

Appendix C – Likelihood of occurrence table

An evaluation of the likelihood and extent of impact to threatened flora recorded from within the Wagga Wagga LGA (TSC Act threatened species); and within a 10 km radius of the subject site. Records are from a search of the Office of Environment and Heritage (OEH) Wildlife Atlas, OEH Biobanking Credit Calculator, and the EPBC Environmental Reporting Tool available from the Department of the Environment (DoE) website. Ecology information has been obtained from the Threatened Species Profiles on the NSW OEH website (www.threatenedspecies.environment.nsw.gov.au) and from the Species Profiles and Threats Database on the Commonwealth DoE website (<http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>).

Likelihood of occurrence in study area

- Unlikely: species, population or ecological community is not likely to occur. Lack of previous recent (<25 years) records and suitable potential habitat limited or not available in the study area.
- Likely: species, population or ecological community could occur and study area is likely to provide suitable habitat. Previous records in the locality and/or suitable potential habitat in the study area.
- Present: species, population or ecological community was recorded during the field investigations.

Possibility of impact

- Unlikely: The proposal would be unlikely to impact this species or its habitats. No EP&A Act 7-Part Test or EPBC Act significance assessment is necessary for this species.
- Likely: The proposal could impact this species, population or ecological community or its habitats. An EP&A Act 7-Part Test and/or EPBC Act significance assessment is required for this species, population or ecological community.

Status

- National: Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.
- NSW: NSW *Threatened Species Conservation Act 1995*.
- E: Endangered.
- CE: Critically Endangered.
- V: Vulnerable.
- Mi: Migratory.
- M: Marine.

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ECOLOGICAL COMMUNITIES				
Grey Box (<i>Eucalyptus microcarpa</i>) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	E	E	Unlikely Scattered Grey Box trees occur in the study area though it is not the dominant canopy species in any of the vegetation types observed in the study area. Therefore the community does not occur. It is known to occur in the wider locality but not study area.	Unlikely – The ecological community does not occur within the study area though scattered Grey Box occur in other vegetation types in the study area.
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Box-Gum Woodland)	CE	E	Present The study area contains an abundance of White Box and the community was mapped during current surveys. This EEC is the most commonly occurring vegetation type in the subject site and study area and occurs as canopy vegetation and derived grasslands.	Likely - the works would remove 12.8 hectares of the ecological community, including a large number of mature, semi-mature and regenerating saplings.
PLANTS				
Woolly Ragwort <i>Senecio garlandii</i>	V	V	Unlikely The species has been recorded six kilometres north-east of the study area. This species is known from the upper parts of south to east-facing slopes of rocky outcrops (Burrows 2001) in dry sclerophyll forest and open woodland in association with <i>Eucalyptus macrorhyncha</i> , <i>E. goniocalyx</i> , <i>Acacia doratoxylon</i> , <i>A. implexa</i> and <i>Brachychiton populneus</i> The study area does not contain suitable habitat for the species in the form of rocky outcrops or dry sclerophyll forest types, therefore the species is unlikely to occur.	Unlikely – the species is unlikely to occur in the study area.
BIRDS				
Barking Owl <i>Ninox connivens</i>	-	V	Likely The species has been recorded four kilometres north-east of the study area in the locality. The study area contains eucalypt woodland the species may use as habitat for foraging, large tree hollows in large, old eucalypts available for nesting. Despite targeted surveys for potential nest	Likely – The removal of mature and juvenile trees from the study area may reduce roosting, nesting and foraging habitat for the species and also

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			trees, the species was not recorded though it may be an occasional foraging visitor to the study area	a 'flow on' effect through removing habitat for its' prey species.
Black-chinned Honeyeater (eastern subspecies) <i>Melithreptus gularis gularis</i>	-	V	Likely The species has been recorded four kilometres north of the study area. The study area contains woodland dominated by White Box, a preferred habitat tree for the species.	Likely - Mature trees to be removed from the subject site may be utilised by the species for nesting, roosting and foraging.
Brown Treecreeper (eastern subspecies) <i>Climacteris picumnus victoriae</i>	-	V	Present The species has been recorded during past surveys in the subject site and study area. The study area contains Box-Gum Woodland, open grassy understorey in sections and sufficient woody debris, which the species requires as habitat components.	Likely – The removal of Box-Gum Woodland canopy vegetation from the study area may reduce nesting, roosting and foraging habitat for the species. The removal of woody debris may also impact upon the species.
Bush Stone-curlew <i>Burhinus grallarius</i>	-	E	Unlikely The study area consists of sections of open woodland with grassy understorey, with woody debris that provides suitable habitat for the species. The species has been recorded five kilometres south-east of the study area from the Lake Albert golf course and is a lone resident bird at this location (it's partner was killed by a golf ball about 10 years ago) and is the only known records from LGA in more than 20 years.	Unlikely – lack of recent records and lack of suitable habitat means an impact is unlikely.
Diamond Firetail <i>Stagonopleura guttata</i>	-	V	Present The species was recorded during the winter bird survey period, about 420 metres west of the subject site, opposite Silvalite Reserve. The species has also been recorded 3.5 kilometres north of the study area. The study area contains Box-Gum Woodland with a sufficient grassy understorey for the foraging requirements of the species.	Likely – The removal of mature and juvenile trees from the study area may reduce nesting and roosting habitat for the species and grassland removal would impact upon foraging resources for the species.

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Flame Robin <i>Petroica phoenicea</i>	M	V	<p>Present</p> <p>The species was recorded during the winter bird survey period, about 400 metres and 430 metres west of the subject site, opposite Silvalite Reserve.</p> <p>The species has also been recorded 3.5 kilometres north of the study area. The study area contains eucalypt woodland with areas of open understorey for the species habitat requirements.</p>	<p>Likely – The removal of mature and juvenile trees from the study area may reduce nesting and roosting habitat for the species and preferred foraging habitat such as woody debris would be subject to impact.</p>
Gilbert's Whistler <i>Pachycephala inornata</i>	-	V	<p>Likely</p> <p>The species has been recorded previously 3.5 kilometres north of the study area. The study area contains eucalypt woodland with areas of shrubland containing acacias, which the species requires as a habitat component, potentially supporting the species in the study area.</p>	<p>Likely – The removal of areas of woodland and shrub understorey would remove potential habitat for the species for foraging, roosting and nesting.</p>
Glossy Black-cockatoo <i>Calyptorhynchus lathami</i>	E (SA sub species)	V	<p>Unlikely</p> <p>Despite targeted survey effort for the species, it was not recorded during the two current survey periods.</p> <p>The species has been recorded 3.5 kilometres north of the study area and is known from Pomingalarna Reserve. Although potential nest trees were targeted during an appropriate survey period in the study area, no birds were observed. The study area does not support stands of Drooping She-Oak, its preferred habitat and as such it is unlikely to occur. The species is known to utilise preferred habitat in the locality.</p>	<p>Unlikely – The species is unlikely to inhabit the study area.</p>
Grey-crowned Babbler (eastern subspecies) <i>Pomatostomus temporalis temporalis</i>	-	V	<p>Present</p> <p>The species was recorded numerous times in the study area during the winter and spring bird survey period, with the nearest record about 60 metres east of the subject site in Silvalite Reserve.</p> <p>The species was recorded during surveys for the ecological assessment and previous surveys in the subject site and study area. The species has also been recorded 14 kilometres north-east of the study area and within Willans Hill Reserve 5.5 kilometres east.</p>	<p>Likely – The removal of mature and juvenile trees from the study area may reduce nesting, roosting and foraging habitat for the species.</p>

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Hooded Robin <i>Melanodryas cucullata cucullata</i>	-	V	Likely The species has been recorded four kilometres north of the study area. The study area contains eucalypt woodland with acacia scrub in areas and is nearby clearings, the preferred positioning of habitat. The structural diversity required for the species habitat is provided in the study area with mature and juvenile eucalypts, shrubs and a tall native grassy understorey.	Likely – The removal of mature and juvenile trees from the study area may reduce nesting, roosting and foraging habitat for the species, however preferred foraging habitat such as woody debris would be subject to minimal disturbance.
Little Eagle <i>Hieraaetus morphnoides</i>	-	V	Present The species was recorded during the winter bird survey period about 160 metres west of the subject site, opposite Silvalite Reserve. There are numerous other recordings of the species within the locality with the nearest record being 3.5 kilometres north of the study area. The study area contains suitable habitat for the species in the form of eucalypt woodland with tall trees available for nesting.	Likely – The removal Box-Gum Woodland and derived grasslands from the study area may impact roosting and foraging habitat for the species.
Little Lorikeet <i>Glossopsitta pusilla</i>	-	V	Present The species was recorded during the winter bird survey period, about 190 metres west of the subject site, opposite the Kapooka residential area and 270 metres east of the subject site within the Planning Agreement Area. The species has also been recorded 3.5 kilometres north of the study area. The study area contains eucalypt woodland habitat for the species with White Box available as an important food source.	Likely – The removal of mature and juvenile trees, particularly White Box, from the study area may impact foraging and roosting habitat for the species. The removal of hollow-bearing trees may reduce nesting potential for the species.
Major Mitchell's Cockatoo <i>Lophochroa leadbeateri</i>	-	V	Present The species was recorded during the spring bird survey period, about 450 metres east of the subject site, in a patch of woodland within the Planning Agreement Area, in the south-east of the study area. The species has also been recorded 10 kilometres north-east of the study area. The study area is at the eastern extent of the species' range. The species may be a rare vagrant to the study area, but it is unlikely to	Unlikely – The removal of mature and juvenile trees from the study area may reduce foraging habitat for the species but is unlikely to impact this species due to its vagrant nature and occurring in the far east of its distribution.

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			provide preferred habitat.	
Painted Honeyeater <i>Grantiella picta</i>	-	V	Unlikely Despite targeted survey effort for the species, it was not recorded during the two current survey periods. The species has not been recorded within the Wagga Wagga LGA. While potential habitat exists in the study area, the species is unlikely to occur due its absence of records within the locality.	Unlikely – The species is unlikely to inhabit the study area.
Regent Honeyeater <i>Anthochaera phrygia</i>	E	E	Unlikely Despite targeted survey effort for the species, it was not recorded during the two current survey periods. The species has not been recorded within the locality since 1980. The species is highly nomadic and may be a rare vagrant to the study area, utilising the Box-Gum community for foraging during periods of flowering. The study area is unlikely to represent preferred habitat for the species and does not contain mistletoes.	Unlikely – The species is unlikely to inhabit the study area.
Scarlet Robin <i>Petroica boodang</i>	-	V	Present The species was recorded within the subject site during the winter bird survey period, on the western side of the Olympic Highway, north of the Kapooka residential area. The species has also been recorded 3.5 kilometres north of the study area. The study area contains the required habitat structure for the species, consisting of eucalypt woodland containing shrubs, grasses and woody debris needed for nesting, roosting and foraging.	Likely – The removal of Box-Gum Woodland from the study area may reduce nesting and roosting habitat for the species, with preferred foraging habitat such as woody debris also subject to disturbance.
Speckled Warbler <i>Pyrrholaemus saggitatus</i>	-	V	Present The species was recorded during the winter bird survey period, about 370 metres west of the subject site, opposite Silvalite Reserve. The species has also been recorded seven kilometres east of the study area. The Box-Gum Woodland of the study area provides preferable	Likely – The removal of groundcover species may reduce nesting habitat for this species. The removal of mature and juvenile trees from the study area may reduce

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			habitat for the species, with native grasses and eucalypt regrowth prevalent.	preferred foraging habitat such as woody debris.
Spotted Harrier <i>Circus assimilis</i>	-	V	<p>Likely</p> <p>Despite targeted survey effort for the species, it was not recorded during the two current survey periods.</p> <p>The species has been recorded 6.5 kilometres south-east of the study area. The woodland of the study area may provide foraging habitat for the species, with preferred native grassland existing within the area.</p>	<p>Unlikely – The removal of mature and juvenile trees from the study area may reduce foraging habitat for the species but is unlikely to impact this species due to its large home ranges and wide ranging foraging attributes in agricultural landscapes.</p>
Superb Parrot <i>Polytelis swainsonii</i>	V	V	<p>Present</p> <p>The species was during the winter and spring bird survey period, about 80 metres west of the subject site in the Planning Agreement Area, about 250 metres east of the subject site within Silvalite Reserve and about 540 metres west of the subject site, opposite Silvalite Reserve.</p> <p>Has been recorded in the subject site previously and from the study area and locality. The species was abundant during surveys for the ecological assessment and previous surveys. Areas of Box-Gum Woodland within the study area are likely to be important for the species in rearing their young as fledglings were observed during the spring birds surveys in surveys completed for the ecological assessment in early summer of 2011 (GHD 2012a) within the subject site. The species would use this area for roosting and foraging.</p>	<p>Likely – The removal of mature and juvenile Box-Gum Woodland trees from the study area may impact foraging and roosting habitat for the species.</p>
Swift Parrot <i>Lathamus discolor</i>	E, Mi, M	E	<p>Present</p> <p>The species was recorded during the winter bird survey period, about 50 metres west of the subject site in the Planning Agreement Area.</p> <p>The species has also been recorded within the study area during previous surveys for the Kapooka bridge replacement. White Box in the study area is a preferred feed tree and provides important foraging and roosting habitat for the species.</p>	<p>Likely – The removal of mature and juvenile trees, particularly White Box from the study area may impact foraging and roosting habitat for the species.</p>

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Turquoise Parrot <i>Neophema pulchella</i>	-	V	Likely Despite targeted survey effort for the species, it was not recorded during the two current survey periods. The species has been recorded six kilometres west of the study area. The eucalypt woodland in the study area adjoining clearings and farmland may provide habitat for the species, with sufficient foraging resources available.	Likely – The removal of mature and juvenile trees from the study area may impact foraging and roosting habitat for the species.
Varied Sittella <i>Daphoenositta chrysoptera</i>	-	V	Likely Despite targeted survey effort for the species, it was not recorded during the two current survey periods. The species has been recorded 3.5 kilometres north of the study area. The Box-Gum Woodland of the study area may provide habitat for the species.	Likely – The removal of mature and juvenile eucalypt trees from the subject site may impact on foraging, roosting and nesting habitat of the species.
White-fronted Chat <i>Epthianura albifrons</i>	-	V	Unlikely Despite targeted survey effort for the species, it was not recorded during the two current survey periods. The species has been recorded 6.5 kilometres south-east of the study area. The study area does not contain suitable aquatic habitat for the species to occur.	Unlikely – The species is unlikely to inhabit the study area.
BATS				
Corben's Long-eared Bat <i>Nyctophilus corbeni</i>	V	V	Unlikely Despite targeted survey effort for the species, it was not recorded during the current survey period. Targeted species and habitat surveys by WSP (2013) concluded that the species is unlikely to occur in the study area. The species has not been recorded within the locality and if it occurs is likely only to be a vagrant to the locality.	Unlikely – The species is unlikely to inhabit the study area.
Eastern Bentwing-bat <i>Miniopterus schreibersii</i>	-	V	Unlikely Despite targeted survey effort for the species, it was not recorded during	Unlikely – The species is unlikely to inhabit the study

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<i>oceanensis</i>			<p>the current survey period. Targeted species and habitat surveys by WSP (2013) concluded that the species is unlikely to occur in the study area.</p> <p>The species has previously been recorded within the study area using echolocation surveys and 12.5 kilometres north-east of the study area, however, there is doubt over the authenticity of this echolocation record (see WSP 2013).</p>	area.
Little Pied Bat <i>Chalinolobus picatus</i>	-	V	<p>Unlikely</p> <p>Occurs in dry open forest, open woodland, mulga woodlands, chenopod shrublands, cypress-pine forest, mallee, Bimbil box. Roosts in caves, rock outcrops, mine shafts, tunnels, tree hollows and buildings. Targeted species and habitat surveys by WSP (2013) recorded a possible Anabat call identification of this species, however the specialist study concluded that the species is unlikely to occur and suitable habitat is limited and the species is likely to be an occasional vagrant (WSP 2013).</p> <p>The species has not been recorded within the locality, and is generally known from further inland to the west. However, the eucalypt woodland in the study area may provide suitable habitat for the species, including tree hollows for roosting.</p>	Unlikely – The species is unlikely to inhabit the study area.
Southern Myotis <i>Myotis macropus</i>	-	V	<p>Present</p> <p>The species was recorded in the study area during current surveys via capture in a harp trap. The individual was caught at a dam in Silvalite Reserve, with surrounding vegetation of immature trees.</p> <p>The species has also been recorded seven kilometres north-east of the study area. The species prefers to forage over water and roost in riparian habitat; however the farm dams in the study area appear to provide habitat for the species.</p>	Likely – The removal of mature and juvenile eucalypt trees from the subject site may impact on foraging habitat for the species as well as possible changes in hydrology at the dam where it was captured.
Yellow-bellied Sheath-tail-bat <i>Saccolaimus flaviventris</i>	-	V	<p>Present</p> <p>The species was recorded in the study area during current surveys using an Anabat detector with a 'probable' level of identification. The record was</p>	Likely – The removal of mature eucalypt trees and hollows from the subject site may impact on foraging and roosting habitat for

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			<p>obtained from the northern end of Silvalite Reserve.</p> <p>Previously the species had not been recorded within the locality. The study area contains foraging and preferred roosting habitat (tree-hollows) for this species.</p>	the species.
MAMMALS				
<p>Squirrel Glider in the Wagga Wagga Local Government Area</p> <p><i>Petaurus norfolcensis</i></p>	-	E	<p>Present</p> <p>The species was recorded numerous times in the subject site and study area during the current survey period.</p> <p>The species has also been recorded previously within the subject site and study area and was detected within the subject site during surveys for the ecological assessment. The Box-Gum Woodland of the study area provides denning and foraging resources for the species, including hollow-bearing trees.</p>	<p>Likely – The removal of Box-Gum Woodland, mature and hollow-bearing trees would reduce denning and foraging habitat of the species and widening and removal of potential crossing areas would impact upon movement for the species and potentially increase mortality.</p>