Report

Koala Plan of Management for New High School for Medowie

Department of Education (DoE)

30 January 2025

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Project Details

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Client	Department of Education (DoE)
Client Project Manager	Tia Cutrupi
Water Technology Project Manager	Caroline Khoo
Water Technology Project Director	Dr Michael Aberton
Authors	Petra Arola
Document Number	23050100_R03V03_Koala Plan of Management Medowie HS

Suite 3, Level 1, 20 Wentworth Street
Parramatta NSW 2150
Telephone (02) 9354 0300
ACN 093 377 283
ABN 60 093 377 283

ACKNOWLEDGEMENT OF COUNTRY

The Board and employees of Water Technology acknowledge and respect the Aboriginal and Torres Strait Islander Peoples as the Traditional Custodians of Country throughout Australia. We specifically acknowledge the Traditional Custodians of the land on which our offices reside and where we undertake our work.

We respect the knowledge, skills and lived experiences of Aboriginal and Torres Strait Islander Peoples, who we continue to learn from and collaborate with. We also extend our respect to all First Nations Peoples, their cultures and to their Elders, past and present.

Artwork by Maurice Goolagong 2023. This piece was commissioned by Water Technology and visualises the important connections we have to water, and the cultural significance of journeys taken by traditional custodians of our land to meeting places, where communities connect with each other around waterways.

The symbolism in the artwork includes:

- *Seven circles representing each of the States and Territories in Australia where we do our work*
- *Blue dots between each circle representing the waterways that connect us*
- *The animals that rely on healthy waterways for their home*
- *Black and white dots representing all the different communities that we visit in our work*
- *Hands that are for the people we help on our journey*

CONTENTS

APPENDICES

LIST OF FIGURES

LIST OF TABLES

1 INTRODUCTION

This Koala Plan of Management has been prepared to support a Review of Environmental Factors (REF) for the proposed New High School for Medowie (the activity). The purpose of the REF is to assess the potential environmental impacts of the activity prescribed by State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&I SEPP) as "development permitted without consent" on land carried out by or on behalf of a public authority under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). This document has been prepared in accordance with the Guidelines for Division 5.1 assessments under the EP&A Act.

The activity is to be undertaken pursuant to Chapter 3, Part 3.4, Section 3.37A of the T&I SEPP.

The activity will be carried out at 6 Abundance Road, Medowie (the site). The purpose of this report is to fulfill the requirements under the Port Stephens CKPoM and support the planning pathways process.

1.1 Assessment context

The NSW Department of Education (DoE) is proposing to construct a new high school at 6 Abundance Road, Medowie NSW 2318. The site is 6.51ha in area, and comprises 1 allotment, legally described as Lot 3 in DP788451 in Port Stephens Local Government Area (LGA). As such, the activity is subject to the requirements of Port Stephens Local Environment Plan 2013 (LEP) and other local legislation and policies. The lot is zoned RU2 – Rural Landscape under the Port Stephens LEP.

Port Stephens Council developed a Comprehensive Koala Plan of Management (CKPoM) in the 1990's to identify koala habitat across the LGA and identify threats to the local koala population in order to enhance the koala conservation within the LGA (Port Stephens Council, 2002). The CKPoM was endorsed in 2001 and has helped manage community development within the LGA in relation to koala conservation efforts.

The Koala Habitat Map forms part of the CKPoM and identifies areas of preferred koala habitat and buffer areas, supplementary and marginal koala habitat, and habitat linking areas. Based on the mapping of the site, different sets of requirements are placed on the development and reporting, as specified in the CKPoM. This will be covered in the following section. The proposed site has mapped Preferred Koala Habitat as well as habitat buffer areas and habitat linking areas. Therefore, further assessments are required by the CKPoM for any proposed activities on the site.

Water Technology has been requested by DoE to prepare a Koala Plan of Management (KPoM) to fulfill the requirements under the Port Stephens CKPoM and support the planning pathways process.

1.2 Site Description

A large proportion of the site is currently unused and vacant. A small shed structure and caravan are located adjacent to the northern boundary. A cluster of buildings including a single storey dwelling, an outhouse/shed structure and temporary greenhouse are located within the south eastern corner.

The site contains a largely vegetated area to the south west corner. The site is relatively flat with a gradual fall from west to east toward Abundance Road.

The site has a primary frontage to Abundance Road to the east and Ferodale Road to the north. Abundance Road and Ferodale Road are both classified Local Roads. Medowie Road, approximately 1km east of the site, is a classified Regional Road.

The area surrounding the site mostly consists of industrial, rural residential, educational, and agricultural lands. Adjacent to the north western boundary is a Shell petrol station and mechanic garage. Adjacent to the north eastern boundary is a medical health clinic. Across Abundance Road along the eastern boundary are a number

of warehouse and light industrial developments. Directly north of the site across Ferodale Road are large lots used for agricultural purposes. Medowie Public School is located on Ferodale Road, to the north west of the site, opposite the Shell petrol station.

The site in the landscape context is shown in Figure 1-1.

Figure 1-1 Project site

1.3 Project description

The proposed activity involves the construction of school facilities on the site for the purpose of the New High School for Medowie. Several sites have been assessed for their suitability and this site was the preferred location.

The site contains a densely vegetated area to the southwest corner which is identified as land with high biodiversity values corresponding to the areas of remnant native vegetation (PCT 3995 – Hunter Coast Paperbark-Swamp Mahogany Forest). The existing dwelling house and other structures on the site will be demolished as part of the works. No other works are proposed within this area. The proposed new school will accommodate 640 students in 29 permanent teaching spaces including 3 support teaching spaces across 3-storeys of buildings on the site. The proposed activity be delivered across 1 stage, and will consist of the following:

- 29 permanent teaching spaces including 3 support teaching spaces, to accommodate 640 students, and school hall to accommodate 1,000 students. Approximately 10,500 sqm of GFA is proposed.
- Main vehicular ingress and egress to Ferodale Road to the north, with a new pedestrian and vehicle crossing proposed.
- Main pedestrian access to Abundance Road.
- Kiss and ride, and bus drop and pick up areas to Abundance Road (6 x parallel spaces).
- New pedestrian wombat crossing to Abundance Road
- Approximately 55 x car parking spaces and 3 x accessible car parking spaces. • Approximately 70 x bicycle parking spaces.
- Block A (Admin) consisting of administration and learning spaces.
- Block B (Foodtech/Workshop) consisting of food technology rooms and workshops.
- Block C (Hall) consisting of school hall to accommodate 1,000 students.
- Central quad, 1 playing field, and 1 sports courtyard.

The proposed school development will include the following spaces; general learning spaces, General support learning spaces, administrative services, staff areas, gym and canteen, library areas for science, wood and metal, food and textiles, health PE, performing arts, additional learning spaces, student amenities, storage, movement (stairs and covered walkways). Refer to Figure 1-2 for plan draft.

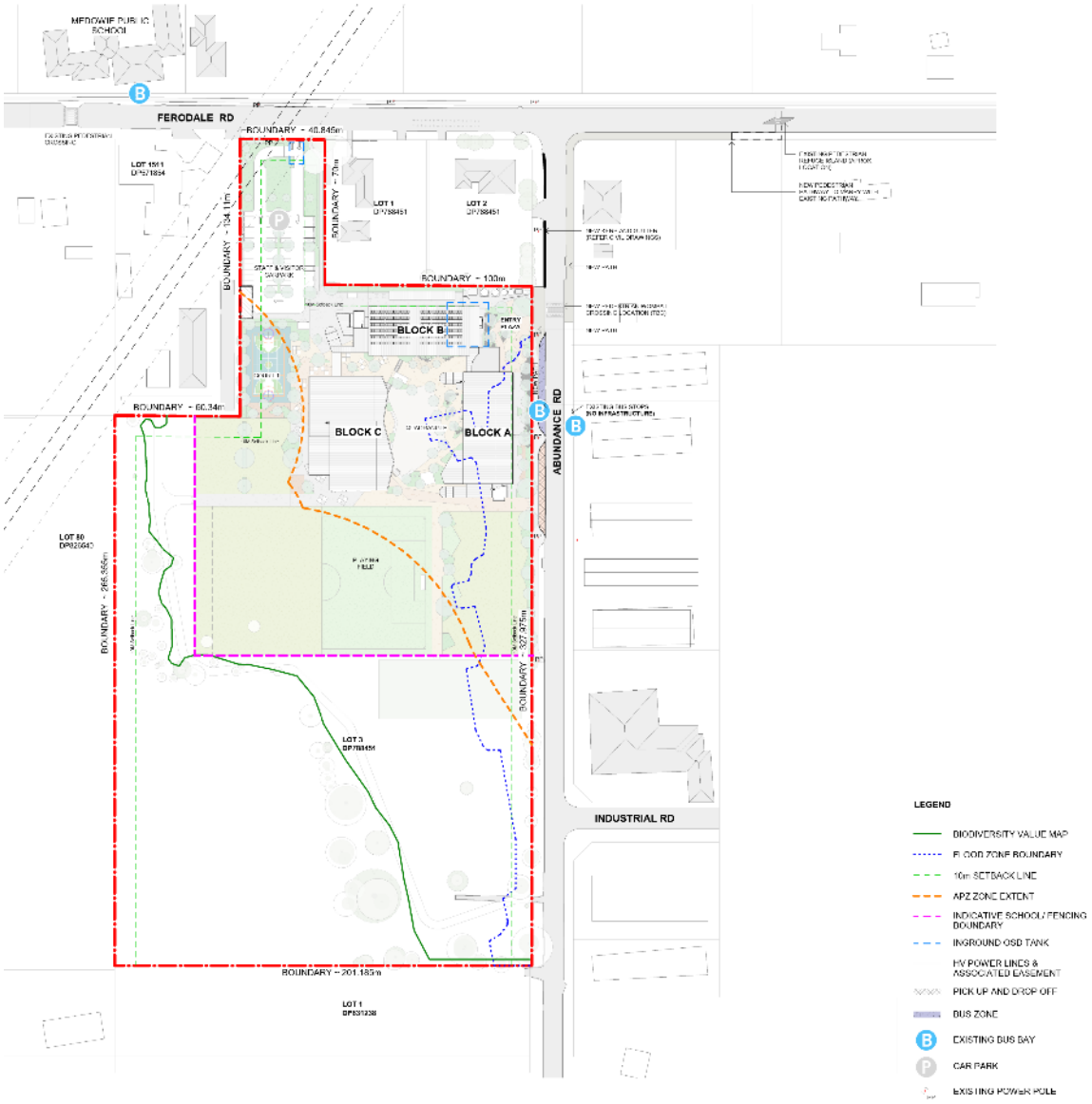

Figure 1-2 Proposed development footprint

2 BACKGROUND

2.1 Port Stephens Comprehensive Koala Plan of Management (CKPoM)

This KPoM has been prepared in line with the requirements under the Port Stephens CKPoM, which is consistent with the National Koala Strategy (ANZECC 1998). At the time of endorsement, the State Environmental Planning Policy No. 44 - Koala Habitat Protection (SEPP 44) was in effect, but has now been replaced by Chapter 3 “Koala habitat protection 2020” and Chapter 4 “Koala habitat protection 2021” under the Biodiversity and Conservation SEPP 2021.

The main objectives of the CKPoM which are most relevant to this KPoM include identifying priority conservation areas to protect significant habitat and populations, devising effective conservation strategies, restoring degraded habitat and increasing public awareness.

In relation to development proposals, the CKPoM aims to:

- Ensure that adequate detail is provided with Development Applications in order to assess, minimise and ameliorate likely impacts on koala habitat; and
- Provide guidelines and development standards to protect koalas and koala habitat.

2.2 Performance Criteria

For the abovementioned purpose, a set of performance criteria have been developed against which all relevant activities need to be assessed to fulfill the legislative requirements, both state and local. These performance criteria form an important means to regulate development so that koala habitat can be protected and effectively managed.

The general aims and objectives of these performance criteria are as follows:

a. To ensure that the koala population in the Port Stephens LGA is sustainable over the long-term.

b. To protect koala habitat areas from any development which would compromise habitat quality or integrity.

c. To ensure that any development within or adjacent to koala habitat areas occurs in an environmentally sensitive manner.

d. To ensure that acceptable levels of investigation are undertaken, considered and accepted prior to any development in or adjacent to koala habitat areas.

e. To encourage koala habitat rehabilitation and restoration.

f. Maintain interconnection between areas of Preferred and Supplementary Koala Habitat and minimise threats to safe koala movements between such areas.

g. To ensure that development does not further fragment habitat areas either through the removal of habitat or habitat links or through the imposition of significant threats to koalas.

h. To provide guidelines and standards to minimise impacts on koalas during and after development, including any monitoring requirements.

i. To provide readily understandable advice to proponents preparing development applications and for Council officers involved in the assessment of those applications.

All Development Applications in the Port Stephens LGA must demonstrate that they are consistent with the above objectives.

These performance criteria are also the most suitable for other development types such as the proposed activity assessed under this REF.

2.3 Site Context

Port Stephens has long since been an LGA where koala conservation and the importance of koala habitat preservation has been emphasised. The proposed site is located within the Port Stephens Area of Regional Koala Significance (ARKS) and is also within a Priority Population for the NSW Koala Strategy 2021-2026.

Koala sightings in the area have been recorded on Bionet since pre-1960, and a comprehensive map showing all nearby verified records is included in Appendix A. Colour coding is used to indicate the year of the sighting as per the map legend. Most of the sightings near the site are between 1975 and 1995. The records on or in very close proximity to the site are dated 1989 and 1991. There is one record from 2023 within 100m of the site.

Based on the Port Stephens CKPoM Koala Habitat Map the subject site contains three categories of koala habitat (Figure 2-1):

- Preferred Koala Habitat (full blue);
- Preferred Koala Habitat Buffer Over Cleared Land (blue hashed over yellow); and
- Preferred Koala Habitat Link over Cleared Land (blue stripes over yellow).

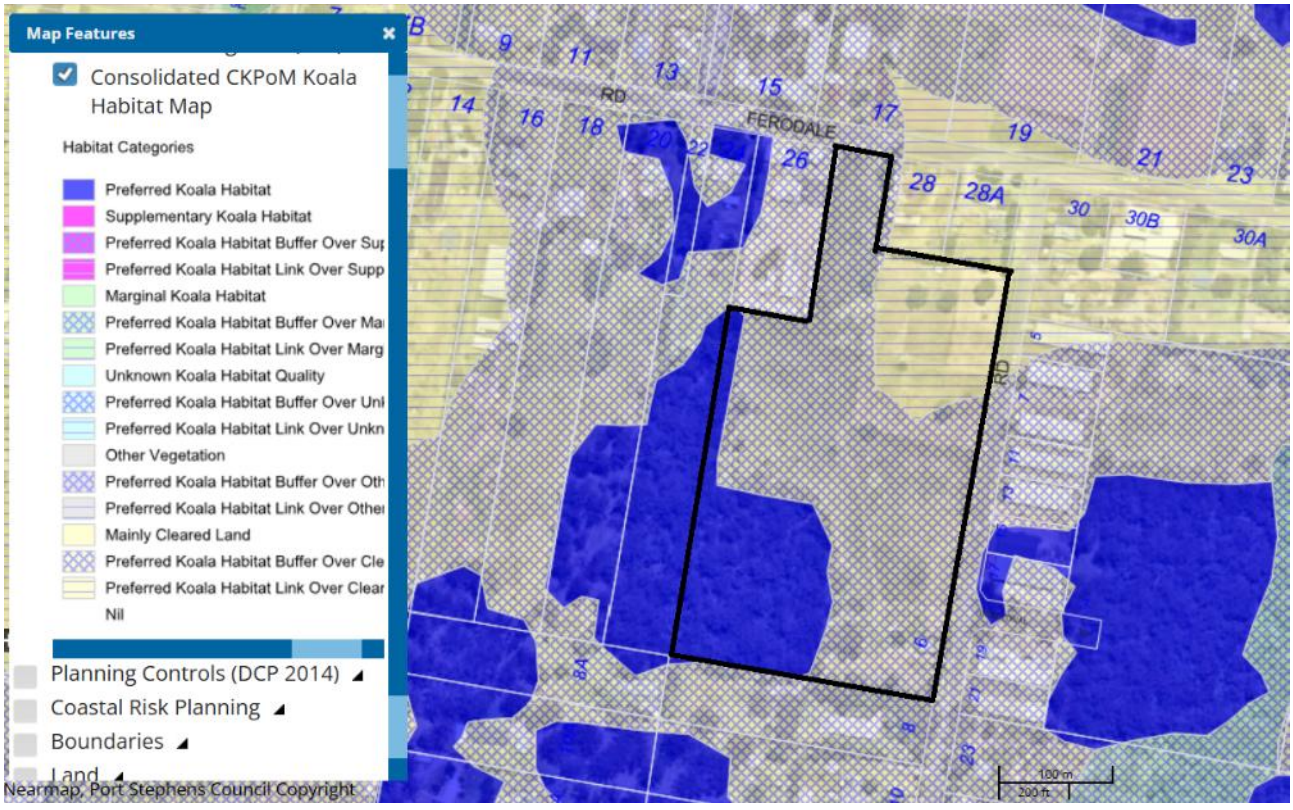

Figure 2-1 Port Stephens Koala Habitat Map

Figure 2-2 shows the proposed development in relation to the mapped koala habitat using the same symbology as above.

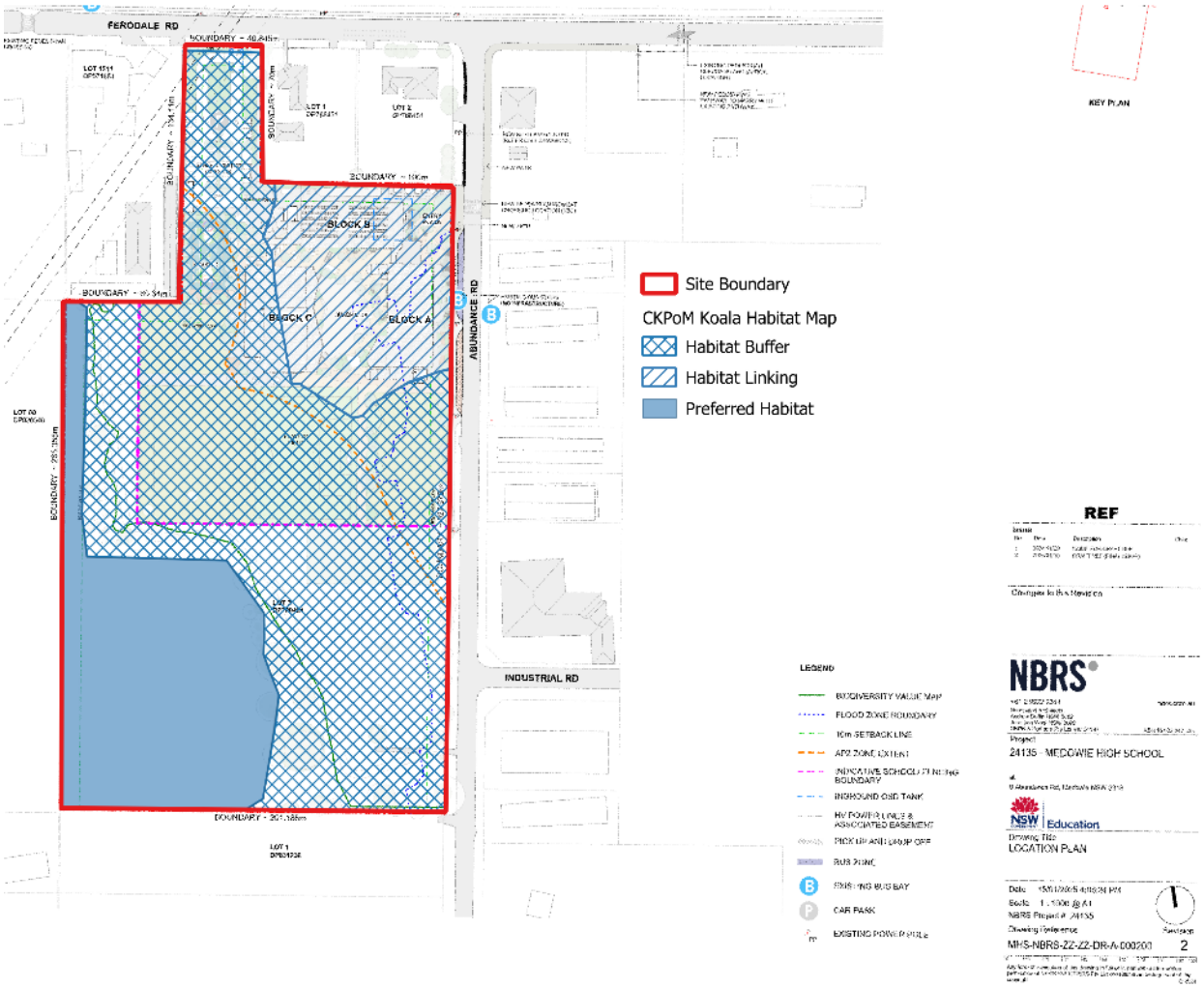

Figure 2-2 Development footprint overlaid with the Port Stephens CKPoM Koala Habitat Map

The performance criteria for development assessments apply to all habitat categories mapped on the site, with the highest level of protection afforded to preferred koala habitat and its buffer. Habitat linking areas have a lower level of restrictions than the other two koala habitat categories. Preferred koala food trees require protection wherever they occur in the Port Stephens LGA.

3 METHODOLOGY

3.1 Assessment under the CKPoM

The methodology for this KPoM follows the requirements and guidelines outlined in the Port Stephens CKPoM and its appendices.

Guidelines for Koala Habitat Assessments are included in Appendix 6 of the Port Stephens CKPoM, and a diagram outlining the process is displayed in Appendix B of this report. The steps for koala habitat assessment in order are as follows:

1. Preliminary Assessment;
2. Vegetation Mapping;
3. Koala Habitat Identification; and
4. Assessment of the proposal.

In line with the requirements of the guidelines, the assessment was carried out by two persons with qualifications and experience in tree species identification and qualifications and experience in biological science and fauna survey and management, including koala surveys. Brief CVs outlining each assessors' relevant experience is outlined in Appendix C.

Step 1, the preliminary assessment, includes a review of the Port Stephens Koala Habitat Map and a site visit to ascertain the presence or absence of preferred koala feed tree species. If the site contains any koala habitat mapping afforded the highest level of protection, or koala feed tree species, the assessment continues to step 2. Preferred koala food trees require protection wherever they occur in the Port Stephens LGA.

Step 2 of the process includes mapping of the vegetation using standardised quadrat or transect methods, and displaying the results on an A3 map. For this survey BAM plots were used as a standardised floristic survey method. The vegetation map shows the distribution of vegetation associations for the site plus a 100m area around the site. In addition to the vegetation mapping, a survey of any signs of koalas using the site as habitat was undertaken. This included a search for koala scats and scratch marks on trees within the vegetation patch and in the paddock.

In step 3, the vegetation map is then compared to the LGA-wide Vegetation Map to identify any discrepancies. Based on the outcome, either step 3a (LGA-wide Vegetation Map is not accurate) or step 3b (LGA-wide Vegetation Map is accurate) is implemented.

The final step (4) then assesses the appropriateness of the proposal based on information from the previous steps. This includes an assessment of the proposal against the performance criteria for development applications, and a map showing the proposed development in relation to the koala habitat map. If the applicant requests provisions a), b) or c) of the criteria (see Table 4-1) be waived, a koala habitat utilisation assessment needs to be undertaken. No provision waiving has been requested for this project, but a brief koala utilisation survey was undertaken using the Spot Assessment Technique (SAT), nonetheless.

The outcome of the assessment steps 1-4 is detailed in Section 4.

3.2 Information to Accompany Development Applications/REFs

As previously mentioned, the DA assessment process for koala habitat is the most appropriate method to use for the purpose of this REF approval. Table 3-1 details the adherence to the information requirements as detailed in the Port Stephens CKPoM.

Table 3-1 Information requirements

Information requirement	Inclusion in this KPoM
Sites containing Preferred or Supplementary Habitat, Habitat Buffers or Habitat Linking Areas	
1. An assessment of koala habitat, by a suitably qualified person, in accordance with the Guidelines for Koala Habitat Assessment.	See CVs attached in Appendix C.
2. Clear details concerning which vegetation is to be cleared or disturbed and that which is to be retained.	An Arboricultural Impact Assessment report including the finalised tree removal plans for the works (Assurance Trees, 2025) was reviewed as part of this assessment. See Figure 3-1 for reference to tree removal plans. For full list of tree species with figure reference see the Arboricultural Impact Assessment for the project. 40 trees and shrubs will be removed, of which 25 are weed species (predominantly African Olive *Olea europaea*). Groundcover mainly consisting of exotic paddock grasses will also be removed. Five native Silky Oaks (*Grevillea robusta*), three Sydney Peppermint (*E. piperita)*, one White Cedar (*Melia azedarach*) and some Native Daphnes (*Pittosporum undulatum*) and Cheese Trees (*Glochidion fernandii*) would also likely be removed. None of the trees proposed for removal are preferred koala feed tree species under the Port Stephens CKPoM, but that can be used as habitat or potentially secondary fee trees. The removal of these trees outside of the vegetation patch on site, and the majority of them being exotic species, is not expected to significantly impact on available koala habitat on site. However, a principle of minimal native tree removal should be adopted to benefit koalas on and near the new school site.

Information requirement	Inclusion in this KPoM
3. Details of any proposed building envelopes and fire fuel reduction zones and the means by which they are to be enforced.	Refer to Figure 2-2 for site plans. An APZ of 40-79m will be kept around the proposed development footprint and would stop at the forested zone. Therefore, no tree clearing is expected within the vegetation patch in the southwest corner of the site (preferred koala habitat). The APZ will also exclude those trees mapped as extended habitat in Appendix D discussed in Section 4.2 below. A separate bushfire assessment report has been prepared, refer to this report for further details on the APZ and bushfire protection measures. A Native Vegetation Management Plan (NVMP) has been prepared for the site (Water Technology, 2025). The NVMP contains suitable bushfire risk mitigation measures from a biodiversity preservation and enhancement perspective.
4. Proposed measures to restore or rehabilitate koala habitat, including measures which will result in the net gain of koala habitat.	A Native Vegetation Management Plan (NVMP) has been prepared for the site. The NVMP will enhance the native bush vegetation on site and thus help improve the koala habitat (including koala food trees). Further measures for koala conservation and koala habitat improvement are included in Section 5.
5. Proposed measures to allow the safe movement of koalas across the site including road designs and speed mediation measures, fence construction details where fencing is proposed, and swimming pool specifications.	As relevant, the fencing requirements for the site are detailed in Section 5.
6. Proposed measures to mitigate the impacts on koalas by dogs.	N/A. The proposal will not increase the negative impacts from dogs on koalas.
7. Details of any proposed program to monitor koalas and koala habitat, during and following development activity on a site. Monitoring programs would not be required for single lot developments. Rather, they would be expected for subdivisions.	N/A. The proposed activity is not a subdivision. The measures in Section 5 propose inclusion of koala education with potential monitoring as part of the school program.
Sites adjacent to Preferred or Supplementary Habitat, Habitat Buffers or Habitat Linking Areas	
8. Proposed measures to mitigate the impacts by dogs on koalas which occupy adjacent habitat. This must include measures (such as education of dog owners, appropriate signs, or restrictions on dog ownership) that reduce the likelihood of domestic dogs straying into koala habitat.	N/A, the school site will not have residing dogs. Mitigation measures about educating residents about threats of dogs on koalas are included in Section 5.

Information requirement	Inclusion in this KPoM
9. Proposed measures to mitigate the impact on koalas of motor vehicles travelling to the site. This must include appropriate traffic control measures on roads which run through or adjacent to nearby koala habitat and which are subject to increased traffic volumes due to the development on the site.	The development of a school on the site is expected to significantly increase the traffic on and around the site at certain times of day. Measures to mitigate impacts from increased traffic on surrounding streets are detailed in Section 5.

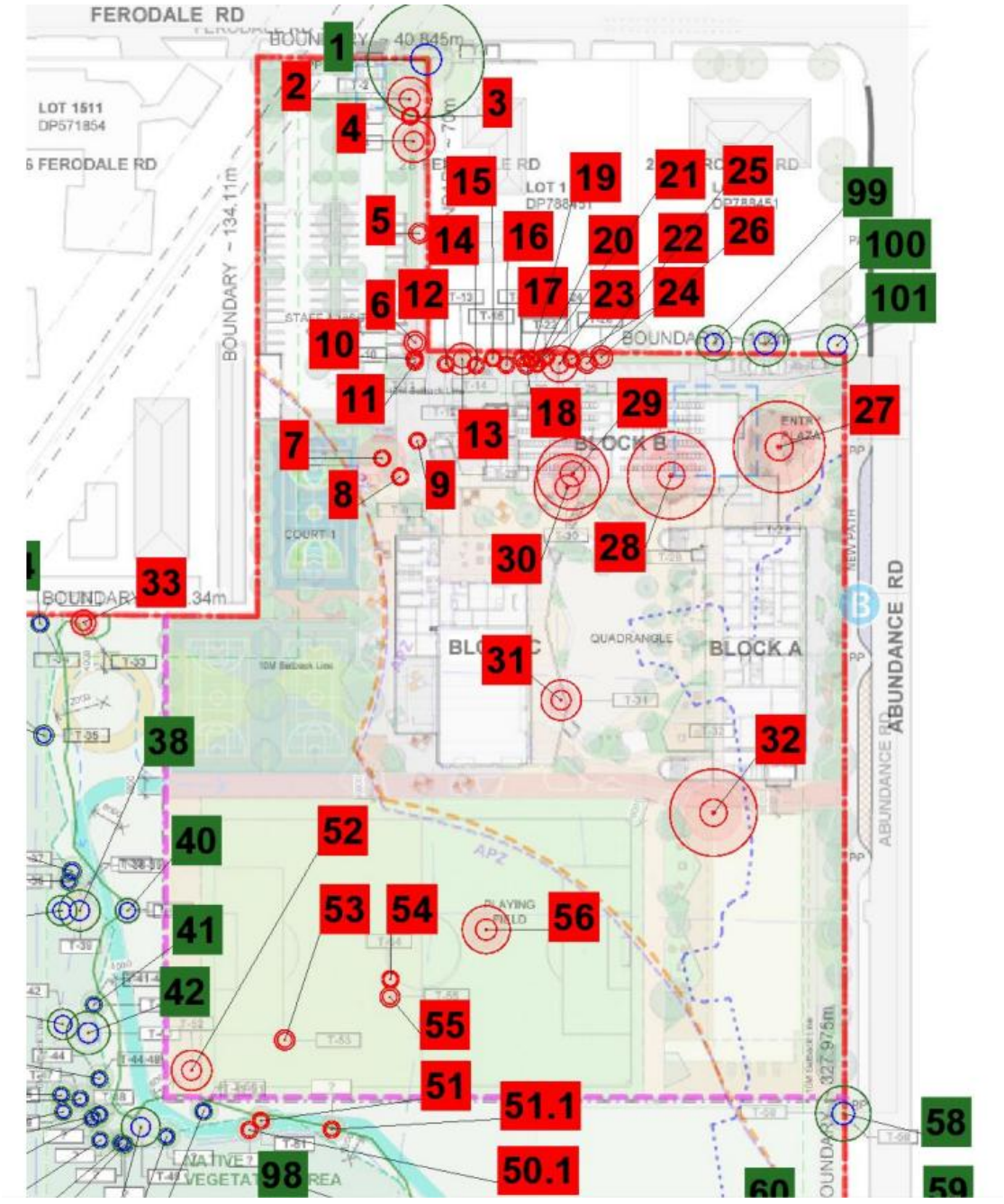

Figure 3-1 Tree removal plan. Figure courtesy Assurance Tree (2025).

4 RESULTS

4.1 Step 1: Preliminary Assessment

The koala habitat mapping of the site is shown in Figure 2-1. The site contains preferred koala habitat, as well as buffer areas and habitat linking areas. The proposed activity would be located within the buffer and linking areas, and the preferred koala habitat area would not be disturbed according to the final plans.

A site survey for this KPoM was undertaken on 15-16 October to ascertain the extent of suitable koala habitat on the site, and to identify any additional preferred koala food trees (Swamp Mahogany *Eucalyptus robusta,* Parramatta Red Gum *Eucalyptus parramattensis* and Forest Red Gum *Eucalyptus tereticornis*) and potentially important koala tree species (Port Stephens CKPoM, Appendix 8) outside the mapped extent of the preferred koala habitat. These trees require protection during the proposed activity.

The extent of the mapped preferred koala habitat was found to reflect the extent of the native vegetation patch in the southwest corner of the site accurately, with a few extensions proposed (see Section 4.2). No preferred koala food trees were identified outside the extent of the mapped koala habitat, however a number of potentially important koala tree species were identified as shown in Figure 4-1. The tree species in Figure 4-1 include Sydney Peppermint (*Eucalyptus piperita*) and Blackbutt (*Eucalyptus pilularis*).

Three Sydney Peppermints are marked for removal, all small trees below 15cm diameter at breast height. The removal of these three trees would not cause any significant impact on available koala habitat in the area. Due to their small size these trees were not mapped as potential feed trees in this assessment (Figure 4-1).

The location of the driveway on the southern section will remain in the same location as previously and will not require further removal of potential koala feed trees.

Based on the arborist report (Assurance Trees, 2025) all of the trees mapped in Figure 4-1 are marked for retention. Crosschecking with the civil plans is also required to ensure that the proposed stormwater pipes do not encroach on the TPZ of these trees.

Figure 4-1 Individual important koala trees outside Preferred Koala Habitat

4.2 Step 2: Vegetation Mapping

A vegetation map for the site is provided in Appendix D. This map shows the distribution of vegetation across the site as well a areas of existing vegetation extending outside the mapped vegetation (koala habitat extension).

The vegetation map includes the PCT mapping surrounding the site, and the extended CKPoM Koala Habitat Mapping is shown in Figure 2-1. The field survey did not include any surveys of the neighbouring sites as they were private residential properties.

To produce the map, a combination of PCT mapping, satellite imagery and ground-truthing was used. The ground-truthing included verification of vegetation boundaries as well as flora surveys across the site. The detailed flora surveys were focused on the proposed development footprint (paddock area), which does not extend into the mapped preferred koala habitat. This patch was surveyed through a random walkthrough of the area to cover as much of the site as reasonably feasible, while recording the characteristics of the patch. All individual trees within the proposed development footprint were assessed.

Full floristic surveys in the form of BAM plots were undertaken in three (3) locations across the site, and eight (8) 1x1m vegetation survey quadrats within the development footprint were surveyed in detail to assess the vegetation losses.

The search for koala scats and scratch marks on trees found no sign of koalas using the site. However, a precautionary principle should be implemented and presence or habitat usage assumed unless proven otherwise. Koalas have previously been recorded on and near the sight, and despite a large number of the records being 30 years old it shows that koalas have previously used the habitat on site.

4.3 Step 3: Koala Habitat Identification

In step 3 the Koala Habitat Map was compared to the vegetation mapping for the area. No LEP mapping or other LGA-wide vegetation mapping was found, and so the NSW state-wide PCT mapping was used alongside satellite imagery. No major discrepancies were noted and so step 3b (LGA-wide vegetation map is accurate) was implemented.

A few areas have been suggested as an expansion on the vegetation map in Appendix D.

The tree species within the area of preferred koala habitat was dominated by important koala tree species and preferred koala feed trees, with a few additional tree species characteristic of the mapped Plant Community Type. In accordance with the CKPoM, a site-specific map showing the location of individual koala trees outside the preferred koala habitat was also produced (see Figure 4-1).

4.4 Step 4: Assessment of Proposal Against Performance Criteria

In step 4 the appropriateness of the proposal was assessed. The following criteria (a-h) apply to all developments (excluding development applications proposing agricultural activities) proposed on sites that contain or are adjacent to Preferred or Supplementary Habitat, Habitat Buffers or Habitat Linking Areas.

As shown in Figure 2-2 the entire development will be outside the preferred koala habitat on site. Some sport fields and small sections of the buildings will be within koala habitat buffer area, while the main portion of the buildings will be within habitat linking area. The area of the proposed development footprint is currently predominantly cleared land with exotic dominant vegetation and is used as horse paddocks.

Table 4-1 Performance Criteria

Performance criteria	Assessment response
a. Minimise the removal or degradation of native vegetation within Preferred Koala Habitat or Habitat Buffers	None of the preferred koala habitat will be disturbed by the works, and no native vegetation removal will be undertaken within this area. The proposed building footprint has been placed in the cleared paddock area mapped as koala habitat buffer and koala habitat linking area. The vegetation in this area mainly consists of exotic paddock grasses and weeds, with a few native and exotic paddock trees. The only native trees present within the building footprint, and planned for removal, are five Silky Oaks and one White Cedar, as well as some large Native Daphne shrubs. This vegetation is not identified as koala food tree species, and the removal of these trees is not expected to have a significant impact on koala habitat availability. While paddock trees are important to allow koalas to move between habitats, the distance for koalas to cover is not significant (100-200m) and there are plenty of trees nearby such as street trees and other adjacent vegetation patches that can be used and provide better quality habitat. The placement of the building footprint, including an indicative APZ, appears to be such that the tree removal is minimised. Additionally, the APZ will serve as a construction free buffer around the vegetation patch mapped as preferred koala habitat, further increasing the vegetation protection.
b. Maximise retention and minimise degradation of native vegetation within Supplementary Koala Habitat and Habitat Linking Areas	As described above, it appears that the building footprint has been placed so that any native vegetation removal for the proposed works is minimised. The vegetation in the section mapped as koala habitat linking area was in poor condition with high grazing pressure and weed recruitment across the site. Native flora species diversity was low in this area. No preferred or important koala food tree species are proposed for removal. The site has no mapped supplementary koala habitat.

Performance criteria	Assessment response
c. Minimise the removal of any individuals of preferred koala food trees, wherever they occur on a development site. In the Port Stephens LGA these tree species are Swamp Mahogany (*Eucalyptus robusta*), Parramatta Red Gum (*Eucalyptus parramattensis*), and Forest Red Gum (*Eucalyptus tereticornis*), and hybrids of any of these species. An additional list of tree species that may be important to koalas based on anecdotal evidence is included in Appendix 8 of the CKPoM.	The proposal does not include the removal of any preferred koala food tree species. Furthermore, no trees listed in Appendix 8 (Tree species that may be important to koalas) of the Port Stephens CKPoM are expected to be impacted by the works. Some preferred feed trees occur as street trees along Abundance Road, however these have not been proposed for removal. The vast majority of preferred koala feed trees are located in the vegetation patch in the southeast corner of the lot (preferred koala habitat) and scattered along the boundary of the lot, and around the southern side of the site. Impact within these areas should be avoided as it may trigger further assessment requirements.
d. Make provision, where appropriate, for restoration or rehabilitation of areas identified as Koala Habitat including Habitat Buffers and Habitat Linking Areas over Mainly Cleared Land. In instances where Council approves the removal of koala habitat (in accordance with dot points 1-4 of the above waive clause), and where circumstances permit, this is to include measures which result in a “net gain” of koala habitat on the site and/or adjacent land	The NVMP outlines all vegetation management practices to be undertaken to restore and rehabilitate the area. See Section 5 for further details regarding the recommendations.
e. Make provision for long term management and protection of koala habitat including both existing and restored habitat	The NVMP outlines the vegetation management practices to be undertaken on the site for the long term management of native vegetation on site. See Section 5 for further details regarding the recommendations.

Performance criteria	Assessment response
f. Not compromise the potential for safe movement of koalas across the site. This should include maximising tree retention generally and minimising the likelihood that the proposal would result in the creation of barriers to koala movement, such as would be imposed by certain types of fencing. The preferred option for minimising restrictions to safe koala movement is that there be no fencing (of a sort that would preclude koalas) associated with dog free developments within or adjacent to Preferred or Supplementary Koala Habitat, Habitat Buffers or Habitat Linking Areas. Suitable fencing for such areas could include:	While no mapping of koala corridors or koala movement within the local area exists, the most likely movement corridors have been assessed by analysing the koala habitat mapping (Figure 4-2) and the vegetation (Figure 4-3) within the local area. The site is located within a semi-rural landscape with scattered vegetation patches which largely correspond to the mapped preferred koala habitat. These areas are likely the preferred corridors for movement. In general, the area within the development footprint itself is expected to have a lower frequency of koala usage, but may still be used for koalas to move between habitat patches. The proposed activity will be located within koala linking habitat and may as such obstruct koala movement across part of the site. Koala movement in the southern half of the site will not be obstructed. Tree removal outside the footprint has been minimised, but some native trees within the footprint will require removal. The removal of paddock trees is not expected to significantly impact koala movement as detailed above. The construction of buildings and fences on the site is expected to be the main hindrance to koala movement across the site. While the placement of the footprint is planned so that the impact on koala habitat is minimised, it is also important to allow movement of koalas across the site once construction is completed. Fencing that presents minimal restriction to koala movement or risk injuries or trapping of koala should be used on the site. Suitable fencing options as per the Port Stephens CKPoM include: ■ Fences where the bottom of the fence is a minimum of 200 mm above ground level that would allow koalas to move underneath; ■ Fences that facilitate easy climbing by koalas; for example, sturdy chain mesh fences, or solid style fences with timber posts on both sides at regular intervals of approximately 20m; or ■ Open post and rail or post and wire (definitely not barbed wire on the bottom strand). See Section 5 for further details regarding the recommendations. The fencing requirements are to be incorporated into the architectural and/or landscape plans.

Performance criteria	Assessment response
g. However, where the keeping of domestic dogs has been permitted within or adjacent to Preferred or Supplementary Koala Habitat, Habitat Buffers or Habitat Linking Areas, fencing of a type that would be required to contain dogs (and which may also preclude koalas) should be restricted to the designated building envelope. Fences which are intended to preclude koalas should be located away from any trees which now or in the future could allow koalas to cross the fence.	The proposal does not include the keeping of domestic dogs on the site, and as such criteria g) is not applicable to the proposal.
h. Be restricted to identified envelopes which contain all buildings and infrastructure and fire fuel reduction zone. Generally there will be no clearing on the site outside these envelopes. In the case of applications for subdivision, such envelopes should be registered as a restriction on the title, pursuant to the *Conveyancing Act 1919*.	The proposed activity has a clearly defined envelope within which the buildings and infrastructure will be located. This assessment has been carried out under the assumption that no tree removal will occur outside the defined areas, nor will there be any vegetation disturbance from site access or ancillary facilities. An APZ will be placed around the perimeter of the proposed activity, but stops at the front of the treed area. This will also act as a buffer protecting the native vegetation within the patch.
i. Include measures to effectively minimise the threat posed to koalas by dogs, motor vehicles and swimming pools by adopting the following minimum standards:	Measures to minimise threats from motor vehicles are listed below. Threats by dogs and swimming pools are not as such relevant for this activity. Education about the threat of dog attacks on koalas is recommended as part of the mitigation measures. See Section 5 for further details regarding the recommendations.
i. The development must include measures that effectively abate the threat posed to koalas by dogs through prohibitions or restrictions on dog ownership. Restrictions on title may be appropriate.	N/A

Performance criteria	Assessment response
ii. The development must include measures that effectively minimise the threat posed to koalas from traffic by restricting motor vehicle speeds, where appropriate, to 40 kph or less	The proposed activity will likely increase traffic around the new school site during drop off and pick up times. The increased traffic during these times increases the risk of vehicle strikes on koalas crossing the road, however the risk will be suitably mitigated as per below. The local speed limit will be lowered to 40 km/h as part of the standard school zone safety management practices. Pedestrian crossings around the site are raised which will add some traffic calming impacts. This along with the lowered speed limit will mitigate the risks of vehicles striking koalas. This KPoM also recommends installing koala warning signs as mitigation measures to protect koalas moving within the road reserve adjacent to the development. The details are included in Section 5 of this report. It is noted that this measure may need to be implemented by Port Stephens Council as the authority that maintains the local roads.
iii. The development must reduce the risk of koala mortality by drowning in backyard swimming pools. Appropriate measures could include: trailing a length of stout rope (minimum diameter of 50mm), which is secured to a stable poolside fixture, in the swimming pool at all times; designing the pool in such a way that koalas can readily escape; or enclosing the pool with a fence that precludes koalas. This last option should include locating the fence away from any trees which koalas could use to cross the fence	N/A

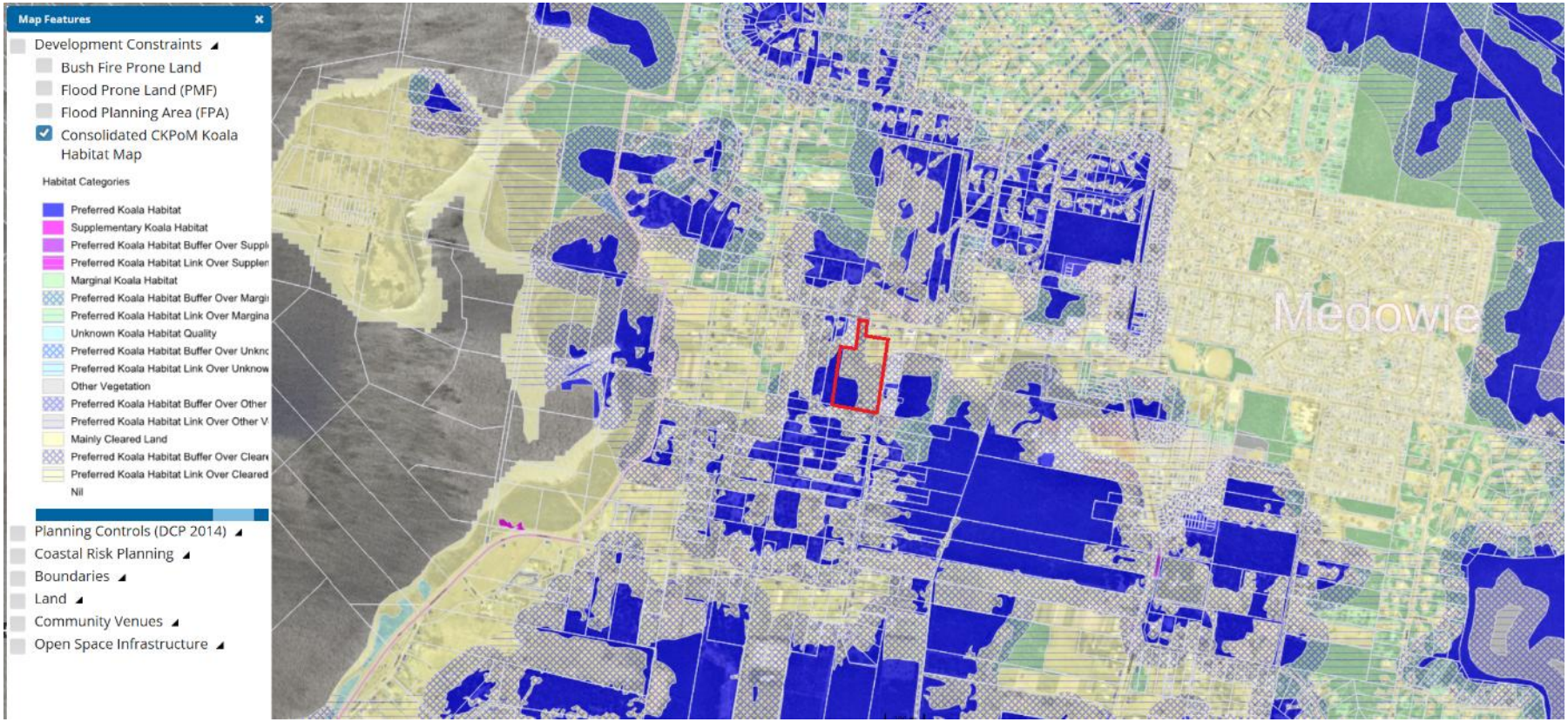

Figure 4-2 Koala Habitat Mapping in the local area

Figure 4-3 Vegetation corridors in the local area

5 RECOMMENDATIONS

The following recommendations are made to suitably mitigate the potential negative impact on the local koala population and koala habitat from the proposed activity, or where possible have a positive impact.

Mitigation measures are included for all project stages including design, pre-construction, construction and operational.

Table 5-1 Recommendations/Mitigation measures

No.	Aspect/Section	Mitigation Measure	Reason for Mitigation Measure
1.	**Vegetation Management**	It is recommended that a suitably qualified ecologist be on site during any tree removal operations to ensure koalas are not present within trees proposed for removal. No trees with koalas present should be cleared.	Koala conservation
2.		Implement the native vegetation management practices as described in the NVMP (Water Technology 2025). This will help control and manage weeds in the bushland on site and help restore koala habitat on site.	
3.		Plant gardens and revegetate using preferred koala food tree species where possible. This will enhance the habitat value of the site. Preferably the seedlings should be propagated from local seed stock. Note that all fire management strategies (fire breaks, access etc.) need to be adhered to when revegetating.	
4.	**Traffic Management**	Consult with Council regarding the need for installation of koala warning signs along the adjacent roads warning incoming traffic about koala presence in the area.	
5.		Implement speed limits and speed humps around the school (e.g. school zone speed limits) to ensure drivers approach slowly. This will be sufficiently covered by lowering speed limits to 40 km/h during drop off and pick up times when traffic loading is increased, as well as constructing a raised pedestrian crossing.	
6.		Ensure roadside vegetation is slashed to increase visibility.	
7.	**Design and construction**	Koala movement across the site should be minimally compromised by avoiding the installation of fences and other restricting structures in any of the koala habitat zones.	

No.	Aspect/Section	Mitigation Measure	Reason for Mitigation Measure
8.		Where fences are essential (such as roadside fencing), koala friendly fencing styles should be used as far as possible (Port Stephens CKPoM): a. fences where the bottom of the fence is a minimum of 200 mm above ground level allowing koalas to move underneath; b. fences that facilitate easy climbing by koalas, for example sturdy chain mesh fences or solid style fences with timber posts on both sides at regular intervals of approximately 20m; or c. open post and rail or post and wire (not barbed wire on the bottom strand). Fencing around the perimeter of and within the school fencing boundary in Figure 1-2 will need to be done to DoE standards for safety, but any fencing outside this area should follow the above recommendations.	
9.		All trees removed during the construction works stage should be checked for koala presence prior to felling.	
10.		Ensure koalas are able to migrate freely through the southern end of the lot (outside school fencing) and the preferred koala habitat, and linkage to other preferred koala habitat patches is maintained. This will be ensured in the design phase that includes no disturbance of preferred koala habitat and linkage habitat in the southern section of the site.	
11.	**Education**	Include education about koala conservation in the school program, e.g. koala habitat restoration, revegetation using preferred koala feed tree species, what to do if an injured koala is encountered, responsible dog ownership, and dangers of traffic to koalas.	
12.		Participate in Port Stephens Council's existing koala education program or koala habitat and population monitoring program (as feasible and relevant).	
13.	**Dog attack mitigation**	No dogs should be permitted on site during and after construction operations.	
14.	**Bushfire management**	The likelihood of high intensity fires (e.g. canopy fires) occurring within koala habitat should be minimised through vegetation management as covered within the NVMP (Water Technology, 2025).	
15.		High frequency of hazard reduction burns within koala habitat should be avoided	

6 SUMMARY

This Koala Plan of Management (KPoM) for the proposed construction of a school at 6 Abundance Road in Medowie has been prepared in accordance with the Port Stephens Comprehensive Koala Plan of Management (CKPoM). The KPoM covers the four steps of koala habitat assessments under the CKPoM (see 7Appendix B) and includes all the background information required as detailed in Table 3-1. The appropriateness of the development proposal has been assessed against the performance criteria for development applications, as detailed in Table 4-1.

No significant impact is expected on the local koala population or the koala habitat on site, and provided the mitigation measures and recommendations within this KPoM are adhered to, the activity is considered appropriate under the Port Stephens CKPoM.

The activity will avoid the preferred koala habitat mapped on site, as well as most of the canopy trees. Some paddock trees are likely to be removed within the development footprint, however their relevance as koala habitat is not considered high. While paddock trees can be important for koalas when moving between habitat patches, the removal of these trees is not considered likely to significantly impact koala movement across the site. Revegetation post-construction using koala food trees is also proposed to improve the koala habitat on the site.

No direct evidence of koalas using the site on an ongoing basis was found, however a precautionary approach should be adopted where koalas are assumed to use the site unless proven otherwise. A long history of koala records on and near the site, albeit most from nearly 30 years ago, shows that the site has had a historical significance as koala habitat.

7 REFERENCES

Assurance Trees (2025). *New High School for Medowie.*

NSW DCCEEW (2024). *Koala Habitat Information Base: Koala Species Sightings.*

Port Stephens Council (2002). *Port Stephens Council Comprehensive Koala Plan of Management.*

Water Technology (2025). *Medowie HS – Native Vegetation Management Plan (NVMP).*

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APPENDIX A
KOALA RECORDS IN THE LOCAL AREA OF THE STUDY SITE

Koala Species Sightings

0 350 700 m

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Notes

All koala sightings recorded in NSW Bionet

Legend

NSW Cadastre

Cadastre

Lot

Koala Species Sightings

Koala Species Sightings

- 2024
- 2023
- 2022
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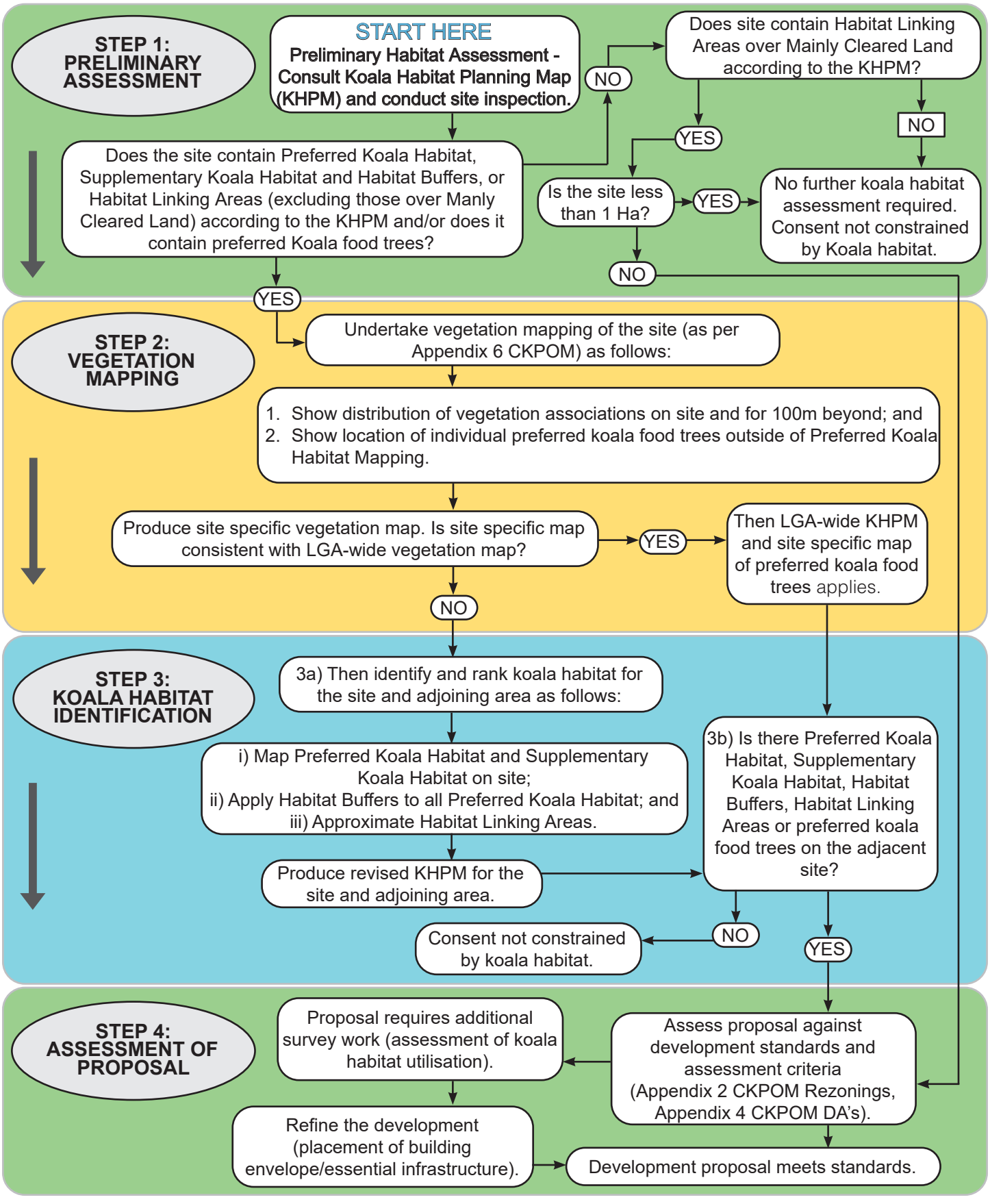
APPENDIX B
KOALA HABITAT ASSESSMENT PROCESS

PORT STEPHENS COMPREHENSIVE KOALA MANAGEMENT PLAN (CKPoM)

Koala Habitat Assessment Process



council@portstephens.nsw.gov.au | 02 4988 0255
PORTSTEPHENS.NSW.GOV.AU

PORT STEPHENS COUNCIL

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APPENDIX C
CVS FOR KOALA HABITAT ASSESSORS

PETRA AROLA

petra.arola@watertech.com.au
Phone: 1300 198 413

Environmental Consultant

QUALIFICATIONS

- Master of Science Environmental and Marine Biology (2020), Åbo Akademi University, Finland
- Bachelor of Economics and Business Administration (2015), Åbo Akademi University, Finland

AFFILIATIONS

- Ecological Consultants Association of NSW

SUMMARY

Petra is a Biologist with a degree in Environmental and Marine Biology from Åbo Akademi University in Finland. While her early career focused on research in the local area of her university, since graduating and moving to Australia, Petra has worked an environmental consultant at Water Technology in Sydney, NSW. Her work includes undertaking ecological assessment, preparing biodiversity reports, planning and carrying out ecological field investigations, assisting with environmental impact assessments, conducting project research, performing stakeholder communication, and spatial analysis using GIS software.

One of the first project Petra worked on was the Koala Habitat Mapping for Mid-Western Regional Council LGA. In this project, Water Technology helped Mid-Western Regional Council fulfill their requirements under the National Recovery Plan for Koala and Koala SEPP 2021 by identifying areas of core koala habitat within the LGA boundaries. The works included extensive GIS mapping across the LGA as well as field survey efforts, resulting in a series of mapping layers for core koala habitat, potential koala habitat, connectivity areas, and lost overlapping these. The mapping will be used for conservation management planning, to guide citizen science projects, for education purposes and to find areas to implement on-ground works for the enhancement of critical habitat. The data will also be used as a basis for a future Koala Plan of Management.

More recently (ongoing), Petra has been the Project Manager and Lead for the Hawkesbury Vegetation Mapping project. The aim of this project is to update the vegetation mapping layer across the LGA, with the purpose of identifying koala habitat within the LGA. This includes both extensive spatial work undertaken by the spatial team, as well as field work undertaken by the ecology team.

Furthermore, Petra has worked on numerous ecological assessments and environmental impact assessments within areas of significant koala populations, requiring localised knowledge about the koala populations as well as background knowledge on koala conservation methods. Through the work undertaken with koalas, Petra has a thorough understanding of the background, legislation, and assessment requirements for koala population and habitat assessments, as well as skills in the field assessment techniques.

APPENDIX D
VEGETATION MAP

Data sources: Metromap, NSW SEED Map, Port Stephens Online Mapping Portal

Imagery date: 2/12/2024

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Medowie High School Koala Plan of Management

Koala Vegetation Map

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WATER TECHNOLOGY
WATER, COASTAL & ENVIRONMENTAL CONSULTANTS

Melbourne

15 Business Park Drive
Notting Hill VIC 3168
Telephone (03) 8526 0800

Sydney

Suite 3, Level 1, 20 Wentworth Street
Parramatta NSW 2150
Telephone (02) 9354 0300

Brisbane

Level 5, 43 Peel Street
South Brisbane QLD 4101
Telephone (07) 3105 1460

Adelaide

1/198 Greenhill Road
Eastwood SA 5063
Telephone (08) 8378 8000

Perth

Level 1, 21 Adelaide Street
Fremantle WA 6160
Telephone (08) 6555 0105

New Zealand

7/3 Empire Street
Cambridge New Zealand 3434
Telephone +64 27 777 0989

Wangaratta

First Floor, 40 Rowan Street
Wangaratta VIC 3677
Telephone (03) 5721 2650

Geelong

51 Little Fyans Street
Geelong VIC 3220
Telephone (03) 8526 0800

Wimmera

597 Joel South Road
Stawell VIC 3380
Telephone 0438 510 240

Gold Coast

Suite 37, Level 4, 194 Varsity Parade
Varsity Lakes QLD 4227
Telephone (07) 5676 7602

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