Appendix B Flora and Fauna Species Lists

B.1 Flora Species List

Family	Scientific name	Common name	NC Act status
Acanthaceae	*Thunbergia alata**	black-eyed susan	Introduced
Alismataceae	*Damasonium minus*	starfruit	Least Concern
Anacardiaceae	*Schinus terebinthifolius**	broad-leaved pepper tree	Introduced
Apiaceae	*Centella asiatica*	pennywort	Least Concern
Apocynaceae	*Gomphocarpus physocarpus**	balloon cotton bush	Introduced
	Parsonsia straminea	monkey rope	Least Concern
Araliaceae	*Schefflera actinophylla*	umbrella tree	Least Concern
Arecaceae	*Archontophoenix alexandrae*	Alexandra palm	Least Concern
Asparagaceae	*Asparagus aethiopicus**	ground asparagus fern	Introduced
	*Asparagus officinalis**	garden asparagus	Introduced
Asteraceae	*Ageratum houstonianum**	blue billygoat weed	Introduced
	*Ambrosia artemisiifolia**	annual ragweed	Introduced
	*Baccharis halimifolia**	groundsel bush	Introduced
	*Bidens pilosa**	cobbler's pegs	Introduced
	*Crassocephalum crepidioides**	thickhead	Introduced
	Cyanthillium cinereum	veronia	Least Concern
	*Emilia sonchifolia**	emilia	Introduced
	*Sphagneticola trilobata**	Singapore daisy	Introduced
Bignoniaceae	*Jacaranda mimosifolia**	jacaranda	Introduced
	*Spathodea campanulata**	African tulip tree	Introduced
Caesalpiniaceae	*Bauhinia variegata**	butterfly tree	Introduced
	Chamaecrista nomame	-	Least Concern
	*Senna pendula**	easter cassia	Introduced
Commelinaceae	*Commelina diffusa*	scurvey weed	Least Concern
	Murdannia graminea	slug herb	Least Concern

Family	Scientific name	Common name	NC Act status
Convolvulaceae	*Ipomoea cairica**	mile-a-minute	Introduced
	Ipomoea plebia	bell vine	Least Concern
Cyatheaceae	*Cyathea cooperi*	straw tree fern	Least Concern
Cyperaceae	*Cyperus cyperoides*	bunchy sedge	Least Concern
	Cyperus polystachyos	bunchy sedge	Least Concern
	Fimbristylis dichotoma	common fringe-rush	Least Concern
Dennstaedtiaceae	*Hypolepis muelleri*	ground fern	Least Concern
Euphorbiaceae	*Euphorbia hyssopifolia**	hyssopleaf sandmat	Introduced
Fabaceae	*Crotalaria lanceolata**	lance-leaved rattlepod	Introduced
	Desmodium rhytidophyllum	-	Least Concern
	Glycine tomentella	wooly glycine	Least Concern
	Indigofera hirsuta	hairy indigo	Least Concern
	*Lotus uliginosus**	birdsfoot trefoil	Introduced
	*Macroptilium atropurpureum**	siratro	Introduced
	*Macroptilium lathyroides**	phasey bean	Introduced
	*Melilotus albus**	white melilot	Introduced
	Neonotonia wightii	glycine	Least Concern
	Sesbania cannabina	sesbania pea	Least Concern
Goodeniaceae	*Goodenia rotundifolia*	round-leaf goodenia	Least Concern
Lauraceae	*Cinnamomum camphora**	camphor laurel	Introduced
Laxmanniaceae	*Eustrephus latifolius*	wombat berry	Least Concern
	Lomandra longifolia	spiny-headed mat-rush	Least Concern
Malvaceae	*Hibiscus rosasinensis**	Chinese hibiscus	Introduced
	*Sida cordifolia**	flannel weed	Introduced
	*Sida rhombifolia**	paddy's lucerne	Introduced
Menyanthaceae	*Nymphoides indica*	water snowflake	Least Concern
Mimosaceae	*Acacia disparrima*	Hickory wattle	Least Concern
	Acacia leiocalyx	early-flowering black wattle	Least Concern

Family	Scientific name	Common name	NC Act status
	*Leucaena leucocephala**	leucaena	Introduced
Moraceae	*Maclura cochinchinensis*	cockspur thorn	Least Concern
	*Morus alba**	white mulberry	Introduced
Myrtaceae	*Corymbia citriodora*	spotted gum	Least Concern
	Corymbia torelliana	cadaghi	Least Concern
	Eucalyptus fibrosa	broad-leaved ironbark	Least Concern
	Eucalyptus moluccana	gum-topped box	Least Concern
	Eucalyptus propinqua	grey gum	Least Concern
	Eucalyptus siderophloia	grey ironbark	Least Concern
	Eucalyptus tereticornis	Queensland blue gum	Least Concern
	Lophostemon suaveolens	swamp box	Least Concern
	Melaleuca linariifolia	flax-leaf paperbark	Least Concern
	Melaleuca quinquenervia	swamp paperbark	Least Concern
Oleaceae	*Fraxinus griffithii**	Himalayan ash	Introduced
Onagraceae	*Ludwigia octovalvis*	willow primrose	Least Concern
Passifloraceae	*Passiflora foetida**	stinking passionflower	Introduced
	*Passiflora suberosa**	corky passion vine	Introduced
Petiveriaceae	*Rivina humilis**	coral berry	Introduced
Phyllanthaceae	*Glochidion ferdinandi*	cheese tree	Least Concern
	Phyllanthus virgatus	-	Least Concern
Pinaceae	*Pinus elliottii**	slash pine	Introduced
Pittosporaceae	*Pittosporum revolutum*	hairy pittosporum	Least Concern
Poaceae	*Aristida calycina*	white spear grass	Least Concern
	Bothriochloa bladhii	forest blue grass	Least Concern
	Bothriochloa decipiens	pitted blue grass	Least Concern
	*Chloris gayana**	Rhodes grass	Introduced
	*Chloris virgata**	feathertop Rhodes grass	Introduced
	Chrysopogon fallax	golden beard grass	Least Concern
	Cymbopogon refractus	barbed wire grass	Least Concern
	*Cynodon dactylon**	couch grass	Introduced

Family	Scientific name	Common name	NC Act status
	Digitaria eriantha	common finger grass	Least Concern
	*Echinochloa colona**	awnless barnyard grass	Introduced
	*Eleusine indica**	crowsfoot grass	Introduced
	Eragrostis lacunaria	purple lovegrass	Least Concern
	Eragrostis parviflora	weeping lovegrass	Least Concern
	*Eragrostis tenuifolia**	elastic grass	Introduced
	Imperata cylindrica	blady grass	Least Concern
	*Megathyrsus maximus**	Guinea grass	Introduced
	*Melinis repens**	red Natal grass	Introduced
	Oplismenus aemulus	Australian basket grass	Least Concern
	Panicum effusum	hairy panic	Least Concern
	Paspalidium distans	spreading panic grass	Least Concern
	*Paspalum urvillei**	vasey grass	Introduced
	*Setaria sphacelata**	South African pigeon grass	Introduced
	*Sorghum halepense**	Johnson grass	Introduced
	Themeda triandra	kangaroo grass	Least Concern
	*Urochloa decumbens**	signal grass	Introduced
Polygonaceae	*Persicaria decipiens*	slender knotweed	Least Concern
	Persicaria strigosa	prickly smartweed	Least Concern
Sapindaceae	*Jagera pseudorhus*	foambark	Least Concern
Solanaceae	*Physalis angulata**	gooseberry	Introduced
	*Solanum mauritianum**	wild tobacco	Introduced
	*Solanum nigrum**	deadly nightshade	Introduced
Typhaceae	*Typha domingensis*	cumbungi	Least Concern
Ulmaceae	*Celtis sinensis**	Chinese elm	Introduced
Verbenaceae	*Lantana camara**	lantana	Introduced
	*Verbena bonariensis**	purple top	Introduced
	*Verbena litoralis**	-	Introduced

B.2 Fauna Species List

Scientific name	Common name	NC Act status
Amphibians		
Litoria fallax	eastern dwarf tree frog	Least Concern
Rhinella marina	Cane toad	Introduced
Birds		
Coracina novaehollandiae	black-faced cuckoo-shrike	Least Concern
Corvus orru	Torresian crow	Least Concern
Cracticus tibicen	Australian magpie	Least Concern
Cracticus torquatus	grey butcherbird	Least Concern
Malurus cyaneus	superb fairy-wren	Least Concern
Manorina melanocephala	noisy miner	Least Concern
Ocyphaps lophotes	crested pigeon	Least Concern
Threskiornis molucca	Australian white ibis	Least Concern
Trichoglossus haematodus moluccanus	rainbow lorikeet	Least Concern
Insects		
Danaus plexipus plexipus	wanderer	-
Euploea corinna	common Australian crow	-
Hypolimnas bolina	common eggfly	-
Melanitis leda	evening brown	-
Pieris rapae	cabbage white	-

Appendix C Threatened Species Likelihood of Occurrence Assessment

C.1 Threatened Flora Likelihood of Occurrence Assessment

Flora species	EPBC Act Status[1]	NC Act Status[1]	Habitat	Likelihood of occurrence[2]
Arthraxon hispidus **hairy joint grass**	Vulnerable	Vulnerable	Hairy joint grass has been recorded within or on the edges of rainforest and in wet eucalypt forest, near creeks and swamps, woodlands, around freshwater springs on coastal foreshore dunes, shaded gullies, creek banks and on alluvium in creek beds in open forest (DEWHA 2008a).	**Unlikely to occur** The species has not been recorded within the desktop search extent. Although suitable habitat was present, comprehensive survey in accordance with the Protected Plants Survey Guideline did not identify the species as occurring within the site.
Baloghia marmorata **marbled balogia**	Vulnerable	Vulnerable	Marbled balogia has a geographically disjunct distribution confined to the Lismore district, in north-east NSW, and the Tamborine Mountains and Springbrook, in south-east Queensland (DEE, 2018). The species is found in subtropical rainforest/notophyll vine forest and wet sclerophyll forest with rainforest understorey between 150-550 m above sea level. Soils are rich black or dark brown clay and loam derived from basalt. Associated species can include *Eucalyptus microcorys*, *Archontophoenix cunninghamiana*, *Aphananthe philippinensis*, *Capparis arborea*, *Planchonella australis*, *Ficus* spp., *Olea paniculata*, *Planchonella myrsinoides*, *Brachychiton discolor*, *Mallotus claoxyloides*, *Drypetes deplanchei* and *Calamus muelleri* (DEE, 2018).	**Unlikely to occur** The species has not been recorded within the desktop search extent and suitable habitat within the site was limited.
Bosistoa transversa **three-leaved Bosistoa**	Vulnerable	Least Concern	Three-leaved Bosistoa grows in wet sclerophyll forest, dry sclerophyll forest and rainforest up to 300 m in altitude. Associated vegetation includes *Argyrodendron trifoliolatum*, *Syzygium hodgkinsoniae*, *Endiandra pubens*, *Dendrocnide photinophylla*, *Acmena ingens* and *Diploglottis australis* (DEWHA 2008b).	**Unlikely to occur** The species has not been recorded within the desktop search extent and suitable habitat within the site was limited.

Flora species	EPBC Act Status[1]	NC Act Status[1]	Habitat	Likelihood of occurrence[2]
Corchorus cunninghamii **native jute**	Endangered	Endangered	The native jute is found in a mosaic of wet sclerophyll and subtropical rainforest as well as grassy open forest. This species is generally located at low to mid elevations (110-430 m), on upper hill-slopes or hill-crests that have a south-easterly or easterly aspect. There is no specific geology or soil type associated with the species as it occurs on both metamorphic and igneous substrates and on loam or clay soils. In general, the soils are shallow, stony and well drained. Common canopy species occurring alongside this species include grey gum (*Eucalyptus propinqua*), brush box (*Lophostemon confertus*) and grey ironbark (*Eucalyptus siderophloia*) (DoE, 2014a).	**Unlikely to occur** The species has not been recorded within the desktop search extent and suitable habitat within the site was limited.
Cryptocarya foetida **stinking laurel**	Vulnerable	Vulnerable	The stinking laurel is restricted to coastal sands, or close to the coast, occurring in littoral rainforest on old sand dunes and subtropical rainforests over slate and occasionally on basalt to an altitude of 150 m (DEE 2018).	**Unlikely to occur** The species has not been recorded within the desktop search extent and suitable habitat within the site was limited.
Endiandra floydii **Floyd's walnut**	Endangered	Endangered	The species is known to occur in warm temperate, subtropical rainforest or wet sclerophyll forest with *Lophostemon confertus* over storey, and in *Cinnamomum camphora* forest. The species usually occurs on paleozoic metamorphics and occasionally basalt (landzones 11 and 8) associated with ridgelines, slopes, gullies and creek flats. The species has also been recorded in disturbed and regrowth areas (Department of Environment and Conservation, 2004).	**Unlikely to occur** The species has not been recorded within the desktop search extent. Although suitable habitat was present, comprehensive survey in accordance with the Protected Plants Survey Guideline did not identify the species as occurring within the site.
Fontainea venosa	Vulnerable	Vulnerable	*Fontainea venosa* mainly occurs in lowland subtropical rainforest and complex notophyll vine forest on basaltic alluvial flats and well drained, bright reddish-brown alluvial clay loam (DEE, 2018).	**Unlikely to occur** The species has not been recorded within the desktop search extent and suitable habitat within the site was limited.

Flora species	EPBC Act Status[1]	NC Act Status[1]	Habitat	Likelihood of occurrence[2]
Gossia gonoclada **angle-stemmed myrtle**	Endangered	Endangered	The angle-stemmed myrtle is found in lowland riparian rainforest, below the peak flood level, along permanent watercourses subject to tidal influence (DEE, 2018).	**Unlikely to occur** Although the species was previously recorded within the desktop search extent (WO), comprehensive survey of in accordance with the Protected Plants Survey Guideline did not identify the species as occurring within the site.
Macadamia integrifolia **macadamia nut**	Vulnerable	Vulnerable	This species grows in remnant rainforest, including complex mixed notophyll forest, and prefers partially open areas such as rainforest edges (DEWHA, 2008c).	**Unlikely to occur** The species has not been recorded within the desktop search extent and suitable habitat within the site was limited.
Macadamia tetraphylla **rough-shelled macadamia**	Vulnerable	Vulnerable	Rough-shelled Macadamia occurs in subtropical rainforest and notophyll vine forest near coastal areas. It is often found on steep slopes, especially along ecotones (DEWHA, 2008d).	**Unlikely to occur** The species has not been recorded within the desktop search extent and suitable habitat within the site was limited.
Marsdenia coronata **slender milkvine**	-	Vulnerable	Most commonly occurs in open eucalypt forest and woodland communities on hillslopes and ridge tops at altitudes of 40-780 m above sea level. The soils are generally well drained, shallow, vary in texture from sandy, gravelly sand, loam to clay loam and are derived from sandstone or acid volcanic rocks. It has also been found on rocky outcrops along cliffs. Most commonly recorded with *Eucalyptus fibrosa*, *E. carnea*, *Corymbia citriodora*, *C. henryi*, *Eucalyptus acmenoides* and *E. propinqua* (Halford 1998).	**Unlikely to occur** Although the species was previously recorded within the desktop search extent (WO) and suitable habitat was present, comprehensive survey in accordance with the Protected Plants Survey Guideline did not identify the species as occurring within the site.

Flora species	EPBC Act Status[1]	NC Act Status[1]	Habitat	Likelihood of occurrence[2]
Marsdenia longiloba **clear milkvine**	Vulnerable	Vulnerable	Clear milkvine is known from scattered sites on the NSW north coast from Hastings River northwards to Mount Nebo in Queensland. The species has been recorded in subtropical and warm temperate rainforest, lowland moist eucalypt forest adjoining rainforest and areas with rocky outcrops (DEE, 2018). Associated species include *Eucalyptus crebra*, *E. microcorys*, *E. acmenoides*, *E. saligna*, *E. propinqua*, *Corymbia intermedia* and *Lophostemon confertus* (DEE, 2018).	**Unlikely to occur** The species has not been recorded within the desktop search extent and suitable habitat within the site was limited.
Melaleuca irbyana **swamp tea tree**	-	Endangered	The species grows in flat areas that are periodically waterlogged, in eucalypt forest, mixed forest and Melaleuca woodland with a sparse and grassy understorey (DEE, 2018). It grows on poorly draining, heavy clay soils (DEE, 2018).	**Unlikely to occur** Although the species was previously recorded within the desktop search extent (WO) and suitable habitat was present, comprehensive survey in accordance with the Protected Plants Survey Guideline did not identify the species as occurring within the site.
Notelaea ipsviciensis **Cooneana olive**	Critically Endangered	Endangered	The Cooneana olive is known from three closely clustered sub-populations in the Ipswich area of southern Queensland (DEE, 2018). The species grows as an understorey plant in open woodlands and is primarily associated with eucalypt-dominated dry sclerophyll communities situated on poor, sandstone-based soils (DEE, 2018).	**Unlikely to occur** The species was not previously recorded within the desktop search extent. Although suitable habitat was present, comprehensive survey in accordance with the Protected Plants Survey Guideline did not identify the species as occurring within the site.

Flora species	EPBC Act Status[1]	NC Act Status[1]	Habitat	Likelihood of occurrence[2]
Persicaria elatior **knotweed**	Vulnerable	Vulnerable	Knotweed is known from the North Coast, Central Coast, and South Coast botanical subdivisions of NSW and the Moreton Pastoral District in south-east Queensland. The species grows on sandy, alluvial soil in swampy areas and riparian herblands along watercourses and lake edges. Associated plant species include *Melaleuca linearifolia*, *M. quinquenervia*, *Pseudognaphalium luteoalbum*, *Persicaria hydropiper*, *Floydia praealta* and *Cyperus semifertilis* (DEE, 2018).	**Unlikely to occur** The species was not previously recorded within the desktop search extent. Although suitable habitat was present, comprehensive survey in accordance with the Protected Plants Survey Guideline did not identify the species as occurring within the site.
Phaius australis **lesser swamp orchid**	Endangered	Endangered	This species is associated with coastal wet heath/sedgeland wetlands, swampy grassland or swampy forest and often where broad-leaved paperbark (*Melaleuca leucadendra*) or swamp mahogany (*Eucalyptus robusta*) are found. Less commonly, the species has been found in drier forest near the coast (DoE, 2014b).	**Unlikely to occur** Comprehensive survey in accordance with the Protected Plants Survey Guideline did not identify the species as occurring within the site.
Samadera bidwillii **quassia**	Vulnerable	Vulnerable	Quassia commonly occurs in lowland rainforest, on rainforest margins and other forest types, such as open forest and woodland. Quassia is commonly found in areas adjacent to both temporary and permanent watercourses in locations up to 510 m altitude (DEWHA, 2008d).	**Unlikely to occur** Comprehensive survey in accordance with the Protected Plants Survey Guideline did not identify the species as occurring within the site.
Symplocos harroldii **hairy hazelwood**	-	Near Threatened	The species occurs in sub-tropical rainforest, dry rainforest and sclerophyll forest (Jessup, 1993).	**Unlikely to occur** Although the species was previously recorded within the desktop search extent (WO) and suitable habitat was present, comprehensive survey in accordance with the Protected Plants Survey Guideline did not identify the species as occurring within the site.

Flora species	EPBC Act Status[1]	NC Act Status[1]	Habitat	Likelihood of occurrence[2]
Thesium australe **austral toadflax**	Vulnerable	Vulnerable	Austral toadflax is semi-parasitic on roots of a range of grass species, notably kangaroo grass (*Themeda triandra*). It occurs in subtropical, temperate and subalpine climates over a wide range of altitudes. The species prefers soils derived from sedimentary, igneous and metamorphic geology on a range of soil types including black, clay-loams to yellow podzolics and peaty loams (DEE, 2018).	**Unlikely to occur** Comprehensive survey in accordance with the Protected Plants Survey Guideline did not identify the species as occurring within the site.

[1] EPBC Act = Environment Protection and Biodiversity Conservation Act 1999; NC Act = Nature Conservation Act 1992

[2] **Known** to occur: species were recorded during field surveys. **Likely** to occur: suitable habitat to support the species is present and the species has previously been recorded within the desktop search extent. **Possible** occurrence: The site is within the species known distribution and suitable habitat to support the species is present; however, the species has not previously been recorded within the desktop search extent; and/or, suitable habitat is degraded or of limited extent, thereby reducing the likelihood of the species occurrence. **Unlikely** to occur: the site does not comprise suitable habitat for the species, or is outside of the species known distribution.

C.2 Threatened Fauna Likelihood of Occurrence Assessment

Fauna species[1]	EPBC Act Status[2]	NC Act Status[2]	Habitat	Likelihood of occurrence[3]
Mammals				
Chalinolobus dwyeri **large-eared pied bat**	Vulnerable	Vulnerable	The species occurs in a variety of habitats, including dry sclerophyll forests, woodland, edges of rainforests and wet sclerophyll forests (Churchill 2008; DECC 2007); however, the species is highly dependent on suitable roosting habitat, with almost all records within several kilometres of cliff-lines or rocky terrain (DERM 2011). Records from south-east Queensland suggest that rainforest and moist eucalypt forest habitats on other geological substrates (rhyolite, trachyte and basalt) at high elevation, are of similar importance to the species (Gynther 2011 pers. comm. cited in DERM 2011; Mathieson 2011 pers. comm. cited in DERM 2011). In south-east Queensland the species has primarily been recorded from higher altitude, moist, tall open forest adjacent to rainforest (Duncan et al. 1999).	**Unlikely to occur** The species has not been recorded within the desktop search extent and suitable roosting habitat within the site was limited.
Dasyurus maculatus maculatus **spot-tailed quoll**	Endangered	Endangered	The species prefers mature, unlogged wet forest habitat; however, the species has been recorded from a wide range of other habitats including wet sclerophyll forest, lowland forests, open and closed eucalypt woodlands, inland riparian and River Red Gum (*Eucalyptus camaldulensis*) forests and coastal heathlands (DEE, 2018). The species has been occasionally sighted from open country, grazing land, rocky outcrops and other treeless areas (DEE, 2018).	**Unlikely to occur** The species has not been recorded within the desktop search extent and suitable habitat within the site was limited.

Fauna species[1]	EPBC Act Status[2]	NC Act Status[2]	Habitat	Likelihood of occurrence[3]
Petauroides volans **greater glider**	Vulnerable	Vulnerable	The species is generally restricted to eucalypt forests and woodlands, particularly favouring forest with a diversity of eucalypt species (TSSC, 2016). During the day the species shelters in tree hollows, particularly large hollows in mature, old trees (TSSC, 2016). Modelling suggests that they require native forest patches of at least 160 km^2 to maintain viable populations (Eyre 2002).	**Potential to occur** Although the species was previously recorded within the desktop search extent (WO), available habitat was highly fragmented and few large hollows were observed, reducing the likelihood of the species to occur.
Koala (*Phascolarctos cinereus*)	Vulnerable	Vulnerable	Koalas occur in a variety of eucalypt forests and woodland communities (EPA 2006). They feed almost entirely on eucalypt foliage with preferences varying regionally (Krockenberger et al. 2012). Diet is thought to be a major determinant of habitat selection, with the species being able to use small remnants of original vegetation where suitable habitat is present (Krockenberger et al. 2012).	**Likely to occur - core habitat** The species has been previously recorded within the desktop search extent and Non-juvenile Koala Habitat Trees were present throughout the site.
Potorous tridactylus tridactylus **long-nosed potoroo**	Vulnerable	Vulnerable	This species occurs in south-eastern Queensland at Many Peaks Range, south-east of Gladstone, Bellthorpe near Beerwah and in the Border Ranges (Amos 1982). It has also been seen at Bulburin, south-west of Miriam Vale (Lindenmayer and Viggers 1994) and in the Lamington National Park and surrounds (DotEE, 2018). The species may occur in a variety of habitats including in wet eucalypt forests (Seebeck 1995) to coastal heaths and scrubs (Mason 1997). The main factors driving habitat selection include dense vegetation for shelter (Bennett 1987) and the presence of an abundant supply of fungi for food (Claridge et al. 1992).	**Potential to occur** The species has not been recorded within the desktop search extent; however suitable habitat was observed within the site in association with RE 12.3.11. The presence of domestic dogs in adjacent properties also reduces the quality of habitat for the species.

Fauna species[1]	EPBC Act Status[2]	NC Act Status[2]	Habitat	Likelihood of occurrence[3]
Pseudomys novaehollandiae **New Holland mouse**	Vulnerable	Vulnerable	In Queensland, this species is only known from east of Toowoomba, between Hampton, Murphy's Creek, and Gatton. It is associated with open heathlands, open woodlands with a heathland understorey (Lazenby et al. 2008; Posamentier and Recher 1974; Pye 1991; Wilson 1991).	**Unlikely to occur** The species has not been recorded within the desktop search extent and suitable habitat within the site was limited.
Pteropus poliocephalus **grey-headed flying fox**	Vulnerable	Least Concern	The grey-headed flying fox feeds on canopy fruits and nectar within rainforests, open forests, closed and open woodlands, melaleuca swamps and banksia woodlands. Their primary food source is eucalypt blossoms however; due to a discontinuous supply throughout the year, migrates between suitable habitats (DEE 2018). Roosting sites are typically located within rainforests, riparian vegetation and melaleuca woodlands near water sources, such as lakes, rivers and dams. The species has also been recorded using highly modified vegetation in urban and suburban areas (Birt *et al.* 1998; Tidemann and Vardon 1997; van der Ree *et al.* 2005).	**Likely to occur - general habitat** The species has been previously recorded within the desktop search extent (WO) and suitable foraging habitat is present in association with remnant vegetation within the site (RE12.3.3d and RE12.3.11).
Xeromys myoides **water mouse**	Vulnerable	Vulnerable	The species has been recorded from mangroves and the associated saltmarsh, sedgelands, clay pans, heathlands and freshwater wetlands (DEE 2018). In south-east Queensland, water mouse habitat includes mangrove communities typically comprised of *Avicenna marina* var. *australasica*, *Rhizophora stylosa*, *Bruguiera gymnorrhiza*, *Aegiceras corniculatum* and *Ceriops tagal* var. *australis* (Van Dyck and Durbidge 1992; Van Dyck 1997; Van Dyck and Gynther 2003) and associated upper tidal areas on the shoreward side of the mangrove zone (DEE 2018).	**Unlikely to occur** The species has not been recorded within the desktop search extent and suitable habitat within the site was limited.

Fauna species[1]	EPBC Act Status[2]	NC Act Status[2]	Habitat	Likelihood of occurrence[3]
Amphibians				
Adelotus brevis **tusked frog**	-	Vulnerable	Tusked frog inhabit rainforests, wet sclerophyll forests, open grasslands and pastures in close proximity to breeding habitat such as ponds and slow-moving streams (Cogger 2000; Meyer et al. 2001; Hines 2012). Also recorded from dams and garden ponds in urban and peri-urban areas (Hines 2012).	**Likely to occur - core habitat** The species has been previously recorded within the desktop search extent (WO) and suitable habitat is present in association with the watercourse in the western extent of the site (RE 12.3.11).
Crinia tinnula **wallum froglet**	-	Vulnerable	Wallum froglet inhabit acid paperbark (*Melaleuca*) swamps, sedgelands and drainage lines in wet heath (Meyer 2012). Also found in disturbed wallum habitat, such as exotic pine plantations, quarry site, recently burnt heathland, 4WD-impacted areas and roadsides (Meyer 2012). Wallum froglets have highly specific hydrological and water chemistry requirements, typically breeding only in low pH (pH 6.0 or less), low nutrient, tannin-stained ephemeral ponds (Meyer et al. 2006). Due to the specific microhabitat requirements, the species is seldom recorded with related species (e.g. *Litoria fallax*, *L. nasuta* and *Crinia signifera*) (Meyer et al. 2006).	**Potential to occur** Although the species was previously recorded within the desktop search extent (WO), suitable microhabitat was limited within the site and a related species (i.e. *L. fallax*) was recorded during the survey, reducing the likelihood of the species to occur.
Insects				
Argynnis hyperbius inconstans **Australian fritillary**	Critically Endangered	Endangered	The species is restricted to areas where its larval food plant, *Viola betonicifolia* (the arrowhead violet), occurs (DEE, 2018). The arrowhead violet is widespread throughout Queensland and NSW, at both high and low altitudes. However, the Australian fritillary appears to only occupy lower altitude sites (<600 m), and in these lower altitude regions there has been significant clearing for urban expansion (DEE, 2018).	**Unlikely to occur** The species has not been recorded within the desktop search extent and suitable habitat containing host plant species within the site was limited.

Fauna species[1]	EPBC Act Status[2]	NC Act Status[2]	Habitat	Likelihood of occurrence[3]
Phyllodes imperialis smithersi **pink underwing moth**	Endangered	Least Concern	The species is found below the altitude of 600 m in undisturbed, subtropical rainforest on rich volcanic soils and fertile alluvium. It occurs in association with the vine *Carronia multisepalea*, a collapsed shrub that provides food and habitat the moth requires in order to breed (DEE, 2018).	**Unlikely to occur** The species has not been recorded within the desktop search extent and suitable habitat containing host plant species within the site was limited.
Birds				
Anthochaera phrygia **regent honeyeater**	Critically Endangered	Endangered	Most records of the Regent Honeyeater have come from box-ironbark eucalypt associations and it seems to prefer wetter, more fertile sites within these associations, such as along creek flats, broad river valleys and lower slopes (Menkhorst *et al*. 1999). In Queensland, the species generally prefers dry eucalypt woodland and open forest, rural and urban areas with mature eucalypts (DEHP 2013). It favours Ironbark-box associations, *Eucalyptus sideroxylon* (Mugga ironbark), *E. albens* (white box), *E. melliodora* (yellow box) (DEHP 2013). Other habitat includes *E. robusta* (swamp mahogany), or *Corymbia maculata* (spotted gum) or *Casuarina cunninghamiana* (river she-oak) with associated *Amyema cambagei* (needle-leaf mistletoe) (DEHP 2013).	**Unlikely to occur** The species has not been recorded within the desktop search extent and suitable habitat within the site was limited.

Fauna species[1]	EPBC Act Status[2]	NC Act Status[2]	Habitat	Likelihood of occurrence[3]
Botaurus poiciloptilus **Australasian bittern**	Endangered	-	The Australasian Bittern's preferred habitat is comprised of wetlands with tall dense vegetation, where it forages in still, shallow water up to 0.3 m deep, often at the edges of pools or waterways, or from platforms or mats of vegetation over deep water (DEE, 2018). It favours permanent and seasonal freshwater habitats, particularly those dominated by sedges, rushes and reeds (e.g. *Phragmites, Cyperus, Eleocharis, Juncus, Typha, Baumea, Bolboschoenus*) or cutting grass (*Gahnia*) growing over a muddy or peaty substrate (Marchant and Higgins, 1990).	**Unlikely to occur** The species has not been recorded within the desktop search extent and suitable habitat within the site was limited.
Calidris ferruginea **curlew sandpiper**	Critically Endangered	Endangered	In Australia, the species usually forages and roosts in intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms (DEE, 2018).	**Unlikely to occur** The species has not been recorded within the desktop search extent and suitable habitat within the site was limited.
Calyptorhynchus lathami lathami **glossy black-cockatoo (eastern)**	-	Vulnerable	The eastern subspecies occurs from Paluma in Queensland to eastern Victoria and ranges inland to Augathella-Tambo region of Queensland (Pizzey and Knight, 2001). The species prefer woodlands dominated by *Allocasuarina*, or open sclerophyll forests or woodlands, with a middle stratum of *Allocasuarina* below *Eucalyptus*, *Corymbia* or *Angophora* (Glossy Black Conservancy 2010). Glossy black-cockatoos breed mainly within woodland or remnant woodland containing large, old trees, but have also been recorded in dead, ringbarked eucalypts in cleared country. The species is an obligate hollow nester and requires a hollow stump or limb, living or dead, or a hole in the trunk of a large, old tree, usually a eucalypt, for breeding (Glossy Black Conservancy 2010).	**Potential to occur** Although the species was previously recorded within the desktop search extent (WO), suitable foraging habitat containing Allocasuarina spp. was limited within the site, reducing the likelihood of the species to occur.

Fauna species[1]	EPBC Act Status[2]	NC Act Status[2]	Habitat	Likelihood of occurrence[3]
Charadrius leschenaultii **greater sand plover**	Vulnerable	Vulnerable	Greater sand plovers occur along most of the coastline but are more widespread in northern Australia (DEE, 2018). In Australia, the species is almost entirely coastal, inhabiting littoral and estuarine habitats. They primarily occur on sheltered sandy, shelly or muddy beaches with large intertidal mudflats or sandbanks, as well as sandy estuarine lagoons, and inshore reefs, rock platforms, small rocky islands or sand cays on coral reefs (Abbott 1982; Morris 1989; Sedgwick 1978). They are occasionally recorded on near-coastal saltworks and saltlakes, including marginal saltmarsh, and on brackish swamps (DEE, 2018).	**Unlikely to occur** The species has not been recorded within the desktop search extent and suitable habitat within the site was limited.
Cyclopsitta diophthalma coxeni **Coxen's fig-parrot**	Endangered	Endangered	Probably prefer lowland subtropical rainforests where fleshy-fruited trees are prevalent (Coxen's Fig-Parrot Recovery Team 2001). Recent records are typically from subtropical rainforest, dry rainforest, littoral and developing littoral rainforest, sub-littoral mixed scrub, riparian corridors in woodland, open woodland and otherwise cleared land, and urbanised and agricultural areas with fig trees (Coxen's Fig-Parrot Recovery Team 2001). The presence of abundant fig trees is considered critical for the species habitat requirements (Coxen's Fig-Parrot Recovery Team 2001).	**Unlikely to occur** The species has not been recorded within the desktop search extent and suitable habitat within the site was limited.

Fauna species[1]	EPBC Act Status[2]	NC Act Status[2]	Habitat	Likelihood of occurrence[3]
Dasyornis brachypterus **eastern bristlebird**	Endangered	Endangered	The species occupies a broad range of vegetation types with a variety of species compositions, including grassland, sedgeland, heathland, swampland, scrubland, grassy sclerophyll forest and woodland, and rainforest (OEH 2012). Eastern Bristlebird habitat primarily occurs as coastal, subcoastal and coastal escarpment scrubland/ grassland/sedgeland and as open grassy forest on inland ranges (Blakers *et al*. 1984; Holmes 1989). The northern population, within south-east Queensland and north-east NSW mainly occur in scattered areas of montane open forest where the undergrowth is dense and grassy and contains diverse structural features which provide the birds with protection and nesting locations (OEH 2012).	**Unlikely to occur** The species has not been recorded within the desktop search extent and suitable habitat within the site was limited.
Erythrotriorchis radiatus **red goshawk**	Vulnerable	Endangered	Resident pairs of red goshawks prefer intact, extensive woodlands and forests with a mosaic of vegetation types that are open enough for fast manoeuvring flight (Marchant and Higgins 1993). These favoured areas contain permanent water, are relatively fertile and biologically rich with large populations of birds. Nesting habitat is a subset of foraging habitat, with a tall stand of trees invariably selected as the nest location (Aumann and Baker-Gabb 1991). The species is mainly associated with regional ecosystems at risk with rugged terrain in southern and northern Queensland (DERM 2012).	**Unlikely to occur** The species has not been recorded within the desktop search extent and suitable habitat within the site was limited.

Fauna species[1]	EPBC Act Status[2]	NC Act Status[2]	Habitat	Likelihood of occurrence[3]
Geophaps scripta scripta **squatter pigeon (southern subspecies)**	Vulnerable	Vulnerable	Potential distribution extends south from the Burdekin-Lynd divide in the southern region of Cape York Peninsula to south-east Queensland, south-west to Stanthorpe, near the Queensland-NSW border, south to the NSW border, and north-westwards through Goondiwindi and the Brigalow Belt in Queensland to Charleville (Cooper et al. 2014; Squatter Pigeon Workshop 2011). Open-forests to sparse, open-woodlands and scrub that are mostly dominated in the overstorey by *Eucalyptus*, *Corymbia*, *Acacia* or *Callitris* species; remnant, regrowth or partly modified vegetation communities; within 3 km of water bodies or courses (Cooper *et al*. 2014; EPA 2006; Squatter Pigeon Workshop 2011).	**Unlikely to occur** The species has not been recorded within the desktop search extent and the site is located in the eastern extent of the species known distribution.
Lathamus discolor **swift parrot**	Critically Endangered	Endangered	Occur in a variety of habitats that contain preferred mature foraging habitat trees. In south-east Queensland, preferred tree species include *Eucalyptus microcarpa* (grey box), *Eucalyptus melliodora* (yellow box), *Eucalyptus robusta* (swamp mahogany) and *Eucalyptus tereticornis* (forest red gum) (Saunders and Tzaros 2011).	**Unlikely to occur** The species has not been recorded within the desktop search extent and suitable habitat within the site was limited.

Fauna species[1]	EPBC Act Status[2]	NC Act Status[2]	Habitat	Likelihood of occurrence[3]
Menura alberti **Albert's lyrebird**	-	Near Threatened	In Queensland, it is restricted to scattered and sometimes isolated sites in the area from Tamborine Mountain to Lamington National Park, and from the McPherson Range west to Mount Barney National Park and near Killarney. It is also found along the Great Divide and associated ranges, from Wilsons Peak north to Cunningham's Gap and Mount Mistake in Main Range National Park (Higgins et al. 2001). Mostly confined to rainforests and wet sclerophyll forests with mesic understorey, usually at altitudes of more than 300 m above sea level. They are typically located in gullies, along watercourses, and on the slopes and ridges of steep mountain ranges (Higgins et al. 2001).	**Unlikely to occur** Although the species has been previously recorded within the desktop search extent (WO), suitable habitat within the site was limited.
Ninox strenua **powerful owl**	-	Vulnerable	Powerful owl has large, possibly permanent home ranges in mountain forests, gullies and forest margins; sparser hilly woodlands, coastal forests, woodlands, plantations and urban areas (Pizzey and Knight, 2001).	**Potential to occur** The species has been previously recorded within the desktop search extent (WO) and suitable foraging habitat is present within the site.
Numenius madagascariensis **eastern curlew**	Critically Endangered	Endangered	Typically inhabit sheltered coasts, especially estuaries, bays, harbours, inlets and coastal lagoons, with large intertidal mudflats or sandflats, often with beds of seagrass (TSSC 2015). Occasionally, the species occurs on ocean beaches (often near estuaries), and coral reefs, rock platforms, or rocky islets (TSSC 2015). The birds are often recorded among saltmarsh and on mudflats fringed by mangroves, and sometimes use the mangroves (TSSC 2015). The birds are also found in saltworks and sewage farms (Marchant and Higgins 1993).	**Unlikely to occur** The species has not been recorded within the desktop search extent and suitable habitat within the site was limited.

Fauna species[1]	EPBC Act Status[2]	NC Act Status[2]	Habitat	Likelihood of occurrence[3]
Poephila cincta cincta **black-throated finch (southern)**	Endangered	Endangered	Occurs mainly in grassy, open woodlands and forests, typically dominated by *Eucalyptus, Corymbia* and *Melaleuca*, and occasionally in tussock grasslands or other habitats (for example freshwater wetlands), often along or near watercourses, or in the vicinity of water (Britton and Britton 2000; BTF Recovery Team 2004; Ley and Cook 2001; NRA 2005). Almost all recent records of the finch from south of the tropics have been in riparian habitat (BTF Recovery Team 2004; Ley and Cook 2001). The subspecies is thought to require a mosaic of different habitats in which it can find seed during the wet season (Mitchell 1996).	**Unlikely to occur** The species has not been recorded within the desktop search extent and the site is located at the southern extent of the species predicted distribution.
Rostratula australis **Australian painted snipe**	Endangered	Vulnerable	Generally inhabits shallow terrestrial freshwater (occasionally brackish) wetlands, including temporary and permanent lakes, swamps and claypans (DotEE 2018). They also use inundated or waterlogged grassland or saltmarsh, dams, rice crops, sewage farms and bore drains (DotEE 2018). The Australian Painted Snipe sometimes utilises areas that are lined with trees, or that have some scattered fallen or washed-up timber (Marchant and Higgins 1993). Breeding occurs in shallow wetlands with areas of bare wet mud and both upper and canopy cover nearby, typically from or near small islands in fresh water wetlands (DotEE 2018).	**Potential to occur** Although the species has not been previously recorded within the desktop search extent, suitable habitat is present within the site in association with the riparian corridor.

Fauna species[1]	EPBC Act Status[2]	NC Act Status[2]	Habitat	Likelihood of occurrence[3]
Turnix melanogaster **black-breasted button-quail**	Vulnerable	Vulnerable	Habitat considered critical to the survival of the black-breasted button-quail includes: Vine thickets and rainforest vegetation types, particularly semi-evergreen vine thicket, low microphyll vine forest, Araucarian microphyll vine forest, Araucarian notophyll vine forest and *Brachychiton* scrubs; Low thickets or woodlands with a dense understorey but little ground cover, typically dominated by *Acacia* spp.; and in littoral situations, dry vine scrubs, acacia thickets and areas densely covered in shrubs, particularly midgen berry (*Austromyrtus dulcis)* (Mathieson and Smith 2009).	**Unlikely to occur** The species has not been recorded within the desktop search extent and suitable habitat within the site was limited.
Reptiles				
Delma torquata **collared delma**	Vulnerable	Vulnerable	The species normally inhabits dry eucalypt dominated woodlands and open-forests on stony soils or rocky ridges with an understorey of grasses and *Lantana montevidensis* (lantana) (Porter 1998). Land Zones the species is typically recorded from include Land Zone 3 (alluvial river and creek flats), 9 (undulating country on fine-grained sedimentary rocks) and 10 (sandstone ranges).	**Potential to occur** Although the species has not been previously recorded within the desktop search extent, suitable habitat is present within the site in association with the riparian corridor.
Furina dunmalli **Dunmall's snake**	Vulnerable	Vulnerable	Dunmall's Snake has been found in a broad range of habitats, including forests and woodlands on black alluvial cracking clay and clay loams dominated by *Acacia harpophylla* (brigalow), *A. burrowii*, *A. deanei*, *A. leiocalyx*, *Callitris* spp. or bull-oak *Allocasuarina luehmannii*; and various spotted gum *Corymbia citriodora*, Eu*calyptus crebra* and *E. melanophloia*, *Callitris glaucophylla* (white cypress pine) and *Casuarina cristata* (bulloak) open forest and woodland associations on sandstone derived soils (DoE, 2014).	**Unlikely to occur** The species has not been recorded within the desktop search extent and suitable habitat within the site was limited.

Fauna species[1]	EPBC Act Status[2]	NC Act Status[2]	Habitat	Likelihood of occurrence[3]
Saiphos reticulatus **three-toed snake-tooth skink**	Vulnerable	Least Concern	Recorded from rainforest, closed forest, wet sclerophyll forest, tall open forest *Eucalyptus pilularis* (blackbutt), tall layered open eucalypt forest and closed forest *Lophostemon confertus* (brush box) (DEE, 2018). It has also been recorded from extensive regrowth in heavily logged area (Czechura, 1974).	**Unlikely to occur** The species has not been recorded within the desktop search extent and suitable habitat within the site was limited.

[1] The Protected Matters Search identified numerous marine, pelagic and shorebird species. These species have not been considered in this report due to the lack of marine and shoreline environment and the site being located approximately 18 km from the coast.

[2] EPBC Act = Environment Protection and Biodiversity Conservation Act 1999; NC Act = Nature Conservation Act 1992

[3] **Known** to occur: species were recorded during field surveys. **Likely** to occur: suitable habitat to support the species is present and the species has previously been recorded within the desktop search extent. **Possible** occurrence: The site is within the species known distribution and suitable habitat to support the species is present; however, the species has not previously been recorded within the desktop search extent; and/or, suitable habitat is degraded or of limited extent, thereby reducing the likelihood of the species occurrence. **Unlikely** to occur: the site does not comprise suitable habitat for the species, or is outside of the species known distribution.

Appendix D EPBC Act MNES Significant Impact self-assessment

D.1 EPBC Act MNES Significant Impact self-assessment

Definitions and terminology

Term	Definition under the EPBC Act
Important population	a population that is necessary for a species' long-term survival and recovery. This may include populations identified as such in recovery plans, and/or that are: • key source populations either for breeding or dispersal • populations that are necessary for maintaining genetic diversity, and/or • populations that are near the limit of the species range.
Habitat critical to the survival of the species	Areas that are necessary: • for activities such as foraging, breeding, roosting, or dispersal • for the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators) • to maintain genetic diversity and long term evolutionary development, or • for the reintroduction of populations or recovery of the species or ecological community. Such habitat may be, but is not limited to: habitat identified in a recovery plan for the species or ecological community as habitat critical for that species or ecological community; and/or habitat listed on the Register of Critical Habitat maintained by the minister under the EPBC Act.
Invasive species	An introduced species, including an introduced (translocated) native species, which out-competes native species for space and resources or which is a predator of native species. Introducing an invasive species into an area may result in that species becoming established. An invasive species may harm listed threatened species or ecological communities by direct competition, modification of habitat or predation.

D.2 MNES self-assessment for the Koala

MNES Significant Impact Guideline criteria	Response
The action is likely to lead to a long-term decrease in the size of an important population of a species	The site and surrounds are located outside of the Koala Coast and Pine Rivers areas, identified as significant koala population areas due to its size and genetic structure (DERM 2010). While the site is likely to provide habitat for transient individuals, the site is unlikely to contain or support an important population of the species. Consequently, the proposed development is unlikely to contribute to a long-term decrease in the size of an important or local population. Koala habitat within the impact area is currently fragmented and contains threats to koala, including vehicle strike and dog attack. In addition, a range of mitigation measures have been proposed to avoid koala mortality during construction and minimise impacts to the species.
Reduce the area of occupancy of an important population	Although 0.96 ha of koala habitat will require clearing as a result of the proposed development, the site is likely to provide habitat for transient individuals and unlikely to contain or support an important population of the species. Furthermore, clearing of the koala habitat for the proposed development is considered unlikely to significantly reduce the area of occupancy for local populations.
Fragment an existing important population into two or more populations	Although 0.96 ha of koala habitat will require clearing as a result of the proposed development, the site is likely to provide habitat for transient individuals and unlikely to contain or support an important population of the species. As such, the proposed development is unlikely to fragment an existing important population.

<table>
<tr><th>MNES Significant Impact Guideline criteria</th><th>Response</th></tr>
<tr><td>Adversely affect habitat critical to the survival of the species</td><td>The site contained scattered koala habitat trees, including Eucalyptus tereticornis, E. moluccana, E. siderophloia, E. fibrosa, Corymbia citriodora, C. torelliana*, Lophostemon suaveolens and Melaleuca spp. Assessment against the Koala Habitat Assessment Tool for coastal areas identified in the Koala Referral Guideline is provided below.
<table>
<tr><th>Attribute</th><th>Score</th><th>Comment</th></tr>
<tr><td>Koala occurrence</td><td>2</td><td>A number of koalas have been observed within the desktop search extent.</td></tr>
<tr><td>Vegetation composition</td><td>2</td><td>The site contains vegetation dominated by koala food tree species</td></tr>
<tr><td>Habitat connectivity</td><td>0</td><td>The site is not connected to an area of contiguous koala habitat that exceeds 300 ha.</td></tr>
<tr><td>Key existing threats</td><td>1</td><td>The site and surrounds contain a number of high traffic roads, including Logan Motorway to the south and Loganlea Road to the east, as well as the potential threat of dog attack in surrounding urban development.</td></tr>
<tr><td>Recovery value</td><td>0</td><td>Koala habitat within the site is unlikely to be important for achieving interim recovery objectives specified in the Koala Referral Guideline as the habitat does not form part of a contiguous large area of koala habitat, nor is it likely to provide a corridor to allow movement of koala between large areas of habitat.</td></tr>
<tr><td>TOTAL</td><td>5</td><td></td></tr>
</table>
Koala habitat within the site calculated a habitat score of 5 and is considered ‘habitat critical to the survival of the species’ in accordance with the Koala Referral Guideline. However, as the proposed development will impact <2 ha of habitat, a referral is not recommended under the Koala Referral Guideline.</td></tr>
</table>

MNES Significant Impact Guideline criteria	Response
Disrupt the breeding cycle of an important population	The site and surrounds are considered likely to provide habitat for transient individuals and unlikely to contain or support an important population of the species. Mitigation measures as identified in the koala Referral guidelines will be applied during clearing so as not to disrupt the breeding cycle of any local resident koalas, including: • presence of a koala spotter during clearing activities • sequential clearing; and • temporary cessation of clearing if a koala is present within the site, to allow the koala to self disperse.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Although 0.96 ha of koala habitat will require clearing as part of the proposed development, the existing habitat has been largely fragmented in association with industrial and urban development. Koala movement within the site is also limited by lantana (*Lantana camara*) infestations within some of the koala habitat. As such, the proposed development is not considered likely to modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the koala is likely to decline.
Result in invasive species that are harmful to a Vulnerable species becoming established in the species habitat	The proposed development is unlikely to result in the introduction or spread of invasive species within the site that may be harmful to the koala. Mitigation measures during construction activities will assist in preventing the introduction and dispersal of pest flora material from vehicles prior to entering the site.

MNES Significant Impact Guideline criteria	Response
Interfere substantially with the recovery of the species including: • Increasing koala fatalities in habitat critical to the survival of the koala due to dog attacks to a level that is likely to result in multiple, ongoing mortalities. • Increasing koala fatalities in habitat critical to the survival of the koala due to vehicle-strikes to a level that is likely to result in multiple, ongoing mortalities. • Facilitating the introduction or spread of disease or pathogens for example Chlamydia or *Phytophthora cinnamomi*, to habitat critical to the survival of the koala, that are likely to significantly reduce the reproductive output of koalas or reduce the carrying capacity of the habitat. • Creating a barrier to movement to, between or within habitat critical to the survival of the koala that is likely to result in a long-term reduction in genetic fitness or access to habitat critical to the survival of the koala. • Changing hydrology which degrades habitat critical to the survival of the koala to the extent that the carrying capacity of the habitat is reduced in the long-term.	Works associated with the proposed development are unlikely to interfere with the recovery of the species. Koala habitat that will require clearing as part of the proposed development has been highly fragmented and contains threats to koala including the potential for vehicle strike and dog attack. Koala movement within the site is also limited by lantana (*Lantana camara*) infestations. The proposed development will not result in an increase in fragmentation of koala habitat or increase the threats to koala, including vehicle strike and dog attack. Mitigation measures during construction activities will assist in preventing the introduction and dispersal of pest flora material from vehicles prior to entering the site. Furthermore, the proposed development will not introduce disease/s that may cause the koala to decline (i.e. chlamydia and Koala Retrovirus).

D.3 MNES self-assessment for the grey-headed flying fox

MNES Significant Impact Guideline criteria	Response
Lead to a long-term decrease in the size of an important population of a species	A grey-headed flying-fox population is considered to comprise a single interbreeding population throughout the species entire geographic range (DEE, 2018). Any grey-headed flying-fox individuals within the site may therefore be considered part of an important population. The species is highly nomadic and responds to fluctuations in food availability through movements between roost sites and a substantial foraging area each night, typically within 15 km of their day roost site (DEE, 2018). The proposed development will require clearing of grey-headed flying-fox foraging habitat. Areas of suitable foraging habitat will be retained as part of the proposed development. The area of clearing is unlikely to lead to a long-term decrease in the size of the species population as the area represents a negligible proportion of the total habitat available for foraging individuals within the area.
Reduce the area of occupancy of an important population	The species is highly nomadic and responds to fluctuations in food availability through short and long-range movements between roost sites and foraging areas (DEE, 2018). No roost sites are currently located within the site and foraging habitat will be retained in association with vegetated corridors along watercourses and drainage lines. As such, clearing of grey-headed flying-fox habitat within the site is unlikely to reduce the area of occupancy of the species.
Fragment an existing important population into two or more populations	The species is highly nomadic and responds to fluctuations in food availability through short and long-range movements between roost sites and foraging areas (DEE, 2018). As such, clearing of grey-headed flying-fox habitat within the site is unlikely to fragment a population or restrict genetic flow of the species.
Adversely affect habitat critical to the survival of a species	The site does not contain a day-roost site for the species. While suitable forging habitat is located within the site, large tracts of similar remnant vegetation are located within surrounding areas. Furthermore, foraging habitat will be retained along watercourses and drainage features. As such, the site is not considered to comprise habitat critical to the survival of the species, necessary for maintenance of the species, the genetic diversity or for the recovery of the species. Consequently, the proposed development is unlikely to adversely affect habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population	The site does not contain a day-roost site for the species. The nearest day-roost site is located approximately 2.4 km from the site. Furthermore, clearing of suitable habitat that is required for the proposed development is unlikely to substantially reduce the foraging resources available to grey-headed flying-fox within the area. As such, the proposed development is unlikely to disrupt the breeding cycle of the species.

MNES Significant Impact Guideline criteria	Response
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The species is highly nomadic and responds to fluctuations in food availability through short and long-range movements between roost sites and foraging areas (DEE, 2018). As such, clearing of foraging habitat within the site is unlikely to decrease the availability or quality of habitat to the extent that the species is likely to decline.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	The proposed development is unlikely to result in the introduction or spread of invasive species within the site that may be harmful to the grey-headed flying fox. Mitigation measures during vegetation clearing activities will assist in preventing the introduction and dispersal of pest flora material from vehicles prior to entering the site.
Introduce disease that may cause the species to decline	The proposed development is unlikely to result in the introduction or spread of a disease that may cause the species to decline.
Interfere with the recovery of the species	The proposed development is unlikely to interfere with the recovery of the species. Clearing of grey-headed flying-fox foraging habitat within the site is unlikely to reduce the area of occupancy of the species, impact habitat connectivity or movement of the species.

Appendix E MSES Significant Residual Impact self-assessment

E.1 MSES Significant Residual Impact self-assessment

Definitions and terminology

Term	Definition under the EO Act
Habitat	An area occupied, or periodically or occasionally occupied, by any species, population or ecological community and includes all the different aspects (both biotic and abiotic) used by species during the different stages of their life cycles.
Essential Habitat	A category B area shown on the regulated vegetation management map under the *Vegetation Management Act 1999*: a) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database; or b) in which the protected wildlife, at any stage of its life cycle, is located.
Long-term decrease	Any decline in a local population that is greater than which would be apparent without the action being present.
Population	An occurrence of the species in a particular area. In relation to *Endangered*, *Vulnerable* and *Special Least Concern* species, occurrences include but are not limited to: • a geographically distinct regional population, or collection of local populations; or • a population, or collection of local populations, that occurs within a particular bioregion.

E.2 MSES Significant Residual Impact self-assessment for the koala

MSES Significant Residual Impact Guideline criteria. The action is likely to:	Response
Lead to a long-term decrease in the size of a local population	The site is likely to provide habitat for transient individuals and is considered unlikely to lead to a long-term decrease in the size of a local population of the species.
Reduce the extent of occurrence of the species	Although 0.96 ha of koala habitat will require clearing as a result of the proposed development, the site is likely to provide habitat for transient individuals and unlikely to contain or support an important population of the species. Furthermore, clearing of the koala habitat for the proposed development is considered unlikely to significantly reduce the area of occupancy for local populations.
Fragment an existing population	Although 0.96 ha of koala habitat will require clearing as a result of the proposed development, the site is likely to provide habitat for transient individuals and unlikely to contain or support an important population of the species. Areas of vegetation to be retained within the site and surrounding vegetation will continue to facilitate movement of individuals across the landscape. As such, the proposed development is unlikely to fragment an existing population.
Result in genetically distinct populations forming as a result of habitat isolation	The proposed development is unlikely to isolate habitat or create barriers that may result in genetically distinct populations forming.
Result in invasive species that are harmful to an endangered or vulnerable species becoming established in the endangered or vulnerable species' habitat	The proposed development is unlikely to result in the introduction or spread of invasive species within the site that may be harmful to the koala. Mitigation measures during construction activities will assist in preventing the introduction and dispersal of pest flora material from vehicles prior to entering the site.
Introduce disease that may cause the population to decline	The proposed development is unlikely to introduce disease that may cause the population koala to decline.
Interfere with the recovery of the species.	The proposed development is unlikely to interfere with the recovery of the species.
Cause disruption to ecologically significant locations (breeding, feeding, nesting, migration or resting sites) of a species.	The proposed development is unlikely to cause disruption to ecologically significant locations (breeding, feeding or resting sites) for the koala. Mitigation measures will be applied during clearing activities so as not to disrupt the breeding cycle of any local, resident populations, including: • presence of a koala spotter-catcher during clearing activities • sequential clearing; and • cessation of clearing activities should an individual be detected to allow for self-dispersal.

E.3 MSES Significant Residual Impact self-assessment for the tusked frog

MSES Significant Residual Impact Guideline criteria. The action is likely to:	Response
Lead to a long-term decrease in the size of a local population	The proposed development will impact minimal area of suitable habitat within the site. As such, the proposed development is unlikely to lead to a long-term decrease in the size of a local population of tusked frog.
Reduce the extent of occurrence of the species	The proposed development will impact approx. 0.20 ha of suitable habitat for the tusked frog. While riparian areas will be impacted by the development, areas of habitat will be retained within the eastern extent of the site. Mitigation measures, including erosion and sediment control measures will be implemented during construction activities to minimise impacts to adjacent habitat areas.
Fragment an existing population	Although 0.20 ha of tusked frog habitat will require clearing as a result of the proposed development, areas of suitable habitat will be retained in the eastern extent of the site. As such, the proposed development is unlikely to fragment an existing population of the species.
Result in genetically distinct populations forming as a result of habitat isolation	The proposed development is unlikely to isolate habitat or create barriers that may result in genetically distinct populations forming.
Result in invasive species that are harmful to an endangered or vulnerable species becoming established in the endangered or vulnerable species' habitat	The proposed development is unlikely to result in the introduction or spread of invasive species within the site that may be harmful to the tusked frog. Mitigation measures during construction activities will assist in preventing the introduction and dispersal of pest flora material from vehicles prior to entering the site.
Introduce disease that may cause the population to decline	The proposed development is unlikely to introduce disease that may cause the population of tusked frog to decline.
Interfere with the recovery of the species.	The proposed development is unlikely to interfere with the recovery of the species.
Cause disruption to ecologically significant locations (breeding, feeding, nesting, migration or resting sites) of a species.	The proposed development will impact on a small area of suitable habitat for the tusked frog and is unlikely to cause disruption to ecologically significant locations (breeding, feeding or resting sites). Mitigation measures as will be applied during clearing and construction so as not to disrupt the breeding cycle of any local populations, including: • presence of a fauna spotter-catcher during clearing activities • sequential clearing; and • erosion and sediment controls.

E.4 MSES Significant Residual Impact self-assessment for the short-beaked echidna

MSES Significant Residual Impact Guideline criteria	Response
Lead to a long-term decrease in the size of a local population	No echidnas or evidence of recent utilisation (e.g. burrowing, scat etc.) was observed during the field survey. The desktop search extent identified numerous records in proximity to the site. Due to fragmentation associated with industrial and urban development, while echidnas are likely to utilise habitat within the area, it may be at relatively low densities. Although the proposed development will require the removal of 1.39 ha of suitable habitat, habitat for the species will be retained in association with the watercourse and areas to the north of the site., allowing continued movement across the site. As such, the proposed development is not considered likely to lead to a long-term decrease in echidna populations in the area.
Reduce the extent of occurrence of the species	Although the proposed development will require the removal of 1.39 ha of suitable habitat, habitat for the species will be retained in association with the watercourse and areas to the north of the site, allowing continued movement across the site. As such, the proposed development is not considered likely to reduce the extent of occurrence for the species.
Fragment an existing population	Although the proposed development will require the removal of 1.39 ha of suitable habitat, habitat for the species will be retained in association with the watercourse and areas to the north of the site, allowing continued movement across the site. As such, the proposed development is not considered likely to fragment an existing population of the species.
Result in genetically distinct populations forming as a result of habitat isolation	Although the proposed development will require the removal of 1.39 ha of suitable habitat, habitat for the species will be retained in association with the watercourse and areas to the north of the site, allowing continued movement across the site. Furthermore, the proposed development is unlikely to pose as a significant barrier or threat to individuals. As such, the proposed development is not considered likely to reduce the extent of occurrence for the species.
Cause disruption to ecologically significant locations (breeding, feeding or nesting) of a species.	The proposed development is unlikely to cause disruption to breeding or foraging habitat for the species. Areas of suitable habitat will be retained in association with the watercourse vegetation north of the site, allowing movement across the site into adjacent areas of suitable habitat.

Appendix F Overlay code response

F.1 Biodiversity Areas overlay code response

Performance Outcomes	Acceptable Outcomes	Achieved Outcome
For accepted development (subject to requirements) and assessable development		
Biodiversity corridors		
PO1 Development in a Biodiversity corridor identified on Biodiversity areas overlay map-OM-02.02 is designed and located to: a) provide for habitat links; b) facilitate safe wildlife movement; c) facilitate wildlife refuge; d) enhance habitat values; e) rehabilitate degraded areas with native vegetation. Note--Compliance with this performance outcome is to be demonstrated by a detailed ecological assessment report prepared in accordance with Part 2 of planning scheme policy 3-Environmental management.	**AO1** Development is located outside a Biodiversity corridor identified on Biodiversity areas overlay map-OM-02.02.	Approximately 1.38 ha of ground-truthed remnant and regrowth vegetation within a mapped Biodiversity area under the LCC Planning Scheme will require removal as a result of the proposed development.,
Primary vegetation management area		
PO2 Development in the Primary vegetation management area identified on Biodiversity areas overlay map-OM-02.01 is designed and located: a) to: i. protect the current extent of native vegetation; or	**AO2.1** Development is located to avoid the need to clear any native vegetation in the Primary vegetation management area identified on Biodiversity areas overlay map-OM-02.01, unless:	Approximately 1.38 ha of ground-truthed remnant and regrowth vegetation within a mapped Primary vegetation management area will be impacted by the proposed development.

Performance Outcomes	Acceptable Outcomes	Achieved Outcome
ii. achieve a net gain of native vegetation; b) to rehabilitate degraded areas with native vegetation. Note--The Primary vegetation management area includes the locally significant vegetation identified on Biodiversity areas overlay map-OM-02.03. Note--Compliance with this performance outcome is to be demonstrated by a detailed ecological assessment report [for section (a)(i)] and an environmental offset report [for section (a)(ii)] prepared in accordance with Part 2 of planning scheme policy 3-Environmental management.	a) if identified as a matter of local environmental significance on Biodiversity areas overlay map-OM-02.04, an offset is provided in accordance with section 3.1-Environmental offset standards in Planning scheme policy 3-Environmental management; or b) if identified as a matter of State environmental significance on Biodiversity areas overlay map-OM-02.04, an offset is provided in accordance with the Queensland Environmental Offset Policy and the Environmental Offsets Act 2014. Note--Compliance with AO2.1(a) is to be demonstrated by an environmental offset report prepared in accordance with Part 2 of planning scheme policy 3-Environmental management. Note--Compliance with AO2.1(b) is achieved where an environmental offset is provided to the Queensland Government in accordance with conditions imposed by a referral agency under the State Development Assessment Provisions. Alternatively, compliance is also achieved where referral agency assessment was undertaken but no environmental offset condition imposed **AO2.2** Development rehabilitates degraded areas in accordance with the South East Queensland Ecological Restoration Framework.	Due to flood mitigation requirements, clearing within these areas is required. Rehabilitation within the waterway corridor will occur and an offset will be provided.
Secondary vegetation management area		

Performance Outcomes	Acceptable Outcomes	Achieved Outcome
PO3 Development in the Secondary vegetation management area identified on Biodiversity areas overlay map-OM-02.01 is designed and located to either: a) protect the current extent of native trees and native habitat trees; or b) achieve a net gain of native trees and native habitat trees. Note--Compliance with this performance outcome is to be demonstrated by a basic ecological assessment report [for paragraph (a)] and environmental offset report [for section (b)] prepared in accordance with Part 2 of planning scheme policy 3-Environmental management.	**AO3** Development is located to avoid the need to clear any native trees and native habitat trees in the Secondary vegetation management area identified on Biodiversity areas overlay map-OM-02.01, unless: a) if identified as a matter of local environmental significance on Biodiversity areas overlay map-OM-02.04, an offset is provided in accordance with section 3.1-Environmental offset standards in Planning scheme policy 3-Environmental management; or b) if identified as a matter of State environmental significance on Biodiversity areas overlay map-OM-02.04, an offset is provided in accordance with the Queensland Environmental Offset Policy and the Environmental Offsets Act 2014. Note--Compliance with AO3(a) is to be demonstrated by an environmental offset report prepared in accordance with Part 2 of planning scheme policy 3-Environmental management. Note--Compliance with AO3(b) is achieved where an environmental offset is provided to the Queensland Government in accordance with conditions imposed by a referral agency under the State Development Assessment Provisions. Alternatively, compliance is also achieved where referral agency assessment was	Not applicable - No Secondary vegetation management areas are mapped within the site.

Performance Outcomes	Acceptable Outcomes	Achieved Outcome
	undertaken but no environmental offset condition imposed.	
Koala corridor		
PO4 Development in a Koala corridor identified on Biodiversity areas overlay map-OM-02.02 is designed and located to protect and enhance koala habitat. Note--Compliance with this performance outcome is to be demonstrated by a detailed ecological assessment report prepared in accordance with Part 2 of planning scheme policy 3-Environmental management.	**AO4** Development: a) is located to avoid the need to clear any native vegetation in a Koala corridor identified on Biodiversity areas overlay map-OM-02.02; b) in a Koala corridor identified on Biodiversity areas overlay map-OM-02.02 rehabilitates degraded koala habitat values within the Koala corridor, in accordance with the South East Queensland Ecological Restoration Framework.	Not applicable - No koala corridors are mapped within the site.
For assessable development		

Performance Outcomes	Acceptable Outcomes	Achieved Outcome
Wildlife movement		
PO5 Development in a Biodiversity corridor or koala corridor identified on Biodiversity areas overlay map-OM-02.02 provides for the safe movement of native fauna by: a) generating minimal additional night time traffic; b) minimising the risk of injury or death to wildlife by vehicular traffic; c) incorporating practices or measures to minimise disruption, injury or death during construction; d) providing that a road or accessway has a low design speed; e) providing fauna-friendly fencing. Note--Compliance with this performance outcome is to be demonstrated by a detailed ecological assessment report prepared in accordance with Part 2 of planning scheme policy 3-Environmental management.	**AO5** Development in a Biodiversity corridor or koala corridor identified on Biodiversity areas overlay map-OM-02.02 provides for the safe movement of native fauna through the implementation of: a) the Queensland Government Fauna Sensitive Road Design Manual Volume 2: Preferred Practices; b) the Queensland Government Koala-sensitive Design Guideline.	Not applicable - No biodiversity or koala corridors are mapped within the site.
Locally significant *Melaleuca irbyana* buffer area		
PO6 Development within the Locally significant *Melaleuca irbyana* buffer area identified on Biodiversity areas overlay map-OM-02.03 protects the Locally significant *Melaleuca irbyana* area identified on Biodiversity areas overlay map-OM-02.03 from: a) edge effects; b) adverse changes to the local hydrology.	**AO6** Development within the Locally significant *Melaleuca irbyana* buffer area identified on Biodiversity areas overlay map-OM-02.03 provides for a vegetated buffer within 50 metres of the Locally significant *Melaleuca irbyana* area identified on Biodiversity areas overlay map-OM-02.03.	Not applicable - No Locally significant *Melaleuca irbyana* buffer areas are mapped within the site.

Performance Outcomes	Acceptable Outcomes	Achieved Outcome
Note--Compliance with this performance outcome is to be demonstrated by a detailed ecological assessment report prepared in accordance with Part 2 of planning scheme policy 3-Environmental management.		
Landscape values		
PO7 Development is designed and located to protect and enhance the landscape values of: a) a ridgeline; b) native vegetation.	**AO7** No acceptable outcome provided.	Where possible, the proposed development has avoided disturbance to native vegetation within the existing waterway corridor within the site. Retained vegetation along the waterway will continue to facilitate movement for native fauna.
Lighting		
PO8 Development in a Biodiversity corridor or Koala corridor identified on Biodiversity areas overlay map-OM-02.02 is designed to minimise adverse light impacts on native fauna.	**AO8** Lighting associated with development in a Biodiversity corridor or Koala corridor identified on Biodiversity areas overlay map-OM-02.02: a) complies with the dark surrounds lighting levels in AS4282-1997-Control of the obtrusive effects of outdoor lighting; b) is directed away from areas identified on Biodiversity areas overlay map-OM-02.00.	Not applicable - No biodiversity or koala corridors are mapped within the site.

F.2 Waterway corridors and wetlands overlay code response

Performance Outcomes	Acceptable Outcomes	Achieved Outcome
For accepted development (subject to requirements) and assessable development		
Design and Location		
PO1 Development is designed and located to provide a buffer to a Waterway corridors and wetlands area identified on Waterway corridors and wetlands overlay map-OM-13.00 that protects its ecosystem processes, water quality, function, scenic amenity and landscape values.	**AO1** Development provides a buffer: (a) to the waterway areas identified on Waterway corridors and wetlands overlay map-OM-13.01: i. of a width specified in Table 8.2.12.3.2-Waterway and wetland buffer width; ii. measured to comply with Figure 8.2.12.3.1-Defining the top bank: upper reaches, middle reaches and lower reaches; (b) to the wetlands identified on Waterway corridors and wetlands overlay map-OM-13.02 of a width specified in Table 8.2.12.3.2-Waterway and wetland buffer width.	Where possible, the proposed development has avoided areas within the mapped waterways corridor. The following will be disturbed: • 0.24 ha of minor waterway corridor • 1.19 ha of major wetland area; and • 0.42 ha of wetland buffer Please refer to the stormwater Management Plan for further details regarding the design and associated stormwater infrastructure.
For assessable development only		

Performance Outcomes	Acceptable Outcomes	Achieved Outcome
Ecosystem processes		
PO2 Development is designed, constructed and managed to protect and enhance: a) in-stream and riparian habitat values of a Waterway corridors and wetlands area identified on Waterway corridors and wetlands overlay map-OM-13.00; b) safe wildlife movement. Note--Planning scheme policy 3-Environmental management provides guidance on how to achieve this outcome. Compliance with this performance outcome is to be demonstrated by an ecological assessment report prepared in accordance with part 2 of planning scheme policy 3-Environmental management.	**AO2** If development does not provide a buffer to a Waterway corridors and wetlands area in accordance with AO1: a) an ecological assessment report is prepared in accordance with part 2 of planning scheme policy 3-Environmental management that demonstrates how the development protects and enhances in-stream and riparian habitat values and results in no loss of connectivity which supports wildlife movement; b) the ecological function of a Waterway corridors and wetlands area is protected and enhanced in accordance with section 3.3.1-Riparian corridor revegetation and weed control of planning scheme policy 3-Environmental management.	The un-named tributary of Scrubby Creek was characterised by a minor meandering channel that has been modified due to changes in surrounding land use. Water was present within the watercourse at the time of the survey. Surrounding riparian vegetation was disturbed with dense infestations of exotic weeds (refer to Ecological Assessment Report (E2M, 2018). Mitigation measures will be applied during clearing and construction so as minimise disturbance to aquatic values, including the presence of a fauna spotter-catcher during clearing activities and erosion and sediment controls.
Secondary vegetation management area		
PO3 Development is designed, constructed and managed to ensure: a) the natural hydrological and geomorphological processes of a Waterway corridors and wetlands area identified on Waterway corridors and wetlands overlay map-OM-13.00 are maintained; b) where the natural hydrological and geomorphological processes are modified, the near natural hydrology is re-instated.	**AO3** Development is designed, constructed and managed to protect the natural hydrological and geomorphological processes of a Waterway corridors and wetlands area by: a) providing an area equal to the buffer width identified on Waterway corridors and wetlands overlay map-OM-13.00 for either side of the	Refer to Stormwater Management Plan.

Performance Outcomes	Acceptable Outcomes	Achieved Outcome
	existing channel to allow for the natural lateral and longitudinal movement of the channel; b) stabilising banks using native vegetation in accordance with section 3.3.1-Riparian corridor revegetation and weed control and section 3.3.2-Near-natural hydrology reinstatement works of Planning Scheme Policy 3-Environmental Management; c) reinstating the near-natural hydrology in accordance with section 3.3.2-Near-natural hydrology reinstatement works of planning scheme policy 3-Environmental management.	
Erosion prone areas		
PO4 Development in an erosion prone area identified on Waterway corridors and wetlands overlay map-OM-13.03 is for coastal dependent development, or temporary, readily relocatable or able-to-be-abandoned development.	**AO4** Development is not located in an erosion prone area identified on Waterway corridors and wetlands overlay map-OM-13.03 unless the development: a) cannot be feasibly located elsewhere; b) is coastal dependent development, or temporary, readily relocatable or able-to-be-abandoned development.	Not applicable - No erosion prone areas are mapped within the site.

Performance Outcomes	Acceptable Outcomes	Achieved Outcome
Water quality		
PO5 Development is designed, constructed and managed to protect water quality of a Waterway corridors and wetlands area identified on Waterway corridors and wetlands overlay map-OM-13.00 by: a) providing vegetated buffers; b) incorporating water sensitive urban design principles having regard to: i. protecting water quality of surface and ground waters; ii. minimising sewage discharges to the natural environment; c) limiting discharge of sediments and pollutants into a Waterway corridors and wetlands area.	**AO5** Development: a) provides a vegetated riparian buffer in accordance with section 3.3.1-Riparian corridor revegetation and weed control of planning scheme policy 3-Environmental management; b) provides effective erosion and sediment control in accordance with section 3.3-Filling and excavation standards of planning scheme policy 5-Infrastructure; c) implements water sensitive urban design principles in accordance with section 3.6—Stormwater infrastructure standards and section 3.7-Landscaping standards of planning scheme policy 5-Infrastructure; d) excludes stock from a Waterway corridors and wetlands area by providing a permanent fence and gate and utilises off-stream stock watering points.	Refer to Stormwater Management Plan. Mitigation measures will be applied during clearing and construction so as minimise disturbance to aquatic values, including erosion and sediment controls.
Access		
PO6 Development provides for an integrated and publicly accessible pedestrian network to: a) a River waterway area identified on Waterway corridors and wetlands overlay map-OM-13.01;	**AO6** A pedestrian path is provided and constructed in accordance with section 3.4-Movement infrastructure standards of planning scheme policy 5-Infrastructure.	A pedestrian footpath has not been included as part of the proposed development. Existing public infrastructure along Ellerslie Road will be retained.

Performance Outcomes	Acceptable Outcomes	Achieved Outcome
b) a Major waterway area identified on Waterway corridors and wetlands overlay map-OM-13.01; c) a Major wetland identified on Waterway corridors and wetlands overlay map-OM-13.02.		
Tenure		
PO7 Development provides for tenure or management arrangements that facilitate the protection and enhancement of a Waterway corridors and wetlands.	**AO7** No acceptable outcome provided.	Approximately 0.24 ha of minor waterway corridor and 1.61 ha of wetland overlay areas will be impacted as a result of the proposed development. Proposed stormwater infrastructure design is provided in the Stormwater Management Plan.