plants will be assessed fortnightly for the next eight months to check if the soil is dry or if the plants are stressed. If either has occurred, the plants should be watered as the maintenance staff see fit. During this period if any plants die, they will require replacement. Any new plants will follow the above maintenance schedule. In the second year, the plants will be checked on a monthly basis and watered if required. During years 3-5 the trees should be checked on a six-monthly basis. After the maintenance phase (5 years) there should be 90% successful establishment of the planted KFTs. If there is less than 90% of the original KFTs surviving, the deficit below 90% should be replanted and maintained as per above.

5.2.6.3 Native Grasslands Maintenance

The native grasslands are intended to be traditionally harvested by the Kamilaroi People and slashing is likely to be an annual event but may not be required due to the habitat augmentation of logs that would make slashing difficult and it may provide for incursions of weeds. Slashing frequency should be discussed with the Kamilaroi People. The maintenance program will need to incorporate methods to prevent the native grasslands from deteriorating. The methods will include:

- If slashing occurs, a reduced slashing frequency will occur relative to well-managed areas to allow for growth and seed production of the native grasses.
- If slashing occurs, the slashing should occur annually in late Autumn, to allow the maturing of seeds for seed harvesting, and replenishment of the soil seed bank.
- The timing of the slashing will be dependent on seasonal variation/conditions and actual seed set of the target grasses, which will be monitored by a suitably qualified person.
- Slashing may also occur in late winter/early spring to promote new growth if required.
- Slashing height should be a minimum of 10 cm to allow tussock grasses to re-grow from above ground tillers.

5.2.6.4 Canopy maintenance

Canopy cover is to retain as much existing native vegetation on site as possible to provide shade and habitat, as such canopy reduction will be limited to the removal of exotic trees. Maintenance methods will include:

- The removal of exotic trees and shrubs, and dead trees deemed unsafe by an arborist, from within the NRL.
- The potential lopping of dead or dangerous branches that overhang pedestrian areas.
- Dead timber could be used on the ground as habitat for native fauna but this may inhibit slashing and could be dangerous for students.

5.2.7 Response

The Integrity Score, and Composition, Structure and Function Scores will be greater than the Trigger Scores in **Table 11** after the five year period of this BMP. If this has not occurred an extension to the BMP will be required. Responses on an annual basis after the first monitoring period will need to show improvement each until the values are greater than the Trigger Scores.



5.3 WEED MANAGEMENT

5.3.1 Overview

The SMART criteria for the weed management of the NRL will be required to meet or be less the Future Integrity Score. PCT 40 SMART management principals in the NRL will be:

- Monitoring – Methods to determine the high priority weed cover in the NRL.
- Baseline data – The weed cover at the time of the first monitoring after the Construction Phase is completed.
- Performance Criteria/target – The reduction in high threat exotic weed cover each year of treatment measured at the next monitoring event.
- Action Trigger – The weed cover future score predicted in the BDAR will be used as the value that will trigger appropriate actions. Values under the weed cover future score will be acceptable and not require actions to be triggered.
- Corrective Actions – Management Actions to reduce the weed cover below the Future Weed Cover Score.
- Response – The expected outcomes over a defined time period i.e. the Integrity Score component is above the Future Integrity Score within the five year period of the VMP.

Weed management within the NRL will prioritise the management of the following species all , including:

1. *Chloris gayana* (Rhodes Grass) [Priority Weed].
2. *Eragrostis curvula*. (African Lovegrass) [Priority Weed].
3. *Lycium ferocissimum* (African Boxthorn) [WoNS and Priority Weed].
4. *Parthenium hysterophorus* (Parthenium Weed) [WoNS and Priority Weed].
5. *Paspalum dilatatum* (Paspalum) [WoNS and Priority Weed].
6. *Phyla canescens* (Lippia) [WoNS and Priority Weed].

Species 1-3 were observed in Plot 1 and Species 4-6 were observed in the broader area. In addition, if other invasive exotic species are observed within the NRL, management will be required.

5.3.2 Monitoring Program Methods

Monitoring for the high threat weed cover will follow the high threat weed cover in in **Section 5.2.2.4**.

5.3.3 Baseline Data

The baseline data will be collected the first monitoring event after the Construction Phases is completed and the Wee Waa High School goes into Operational Phase. It is expected that the high threat exotics cover will be approximately 6.1%.

5.3.4 Performance Criteria

It is expected that:

- In the first year after monitoring that all African Boxhorn shrubs and large seedlings found should be removed by mechanical means and any seedlings individually chemically sprayed reducing the cover of African Boxthorn by at least 50% in the NRL for each of the five years of the life of the BMP.
- Large clumps of African Lovegrass should be mechanically removed and small clumps individually chemically sprayed to reduce cover by 40 % in the NRL for each of the five years of the life of the BMP.
- The other four HTE species should be chemically sprayed to reduce cover by 40 % in the NRL for each of the five years of the life of the BMP.

5.3.5 Action Trigger

The Action Trigger will be set at >6.1% of high threat exotics cover in the whole NRL or the introduction of a new species into the NRL.



5.3.6 Corrective Actions (Management)

Management will adopt the 'Bradley method', which involves the progressive, staged removal of weeds from less disturbed areas followed by removal from more weed infested areas. This method also aims to remove weeds with minimal disturbance and allow native species to re-establish naturally from the existing seed bank and rootstock. The first stage of weed removal should occur within the NRL prior to any planting, with an effort made to preserve existing native groundcover species.

The following steps are to be followed when controlling weeds on the site:

1. The weed removal team will require a site-specific induction, to understand what weeds are to be removed, the process of removal, identification of the native species, and the procedures to be followed.
2. Manual weed removal. Due to presence of native groundcover species within the NRL, the manual removal of weeds will be prioritised where possible.
3. Weed propagules collected during weed control activities are to be taken offsite. This will stop weed material smothering native plants and prevent re-establishment. This material is to be taken to an appropriate waste disposal centre to prevent further weed spread in the region.
4. Chemical weed control. Chemical should be applied only where application to larger weeds can be isolated (i.e. no broad application).

For concentrations and dosage rates on targeted chemical control, refer to the Department of Primary Industries New South Wales 'WeedWise' webpage. Any weed spraying should be conducted by an authorised person, having a Chemical Application Certificate or similar qualification. This would ensure that best practice is adhered to in consideration of the sensitive nature of the surrounding ecosystems.

The removal of general exotic species (of which 21 were recorded – see the **Appendix 3** for full list of exotic plant species recorded within the Subject Site) will be based on the recommendations provided in annual monitoring reports. Follow up weed management may be required as per the recommendations of future reports. It is expected that other restoration tasks including the restriction of entry, upgrading of fence and additional plantings will assist in the natural reduction of general exotic species cover over the duration of the BMP implementation period until the end of the operational life of the school.

5.3.7 Response

After the initial 5 years of this VMP for the NRL, the cover for weeds in the NRL will be <2%. If this outcome is not met, further monitoring and treatment of the weeds will be required.



6 REPORTING

Reporting requirements and timing of deliverables are summarised within **Table 9**, all monitoring and reporting will be completed by a suitably qualified person (i.e., Ecologist), content of reporting deliverables are detailed below:

- **Baseline Monitoring Survey Report:** This report will provide details on location of monitoring points, baseline measurements of key extent and condition variables within the NRL.
- **Annual Monitoring Survey Report:** This report will detail the results of annual monitoring, with comparison to baseline results and preceding survey events. Reporting will provide recommendations for future monitoring and management within the NRL. These reports are to be submitted annually to the Biodiversity Conservation and Science Directorate (BCS) of the Department of Planning and Environment (DPE).
- **Final Summary Report:** The final Annual Monitoring Survey Report for the post-construction period of the school, inclusive of the monitoring results of Year 5 as well as a summary the results of the Monitoring Programme throughout. This is to be delivered 5 years post completion of works.
-



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APPENDIX 1: ECOLOGISTS CV



Dr Kevin Wormington

Senior Ecologist Brisbane

Kevin has over 20 years of experience as an environmental consultant. Kevin joined Kleinfelder in 2019 as an experienced Senior Ecologist where he specialised in field ecological assessment, project management and reporting for flora, fauna and freshwater projects. Having also undertaken training in spatial services, Kevin is a experienced and capable in the GIS functions required for his ecological reporting including vegetation mapping.

Prior to joining Kleinfelder, Kevin ran his own small company out of Bundaberg as a means of staying in Bundaberg until his children finished their High School certificate. Kevin was also the Terrestrial Ecology Team leader in the Centre for Environmental Management at CQ University for 12 years. The CEM was a consultancy and research arm of the university.

He has 20 years of experience in Commonwealth and Queensland legislation and policies associated with the environment and ecology. The above has included Matters of National Environmental Significance, Matters of State Environmental Significance and environmental offsets. Kevin also has 3 years of experience in New South Wales legislation and policies for environment and ecology.

Kevin has a high level of statistical analysis skills using a variety of univariate analysis techniques for his PhD and later learning multivariate analysis techniques using Primer 7 for freshwater ecology work.

Project Experience

Ecological assessment of four schools in Northern NSW.

The ecological assessment for the Kingscliff High School (KHS), Kingscliff Public School (KPS), Tweed River High School (TRHS) and Tweed Heads South Public School THSPS began in early 2020 with an ecological constraints assessment of the above four schools. The ecological constraints required a desktop assessment and a preliminary field survey to determine if there were any constraints associated with the schools. The outcomes of the constraints assessment was delivered in a separate report

for each school, which determined that there were ecological constraints associated with schools.

Following the outcomes of the ecological constraints and the development of plans for each school, a flora and fauna assessment for the areas that would be developed at the schools was required. This required some further desktop assessments, detailed flora and fauna surveys and a Flora and Fauna Assessment Report (FFAR) for a development applications (DA) at each school.

At the completion of the FFARs an assessment of the construction programs decided that the major sections of the KHS, KPS and TRHS would be State Significant Developments and a Biodiversity Development Assessment Report (BDAR) would be required for the three above schools. The BDARS were completed along with the DA for THSPS. In addition to the BDARS and DA, there were small sections of each school developed under a different criteria and required a Review of Environmental Factors (REF) report for each the four Schools. All reports were completed successfully. Management plans for the Bush-stone Curlew, Koala Offset Management Plans and Biodiversity Management Sub-plans were also completed for the schools.

Ecological Assessment of the Ettamogah Army Stores Depot – Australian Department of Finance

A desktop analysis and field survey of the disused explosives stores at Ettamogah to determine biodiversity values of the site. Kevin participated in the flora and fauna field surveys.

A total of 73 flora species were identified within the study area during the field surveys. Thirty-one of the above were exotic species and one is a non-endemic native species. The exotic species *Rubus fruticosus* sp. agg. (Blackberry) is a listed Weed of National Significance (WoNS) and a Priority Weed for the Murray Region (relevant

Education

PhD Ecology, The University of Queensland, Brisbane, Australia

Bachelor of Applied Science (Environmental Science) with 1st Class Honours, The University of Queensland, Brisbane, Australia

Training & Certifications

Standard 11 Surface Mining Induction

Mining Supervisor (S123)

G2 Risk Facilitator

First Aid

Operate a 4x4 Vehicle Off-road and Advanced Recovery Techniques

Three species of plants, four reptiles, 21 birds and four mammals of conservation significance were listed as possibly using habitat within five km of the proposed new roadway, but most of these used habitats not found in the pathway of the new roadway. It was considered that it is highly unlikely any fauna of conservation significance will be affected by the project. However, there may be some impact on possums and gliders due to the removal of hollow-bearing trees.

Management for Biodiversity in Fenced Riparian Zones on Grazing Properties – Fitzroy Basin Association

Kevin designed, managed and reported on the project for the flora, mammals, birds and reptiles. The project assessed if the fencing of Riparian Zones enhanced biodiversity within the riparian zone and adjacent area. Forty sites were established in five sub-catchment areas of the Fitzroy River Basin that contained a range of riparian and adjacent sites that had been traditionally managed or managed for biodiversity values, i.e. fenced riparian zone. There was evidence that in areas where grazing regimes had changed in conjunction with fencing for a period exceeding 5 years, vegetation structure was more complex and exotic plants were less numerous. Other factors influencing vegetation structure were sub-catchment, the land zone and level of clearing. The overall diversity of non-bird vertebrate species was positively influenced by the fencing and associated changed grazing regimes. Reptile and ground mammal diversity of native species was greater in the fenced riparian zones and their adjacent forested areas than the equivalent non-fenced riparian zones. Complexity of habitat was also a positive influence. In contrast, exotic vertebrates were negatively influenced by the grazing management associated with fencing of riparian zones. Generally, birds were not sensitive to the grazing management, although bird species richness, abundance and assemblages were influenced by landscape position and vegetation.



Cassandra Bugir, PhD

Ecologist

Cassandra Bugir is a new Ecologist at Kleinfelder with over five years' previous experience in flora and fauna research- predominantly surrounding wetlands. Previous projects have involved a variety of technical disciplines including surveying methods- anabat, camera trapping, capture-mark-release, visual surveys, and auditory surveys, reporting, and fauna handling. Prior to the research experience, Cassandra worked internationally in conservation, animal husbandry, and public outreach/education for six years. Her career emphasizes threatened terrestrial and aquatic fauna, of all taxa, and their habitat requirements.

Education

PhD in Conservation Science

MSc in Anthrozoology

BSc in Ecology and Evolutionary Biology

Training & Certifications

NSW White Card

First Aid/CPR Certification

Project Experience

Fulton Hogan

- Flora and fauna surveying methods using random data points, transects, visual, photographic recognition, auditory, and scat/pellet surveys to determine the presence of threatened species for post-disturbance monitoring. The data from these surveys is used for writing the subsequent reports.

Cessnock City Council

- Flora and fauna surveying methods using visual, photographic recognition, auditory, floristic, and scat surveys to determine the presence of threatened species for road stabilization works. The data from these surveys is used for writing the subsequent Flora and Fauna reports.

Clarke Creek

- Fauna surveying methods in a significant environmental area (SEA) to identify macropods, koalas, reptiles, and any feral species using visual, spotlighting, sandplots, photographic recognition, GIS, auditory, scratch marks, and scat surveys to determine presence. Flora surveys were conducted in this SEA using fieldmaps GIS and photographic/visual for presence of weed density and vegetation condition. These baseline surveys were conducted for future control measures particularly for feral fauna and invasive weed species.

Kingfisher consultancy

- Prior to development clearing in Sydney, Cardiff, and Rankin Park, flora and fauna surveying methods were implemented using visual, spotlighting, aquatic invertebrate, photographic recognition, auditory, floristic, and scat surveys to determine the assemblage of species on site. The data collected from each survey was used to compile EIS, Flora and Fauna reports, and BDARs for each project.
- Osprey nest relocation and monitoring efforts for telecom tower in Raymond Terrace Golf Course. Prior to breeding season, telecom company requested to complete their works on a telecom tower that an osprey nest was located. Photographic evidence and visual surveillance of bird nest being taken down prior to works, reassembled and placed back up once works was completed.

University of Newcastle- Conservation Science Research Group

- Supportive teaching role for ENVS 3001- Environmental Conservation in Watagans and Barrington Tops, teaching 50+ students how to trap fauna in survey efforts using Elliot traps, Harp Traps, aquatic nets, and Pipe traps. Taught students how to properly install and bait camera traps and sand plots, they were also shown how to interpret anabat data and ID species in spotlighting surveys. Out of the trapping survey efforts, we showed students how to handle *Antechinus* sp., bandicoots, rat sp., various frog species, skinks/lizards including Goanna, Gliders, and Quolls.



- Research assistant for Kooragang and Ash Island wetland study- captured and handled various species of frogs (in various developmental stages- from tadpole to adult) for surveys, Chytrid swabbing, microchipping (capture/recapture data), and biobanking (hormonal induction of genetic material and web punches). The main target was threatened species, Green and Golden Bell Frog (*Litoria aurea*). Other survey methods were installing audio moths and camera traps set up for feral species, birds, and frog calls for species diversity within this former BHP site. Vegetation surveys, weather conditions, watercourse ephemerality, and water quality tests were also conducted for habitat conditions. Data collected from these survey methods were used for report and publication writing. Some of the data collected was used to create ponds for environmental restoration works and implement frog exclusion fences for construction work on the island.



APPENDIX 2: NATIVE FLORA LIST

#	Family	Scientific Name	Common Name	Growth Form
1.	Aizoaceae	<i>Tetragonia tetragonioides</i>	New Zealand	Forb (FG)
2.	Amaranthaceae	<i>Alternanthera sp.</i>	Joyweed	Forb (FG)
3.	Amaranthaceae	<i>Alternanthera angustifolia</i>		Forb (FG)
4.	Amaryllidaceae	<i>Crinum flaccidum</i>	Crinum flaccidum	Forb (FG)
5.	Apiaceae	<i>Daucus glochidiatus</i>	Native Carrot	Forb (FG)
6.	Asphodelaceae	<i>Bulbine bulbosa</i>	Bulbine Lily	Forb (FG)
7.	Asteraceae	<i>Calotis cuneata</i>	Mountain Burr-daisy	Forb (FG)
8.	Asteraceae	<i>Calotis spp.</i>	A Burr-daisy	Forb (FG)
9.	Asteraceae	<i>Leiocarpa panaetioides</i>	Woolly Buttons	Forb (FG)
10.	Campanulaceae	<i>Lobelia concolor</i>	Poison Pratia	Forb (FG)
11.	Campanulaceae	<i>Wahlenbergia spp.</i>	Bluebell	Forb (FG)
12.	Chenopodiaceae	<i>Atriplex semibaccata</i>	Creeping Saltbush	Shrub (SG)
13.	Chenopodiaceae	<i>Einadia polygonoides</i>	Knotweed	Forb (FG)
14.	Chenopodiaceae	<i>Salsola australis</i>	Wallaby Grass	Grass & grasslike (GG)
15.	Chenopodiaceae	<i>Sclerolaena decurrens</i>	Green Copperburr	Shrub (SG)
16.	Chenopodiaceae	<i>Sclerolaena muricata</i>	Black Rolypoly	Shrub (SG)
17.	Convolvulaceae	<i>Convolvulus graminetinus</i>		Other (OG)
18.	Crassulaceae	<i>Crassula colorata acuminata</i>		Forb (FG)
19.	Cyperaceae	<i>Cyperus spp.</i>		Grass & grasslike (GG)
20.	Euphorbiaceae	<i>Chamaesyce drummondii</i>	Caustic Weed	Forb (FG)
21.	Fabaceae (Mimosoideae)	<i>Acacia salicina</i>	Cooba	Tree (TG)
22.	Fabaceae (Faboideae)	<i>Cullen tenax</i>	Emu-foot	Forb (FG)
23.	Goodeniaceae	<i>Goodenia fascicularis</i>	Mallee Goodenia	Forb (FG)
24.	Haloragaceae	<i>Haloragis glauca f. glauca</i>		Forb (FG)
25.	Malvaceae	<i>Abutilon oxycarpum</i>	Straggly Lantern-bush	Shrub (SG)
26.	Marsileaceae	<i>Marsilea drummondii</i>	Common Nardoo	Fern (EG)
27.	Myoporaceae	<i>Eremophila debilis</i>	Amulla	Shrub (SG)
28.	Myrtaceae	<i>Eucalyptus coolibah</i>	Coolibah	Tree (TG)
29.	Oxalidaceae	<i>Oxalis perennans</i>	Western Boobiolla	Shrub (SG)
30.	Poaceae	<i>Aristida spp.</i>	A Wiregrass	Grass & grasslike (GG)
31.	Poaceae	<i>Bromus spp.</i>	A Brome	Grass & grasslike (GG)
32.	Poaceae	<i>Chloris truncata</i>	Windmill Grass	Grass & grasslike (GG)
33.	Poaceae	<i>Cynodon dactylon</i>	Common Couch	Grass & grasslike (GG)
34.	Poaceae	<i>Dichanthium sericeum</i>	Queensland Bluegrass	Grass & grasslike (GG)
35.	Poaceae	<i>Eriochloa procera</i>	Spring Grass	Grass & grasslike (GG)
36.	Poaceae	<i>Panicum effusum</i>		Forb (FG)



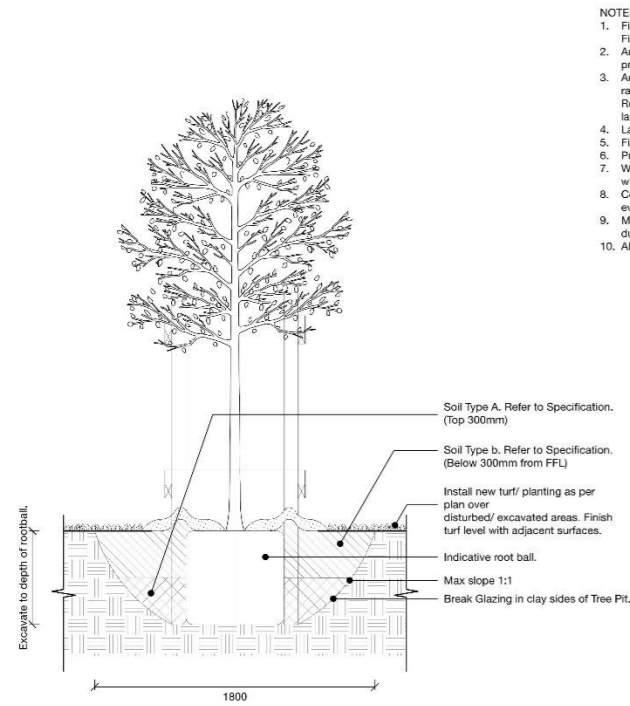
37.	Poaceae	<i>Paspalidium distans</i>		Grass & grasslike (GG)
38.	Poaceae	<i>Rytidosperma bipartitum</i>	Dock	Forb (FG)
39.	Poaceae	<i>Sporobolus spp.</i>	Rat's Tail Couch	Grass & grasslike (GG)
40.	Polygonaceae	<i>Rumex spp.</i>	Dock	Forb (FG)
41.	Verbenaceae	<i>Verbena gaudichaudii</i>	Verbena	Forb (FG)



APPENDIX 3: EXOTIC SPECIES LIST

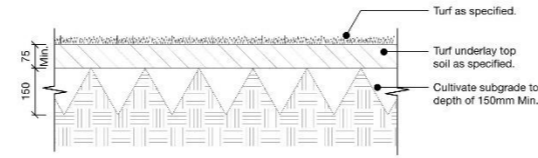
#	Family	Scientific Name	Common Name	Growth Form
1.	Asteraceae	<i>Aster subulatus</i>	Wild Aster	Exotic
2.	Asteraceae	<i>Gamochaeta spp.</i>		Exotic
3.	Asteraceae	<i>Lactuca serriola f. serriola</i>		Exotic
4.	Asteraceae	<i>Parthenium hysterophorus</i>	Parthenium	Exotic
5.	Asteraceae	<i>Sonchus oleraceus</i>	Common	Exotic
6.	Brassicaceae	<i>Capsella bursa-pastoris</i>	Shepherd's Purse	Exotic
7.	Brassicaceae	<i>Lepidium africanum</i>	Common	Exotic
8.	Brassicaceae	<i>Sisymbrium irio</i>	London Rocket	Exotic
9.	Brassicaceae	<i>Sisymbrium spp.</i>		Exotic
10.	Fabaceae (Faboideae)	<i>Medicago minima</i>	Woolly Burr Medic	Exotic
11.	Fabaceae (Faboideae)	<i>Trifolium glomeratum</i>	Clustered Clover	Exotic
12.	Lamiaceae	<i>Lamium amplexicaule</i>	Dead Nettle	Exotic
13.	Malvaceae	<i>Malva parviflora</i>	Small-flowered Mallow	Exotic
14.	Myoporaceae	<i>Myoporum montanum</i>		Exotic
15.	Poaceae	<i>Chloris gayana</i>	Rhodes Grass	Exotic
16.	Poaceae	<i>Eragrostis curvula</i>	African Lovegrass	Exotic
17.	Poaceae	<i>Paspalum dilatatum</i>	Paspalum	Exotic
18.	Polygonaceae	<i>Rumex spp.</i>	Lippia	Exotic
19.	Solanaceae	<i>Lycium ferocissimum</i>	African Boxthorn	Exotic
20.	Solanaceae	<i>Solanum nigrum</i>	Black-berry Nightshade	Exotic
21.	Verbenaceae	<i>Phyla canescens</i>	Paspalum	Exotic

APPENDIX 4: LANDSCAPE PLAN

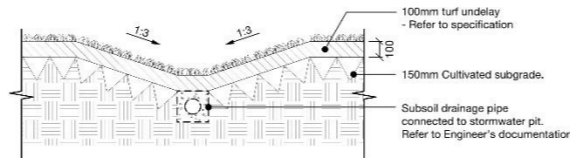


01 TYPICAL TREE IN MASS TURF PLANTING DETAIL
Scale: 1:20

- NOTES:
1. Finish crossfall to turf shall be 1:80 min. Finish flush with adjoining surfaces.
 2. Ameliorate site soil or import topsoil to provide a turf underlay that complies with AS4419.
 3. Ameliorate clay subsoil with gypsum applied at the rate specified by the manufacturer. Remove contaminated areas, deleterious material such as large rocks greater than 50mm, rubbish and large twigs.
 4. Lay turf parallel to contour, close butted and lightly tamp.
 5. Fill joints with top dressing soil.
 6. Provide subsoil drainage to address any poorly draining areas.
 7. Water in and maintain consistent deep watering for 14 weeks minimum.
 8. Consistently top dress depressions to provide an even surface.
 9. Mow, top dress and control pests and disease consistently during the remainder of the planting establishment period.
 10. All turf orders to be supplied free of plastic reinforcement mesh.



03 TYPICAL TURF PLANTING DETAIL
Scale: 1:10

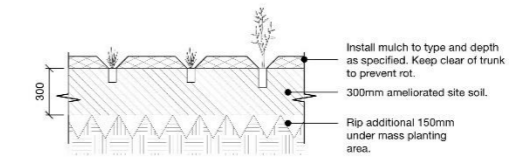


04 TYPICAL TURF SWALE DETAIL
Scale: 1:20

Code	Botanical Name	Common Name	Pot Size	Mature Height	Mature Width	Qty	Notes
Trees							
CAS cri	<i>Casuarina cristata</i>	Belah	45 litre	10 - 15m	3.5 - 6m	47	N
EUC mic	<i>Eucalyptus microtheca</i>	Coolabah	45 litre	15 - 25m	6 - 10m	50	N / LF
WAS rob	<i>Washingtonia robusta</i>	Mexican Fan Palm	45 litre	20 - 25m	2.0 - 3.5m	3	E
ZEL ser	<i>Zelkova serrata 'Wireless'</i>	Japanese Zelkova	45 litre	14m	12m	4	E
MP1 Mass Planting Existing grassland							
MP2 Mass Planting							
STI sca	<i>Stipa scabra</i>	Rough Speargrass	Tubestock	0.3 - 0.45m	0.3 - 0.6m	796	4 per m ²
STI ver	<i>Stipa verticillata</i>	Slender Bamboo Grass	Tubestock	1.5 - 2.0m	0.8 - 1.0m	796	4 per m ²
MP3 Mass Planting							
BOL flu	<i>Bolboschoenus fluviatilis</i>	Stream Club-rush	Tubestock	0.75 - 0.9m	0.3 - 0.6m	64	4 per m ²
CAR app	<i>Carex appressa</i>	Tall Sedge	Tubestock	0.8 - 1.0m	0.6 - 0.9m	64	4 per m ²
ENT str	<i>Entolasia stricta</i>	Wiry Panic	Tubestock	0.75 - 0.90m	0.3 - 0.6m	64	4 per m ²
JOY pal	<i>Joycea pallida</i>	Red Anther Wallaby Grass	Tubestock	0.9 - 1.5m	0.6 - 0.9m	64	4 per m ²
JUN usi	<i>Juncus usitatus</i>	Common Rush	Tubestock	0.9 - 1.5m	0.6 - 0.9m	64	4 per m ²
MP4 Mass Planting							
DIA jes	<i>Dianella caerulea 'Little Jess'</i>	Blue Flax-lily	Tubestock	0.45 - 0.6m	0.3 - 0.6m	84	4 per m ²
LOM flu	<i>Lomandra fluviatilis 'Shara'</i>	River Lomandra	Tubestock	0.45 - 0.6m	0.3 - 0.6m	168	4 per m ²
MYO par	<i>Myoporum parvifolium</i>	Boobialla	Tubestock	0.45 - 0.6m	0.9 - 1.2m	95	3 per m ²
RHA spi	<i>Rhagodia spinescens</i>	Thorny Saltbush	200mm	1.0 - 1.5m	1.0 - 2.0m	3	0.5 per m ²
RHA sno	<i>Rhaphiolepis 'Snow Maiden'</i>	Indian Hawthorn	200mm	0.60 - 0.75m	0.3 - 0.6m	3	0.5 per m ²
MP5 Mass Planting							
CAR gla	<i>Carpobrotus glaucescens</i>	Pigface	Tubestock	0.0 - 0.3m	1.2 - 2.0m	16	4 per m ²
SEN ser	<i>Senecio serpens</i>	Blue Chalk Sticks	Tubestock	0.1 - 0.2m	0.6 - 1.0m	16	4 per m ²
DRA mar	<i>Dracaena marginata</i>	Red edged dragon tree	200mm	3 - 5m	1.2 - 2.0m	16	4 per m ²
AEO sch	<i>Aeonium arboreum 'Schwarzkopf'</i>	Aeonium Schwarzkopf	140mm	0.3-0.6m	0.6-0.9m	16	4 per m ²
KAL thy	<i>Kalanchoe thyrsiflora 'flapjack'</i>	Kalanchoe flapjack	140mm	0.3-0.6m	0.6-0.9m	16	4 per m ²

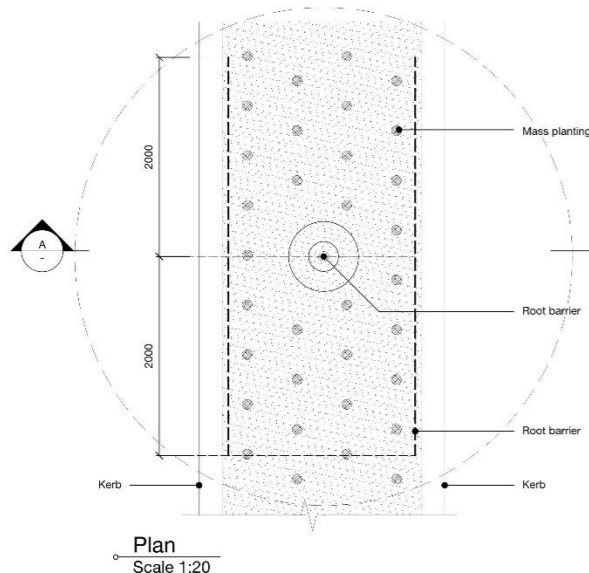
Note:
N - Native
E - Exotic
LF - Low flammable

NOTE:
CONTRACTOR IS REQUIRED TO CHECK ALL NUMBERS ON DRAWINGS AND CONFIRM WITH SCHEDULE PRIOR TO ORDERING. NUMBERS ON DRAWINGS TO TAKE PRECEDENT ALONG WITH SQUARE METRE RATES. ALL CONTAINER SIZES SUBJECT TO COMMERCIAL AVAILABILITY AT TIME OF ORDERING.

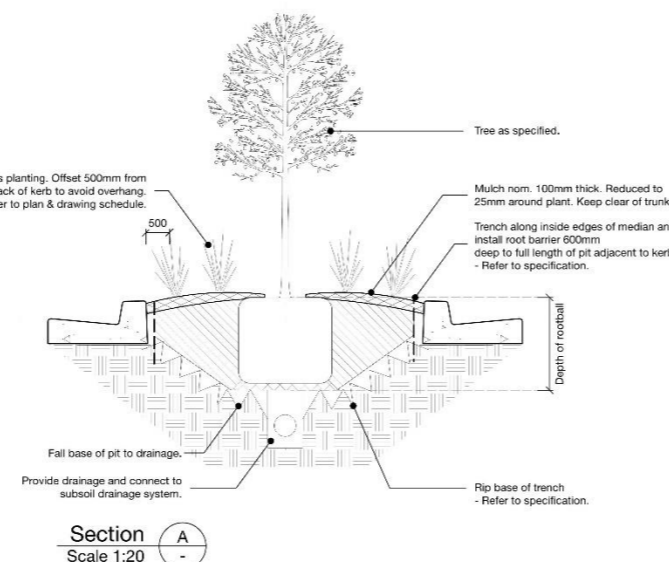


05 TYPICAL MASS PLANTING DETAIL
Scale: 1:20

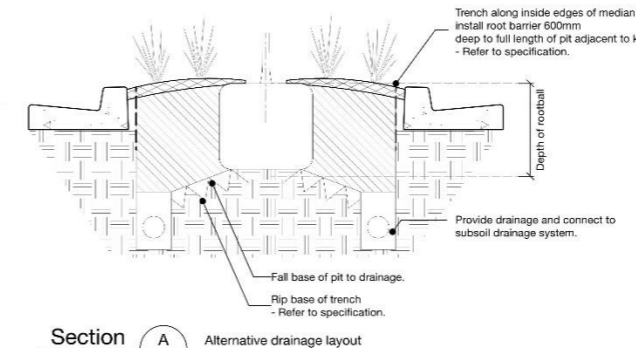
- NOTES:
- Comply with all relevant Australian Standards.
 - Comply with RMS requirements and guidelines.
 - Obtain DBYD drawings prior to starting work.
 - Ground truth all possible conflicts with underground and overhead services and structures prior to commencement of works.
 - Confirm locations of subsoil drainage system prior to starting work.
 - Minimum tree installation size is 75 litres unless indicated otherwise on Conditions of Consent.
 - Tree species substitution requires written consent from LMCC.



02 TREE IN MEDIAN PLANTING DETAIL
Scale: 1:20



Section A
Scale 1:20



Section A
Scale 1:20

moir landscape architecture
Studio 1, 89 Fern Street | PO Box 111
Islington NSW 2296
Phone (02) 4965 3500 Fax (02) 4965 3555
admin@moir.com.au www.moir.com.au



NOTES:
1. DO NOT SCALE OFF DRAWINGS. FOLLOW WRITTEN DIMENSIONS. IF IN DOUBT OBTAIN WRITTEN ADVICE FROM THE SUPERINTENDENT.
2. VERIFY ALL DIMENSIONS ON SITE.
3. TO BE READ IN CONJUNCTION WITH THE SPECIFICATION.
4. READ IN CONJUNCTION WITH ALL ARCHITECTURAL, CIVIL, STRUCTURAL, HYDRAULIC, MECHANICAL AND ELECTRICAL ENGINEERS' DRAWINGS AND SPECIFICATIONS.
5. CONFIRM LOCATION OF ALL SERVICES ON SITE PRIOR TO EXCAVATION.
6. DRAWINGS TO BE PRINTED IN COLOUR ONLY

Architect: SHAC
Engineer:

No.	Date	REVISION	By
A	4/3/2022	FOR DISCUSSION	CN
B	19/07/22	FOR APPROVAL	AS
C	4/10/2022	FOR APPROVAL	AG
D	19/10/2022	FOR APPROVAL	CN
E	7/11/22	FOR APPROVAL	CN

Status: FOR APPROVAL
Wee Waa High School
Off Kamilari Highway, Wee Waa NSW
BUILT

DETAILS	
SCALE: AS SHOWN	Project No. 2114
ORIGINAL DRAWING AT A1.	Drawing No. LP08
Drawn By: CNAG	Rev E
Checked By: TB	



APPENDIX 5: BMP APPROVAL



Department of Planning and Environment

Our ref: DOC23/1058153
Your ref: SSD-21854025

Elise Harrison
Project Manager
TSA Management
elise.harrison@tsamgt.com

Dear Elise,

Wee Waa High School (SSD-21854025) – Draft Biodiversity Management Plan (BMP)

Thank you for your e-mail dated 1 December 2023 to the Biodiversity, Conservation and Science Directorate (BCS) of the Department of Planning and Environment inviting comments on the revised draft Biodiversity Management Plan (BMP) for the new Wee Waa High School (SSD-21854025).

BCS has reviewed the revised draft Biodiversity Management Plan and is satisfied that the BMP contains measurable management actions for the partial impact zone assessed in the Biodiversity Development Assessment Report (BDAR). We note that the proponent has also committed to annually providing BCS with monitoring reports for the partial impact zone.

BCS is satisfied that our previous comments have been addressed and have no further comments on the draft BMP.

If you have any questions about this advice, please do not hesitate to contact Candice Larkin, Senior Conservation Planning Officer, via candice.larkin@environment.nsw.gov.au or (02) 8217 2065.

Yours sincerely

Liz Mazzer
A/Senior Team Leader Planning North West
Biodiversity, Conservation and Science Directorate

4 December 2023



