

22/08/2019

Kim Stamper
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Dear Kim,

Re: Biodiversity Assessment for State Significant Development – 57-69 Tattersall Road, Kings Park

1. Background

Molino Stewart was engaged by Barker Ryan Stewart (on behalf of the proponent) to undertake a biodiversity assessment for the proposed alterations and additions to a metal recovery and recycling facility at 57-69 Tattersall Road, Kings Park.

The site is owned by Auto-recyclers Pty Ltd (the proponent) and operated as Pick 'n Payless Self-Serve Auto Parts. Development consent (DA 15-291) for the existing car dismantling and recycling facility was issued by Blacktown City Council on 8th March 1996.

Auto-recyclers Pty Ltd has identified additional demand to recycle car bodies and other metal and the expansion of the existing auto recycling business is necessary to meet the identified market demand. The expansion will facilitate a far greater efficiency in the utilisation of equipment, enabling the operator to respond to market supply and demand volumes and safeguard the long term economic viability of the business. As such, it is submitting a State Significant Development (SSD) for a metal recovery and recycling facility with a processing capacity of 130,000 tonnes per year.

The SSD application will involve the following:

- Permission to process 130,000 tonnes of scrap metal per year;
- Operation of Vezzani PC 1626 AC shear and a copper granulator;
- Internal site layout and circulation amendments; and
- Consolidation of all existing approvals, which include:
 - DA 96-185 issued by Blacktown City Council on 8th March 1996 for a “Car Dismantling Yard and Sale of Motor Vehicle Parts”.
 - DA 18-01273 issued by Blacktown City Council on 29th March 2019 for the use of the north-western part of the site, to operate a metal recovery and recycling facility with a processing capacity of 30,000 tonnes per annum and using a pre-shredder (Taurus Redline Pre-Shredder Bravo (Model B16H), a hammermill/shredder (Thor 2121K) and associated downstream processing equipment (Steinert Finesmaster).

The proposed development consists of the following components:

- a. Pick 'n' Pay Less Self-Serve Auto Parts; and

b. a metal recovery and recycling facility with a maximum processing capacity of 130,000 tonnes per year.

The physical works associated with the SSD would include widening the access road along the south and west area of the site from 4m to 6m and widening the eastern driveway to 12m along the boundary (see Attachment A, Map 1). It is proposed that one tree be removed to permit the access road widening (see Attachment A, Map 2).

The proposed outcomes of the development for the site operations are as followed:

Pick 'n Payless

The vehicle storage yard associated with the existing Pick 'n Payless business operations, and accessible to the general public, will be reduced in size and fenced off from the metal recycling area. The public will continue to access Pick 'n Payless via the existing car park. The proposed operational hours of the self-serve auto parts business are 8.00am – 5.00pm Monday to Friday and 9.00am to 3.00pm Sunday.

Metal Recycling Facility

The major components of the metal recovery and recycling facility are:

- scrap metal processing using the pre-shredder (Taurus Redline Pre-Shredder Bravo (Model B16H), a hammermill/shredder (Thor 2121K) and downstream processing equipment (Steinert Finesmaster);
- shearing activities using a Vezzani PC 1626 AC shear;
- a copper granulator located in Building B; and
- a vehicle depollution facility consisting of 4 SEDA Easy Drain stations in Building C.

The shredder, shear, associated floc separating equipment, loading/unloading areas and material stockpiles will all be located on concrete slabs in the north-western corner of the site. The proposed hours of operation are 6am to 6pm, Monday to Sunday, with the processing of scrap metal from 6am to 9pm and maintenance being undertaken from 9pm to 6am.

As the site is currently operating as a metal recovery and recycling facility, it is predominantly cleared with only two groups of native trees on and near the western boundary (shown in Attachment A, Map 2). Most of the site is a hardstand area with the purpose to support existing operations. Therefore, understorey plants are predominantly absent with the exception of isolated areas of exotic weeds. Small *Acacia sp.* and a sparse cover of depauperate native groundcover species were located near the trees marked on site plan in Attachment A and along the sites western boundary fence. The area beneath the trees is used as a storage area for miscellaneous car parts. Breakfast Creek traverses behind the site outside of the southern boundary. The existing site ground levels drain away from Breakfast Creek and towards existing water quality improvement structures on the site. Sediment fencing is also in place between the operational area of the site and the waterway. Blacktown City Council cleared the vegetation along the riparian corridor some years ago as a flood mitigation measure. The remaining vegetation is predominantly exotic grasses.

The vegetation on the adjacent lot to the west of the site is mapped in the terrestrial biodiversity layer in the Blacktown Local Environment Plan (LEP), this area was examined during the site inspection and was found to be operating as a car park (see Attachment A, Map 3). There were some established Forest Red Gum (*Eucalyptus tereticornis*) trees but no discernible understorey layer was present. Both the subject site and the adjacent site have vegetation outside their southern boundaries running parallel to Breakfast Creek. This vegetation consisted primarily of native riparian tree species such as Sheoak (*Allocasuarina*)

sp., Forest Red Gum, and Cabbage Gum (*Eucalyptus ampifolia*). Understory species were a mixture of native shrubs such as *Acacia sp*, and some exotic grasses and weeds.

2. Legislation

Biodiversity Assessment Method (BAM)

The project is a SSD for a Pick and Payless Metal Recovery and Recycling Facility and has received Secretary's Environmental Assessment Requirements (SEARs) for the Environmental Impact Statement (EIS) from the Department of Planning and Environment.

The *NSW Biodiversity Conservation Act* (2016) states that a biodiversity assessment for SSD requires that an application is to be accompanied by a Biodiversity Development Assessment Report (BDAR) unless the Planning Agency Head and the Environment Agency Head determine that the proposed development is not likely to have any significant impact on biodiversity values. Further it states that the EIS that accompanies any SSD application is to include the biodiversity assessment required by the SEARs.

For this development the SEARs was issued on 21/7/17 and did not make any specifications with regards to biodiversity. In order to understand the requirements for a biodiversity assessment Molino Stewart has reviewed the Masterplan and survey plans for the site, the NSW Government Biodiversity Values (BV) Map and the Blacktown LEP 2015 Terrestrial Biodiversity Layer.

Biodiversity Assessment

Biodiversity Values Map (BV Map)

Version 3 of the BV Map was published on 9th November 2018 and has removed the previously mapped riparian vegetation associated with Breakfast Creek from the southern extremity of the land (Attachment A, Map 4)

The circular for the changes to the BV Map states:

Change 4: Removal of protected riparian land on urban zoned land

In urban areas, large portions of riparian corridors have been cleared and developed, leaving small isolated areas on the BV map with limited biodiversity value. OEH will develop a robust method for mapping riparian land with biodiversity values. Once the new mapping has been developed, it will be added to a future version of the BV Map.

The current version of the Biodiversity Values Map shows no part of the site mapped (Attachment A, Map 4)

Blacktown LEP

The vegetation on the extreme south western side boundary of the site is partially mapped on the Blacktown LEP 2015 Terrestrial Biodiversity Layer (Attachment A, Map 3). The LEP states:

7.2 Terrestrial Biodiversity

(1) The objective of this clause is to maintain terrestrial biodiversity by:

- (a) protecting native fauna and flora, and*
- (b) protecting the ecological processes necessary for their continued existence, and*
- (c) encouraging the conservation and recovery of native fauna and flora and their habitats.*

(2) This clause applies to land identified as “Biodiversity” on the Terrestrial Biodiversity Map.

(3) In deciding whether to grant development consent for development on land to which this clause applies, the consent authority must consider:

(a) whether the development is likely to have:

(i) any adverse impact on the condition, ecological value and significance of the fauna and flora on the land, and

(ii) any adverse impact on the importance of the vegetation on the land to the habitat and survival of native fauna, and

(iii) any potential to fragment, disturb or diminish the biodiversity structure, function and composition of the land, and

(iv) any adverse impact on the habitat elements providing connectivity on the land, and

(b) any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.

(4) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that:

(a) the development is designed, sited and will be managed to avoid any significant adverse environmental impact, or

(b) if that impact cannot be reasonably avoided by adopting feasible alternatives—the development is designed, sited and will be managed to minimise that impact, or

(c) if that impact cannot be minimised—the development will be managed to mitigate that impact.

Biodiversity Value

Molino Stewart has undertaken a biodiversity assessment for the proposed works. Our findings are outlined from Section 4 onwards, below.

The proposed removal of the vegetation onsite would not constitute a significant impact. In our investigations, we have examined the proposed works and the vegetation clearance is insignificant.

It is a very small area with poor understorey and would not justify a BAM assessment nor BDAR. It has been found that:

- no Plant Community Type (PCT) can be nominated due to the lack of species present; and
- even if a PCT could be identifiable, both the area of native vegetation to be cleared (one tree) and the score would be too low to qualify as a native vegetation patch.

The vegetation has very low integrity with low site context and landscape features. Threatened species are unlikely as the habitat is poor.

3. BDAR Waiver Request

On the basis of our findings and what we have outlined above, we seek a waiver from the need to prepare a BDAR for this development application.

The NSW Office of Environment and Heritage (OEH) has previously advised that a waiver request needs to address the following sections of the *Biodiversity Conservation Act 2016* and the *Biodiversity Conservation Regulation 2017*:

- section 1.5 of the Biodiversity Conservation Act 2016; and
- clauses 1.4 and 6.1 of the Biodiversity Conservation Regulation 2017.

This issue has been addressed below.

These sections of the legislation are addressed in the table below, including references to specific sections of the biodiversity assessment where relevant.

| Section of Legislation | Response |
|---|---|
| <i>BC Act Section 1.5 Biodiversity and biodiversity values for purposes of Act</i> | |
| <i>(2) For the purposes of this Act, biodiversity values are the following biodiversity values:</i> | |
| <i>(a) vegetation integrity—being the degree to which the composition, structure and function of vegetation at a particular site and the surrounding landscape has been altered from a near natural state</i> | The landform and vegetation on the site and surrounding land is highly modified. The site consists of some regrowth trees adjacent to the stormwater sump with no remnant native vegetation elsewhere identified. |
| <i>(b) habitat suitability—being the degree to which the habitat needs of threatened species are present at a particular site</i> | Habitat suitability present at the site for specific threatened species is addressed in Section 4 and Attachment B (Likelihood Of Occurrence assessment). The conclusion of this assessment is that it is not considered to have a significant impact on threatened species of fauna as the vegetation affected has very low integrity with low site context and landscape features. Threatened species are unlikely as the habitat is poor. |
| <i>(c) biodiversity values, or biodiversity-related values, prescribed by the regulations.</i> | Biodiversity values are addressed in Section 4. The vegetation on the adjacent site has been mapped in the Blacktown LEP (Attachment A). This vegetation does not extend onto the subject site. The vegetation on-site is limited and not a recognised plant community type (PCT) and on this basis, is not likely to provide any important biodiversity values or ecological constraints. |
| <i>BC Reg. Clause 1.4 Additional biodiversity values (section 1.5 of the Act)</i> | |
| <i>The following are prescribed as additional biodiversity values for the purposes of the Act:</i> | |
| <i>(a) threatened species abundance—being the occurrence and abundance of threatened species or threatened ecological communities, or their habitat, at a particular site</i> | There are no threatened flora species onsite. An analysis of the potential for the site to provide habitat for the locally recorded threatened species is addressed in Section 3 and Attachment B of this biodiversity |

| | |
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| | assessment. |
| <i>(b) vegetation abundance—being the occurrence and abundance of vegetation at a particular site</i> | <p>Vegetation present at the site is addressed in Sections 3 and 4 of this biodiversity assessment and summarised below.</p> <p>The landform and vegetation on the site and surrounding land is highly modified. The site comprises cleared land and a mix of exotic weed species and a small number of native trees.</p> |
| <i>(c) habitat connectivity—being the degree to which a particular site connects different areas of habitat of threatened species to facilitate the movement of those species across their range</i> | <p>The site and immediate local area is located within an industrial estate and consists mainly of cleared land. The remnant vegetation in the locality is limited to that along Breakfast Creek, with small patches of riparian vegetation upstream of the site and to the south of it. There is no vegetation being removed within the facility that is considered to provide critical habitat connectivity.</p> |
| <i>(d) threatened species movement—being the degree to which a particular site contributes to the movement of threatened species to maintain their lifecycle</i> | <p>The likelihood of occurrence assessment for this site is shown in Attachment B.</p> <p>The only threatened flora species likely to occur on-site was not present during site inspection. There were no threatened fauna species that had a high likelihood of occurrence on the site.</p> |
| <i>(e) flight path integrity—being the degree to which the flight paths of protected animals over a particular site are free from interference</i> | <p>The proposed works are at ground level therefore they are not expected to interfere with flight paths.</p> |
| <i>(f) water sustainability—being the degree to which water quality, water bodies and hydrological processes sustain threatened species and threatened ecological communities at a particular site</i> | <p>Breakfast Creek runs adjacent to the site on the southern boundary. The proposed works are occurring within the hardstand area of the site. The existing ground levels drain away from Breakfast Creek and towards existing water quality improvement structures on the site and additional sediment control measures will be used during the works. The proposed works are not expected to impact Breakfast Creek.</p> |
| <p>Prescribed Impacts</p> <p><i>BC Reg. Clause 6.1 Additional biodiversity impacts to which scheme applies (sections 6.3 and 6.6 (2))</i></p> <p><i>(1) The impacts on biodiversity values of the following actions are prescribed (subject to subclause (2)) as biodiversity impacts to be assessed under the biodiversity offsets scheme:</i></p> | |
| <i>(a) the impacts of development on the following habitat of threatened species or ecological communities:</i> | <p>The only one of these features present at the site is non-native vegetation (iv), with exotic grasses being present.</p> |

| | |
|--|---|
| <ul style="list-style-type: none"> (i) <i>karst, caves, crevices, cliffs and other geological features of significance,</i> (ii) <i>rocks,</i> (iii) <i>human made structures</i> (iv) <i>non-native vegetation</i> | <p>The conclusion of this biodiversity assessment is that removal of non-native vegetation is not considered to have a significant impact on threatened species of fauna. Impact of removal of exotic grasses present would not remove threatened species habitat. There are no areas of woody weeds that would provide shelter for fauna or exotic fruiting trees that would provide foraging habitat.</p> |
| <p><i>(b) the impacts of development on the connectivity of different areas of habitat of threatened species that facilitates the movement of those species across their range</i></p> | <p>The site and immediate local area consist of heavily cleared and industrialised land, with only fragmented connectivity of canopy trees remaining in the Kings Park vicinity. The tree to be removed would not isolate any potential habitat for any threatened species. The trees present on-site were not hollow-bearing.</p> |
| <p><i>(c) the impacts of development on movement of threatened species that maintains their lifecycle</i></p> | <p>The impacts of development are unlikely to impact the movement of threatened species.</p> |
| <p><i>(d) the impacts of development on water quality, water bodies and hydrological processes that sustain threatened species and threatened ecological communities (including from subsidence or upsidence resulting from underground mining or other development)</i></p> | <p>Breakfast Creek runs adjacent to the site on the southern boundary. Breakfast Creek runs adjacent to the site on the southern boundary. The proposed works are occurring within the hardstand area of the site. The existing ground levels drain away from Breakfast Creek and towards existing water quality improvement structures on the site and additional sediment control measures will be used during the works. The proposed works are not expected to impact Breakfast Creek.</p> <p>Attention to hydrological processes during development will only be required during soil preparation.</p> |
| <p><i>(e) the impacts of wind turbine strikes on protected animals</i></p> | <p>NA</p> |
| <p><i>(f) the impacts of vehicle strikes on threatened species of animals or on animals that are part of a threatened ecological community</i></p> | <p>The proposal will increase traffic movement marginally within the site. Due to the cleared and disturbed nature of the surrounding lands, and the presence of a tall chain wire security fence around the entire site, an increase in vehicle strikes on threatened species is not anticipated.</p> |

4. Existing Biodiversity Values

Vegetation Communities

The site is currently operating as a car dismantling and recycling facility. The majority of the site is covered by a hardstand area where numerous cars are stored (Attachment A and Attachment C, Photo 3). At the north of the site is the offices and customer service desk, there are some small landscaped areas and a customer car park. The southern area of the site contains a car dismantling and depollution area, scrap metal shredding infrastructure and scrap metal and car storage areas. Beyond the southern boundary fence is Breakfast Creek and a small patch of riparian vegetation comprising of *Allocasuarina sp*, Forest Red Gum, Cabbage gum trees, and exotic grasses and weeds (Attachment C, Photo 4). The eastern boundary forms part of the hardstand and car storage area. There are existing access roads within the site.

There is no mapped vegetation onsite. The only area of vegetation on-site is located on the western boundary, where there are six mature native trees exist (Attachment A, Map 2) all of which were identified as Forest Red Gum (Attachment C, Photo 1-2). All trees were in good condition and were not hollow bearing; further characteristics of the trees are specified in Table 1. Trees were separated into two distinct areas, one being a group of five trees (T1-5 in Table 1) with an area of 72m² located near the sediment basin (Attachment C Photo 1) and one individual tree with a group of 28m² located further north on the western boundary fence line (Attachment A, Map 2 and Attachment C, Photo 2) The diameter at breast height (DBH) and Tree Protection Zone (TPZ) were calculated and are included in Table 1.

Table 1: Specifications of Forest Red Gum trees on-site

| Tree # | DBH (m) | TPZ (m) | Hollows (yes (y)/no (n)) | Retained/removed |
|--------|---------|---------|--------------------------|------------------|
| T1 | 1.25 | 15 | n | Removed |
| T2 | 0.64 | 7.7 | n | Retained |
| T3 | 0.35 | 2.9 | n | Retained |
| T4 | 0.63 | 7.6 | n | Retained |
| T5 | 0.67 | 8 | n | Retained |
| T6 | 1.08 | 13 | n | Retained |

The ground cover across the site was sparse with the majority of groundcover species present on the west boundary and surrounding the mature trees.

Weed species included:

- *Taraxacum sp* (Dandelion) (Attachment C, Photo 6)
- *Trifolium repens* (White clover)
- Thistle
- *Poaceae sp*
- *Anagallis arvensis* (Scarlett Pimpernel)
- *Conyza bonariensis* (Flaxleaf Fleabane)
- *Asparagus asparagoides* (Bridal Creeper)

Other groundcover species included the following native species:

- *Dichondra repens* (Kidney weed)
- *Acacia sp*
- *Urticaceae incisa* (Stinging nettle)
- *Hardenbergia violacea* (Happy Wanderer)

The vegetation observed during assessment on site is not a recognised PCT due to lack of any strata other than limited canopy species. It is also concluded the site is not likely to provide any important biodiversity values nor present any ecological constraints on the proposed works.

Vegetation on the adjacent site to the west boundary has been mapped in the Blacktown LEP (Attachment A, Map 3), however, during site inspection this area was found to be operating as a carpark and had only a few scattered canopy trees (Forest Red Gums) and two *Acacia spp* that were only present in the grassy strip on the western boundary, no understory species were present (Attachment C, Photo 5). The works will not impact this area, but the area has been examined to contextualise vegetation on-site.

Threatened Species

A likelihood of occurrence has been prepared for threatened species that occur within 10km of the site (Attachment B). During the site inspection habitat searches for species or species habitat likely to occur on-site were conducted. Fauna present during site visit included: a group of *Trichoglossus moluccanus* (Rainbow Lorikeet) were heard, and *Acridotheres tristis* (Indian Mynah) were seen elsewhere on-site. Both of these are aggressive species that often drive other species away from the area. No threatened fauna were sighted during site inspection. Furthermore, habitat on-site was limited to the six trees located on the western boundary of the site and areas of grasses and understory species. The trees were in good condition and were not hollow bearing and thus unlikely to be important shelter habitat. It is possible that they may occasionally serve as food resources for bird species in the area.

The site is unlikely to support viable populations of threatened flora species considering the highly modified nature of the habitats. Aside from the six Forest Red Gum trees, there was limited vegetation present onsite. More contiguous and higher diversity habitat was observed adjacent to Breakfast Creek which is not going to be affected by the proposed works. The site inspection did not detect any Juniper Leaved Grevillea (*Grevillea juniperina*) or any other threatened flora species nor is it likely to due to the modified areas with ongoing disturbance.

5. Impacts on Biodiversity Values

Impact on vegetation is the removal of one native tree from the patch in the western part of the site to facilitate the road widening works. All of which are Forest Red Gum trees. No other trees or vegetation is likely to be impacted by the proposed works.

The impact on native fauna is the removal of one of the six trees (Attachment A). The removal of this tree is a minor impact and would not have any impact on any threatened species or significant habitat.

6. Recommended Mitigation Measures

All trees aside for the tree marked for removal (Attachment A) are to be protected by TPZ's (Table 1) and adherence to the detailed specifications below including:

- installation of tree protection fencing in accordance with AS 4970-2009 Protection of Trees on Development Sites;
- retention of existing soil grades where there is encroachment into the Tree Protection Zone;
- avoidance of soil compaction through working from inside the footprint, protection of ground surfaces, within the TPZ, careful removal of sub base soils;
- an erosion and sedimentation control plan should be implemented on the site; and
- during works should any native fauna be located in the trees the contractor is to cease work on the tree and call WIRES if the fauna has not relocated of its own accord.
- remove items stored underneath trees to prevent further impact to the trees to be retained. .

7. Conclusion

In conclusion, the proposed alterations and additions to the metal recovery and recycling facility would not have a significant impact on the biodiversity values of the site, and provided the mitigation measures above are implemented, ecological impacts are likely to be minimal.

Overall, the removal of one remnant Forest Red Gum trees from the site is not likely to have a significant impact on the biodiversity values of the site considering the highly modified nature of the site with substantial areas of open space. There is no evidence of remnant vegetation present on the site.

No work will be undertaken at night thereby not disturbing any native fauna that may use the site for foraging.

The biodiversity impacts are not significant based on the Biodiversity Assessment and a BDAR is not required due to the following:

- The proposed development activity is unlikely to have a ‘significant impact’ on any threatened species, threatened populations or endangered ecological communities listed under the tests under *Section 7.3 of the NSW Biodiversity Conservation Act 2016* or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.
- It does not exceed the biodiversity offsets scheme threshold as
 - no areas within the site are mapped as having ‘high biodiversity value’ as identified on the NSW Biodiversity Values Map (Attachment A); and
 - vegetation clearing on the site will not exceed the native vegetation clearing thresholds identified in the Biodiversity Assessment Method as the site is not remnant vegetation and the clearing is less than 0.25ha for the minimum lot size of less than 1 ha.
- The development is not being carried out in it is carried out in a declared area of outstanding biodiversity value.

8. References

Greater Sydney Local Land Services 2017 Greater Sydney Regional Strategic Weed Management Plan 2017-2022.

Office of Environment and Heritage 2019 Biodiversity Values Map
<https://www.lmbc.nsw.gov.au/Maps/index.html?viewer=BVMap>

Office of Environment and Heritage 2019 BioNet Atlas
<http://www.bionet.nsw.gov.au/>

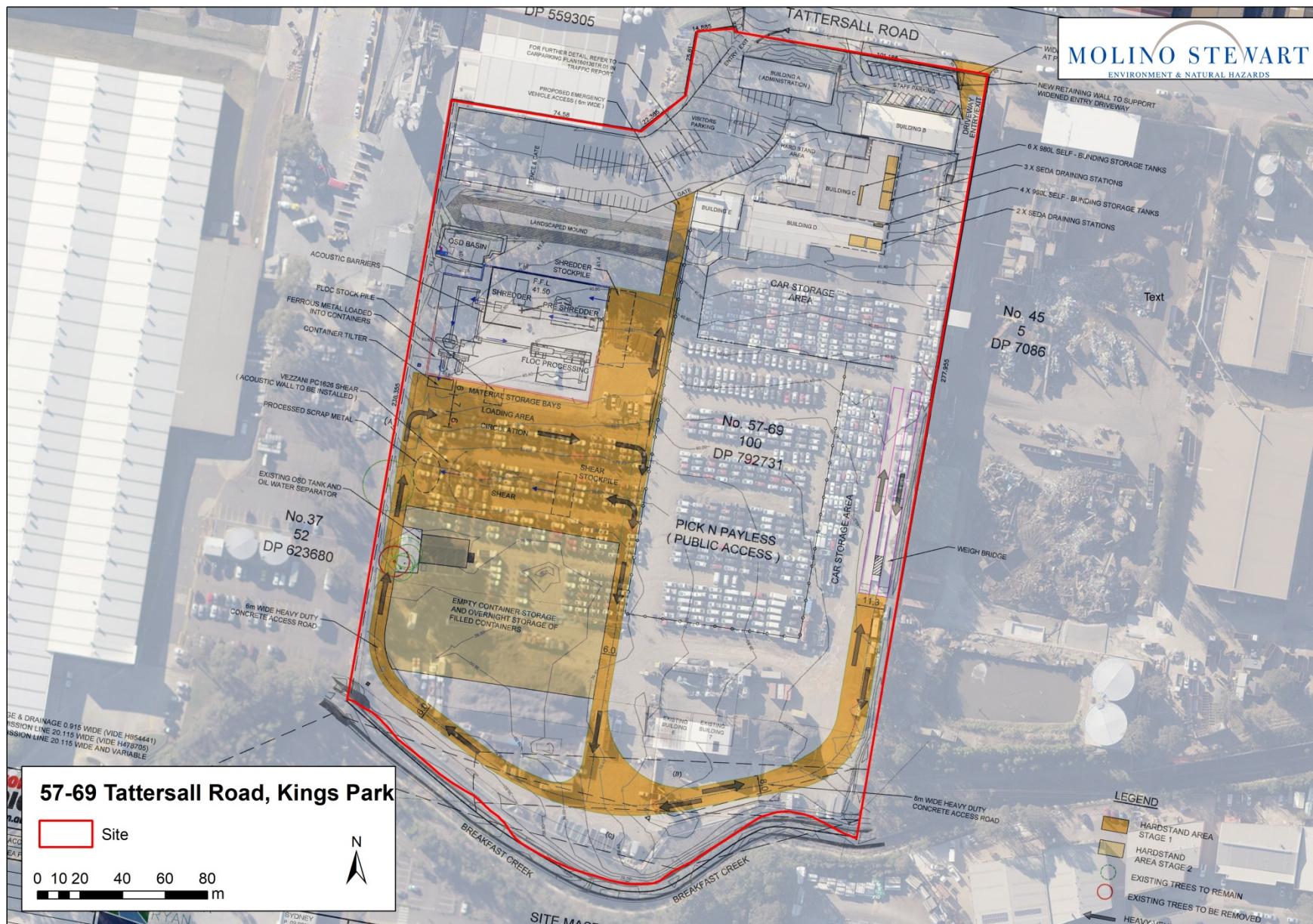
Yours faithfully
For Molino Stewart Pty Ltd

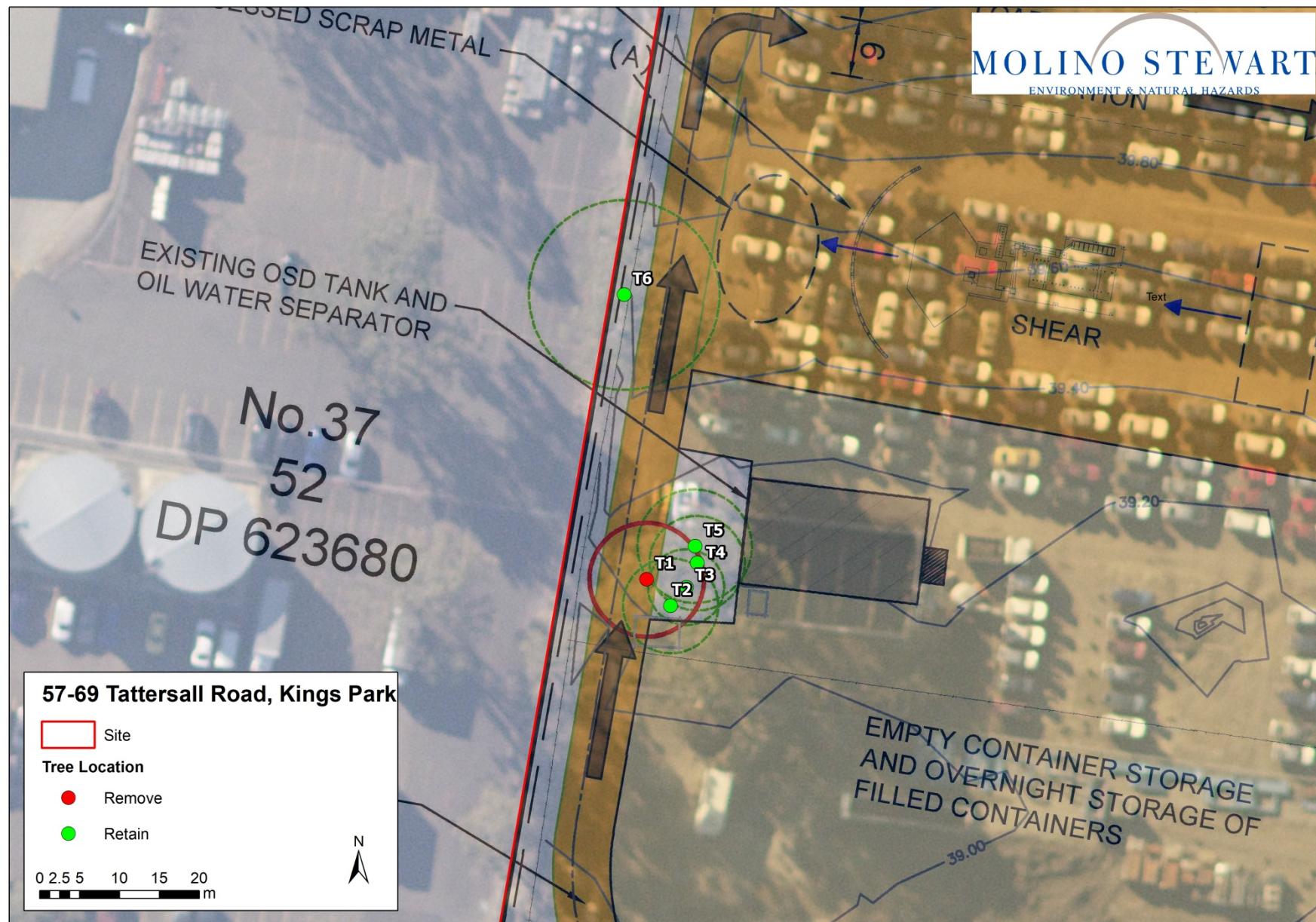


Steven Molino
Principal

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Attachment A: Mapping - Footprint and Vegetation





Map 2: Trees marked for retention and removal onsite



Map3: Blacktown LEP 2015 terrestrial biodiversity layer



Map 4: Biodiversity Values Map (OEH) accessed 14 June 2019

Attachment B: Likelihood of Occurrence tables

Table 1 Threatened fauna recorded within 10 km of site. BC Act Status codes: Vulnerable (V); Endangered (E1); Critically Endangered (E4A). EPBC Act status codes: Vulnerable (V); Endangered (E); Critically Endangered (CE). Refer to table 3 below for Likelihood of occurrence criteria

| Family | Scientific name | Common name | BC Act Status | EPBC Act Status | Records within 10km (n) | Habitat/comments | Likelihood at subject site |
|---------------------|------------------------------|----------------------------|---------------|-----------------|-------------------------|--|---|
| Amphibia | | | | | | | |
| <i>Hylidae</i> | <i>Litoria aurea</i> | Green and Golden Bell Frog | E1 | V | 1 | Permanent unshaded dams and lakes, often in association with well-developed fringing vegetation. Has been observed in degraded and polluted environments. | Low |
| Aves | | | | | | | |
| <i>Accipitridae</i> | <i>Hieraetus morphnoides</i> | Little Eagle | V | - | 5 | Occupies open eucalypt forest, woodland or open woodland. Sheoak or Acacia woodlands and riparian woodlands of interior NSW are also used. Nests in tall living trees within a remnant patch, where pairs build a large stick nest in winter. | Low |
| <i>Falconidae</i> | <i>Falco subniger</i> | Black Falcon | V | - | 1 | Occupies a broad range of habitats but mostly occurring in inland regions | Low |
| <i>Psittacidae</i> | <i>Glossopsitta pusilla</i> | Little Lorikeet | V | - | 2 | Forages primarily in the canopy of open Eucalyptus forest and woodland, yet also finds food in Angophora, Melaleuca and other tree species. Riparian habitats are particularly used, due to higher soil fertility and hence greater productivity. Isolated flowering trees in open country, e.g. paddocks, roadside remnants and urban trees also | Low-Moderate, may opportunistically forage at site but disturbance and activity onsite reduces likelihood |

| Family | Scientific name | Common name | BC Act Status | EPBC Act Status | Records within 10km (n) | Habitat/comments | Likelihood at subject site |
|-------------|---------------------------|------------------|---------------|-----------------|-------------------------|---|----------------------------|
| | | | | | | help sustain viable populations of the species. | |
| Psittacidae | <i>Lathamus discolor</i> | Swift Parrot | E1 | CE | 22 | <p>On the mainland they occur in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations.</p> <p>Favoured feed trees include winter flowering species such as Swamp Mahogany <i>Eucalyptus robusta</i>, Spotted Gum <i>Corymbia maculata</i>, Red Bloodwood <i>C. gummifera</i>, Mugga Ironbark <i>E. sideroxylon</i>, and White Box <i>E. albens</i>.</p> <p>Commonly used lerp infested trees include Inland Grey Box <i>E. microcarpa</i>, Grey Box <i>E. moluccana</i> and Blackbutt <i>E. pilularis</i>.</p> | Low |
| Psittacidae | <i>Neophema pulchella</i> | Turquoise Parrot | V | - | 1 | Lives on the edges of <i>Eucalypt</i> woodland adjoining clearings, timbered ridges and creeks in farmland. | Low |
| Strigidae | <i>Ninox connivens</i> | Barking Owl | V | - | 1 | Inhabits woodland and open forest, including fragmented remnants and partly cleared farmland. Roost in shaded portions of tree canopies, including tall midstorey trees with dense foliage such as Acacia and Casuarina species. | Low |
| Strigidae | <i>Ninox strenua</i> | Powerful Owl | V | - | 3 | Inhabits a range of vegetation types, from | Low |

| Family | Scientific name | Common name | BC Act Status | EPBC Act Status | Records within 10km (n) | Habitat/comments | Likelihood at subject site |
|---------------------|------------------------------|-------------------|---------------|-----------------|-------------------------|--|----------------------------|
| | | | | | | woodland and open sclerophyll forest to tall open wet forest and rainforest. Requires large tracts of forest or woodland habitat but can occur in fragmented landscapes as well. The species breeds and hunts in open or closed sclerophyll forest or woodlands and occasionally hunts in open habitats. It roosts by day in dense vegetation comprising species such as Turpentine <i>Syncarpia glomulifera</i> , Black She-oak <i>Allocasuarina littoralis</i> , Blackwood <i>Acacia melanoxylon</i> , Rough-barked Apple <i>Angophora floribunda</i> , Cherry Ballart <i>Exocarpus cupressiformis</i> and a number of eucalypt species. | |
| <i>Acanthizidae</i> | <i>Chthonicola sagittata</i> | Speckled Warbler | V | - | 1 | Typical habitat is a <i>Eucalyptus</i> dominated community, with scattered native tussock grasses, a sparse shrub layer, some eucalypt regrowth and an open canopy. | Low |
| <i>Meliphagidae</i> | <i>Anthochaera phrygia</i> | Regent Honeyeater | E4A | CE | 5 | Inhabits dry open forest and woodland, particularly Box-Ironbark woodland, and riparian forests of river Sheoak. In particular, woodlands with a large number of mature trees, high canopy cover and an abundance of mistletoes. Feeds mainly on nectar from a small number of eucalypts, but is also a generalist forager. | Low |
| <i>Neosittidae</i> | <i>Daphoenositta</i> | Varied Sittella | V | - | 3 | Inhabits eucalypt forests and woodlands, | Low |

| Family | Scientific name | Common name | BC Act Status | EPBC Act Status | Records within 10km (n) | Habitat/comments | Likelihood at subject site |
|-------------|--|-------------------|---------------|-----------------|-------------------------|--|----------------------------|
| | <i>chrysoptera</i> | | | | | especially those containing rough-barked species and mature smooth-barked gums with dead branches, mallee and Acacia woodland. | |
| Artamidae | <i>Artamus cyanopterus</i> <i>cyanopterus</i> | Dusky Woodswallow | V | - | 10 | Primarily inhabit dry, open eucalypt forests and woodlands, including mallee associations, with an open or sparse understorey of eucalypt saplings, acacias and other shrubs, and ground-cover of grasses or sedges and fallen woody debris. It has also been recorded in shrublands, heathlands and very occasionally in moist forest or rainforest. Also found in farmland, usually at the edges of forest or woodland. Most breeding activity occurs on the western slopes of the Great Dividing Range. | Low |
| Petroicidae | <i>Petroica boodang</i> | Scarlet Robin | V | - | 1 | The Scarlet Robin lives in dry eucalypt forests and woodlands. The understorey is usually open and grassy with few scattered shrubs. This species lives in both mature and regrowth vegetation. It occasionally occurs in mallee or wet forest communities, or in wetlands and tea-tree swamps. Scarlet Robin habitat usually contains abundant logs and fallen timber: these are important components of its habitat. | Low |

| Family | Scientific name | Common name | BC Act Status | EPBC Act Status | Records within 10km (n) | Habitat/comments | Likelihood at subject site |
|-----------------|---------------------------------|-------------------------------|---------------|-----------------|-------------------------|--|---|
| Mammalia | | | | | | | |
| Dasyuridae | <i>Dasyurus maculatus</i> | Spotted-tail Quoll | V | E | 6 | Recorded across a range of habitat types, including rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline. Individual animals use hollow-bearing trees, fallen logs, small caves, rock outcrops and rocky-cliff faces as den sites. | Low |
| Petauridae | <i>Petaurus norfolkensis</i> | Squirrel Glider | V | - | 5 | Found in Blackbutt-Bloodwood forest with heath understorey in coastal areas. Prefers mixed species stands with a shrub or Acacia midstorey. | Low |
| Pteropodidae | <i>Pteropus poliocephalus</i> | Grey-headed Flying-fox | V | V | 224 | It occurs in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and orchards. Roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water and in vegetation with a dense canopy. | Moderate, may occasionally forage on nectar |
| Emballonuridae | <i>Saccopteryx flaviventris</i> | Yellow-bellied Sheathtail-bat | V | - | 5 | Forages in most habitats across its very wide range, with and without trees; appears to defend an aerial territory. When foraging for insects, flies high and fast over the forest canopy, but | Moderate |

| Family | Scientific name | Common name | BC Act Status | EPBC Act Status | Records within 10km (n) | Habitat/comments | Likelihood at subject site |
|-------------------------|-----------------------------------|---------------------------|---------------|-----------------|-------------------------|--|----------------------------|
| | | | | | | lower in more open country. Roosts singly or in groups of up to six, in tree hollows and buildings; in treeless areas they are known to utilise mammal burrows. | |
| <i>Molossidae</i> | <i>Mormopterus norfolkensis</i> | Eastern Freetail-bat | V | - | 33 | Occur in dry sclerophyll forest, woodland, swamp forests and mangrove forests east of the Great Dividing Range. Roost mainly in tree hollows but will also roost under bark or in man-made structures. | Moderate |
| <i>Vespertilionidae</i> | <i>Chalinolobus dwyeri</i> | Large-eared Pied Bat | V | V | 3 | Found mainly in well-timbered areas with extensive cliffs and caves. Roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin, frequenting low to mid-elevation dry open forest and woodland close to these features. | Low |
| <i>Vespertilionidae</i> | <i>Falsistrellus tasmaniensis</i> | Eastern False Pipistrelle | V | - | 11 | Prefers moist habitats, with trees taller than 20 m. Generally roosts in eucalypt hollows, but has also been found under loose bark on trees or in buildings. | Moderate |
| <i>Vespertilionidae</i> | <i>Miniopterus australis</i> | Little Bentwing-bat | V | - | 5 | Moist eucalypt forest, rainforest, vine thicket, wet and dry sclerophyll forest, Melaleuca swamps, dense coastal forests and banksia scrub. | Moderate |

| Family | Scientific name | Common name | BC Act Status | EPBC Act Status | Records within 10km (n) | Habitat/comments | Likelihood at subject site |
|------------------|--|-------------------------|---------------|-----------------|-------------------------|--|----------------------------|
| | | | | | | Generally found in well-timbered areas. Roost in caves, tunnels, tree hollows, abandoned mines, stormwater drains, culverts, bridges and sometimes buildings during the day, and at night forage for small insects beneath the canopy of densely vegetated habitats. | |
| Vespertilionidae | <i>Miniopterus schreibersii oceanensis</i> | Eastern Bentwing-bat | V | - | 41 | Hunt in forested areas, catching moths and other flying insects above the tree tops. Caves are the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings and other man-made structures. | Moderate |
| Vespertilionidae | <i>Myotis macropus</i> | Southern Myotis | V | - | 14 | Found in coastal areas. Generally roost in groups of 10 - 15 close to water in caves, mine shafts, hollow-bearing trees, storm water channels, buildings, under bridges and in dense foliage. Forage over streams and pools catching insects and small fish by raking their feet across the water surface | Low |
| Vespertilionidae | <i>Scoteanax rueppellii</i> | Greater Broad-nosed Bat | V | - | 12 | This species utilises a variety of habitats from woodland through to moist and dry eucalypt forest and rainforest, though it is most commonly found in tall wet forest. Although this species usually roosts in tree hollows, it has also been | Moderate |

| Family | Scientific name | Common name | BC Act Status | EPBC Act Status | Records within 10km (n) | Habitat/comments | Likelihood at subject site |
|-------------------|-------------------------------|-----------------------------|---------------|-----------------|-------------------------|---|----------------------------|
| | | | | | | found in buildings and forages after sunset, flying slowly and directly along creek and river corridors at an altitude of 3 - 6 m. Open woodland habitat and dry open forest suits the direct flight of this species as it searches for beetles and other large, slow-flying insects; this species has been known to eat other bat species. | |
| Gastropoda | | | | | | | |
| Camaenidae | <i>Meridolum corneovirens</i> | Cumberland Plain Land Snail | E1 | - | 50 | Found in Cumberland Plain Woodland. Lives under litter of bark, leaves and logs, or shelters in loose soil around grass clumps. Occasionally shelters under rubbish. | Moderate |

Source: NPWS BioNet Atlas and EPBC Protected Matters 14th June 2019.

Table 2 Threatened flora recorded within 10 km of site. BC Act Status codes: Vulnerable (V); Endangered (E1); Critically Endangered (E4A). EPBC Act status codes: Vulnerable (V); Endangered (E); Critically Endangered (CE). Refer to table 3 below for Likelihood of occurrence criteria

| Family | Scientific name | Common name | BC Act Status | EPBC Act Status | Records within 10km (n) | Habitat | Likelihood at subject site |
|---|---|-------------|---------------|-----------------|-------------------------|--|------------------------------|
| <i>Campanulaceae</i> | <i>Isotoma fluviatilis</i> <i>subsp. fluviatilis</i> | - | | X | 1 | Known to grow in damp places, on the Cumberland Plain, including freshwater wetland, grassland/alluvial woodland and an alluvial woodland/shale plains woodland (Cumberland Plain Woodland) ecotone. | Low-species presumed extinct |
| <i>Fabaceae</i> (<i>Faboideae</i>) | <i>Dillwynia tenuifolia</i> | - | V | | 1 | In western Sydney, may be locally abundant particularly within scrubby/dry heath areas within Castlereagh Ironbark Forest and Shale Gravel Transition Forest on tertiary alluvium or laterised clays. May also be common in transitional areas where these communities adjoin Castlereagh Scribbly Gum Woodland. At Yengo, is reported to occur in disturbed escarpment woodland on Narrabeen sandstone. | Low |
| <i>Fabaceae</i> (<i>Faboideae</i>) | <i>Pultenaea parviflora</i> | - | E | V | 2 | May be locally abundant, particularly within scrubby/dry heath areas within Castlereagh Ironbark Forest and Shale Gravel | Low |

| Family | Scientific name | Common name | BC Act Status | EPBC Act Status | Records within 10km (n) | Habitat | Likelihood at subject site |
|---|-----------------------------------|------------------|---------------|-----------------|-------------------------|--|----------------------------|
| | | | | | | Transition Forest on tertiary alluvium or laterised clays. May also be common in transitional areas where these communities adjoin Castlereagh Scribbly Gum Woodland. | |
| <i>Fabaceae</i> (<i>Mimosoideae</i>) | <i>Acacia pubescens</i> | Downy Wattle | V | V | 1 | Occurs in heath or dry sclerophyll forest on sandy soils. Seems to prefer open, sometimes slightly disturbed sites such as trail margins, edges of roadside spoil mounds and in recently burnt patches. Associated overstorey species include Red Bloodwood, Scribbly Gum, Parramatta Red Gum, Saw Banksia and Narrow-leaved Apple. | Low |
| <i>Marsileaceae</i> | <i>Pilularia novae-hollandiae</i> | Austral Pillwort | E | | 1 | Austral Pillwort grows in shallow swamps and waterways, often among grasses and sedges. It is most often recorded in drying mud as this is when it is most conspicuous. | Low |

| Family | Scientific name | Common name | BC Act Status | EPBC Act Status | Records within 10km (n) | Habitat | Likelihood at subject site |
|-------------|--|--------------------------------|---------------|-----------------|-------------------------|--|------------------------------------|
| Myrtaceae | <i>Callistemon linearifolius</i> | Netted Bottle Brush | V | | 3 | Grows in dry sclerophyll forest on the coast and adjacent ranges. | Low |
| Myrtaceae | <i>Eucalyptus nicholii</i> | Narrow-leaved Black Peppermint | V | V | 1 | Typically grows in dry grassy woodland, on shallow soils of slopes and ridges. Found primarily on infertile soils derived from granite or metasedimentary rock. Seedling recruitment is common, even in disturbed soils, if protected from grazing and fire. Tends to grow on lower slopes in the landscape. | Low |
| Myrtaceae | <i>Syzygium paniculatum</i> | Magenta Lilly Pilly | E1 | V | 6 | On the south coast occurs on grey soils over sandstone, restricted mainly to remnant stands of littoral (coastal) rainforest. | Low |
| Orchidaceae | <i>Pterostylis saxicola</i> | Sydney Plains Greenhood | E1 | E | 1 | Most commonly found growing in small pockets of shallow soil in depressions on sandstone rock shelves above cliff lines. | Low |
| Proteaceae | <i>Grevillea juniperina</i> subsp. <i>juniperina</i> | Juniper-leaved Grevillea | V | | 36 | Grows on reddish clay to sandy soils derived from Wianamatta Shale and Tertiary alluvium (often | Low; habitat highly disturbed, not |

| Family | Scientific name | Common name | BC Act Status | EPBC Act Status | Records within 10km (n) | Habitat | Likelihood at subject site |
|----------------------|------------------------|--------------------|---------------|-----------------|-------------------------|---|----------------------------|
| | | | | | | <p>with shale influence), typically containing lateritic gravels.</p> <p>Recorded from Cumberland Plain Woodland, Castlereagh Ironbark Woodland, Castlereagh Scribbly Gum Woodland and Shale/Gravel Transition Forest.</p> <p>Associated canopy species within Cumberland Plain Woodland and Shale/Gravel Transition Forest include <i>Eucalyptus tereticornis</i>, <i>E. moluccana</i>, <i>E. crebra</i>, <i>E. fibrosa</i> and <i>E. eugenioides</i>. Understorey species include <i>Bursaria spinosa</i>, <i>Dillwynia sieberi</i>, <i>Ozothamnus diosmifolius</i>, <i>Daviesia ulicifolia</i>, <i>Acacia falcata</i>, <i>Acacia parramattensis</i>, <i>Themeda australis</i>, <i>Aristida ramosa</i>, <i>Cymbopogon refractus</i>, <i>Eragrostis brownii</i>, <i>Cheilanthes sieberi</i>, <i>Dianella revoluta</i> and <i>Goodenia hederacea</i>.</p> | present onsite |
| <i>Thymelaeaceae</i> | <i>Pimelea spicata</i> | Spiked Rice-flower | E1 | E | 83 | In both the Cumberland Plain and Illawarra environments this species is found on well-structured clay | Low |

| Family | Scientific name | Common name | BC Act Status | EPBC Act Status | Records within 10km (n) | Habitat | Likelihood at subject site |
|---------------|------------------------|--------------------|----------------------|------------------------|--------------------------------|---|-----------------------------------|
| | | | | | | <p>soils.</p> <p>On the Cumberland Plain sites it is associated with Grey Box communities (particularly Cumberland Plain Woodland variants and Moist Shale Woodland) and in areas of ironbark.</p> <p>The co-occurring species in the Cumberland Plain sites are grey box (<i>Eucalyptus moluccana</i>), forest red gum (<i>E. tereticornis</i>) and narrow-leaved ironbark (<i>E. crebra</i>). Blackthorn (<i>Bursaria spinosa</i>) is often present at sites (and may be important in protection from grazing) and kangaroo grass (<i>Themeda australis</i>) is usually present in the groundcover (also indicative of a less intense grazing history).</p> | |

Source: NPWS BioNet Atlas and EPBC Protected Matters 14th June 2019.

Table 3 Likelihood of occurrence criteria

| Likelihood | Criteria |
|------------|--|
| Recorded | The species was observed in the study area during the current survey |
| High | It is highly likely that a species inhabits the study area and is dependent on identified suitable habitat (ie. for breeding or important life cycle periods such as winter flowering resources), has been recorded recently in the locality (10km) and is known or likely to maintain resident populations in the study area. Also includes species known or likely to visit the study area during regular seasonal movements or migration. |
| Moderate | Potential habitat is present in the study area. Species unlikely to maintain sedentary populations, however may seasonally use resources within the study area opportunistically or during migration. The species is unlikely to be dependent (ie. for breeding or important life cycle periods such as winter flowering resources) on habitat within the study area, or habitat is in a modified or degraded state. Includes cryptic flowering flora species that were not seasonally targeted by surveys and that have not been recorded. |
| Low | It is unlikely that the species inhabits the study area and has not been recorded recently in the locality (10km). It may be an occasional visitor, but habitat similar to the study area is widely distributed in the local area, meaning that the species is not dependent (ie. for breeding or important life cycle periods such as winter flowering resources) on available habitat. Specific habitat is not present in the study area or the species are a non-cryptic perennial flora species that were specifically targeted by surveys and not recorded. |
| None | Suitable habitat is absent from the study area. |

Attachment C: Photographs taken during site visit



Photo 1: Trees 1-5 located near sump



Photo 2: Western boundary facing south showing tree 6 (right foreground) and trees 1 and 2 (left background)



Photo 3: Hardstand area facing west



Photo 4: Vegetation adjacent to Breakfast Creek outside southern boundary



Photo 5: Adjacent lot mapped under Blacktown LEP



Photo 6: Dandelion groundcover species