Alphitonia.

Flora and Fauna Impact Assessment

For State Significant Development Application (SSD 9368) for the Proposed ALEX AVENUE PUBLIC SCHOOL, corner of Farmland Drive and future realignment of Pelican Road, Schofields – Revision 3

12 March 2019

Environmental Planning
Ecological Assessments
Bushfire Hazard Management
Project Management

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1 Introduction

1.1 Overview

This *Flora and Fauna Impact Assessment* has been prepared by Brendan Pratt of *Alphitonia Pty Ltd*, in conjunction with *Ecoplanning Pty Ltd* on behalf of the Schools Infrastructure NSW (the Applicant). It accompanies an Environmental Impact Statement (EIS) in support of State Significant Development Application (SSD 9368) for the new Alex Avenue Public School at the corner of Farmland Drive and future realignment of Pelican Road in Schofields (the site / Proposal). The site is legally described as proposed Lots 1 and 2, being part of existing Lot 4 in DP1208329 and Lot 121 in DP1203646.

The new school will cater for approximately 1,000 primary school students and 70 full-time staff upon completion. The proposal seeks consent for:

- Construction of a 2-storey library, administration and staff building (Block A) comprising:
  - School administrative spaces including reception;
  - Library with reading nooks, makers space and research pods;
  - Staff rooms and offices;
  - Special programs rooms;
  - Amenities;
  - Canteen;
  - Interview rooms; and
  - Presentation spaces.
- Construction of four 2-storey classroom buildings (Block B) containing 40 homebases comprising:
  - Collaborative learning spaces;
  - Learning studios;
  - Covered outdoor learning spaces;
  - Practical activity areas; and
  - Amenities.
- Construction of a single storey assembly hall (Block C) with a performance stage and integrated covered outdoor learning area (COLA). The assembly hall will have OOSH facilities, store room areas and amenities;
- Associated site landscaping and open space including associated fences throughout and games courts;
- Pedestrian access points along both Farmland Drive and the future Pelican Road;
- Substation on the north-east corner of the site; and
- School signage to the front entrance.

All proposed school buildings will be connected by a covered walkway providing integrated covered outdoor learning areas (COLAs). School staff will use the Council car park for the adjacent sports fields pursuant to a Joint Use agreement. The proposed School pick up and drop off zone will also be contained within the future shared car park and will be accessed via Farmland Drive.

The works will require some clearing of existing vegetation and are likely to include:

- Clearing of vegetation around the work area and initial site setup,

- Temporary access to work areas,
- Site stripping and stockpiling of topsoil (if applicable),
- Excavation for building footings and foundations,
- Concrete works,
- Building work,
- Asphalt and final road works and carparking, and
- Site remediation.

Figure 1-2 provides a site plan, an overview of the proposal.

1.2 Purpose of report and legislative context

The purpose of this *Flora and Fauna Impact Assessment* is to assess and document the impacts on flora and fauna related to the Proposal.

The study area falls within the Alex Avenue precinct of the North West Growth Centre which is defined in the *State Environment Planning Policy (SEPP) (Sydney Region Growth Centres) 2006*. Biodiversity Certification (Biocertification) was conferred over large parts of the SEPP meaning that impacts to biodiversity in the Alex Avenue precinct have already been considered and offset at the planning stage. Biocertification is only issued when biodiversity values will be maintained or improved. The SEPP has bilateral support from the Commonwealth.

1.3 Response to SEARs

The *Flora and Fauna Impact Assessment* is required by the Secretary's Environmental Assessment Requirements (SEARs) for SSD 9368. This table identifies the SEARs and relevant reference within this report.

Table 1-1 SEARs and Relevant Reference

SEARs Item	Report Reference
17. Biodiversity • **Where a Biodiversity Development Assessment Report is not required, engage a suitably qualified person to assess and document the flora and fauna impacts related to the proposal.**	This report in its entirety.

1.4 Site description

The proposed development would be constructed in an area currently being developed for new residential housing. The roadways and infrastructure for this new residential development are currently under construction and the Proposed ALEX AVENUE PUBLIC SCHOOL site would be located south of Farmland Drive and east of the future realignment of Pelican Road.

The development site has previously been used for agricultural purposes and scattered remnant native trees occur within the boundaries of the proposed new school grounds.

The subject site is defined as the area directly impacted by the proposal and includes all vegetation proposed to be removed for the development. **Figure 1-1**, outlines the location of the subject site and the wider study area.

The study area is situated in the suburb of Schofields in the Blacktown Local Government Area, in the west of Sydney. The study area is on land previously used for agricultural purposes and is now a rapidly developing urban area. Once development is completed the subject site would be bounded by Farmland Drive to the north, Pelican Road to the west, a new public park and oval to the east and a drainage reserve / floodplain area to the south. Refer to **Figure 1-1**.

A long grazing history has reduced the floristic diversity of the subject site. Exotic ground covers have replaced native species and reduced the structural complexity of flora on the site. A line of remnant trees, with an understorey of mixed pasture, remains on the southern boundary of the subject site and extends off site to the west.

Figure 1-1 Subject site, study area and location.

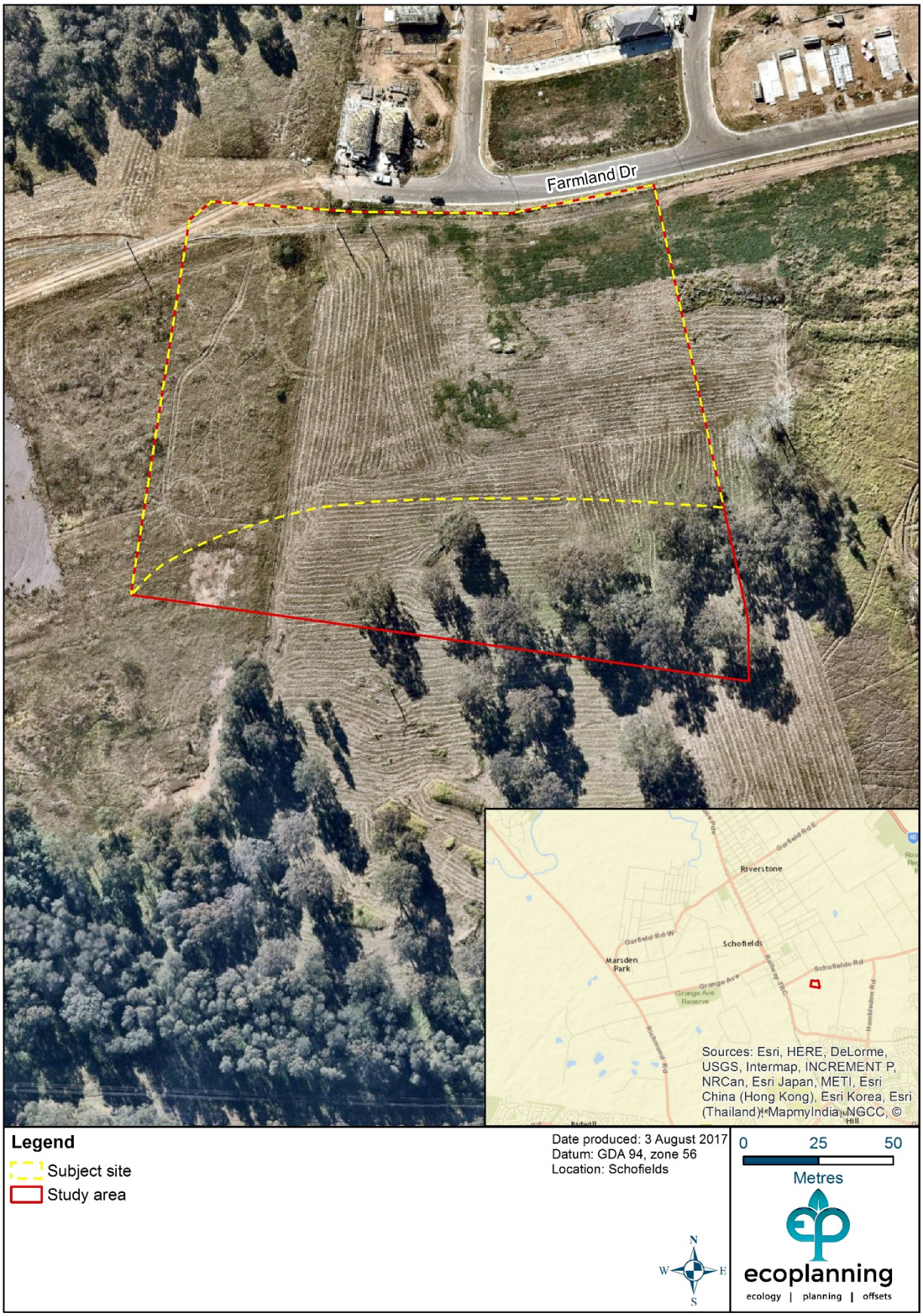
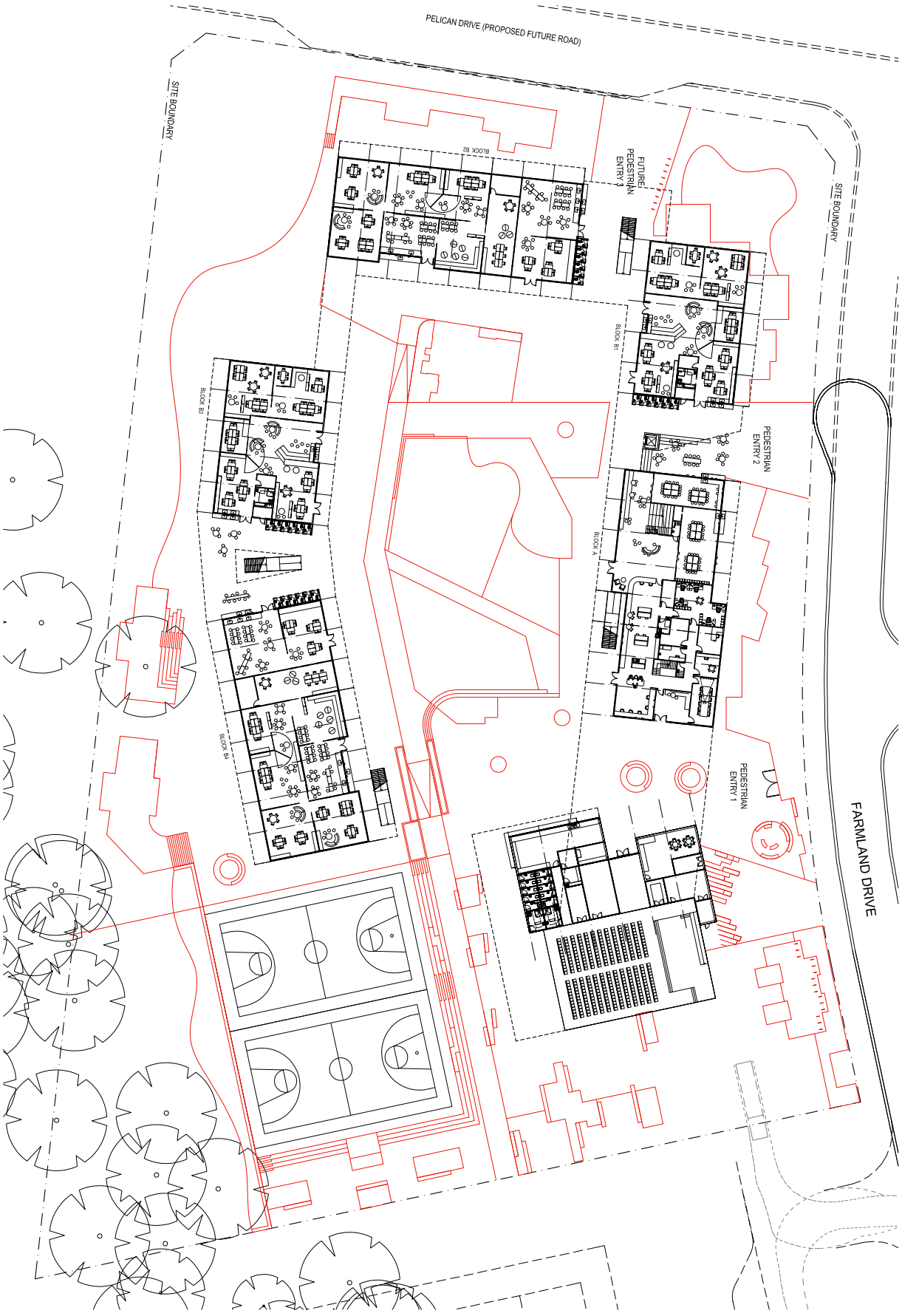


Figure 1-2 Site plan GF.



Source: Group GSA (2019)

2 Methods

2.1 Literature and database review

A site specific literature and database review was undertaken prior to undertaking field survey and the preparation of this report, which included the following sources:

- BioNet Atlas of NSW Wildlife (OEH, 2017a);
- Vegetation mapping (NPWS, 2002, Tozer et al, 2006 and OEH, 2013a);
- Protected Matters Search Tool (DotEE, 2017); and
- SIXmaps (LPI, 2017).

Threatened species, populations and migratory species recorded during the literature and database review were consolidated and their likelihood of occurrence was considered by:

- review of available habitat within the study area and surrounding area,
- review of the scientific literature pertaining to each species and population, and
- applying expert knowledge of each species.

Pelagic and shorebird species were disregarded due to the location of the study area.

The potential for each threatened species, population and/or migratory species to occur was then considered. Following field surveys and review of available habitat within the subject site and study area, the potential for species to use the subject site and be affected directly or indirectly by the proposed action was considered as either:

- “Recent record” = species has been recorded in the study area within the past 5 years.
- “High” = species has previously been recorded in the study area (>5 years) or in proximity (for mobile species), and/or habitat is present that is likely to be used by a local population.
- “Moderate” = suitable habitat for a species is present onsite but no evidence of a species detected and relatively high number of recent records (5-20 years) in the locality or species is highly mobile.
- “Low” = suitable habitat for a species is present onsite but limited or highly degraded, no evidence of a species detected and relatively low number of recent records in the locality.
- “Not present” – suitable habitat for the species is not present onsite or adequate survey has determined species does not occur in the study area.

2.2 Field Survey

A field survey was undertaken across the study area for a period of one person hour by Bruce Mullins (Principal Ecologist, *Ecoplanning*) on 27 June 2017. Weather conditions on the day of survey were cool with no rain falling in the days leading up to the field survey. Total rainfall for June was 191.2 mm, most of which fell before 21 June, 2017 (Parramatta North weather station 066124).

2.2.1 Vegetation communities and flora

A field survey was conducted to validate vegetation community mapping, assess the structure and condition of vegetation in the study area, and compile a list of visible floral species. A targeted survey for flora deemed likely to occur was conducted across the study area. Nomenclature follows the *Flora of NSW* (Harden, 1993-2002) and updates provided in the PlantNET (RBGDT, 2017).

2.2.2 Fauna habitat

Opportunistic observations of fauna were recorded during the survey, which included noting signs of indirect presence (i.e., scats, owl pellets, fur, bones, tracks, bark scratches, foliage chew marks and chewed capsules).

Faunal habitat searches were conducted for potential foraging, roosting, breeding or nesting habitat of nocturnal and diurnal species. This included tree hollows, stags, bird nests, possum dreys, decorticating bark, mature / old growth trees, food trees (e.g., winter-flowering eucalypts), and refuge habitats of anthropogenic structures, including school buildings.

2.2.3 Survey limitations

The floral survey aimed to record as many species as possible. It is acknowledged that this is not a definitive list of the flora within the study area, more species would be recorded during a longer survey over various seasons. Nevertheless, the techniques used in this survey are adequate for gathering the data necessary to validate the location and extent of vegetation communities and condition onsite, and to detect any threatened flora with the potential to occur.

Full faunal surveys following *Threatened Species Survey and Assessment Guidelines* (OEH, 2013b) were not undertaken as sufficient detail to determine the likelihood of occurrence of threatened and migratory species was achieved through habitat assessment. Therefore, a further detailed faunal survey was not considered necessary.

3 Results

3.1 Literature and database review

3.1.1 Topography and drainage

The north of the subject site is generally flat. The southern half of the site slopes gently to the south towards an un-named drainage line (off site). The un-named drainage line is a second order stream and a tributary of Eastern Creek.

3.1.2 Threatened species, populations and migratory species

A search of the relevant databases and literature identified 15 threatened flora species and 43 threatened and/or migratory fauna species (excluding pelagic and shorebird species) (two frogs, 25 birds, two invertebrates, 14 mammals) that have been recorded within a 5 km radius of the study area, or are predicted to occur based on potential habitat modelling (**Appendix A**). Those species recorded within proximity to the study area are presented in **Figure 3-1**.

3.1.3 Vegetation and threatened ecological communities

NPWS (2002) mapping indicates that the subject site contains Shale Plains Woodland, a remnant native vegetation community. Shale Plains Woodland is a sub-community of the critically endangered ecological community Cumberland Plain Woodland (listed under the Biodiversity Conservation Act) and Cumberland Plain Shale Woodlands and Shale Gravel Transition Forest (listed under the Environmental Protection and Biodiversity Conservation (EPBC) Act).

The Threatened Species Conservation Act scientific determination of the community includes examples of the community in varying condition, from relatively intact remnants to remnant trees and derived native grasslands.

The EPBC Act Listing Advice (TSSC, 2008) includes condition thresholds for patches of native vegetation that meet the description of the community. These condition thresholds are outlined in **Table 3-1**.

Table 3-1 Condition thresholds for patches of Cumberland Plain Shale Woodlands and Shale Gravel Transition Forest under the EPBC Act

Category and rationale	Thresholds
A. Core thresholds that apply under most circumstances: patches with an understorey dominated by natives and a minimum size that is functional and consistent with the minimum mapping unit size applied in NSW	Minimum patch size is > 0.5 ha; **AND** >50% of the perennial understorey vegetation cover is made up of native species.
OR	
B. Large patches which are inherently valuable due to their rarity	The patch size is > 5 ha; **AND** >30% of the perennial understorey vegetation cover is made up of native species.
OR	
C. Patches with connectivity to other large native vegetation remnants in the landscape	The patch size is > 0.5 ha; **AND** >30% of the perennial understorey vegetation cover is made up of native species; **AND** The patch is contiguous with a native vegetation remnant (any native vegetation where cover in each layer present is dominated by native species) that is > 5 ha in area.
OR	

D. Patches that have large mature trees or trees with hollows (habitat) that are very scarce on the Cumberland Plain.	The patch size is > 0.5 ha; **AND** >30% of the perennial understorey vegetation cover is made up of native species; **AND** The patch has at least one tree with hollows per hectare or at least one large tree (>80 cm dbh) per hectare from the upper tree layer species outlined in the Description and **Appendix A**.

3.2 Field survey results

3.2.1 Vegetation communities

The field survey confirmed the presence of a small patch of Shale Plains Woodland near the southern boundary of the site, with exotic pasture over the remainder of the site (**Figure 3-1**). The patch of Shale Plains Woodland extended further south off site.

Shale Plains Woodland within the study area was characterised by a canopy of *Eucalyptus crebra* (Narrow-leaved Ironbark) over a ground layer composed of *Cenchrus clandestinus* (Kikuyu), *Microlaena stipoides* var. *stipoides, Sida rhombifolia* (Paddy's Lucerne), *Plantago lanceolata* (Plantain), *Cerastium glomeratum* (Mouse-eared Chickweed) and *Rytidosperma* sp. Shrubs were virtually absent with a single *Lycium ferocissimum* (African Boxthorn) present. Weeds were common in the ground layer (**Figure 3-3**). The ground layer had recently been slashed. Approximately 0.37 ha of this community occurred in the study area.

Shale Plains Woodland is a sub-community of the critically endangered ecological community Cumberland Plain Woodland (listed under the Biodiversity Conservation Act) and Cumberland Plain Shale Woodlands and Shale Gravel Transition Forest (listed under the EPBC Act) (both referred to as CPW). The grazing history on the site has modified the vegetation to such an extent that the community is degraded. While the community still meets the criteria to be considered part of the Biodiversity Conservation Act listed entity, the cover of native species has been reduced such that the community does not meet the 30% cover threshold to be considered part of the EPBC Act listed community (**Table 3-2**).

The exotic pasture was dominated by *Cenchrus clandestinus*, *Eragrostis curvula* (African Lovegrass), *Trifolium repens* (White Clover), *Lolium rigidum* (Annual Ryegrass), *Trifolium dubium* (Yellow Suckling Clover) and *Paspalum dilatatum* (Paspalum) (**Figure 3-4**). The vegetation had recently been slashed. Approximately 2.27 ha of exotic pasture occurs on site.

3.2.2 Flora species

A total of 34 flora species were identified within the study area during field survey, of which ten were native species (**Appendix B**). No threatened plants were recorded during the survey.

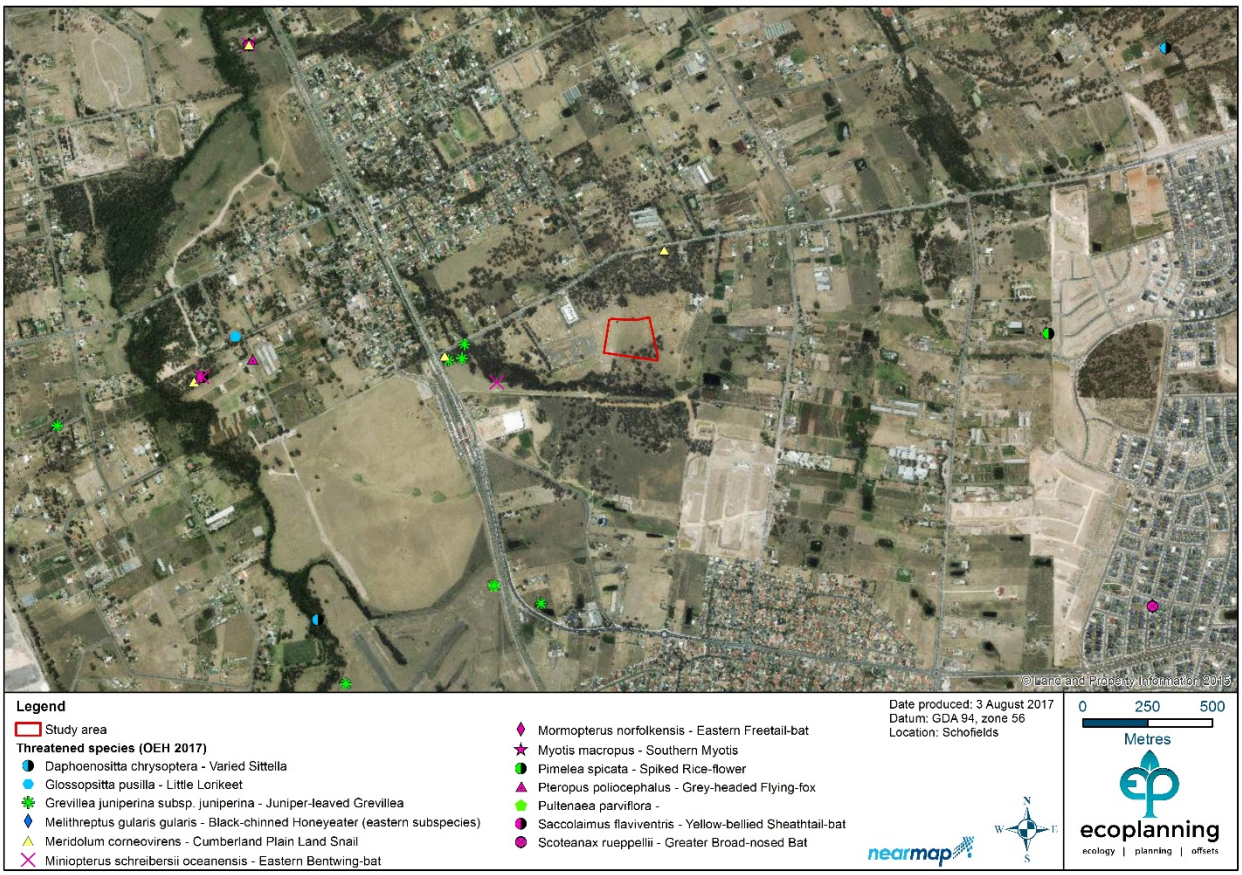
Two priority weeds listed under the NSW *Biosecurity Act 2015*, were recorded, one which is also recognised as a Weed of National Significance (WONS) (**Table 3-2**).

Table 3-2 Priority weeds and Weeds of National Significance

Common Name	Scientific Name	Priority Weed	WoNS*	Requirement
African Boxthorn	*Lycium ferocissimum*	X	Y	**Mandatory Measure** Must not be imported in the State or sold
Fireweed	*Senecio madagascariensis*	X	Y	**Mandatory Measure** Must not be imported in the State or sold
Prickly pear	*Opuntia* spp.	X	Y	**Mandatory Measure** Must not be imported in the State or sold

*http://www.weeds.org.au/WoNS/

Figure 3-1 Threatened species in proximity to the subject site.



3.2.3 Fauna habitat

The site contained limited fauna habitat. Mature trees within the study area provided potential foraging, roosting, breeding and nesting resources for local fauna (**Table 3-3**). The site provided habitat primarily for species common to urban and semi-rural environments including the birds listed in **Appendix C** which were recorded at the site during the field survey.

None of the trees on site were hollow bearing.

Table 3-3 Fauna habitat features present in the study area

Habitat features	Fauna species
Mature trees	Arboreal mammals, birds, and megachiropteran bats
Dense ground layer	Ground mammals, reptiles

The study area provided potential foraging habitat for the following threatened fauna species:

- *Pteropus poliocephalus* (Grey-headed Flying-fox) – Biodiversity Conservation Act and EPBC Act – vulnerable
- *Miniopterus schreibersii oceanensis* (Eastern Bentwing-bat) – Biodiversity Conservation Act – vulnerable

Figure 3-2 Validated vegetation map

Figure 3-3 Remnant trees characteristic of Shale Plains Woodland, a sub-community of the endangered ecological community Cumberland Plain Woodland.

Figure 3-4 Exotic pasture.

4 Impact Assessment

As discussed in **Section 1.1**, the Alex Avenue Precinct of the North West Growth Centre has been Biocertified. Nevertheless, this section discusses the proposals likely impacts to biodiversity and opportunities to reduce and manage impacts on biodiversity within the site.

4.1 Vegetation clearing

The proposal will require vegetation clearing to construct the Proposed ALEX AVE PUBLIC SCHOOL. However, the proposal will not remove any native vegetation community (i.e., Shale Plains Woodland - CPW). **Figure 1-1** and **1-2** illustrate the extent of the building footprint.

4.2 Loss of fauna habitat

The proposed development will remove exotic pasture which has limited value for ground dwelling fauna. While development throughout the precinct will substantially reduce the amount of this type of habitat, it is of low-conservation value. The habitat removal is likely to have a negligible impact on local fauna (**Appendix C**).

4.3 Indirect impacts

Indirect impacts, such as noise and/or erosion, stormwater runoff, and edge effects associated with the construction and operational phase of the project, are likely to result from the proposal. Some indirect impacts, such as light and noise, are less likely to affect nocturnal species at a school site, given the restricted hours the school is in use. Recommendations to manage indirect impacts of the proposal are outlined in **Section 5.**

4.4 Threatened species, populations, ecological communities and migratory species

Biocertification of the Growth Centres SEPP means that assessments of significance under the EP&A Act and EPBC Act are not required for development applications in biocertified areas. Nevertheless, this report assesses the potential threatened species and their habitat affected by the proposal.

The school will be constructed in a paddock of exotic pasture that has been subject to a history of grazing. The proposal will not remove trees located near the southern boundary of the school grounds that have been identified as a degraded form of Shale Plains Woodland. The exotic pasture to be cleared or modified by the proposal is not habitat for threatened species that could potentially occur in the area. Consequently, the proposal is not likely to affect the habitat of threatened species that have been recorded within a 5 km radius of the proposed school.

Species that were retrieved by searches of the Atlas of NSW Wildlife (OEH, 2017a) and Protected Matters Search Tool (excluding pelagic species and shorebirds) (DotEE, 2017) are not likely to be affected by the proposal.

5 Conclusions and recommendations

5.1 Conclusions

A survey of the study area was conducted to determine the presence of threatened species, populations and endangered ecological communities at the subject site.

The proposal will remove exotic pasture, but not impact the 0.37 ha of Shale Plains Woodland present within the southern portion of the subject site. Shale Plains Woodland is a sub-community of the critically endangered ecological community, Cumberland Plain Woodland (under the Biodiversity Conservation Act and EPBC Act).

Remnant trees may provide occasional foraging habitat for some microbats and mega bats. However, as this habitat will remain and only exotic pasture will be removed, the proposal is not likely to impact these threatened species.

Faunal habitat included large remnant trees and a dense ground layer. No threatened species were observed on the site.

Biodiversity certification was conferred on the Growth Centres SEPP, which includes large parts of the Alex Ave precinct in the North West Growth Centre. Potential impacts to threatened species, populations and ecological communities have been assessed and offset as part of the biocertification process. Nevertheless, the potential impacts of this proposal have been considered and opportunities to reduce the potential impacts on the ecology of the subject site have been recommended in **Section 5.2**.

5.2 Recommendations

To alleviate the impact of the proposal on flora and fauna, the following recommendations should be followed:

- Tree protection measures, in accordance with AS 4970 – 2009 protection of trees on development sites, are to be installed around mature trees along the southern margin of the construction footprint to ensure the protection of trees associated with the area of Shale Plains Woodland.
- Minimise the disturbance footprint as much as practicable.
- Do not store plant and equipment in Shale Plains Woodland area during construction.
- Prepare a sediment and erosion control plan so that Shale Plains Woodland downslope of the construction site is not impacted.
- Rehabilitate and revegetate disturbed areas following the works, including weed management.
- Lighting (either temporary during construction or permanent school lighting) should not be directed into remnant trees to avoid impact to any nocturnal species.

6 References

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APPENDIX A

LIKELIHOOD OF THREATENED SPECIES OCCURRENCE

Scientific Name (Common Name)	Legal Status	No. of records	Closest record (date)	Latest proximity (date)	Likelihood of occurrence		Need for an Assessment of Significance
					Before survey	After survey	
KINGDOM: Animalia; CLASS: Amphibia							
Heleioporus australiacus (Giant Burrowing Frog)	BC Act = V EPBC Act = V				Low	No	No – study area does not support habitat preferred by this species
Litoria aurea (Green and Golden Bell Frog)	BC Act = E EPBC Act = V	3	2.49 km (2010)	2.58 km (2011)	Low	Low	No – study area does not support habitat preferred by this species
KINGDOM: Animalia; CLASS: Aves							
Anthochaera phrygia (Regent Honeyeater)	BC Act = CE EPBC Act = CE				Low	Low	No – no impact to habitat
Apus pacificus (Fork-tailed Swift)	EPBC Act = C, J, K				Low	Low	No – no impact to habitat
Artamus cyanopterus cyanopterus (Dusky Woodswallow)	BC Act = V	11	1.80 km (2003)	4.86 km (2015)	Low	Low	No – no impact to habitat
Botaurus poiciloptilus (Australasian Bittern)	BC Act = E EPBC Act = E	1	4.78 km (2002)	4.78 km (2002)	Low	Low	No – study area does not support habitat preferred by this species
Calyptorhynchus lathami (Glossy Black-Cockatoo)	BC Act = V	1	4.64 km (2015)	4.64 km (2015)	Low	Low	No – study area does not support habitat preferred by this species
Chthonicola sagittata (Speckled Warbler)	BC Act = V	1	3.31 km (2006)	3.31 km (2006)	Low	Low	No – no impact to habitat
Circus assimilis (Spotted Harrier)	BC Act = V	1	4.87 km (2013)	4.87 km (2013)	Low	Low	No – no impact to habitat
Cuculus optatus (Oriental Cuckoo)	EPBC Act = C				Low	Low	No – no impact to habitat
Daphoenositta chrysoptera (Varied Sittella)	BC Act = V	31	1.63 km (2003)	1.76 km (2013)	Low	Low	No – no impact to habitat
Dasyornis brachypterus (Eastern Bristlebird)	BC Act = E EPBC Act = E				Low	Low	No – study area does not support habitat preferred by this species

Scientific Name (Common Name)	Legal Status	No. of records	Closest record (date)	Latest proximity (date)	Likelihood of occurrence		Need for an Assessment of Significance
					Before survey	After survey	
Gallinago hardwickii (Latham's Snipe)	EPBC Act = C, J, K	10	1.90 km (2003)	2.26 km (2015)	Low	No	No – study area does not support habitat preferred by this species
Glossopsitta pusilla (Little Lorikeet)	BC Act = V	31	1.54 km (2015)	1.54 km (2015)	Low	Low	No – no impact to habitat
Grantiella picta (Painted Honeyeater)	BC Act = V EPBC Act = V				Low	Low	No – no impact to habitat
Haliaeetus leucogaster (White-bellied Sea-Eagle)	BC Act = V EPBC Act = C	3	2.50 km (2012)	2.50 km (2012)	Low	Low	No – study area does not support habitat preferred by this species
Hieraaetus morphnoides (Little Eagle)	BC Act = V	5	1.76 km (2013)	1.76 km (2013)	Low	Low	No – no impact to habitat
Hirundapus caudacutus (White-throated Needletail)	EPBC Act = C, J, K	1	2.72 km (2013)	2.72 km (2013)	Low	Low	No – no impact to habitat
Lathamus discolor (Swift Parrot)	BC Act = E EPBC Act = CE				Low	Low	No – no impact to habitat
Melithreptus gularis gularis (Black-chinned Honeyeater (eastern subspecies))	BC Act = V	1	2.33 km (2002)	2.33 km (2002)	Low	Low	No – no impact to habitat
Merops ornatus (Rainbow Bee-eater)	EPBC Act = J	1	1.72 km (2013)	1.72 km (2013)	Low	Low	No – no impact to habitat
Motacilla flava (Yellow Wagtail)	EPBC Act = C, J, K				Low	Low	No – study area does not support habitat preferred by this species
Neophema pulchella (Turquoise Parrot)	BC Act = V	1	4.50 km (1999)	4.50 km (1999)	Low	Low	No – study area does not support habitat preferred by this species
Pandion haliaetus (Osprey)	BC Act = V				Low	No	No – study area does not support habitat preferred by this species

Scientific Name (Common Name)	Legal Status	No. of records	Closest record (date)	Latest proximity (date)	Likelihood of occurrence		Need for an Assessment of Significance
					Before survey	After survey	
Petroica boodang (Scarlet Robin)	BC Act = V	1	1.72 km (2013)	1.72 km (2013)	Low	Low	No – no impact to habitat
Plegadis falcinellus (Glossy Ibis)	EPBC Act = C	1	4.87 km (2012)	4.87 km (2012)	Low	Low	No – no impact to habitat
Rostratula australis (Australian Painted Snipe)	BC Act = E EPBC Act = E	15	4.87 km (2012)	4.87 km (2012)	Low	No	No – study area does not support habitat preferred by this species
KINGDOM: Animalia; CLASS: Gastropoda							
Meridolum corneovirens (Cumberland Plain Land Snail)	BC Act = E	261	360 m (2016)	360 m (2016)	High	Low	No – no impact to habitat
Pommerhelix duralensis (Dural Land Snail)	BC Act = E EPBC Act = E				Mod	No	No – study area does not support habitat preferred by this species
KINGDOM: Animalia; CLASS: Mammalia							
Chalinolobus dwyeri (Large-eared Pied Bat)	BC Act = V EPBC Act = V	4	1.54 km (2015)	1.54 km (2015)	Low	No	No – study area does not support habitat preferred by this species
Dasyurus maculatus maculatus (Spotted-tailed Quoll)	BC Act = V EPBC Act = E				Low	No	No – study area does not support habitat preferred by this species
Falsistrellus tasmaniensis (Eastern False Pipistrelle)	BC Act = V	9	1.54 km (2015)	1.54 km (2015)	Low	Low	No – no impact to habitat
Miniopterus australis (Little Bentwing-bat)	BC Act = V	1	2.20 km (2015)	2.20 km (2015)	Low	Low	No – no impact to habitat
Miniopterus schreibersii oceanensis (Eastern Bentwing-bat)	BC Act = V	26	0.56 km (2016)	0.56 km (2016)	Low	Low	No – no impact to habitat
Mormopterus norfolkensis (Eastern Freetail-bat)	BC Act = V	28	1.54 km (2016)	1.54 km (2016)	Low	Low	No – no impact to habitat

Scientific Name (Common Name)	Legal Status	No. of records	Closest record (date)	Latest proximity (date)	Likelihood of occurrence		Need for an Assessment of Significance
					Before survey	After survey	
Myotis macropus (Southern Myotis)	BC Act = V	16	1.54 km (2016)	1.54 km (2016)	Low	Low	No – no impact to habitat
Petauroides volans (Greater Glider)	BC Act = E EPBC Act = V				Low	No	No – study area does not support habitat preferred by this species
Petrogale penicillata (Brush-tailed Rock Wallaby)	EPBC Act = V				Low	No	No – study area does not support habitat preferred by this species
Phascolarctos cinereus (Koala)	BC Act = V EPBC Act = V	4	2.90 km (2014)	2.90 km (2014)	Low	Low	No – study area does not support habitat preferred by this species
Pseudomys novaehollandiae (New Holland Mouse)	EPBC Act = V				Low	Low	No – study area does not support habitat preferred by this species
Pteropus poliocephalus (Grey-headed Flying-fox)	BC Act = V EPBC Act = V	215	1.47 km (2015)	1.47 km (2015)	High	High	Yes – impact to potential foraging habitat
Saccolaimus flaviventris (Yellow-bellied Sheathtail-bat)	BC Act = V	7	1.67 km (2016)	1.67 km (2016)	Low	Low	No – no impact to habitat
Scoteanax rueppellii (Greater Broad-nosed Bat)	BC Act = V	9	1.87 km (2016)	1.87 km (2016)	Low	Low	No – no impact to habitat
KINGDOM: Plantae							
Acacia bynoeana (Bynoe's Wattle)	BC Act = E EPBC Act = V				Low	Not present	No
Acacia pubescens (Downy Wattle)	BC Act = V EPBC Act = V				Low	Not present	No
Allocasuarina glareicola	BC Act = E EPBC Act = E				Low	Not present	No
Dillwynia tenuifolia	BC Act = V	11815	2.52 km (2008)	2.74 km (2012)	Low	Low	No

Scientific Name (Common Name)	Legal Status	No. of records	Closest record (date)	Latest proximity (date)	Likelihood of occurrence		Need for an Assessment of Significance
					Before survey	After survey	
Genoplesium baueri (Bauer's Midge Orchid)	BC Act = E EPBC Act = E				Low	Not present	No
Grevillea juniperina subsp. *juniperina* (Juniper-leaved Grevillea)	BC Act = V	762	670 m (2007)	2.25 km (2015)	Mod.	Low	No
Haloragis exalata subsp. *exalata* (Wingless Raspwort)	BC Act = V EPBC Act = V				Low	Not present	No
Melaleuca deanei (Deane's Paperbark)	BC Act = V EPBC Act = V				Low	Not present	No
Micromyrtus minutiflora	BC Act = E1 EPBC Act = V	4	3.93 km (2003)	3.93 km (2003)	Low	Not present	No
Pimelea curviflora var. *curviflora*	BC Act = E EPBC Act = V				Low	Not present	No
Pimelea spicata (Spiked Rice-flower)	BC Act = E EPBC Act = E	668	1.59 km (2001)	4.28 km (2013)	Low	Not present	No
Pterostylis gibbosa (Illawarra Greenhood)	BC Act = E EPBC Act = E				Low	Not present	No
Pterostylis saxicola (Sydney Plains Greenhood)	BC Act = E EPBC Act = E				Low	Not present	No
Pultenaea parviflora	BC Act = E EPBC Act = V	4563	1.09 km (2008)	2.69 km (2012)	Low	Not present	No
Thesium australe (Austral Toadflax)	BC Act = V EPBC Act = V				Low	Not present	No
Endangered ecological communities							
Castlereagh Scribbly Gum and Agnes Banks Woodland					Low	Not present	No
Cooks River/Castlereagh Ironbark Forest					Low	Not present	No
Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest					High	Present	No – no impact to habitat

Scientific Name (Common Name)	Legal Status	No. of records	Closest record (date)	Latest proximity (date)	Likelihood of occurrence		Need for an Assessment of Significance
					Before survey	After survey	
Shale Sandstone Transition Forest					Low	Not present	No
Western Sydney Dry Rainforest and Moist Woodland on Shale					Low	Not present	No

APPENDIX B

FLORA INVENTORY

Common Name	Scientific Name	Native/Exotic
Scarlet Pimpernel	*Anagallis arvense*	Exotic
Common Woodruff	*Asperula conferta*	Native
Kikuyu	*Cenchrus clandestinus*	Exotic
Mouse-eared Chickweed	*Cerastium glomeratum*	Exotic
Spear Thistle	*Cirsium vulgare*	Exotic
Couch	*Cynodon dactylon*	Native
Climbing Saltbush	*Einadia nutans*	Native
	Einadia trigonos	Native
African Lovegrass	*Eragrostis curvula*	Exotic
Narrow-leaved Ironbark	*Eucalyptus crebra*	Native
	Gamochaeta sp.	Exotic
Catsear	*Hypochaeris radicata*	Exotic
Annual Ryegrass	*Lolium rigidum*	Exotic
African Boxthorn	*Lycium ferocissimum*	Exotic
Weeping Grass	*Microlaena stipoides* var. *stipoides*	Native
Prickly Pear	*Opuntia stricta*	Exotic
	Oxalis perennans	Native
Paspalum	*Paspalum dilatatum*	Exotic
Phalaris	*Phalaris aquatica*	Exotic
Plantain	*Plantago lanceolata*	Exotic
	Rumex sp.	Native
	Rytidosperma sp.	Native
Fireweed	*Senecio madagascariensis*	Exotic
Paddy's Lucerne	*Sida rhombifolia*	Exotic
Narrawa Burr	*Solanum cinereum*	Native
	Solanum sisymbriifolium	Exotic
Prickly Sowthistle	*Sonchus aspera*	Exotic
Common Sowthistle	*Sonchus oleraceus*	Exotic
Chickweed	*Stellaria media*	Exotic
Dandelion	*Taraxacum officinale*	Exotic
Yellow Suckling Clover	*Trifolium dubium*	Exotic
White Clover	*Trifolium repens*	Exotic
Purple Top	*Verbena bonariensis*	Exotic
	Veronica plebeia	Exotic

APPENDIX C

FAUNA INVENTORY

Common Name	Scientific Name	Native/Exotic
Yellow Thornbill	*Acanthiza nana*	Native
Indian Myna	*Acridotheres tristis*	Exotic
Grey Butcherbird	*Cracticus torquatus*	Native
Black-shouldered Kite	*Elanus axillaris*	Native
Australian Magpie-lark	*Grallina cyanoleuca*	Native
Noisy Miner	*Manorina melanocephala*	Native
Spotted Pardalote	*Pardalotus punctatus*	Native
Weebill	*Smicrornis brevirostris*	Native
Common Starling	*Sturnus vulgaris*	Exotic
Silvereye	*Zosterops lateralis*	Native