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Dear Katrina,

240-244 Beecroft Road, Epping – Ecological Constraints Supplementary Statement

Eco Logical Australia (ELA) was commissioned by Landcom (formerly UrbanGrowth NSW) to prepare and ecological constraints supplementary statement regarding a Concept Proposal and Stage 1 works at 240-244 Beecroft Road, Epping. The proposal involves the preparation of a concept proposal for approximately 450 dwellings within the site in buildings with a maximum height of 15 storeys, mixed use commercial and retail outlets, open space and car parks. The proposal also includes Stage 1 works comprising subdivision to create separate lots for the proposed residential flat development and the Epping Service Facility.

A literature review was undertaken investigating previous reports by Eco Logical Australia (2016a, 2016b, 2016c) on ecological values of the study area, OEH Vegetation Mapping (OEH, 2016) and additional relevant documents, legislation and planning instruments. The study area had previously been mapped as containing 'Weeds and Exotics' by OEH (2016) and 'Planted/Exotic' by ELA (2012a). No Groundwater dependent ecosystems were mapped within the study area (2012b). A constructed stormwater channel was identified in the west of the study are which was highly disturbed and provided limited ecological values due to its concrete structure and level of weed infestation within the riparian corridor (2012c).

A site inspection was undertaken in October 2017 to validate vegetation mapping and ecological values determined by ELA (2012a) and identify any additional constraints in relation to the proposed development. Vegetation within the study area was highly disturbed and primarily composed of weeds, several of which are priority weeds under the *Biosecurity Act 2016*. One large native tree was present within the site, an isolated *Eucalyptus microcorys* (Tallowwood) in the south of the study area. One *Syncarpia glomulifera* (Turpentine) was present to the west of the study area. This tree is located outside the boundary of the site, however was within the fenced area of the study area. These trees were surrounded by landscaped gardens, weeds, concrete and buildings. A planted *Grevillea robusta* (Silky Oak) was also present in the study area and a small area of planted natives was present along the street in the south-west of the study area including *Callistemon viminalis* (Weeping Bottlebrush) and *Melaleuca quinquenervia* (Broad-leaved Paperbark). Vegetation within the study area is not consistent with any Threatened Ecological Community due to the absence of any surrounding native vegetation and high level of modification of surrounding soils. Vegetation within the study area was found to be consistent with that previously mapped by ELA (2012a) and OEH (2016).

Low quality foraging habitat was available within native trees on site for *Pteropus poliocephalus* (Grey-headed Flying-fox) and several threatened microchiropteran bats. This habitat was marginalised due to the high level of isolation and disturbance and larger areas of higher quality foraging habitat these mobile species is available north of the study area.

No trees require removal as a result of the concept proposal and Stage 1 subdivision works. It is possible that future stages will result in the removal of the limited native vegetation within the study area. Given the high level

of disturbance of the study area, the removal of a small amount of predominantly exotic vegetation and limited native vegetation presents low and moderate ecological constraints. Recommendations have been provided to mitigate any impacts associated with future works and vegetation removal.

In December 2017 the NSW Department of Planning & Environment (DPE) issued revised SEARs for the proposed development at 240-244 Beecroft Road, Epping. The revised SEARs outlined the requirement for assessment of the proposal under the *Biodiversity Conservation Act 2016* (BC Act). It is understood that the client intends to submit a waiver for the Biodiversity Development Assessment Report (BDAR).

To waive the requirements it must be demonstrated that the site does not contain biodiversity values in accordance with Clause 1.5 of the BC Act and Clause 1.4 of the *Biodiversity Conservation Regulation 2017.* The requirements to waiver assessment under the BC Act have been addressed in Appendix A. It was determined that the study area does not contain any significant biodiversity values, as such a Biodiversity Development Assessment Report (BDAR) would not be required. In addition to the results of the assessment undertaken by ELA, during consultation between the Office of Environment and Heritage (OEH) and DPE, OEH advised that there were no biodiversity values present on site that require a response.

Yours sincerely,

Mike Lawrie

Ecologist

Introduction

Landcom is in the process of preparing a Concept Plan and Development Application for a subdivision at 240-244 Beecroft Road, Epping. The study area was bound by Beecroft Road to the east, Ray Road to the west, a service station to the south and existing residential developments to the north.

The majority of the study area was undergoing construction works as a part of the Transport for NSW North west rail link development. A small two small areas of disturbed vegetation were present in the north-west and west of the study area.

The proposed works within the scope of this report include:

- **Concept Proposal** for a residential flat building development comprising of:
    - Building envelopes for residential flat buildings with a maximum height of 15 storeys
    - An indicative yield of 450 dwellings
    - Gross floor area (GFA) of approximately 38,000 m^2 to 39,000 m^2
    - Retail and commercial uses in the lower levels of the buildings
    - On-site communal and private open space
    - Approximately 389 car spaces
    - Two proposed carpark entry points
- **Stage 1** works comprising subdivision to create separate lots for the proposed residential flat development and the Epping Service Facility

Methods

Literature Review

A review of relevant literature was conducted prior to the site visit. Literature reviewed includes:

- Ecology Assessment report for Transport for NSW North West Rail Link (Eco Logical Australia, 2012)
- Riparian Ecology Assessment report for Transport for NSW North West Rail Link (Eco Logical Australia, 2012)
- Groundwater Dependent Ecosystem Risk Assessment for Transport for NSW North West Rail Link (Eco Logical Australia, 2012)
- Vegetation mapping for the areas of interest (obtained from the Office of Environment and Heritage (OEH) Vegetation Information System or other sources)
- Aerial photography, topographic mapping and terrain data
- Review of relevant planning instruments including Hornsby LEP and Sydney Metro Northwest Project

Field survey

A site visit was undertaken over one half day by ecologist Mike Lawrie to verify vegetation communities present within the site in accordance with that previously mapped by Eco Logical Australia (2012a) and to identify key ecological constraint issues within the study area. As part of the site visits the vegetation communities and their condition were mapped and opportunistic flora and fauna species list were recorded. Habitat features (significant feed trees or stags) and hollow-bearing trees (HBTs) were also noted if present.

Vegetation mapping was undertaken using aerial photography and ground-truthing of ELA vegetation mapping (ELA 2012a) and OEH mapping for the Sydney metropolitan area (OEH 2016). The vegetation and habitat was identified by walking over the entire study area using the random meandering technique of Cropper (1993) and recording dominant flora species.

Opportunities and constraints were identified and constraints assigned a constraint level based on the criteria listed in (**Table 1**).

Table 1: Constraints ranking criteria

Constraint level	Criteria
Very high constraint	Threatened community or species listed under the TSC Act and EPBC Act
High constraint	Threatened community or species listed under the TSC Act in low condition or dominated by weeds
Moderate constraint	Native vegetation, areas likely to provide habitat for threatened species.
Low constraint	Non-native vegetation and open grasslands

Results

Literature review

Vegetation

A review of OEH mapping (2016) did not identify any existing vegetation communities within the study area. An area of vegetation approximately 80 metres to north of the study area along Beecroft Road was mapped as Sydney Turpentine Ironbark Forest. A review of the ecological report by ELA (2016a) identified vegetation within the study area as comprising Planted/Exotic vegetation. No native vegetation communities were mapped within the study area.

Groundwater Dependent Ecosystems

The study area does not contain any Groundwater Dependent Ecosystems (ELA, 2016b).

Riparian Corridors

A Riparian Corridor was identified by ELA (2016b) running through the west of the site. This bank was described as highly degraded due to the sealed concrete channel preventing vegetation growth within the channel. Vegetation within the corridor was highly disturbed due to the high presence of invasive weeds.

Hornsby LEP 2013

The study area did not contain any land mapped as 'Biodiversity' within the Hornsby LEP Terrestrial Biodiversity Map.

Field survey

A rapid walkover of the study area was undertaken by Mike Lawrie from (Eco Logical Australia) on 13 October 2017.

The purpose of the site inspection was to briefly assess the ecological values present within the study area and verify vegetation communities present relative to that identified by ELA (2016a).

Vegetation Communities

The majority of vegetation within the study area is comprised of planted or invasive species. The vegetation was severely impacted by weed incursion.

Dominant canopy species within the small area of vegetation in the north-west of the study area included *Cinnamomum camphora* (Camphor Laurel), *Erythrina* × *sykesii* (Coral Tree) and *Schinus molle* (Pepper Tree). Only a small number of canopy species were recorded, including *Grevillea robusta* (Silky Oak) in the north-west of the study area and *Syncarpia glomulifera* (Turpentine) outside the western boundary of the study area. The mid-storey was dominated by introduced species *Ligustrum lucidum* (Broad-leaf Privet) and *Solanum mauritianum* (Wild Tobacco). *Ageratina adenophora* (Crofton Weed), *Conyza bonariensis* (Flaxleaf Fleabane) and *Cirsium vulgare* (Spear Thistle). Vegetation within the study area was severely infested with *Cardiospermum grandiflorum* (Balloon Vine). The field survey determined that vegetation within the study area was consistent with that previously identified by ELA (2012) as Planted/Exotic vegetation. A single isolated *Eucalyptus microcorys* (Tallowwood) was also present in the southern portion of the study area. A map of the vegetation present within the study area is shown in Figure 1.

Based on the high level of disturbance, isolation and modification to soils and vegetation in this area, the single Turpentine and surrounding area in the west of the study area was deemed inconsistent with the TEC Sydney

Turpentine-Ironbark Forest. No native understorey vegetation was present surrounding the Turpentine tree, groundcover and understorey vegetation surrounding the tree consisted of *Cardiospermum grandiflorum* (Balloon Vine), *Asparagus aethiopicus* (Ground Asparagus), *Bidens pilosa* (Cobber's Pegs), *Ehrharta erecta* (Vasey Grass), *Hedera helix* (English Ivy) and planted specimens of *Strelitzia reginae* (Bird of Paradise). It is understood that the Turpentine will be retained within a Green Space corridor.

The single Tallowwood in the southern portion of the study area is surrounded by a carpark and bare ground. It has no connectivity to any remnant native vegetation does not constitute an endangered ecological community. No native understorey vegetation was present under this tree.

Habitat for threatened species

The vegetation within the study area is unlikely to provide suitable habitat for threatened flora species. The high level of disturbance and modification of vegetation and soils within the study area has limited the opportunities for threatened flora species to persist in the landscape.

Habitat for threatened fauna species was highly limited within the study area. Only a very small amount of marginal foraging habitat was considered to be present for *Pteropus poliocephalus* (Grey-headed Flying-fox), as well as marginal foraging habitat for threatened microchiropteran bats within the limited vegetation present in the study area. No roosting or nesting habitat was available for these threatened species and no hollow-bearing trees were present within the study area.

Riparian Corridor

As described by ELA (2016c) the riparian corridor in the west of the site was composed of a constructed concrete stormwater channel. The channel and majority of the corridor is located outside of the study area. There was no native vegetation within the stream channel and it did not provide suitable habitat for aquatic fauna species. The small area of riparian corridor present within the site was degraded by weed incursion. It is assumed that stormwater capture and treatment will be done on site, such that there will be minimal change or impact on vegetation or other ecological values outside of the site.

Priority Weeds

The following species declared as State Priority Weeds under the *Biosecurity Act 2016* were recorded within the study area:

- *Asparagus aethiopicus* (Ground Asparagus)

Ecological Constraints

The concept proposal and Stage 1 of the proposed development does not require the removal of any vegetation from the study area. Future stages of the proposed development may require the removal of planted and exotic vegetation. A limited amount of low-quality habitat was available for a small number of threatened fauna species (Grey-headed Flying-fox and microchiropteran bats). These species are highly mobile and only a small area of low quality habitat is available for these species. Larger areas of higher quality habitat are available north of the study area.

Potential future removal of vegetation within the study area presents the following ecological constraints:

Moderate Ecological Constraints

- Single isolated native tree, *Eucalyptus microcorys* (Tallowwood) in the south of the study area.

Low Ecological Constraint

- Weeds and exotic plantings within the study area.

Figure 1: Vegetation communities within the study area

Discussion of Impacts

As discussed, the proposal involves the development of a concept plan for the study area containing approximately 450 dwellings within the study area, mixed use commercial and retail buildings, open space and car parks. The proposal also includes Stage 1 works involving the subdivision of the site for the proposed residential flat development and the Epping Service Facility.

The concept plan and Stage 1 will not require the removal of any vegetation from the study area or impact any threatened species.

A site contamination assessment undertaken (JBS&G, 2017) determined a statistically significant exceedance of nickel from sampled locations in the southern portion of the study area close to the isolated Tallowwood. As a result, future landscaping works may result in impacts to the root system leading to the removal of this tree.

While the current proposal does not require the removal of vegetation from the study area, subsequent Stages may include works to the south and west of the study area resulting in the removal of a small amount of native vegetation. These trees are located within disturbed areas and do not form part of any Threatened Ecological Community. Limited marginal foraging habitat for Grey-headed Flying Fox within native trees present and marginal foraging habitat was available for some threatened microchiropteran bats. Future removal of native trees for subsequent stages would result in an incremental loss of marginal foraging habitat for these species, however this is considered to be negligible on a local scale and would not result in a long-term decline of any threatened species. The removal of vegetation from the study area would not result in a significant impact on any threatened species or ecological community under the *Biodiversity Conservation Act 2016* (BC Act) or *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Conclusion/Recommendations

Only a small amount of vegetation was present within the study area, the majority of which was composed of exotic species.

The proposed works including a concept proposal and Stage 1 works creating separate lots for the proposed residential flat development and the Epping Service Facility will not result in the removal of vegetation from the study area.

A small amount of native vegetation may be removed in future stages of the development of the study area. This will result in the loss of an incremental amount of low quality foraging habitat for a small number of threatened fauna species including Grey-headed Flying-fox and threatened microchiropteran bats. These species are highly mobile and there are larger areas of higher quality habitat within the locality.

An assessment was undertaken to seek a waiver for a Biodiversity Development Assessment Report (BDAR) (Appendix A) which determined that the study area did not contain significant biodiversity values due to the limited and highly modified nature of vegetation present.

It is recommended that the following measures be implemented to protect native vegetation within and adjacent to the site:

- Where possible within the scope of future development, native trees should be retained within the study area.
- Weeds should be controlled within the study area as a part of landscaping works for future development.
- Sediment and erosion controls should be put in place during construction to prevent indirect impacts on the adjacent vegetation and the water course to the west of the study area.

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Appendix A: Application to waive assessment under the *Biodiversity Conservation Ac* (BC Act)

In December 2017 the NSW Department of Planning & Environment issued revised SEARs for the proposed development at 240-244 Beecroft Road, Epping. The revised SEARs outlined the requirement for assessment of the proposal under the *Biodiversity Conservation Act 2016* (BC Act). It is understood that the client intends to submit a request to waive the requirement for assessment under the BC Act. To waive the requirements it must be demonstrated that the site does not contain biodiversity values in accordance with Clause 1.5 of the BC Act and Clause 1.4 of the *Biodiversity Conservation Regulation 2017.*

Legislation criteria	Discussion of values within study area
Biodiversity Conservation Act (Clause 1.5)	
2 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;	Vegetation within the site is composed of mixed exotic and native vegetation. One tall isolated native tree is present in the south of the site is surrounded by a concrete carpark and does not contain understorey vegetation. Native and exotic species have been planted along the western boundary of the site and the north-west of the site is composed of predominantly exotic vegetation. The small amount of vegetation present within the site was not consistent with any listed Plant Community Type (PCT). Overall, vegetation within the site is highly modified and altered from its natural state. Given the high modification of the site, rehabilitation to its natural state would not be practicable.
b) Habitat suitability – being the degree to which the habitat needs of threatened species are present at the particular site;	Suitable habitat for threatened species is highly limited within the site. No habitat is available for any threatened flora species. Marginal foraging habitat is available only for highly mobile fauna species such as *Pteropus poliocephalus* (Grey-headed Flying Fox). Considering the small amount of isolated native vegetation present (one Tallowwood tree), the site does not contain sufficient foraging resources to sustain any threatened fauna species. No roosting or nesting habitat is available within the site for any threatened fauna species.
Biodiversity Conservation Regulation (Clause 1.4)	
a) Threatened species abundance – being the occurrence and abundance of threatened species or threatened ecological communities, or their habitat, at a particular site	No threatened ecological communities were present within the site. The small amount of vegetation present is Urban Exotic or Native plantings, and is not consistent with any listed Plant Community Type (PCT). No habitat was available for threatened flora species due to the high level of modification of remaining vegetation within the site. No threatened fauna species were observed within the site during the site survey. Marginal foraging habitat is available only for highly mobile fauna species such as *Pteropus poliocephalus*

	(Grey-headed Flying Fox). Considering the small amount of isolated native vegetation present, the site does not contain sufficient foraging resources to sustain any threatened fauna species. No roosting habitat is available within the study area for any threatened fauna species.
b) Vegetative abundance – being the occurrence and abundance of vegetation at a particular site;	Vegetation within the site was of very low abundance and quality. The majority of the site was composed of a cleared construction site, buildings and carparks which contained little to no vegetation. The majority of vegetation within the site was present along the western boundary consisting of planted exotic and native species. A singular isolated tree (Tallowwood) was present in the south of the site. Vegetation within the site was not consistent with any remnant native vegetation communities and did not conform to any listed Plant Community Types (PCTs).
c) Habitat connectivity – being the degree to which a particular site connects different areas of habitat of threatened species to facilitate movement of those species across their range;	Vegetation within the site is part of a highly fragmented local landscape. Limited connectivity exists between areas of vegetation within the site, except for exotic vegetation in the northwest of the site which connects to vegetation within the riparian corridor and a larger fragment of bushland north of the site. The site does not provide any significant level of connectivity to facilitate movement of threatened species across their range, the site is already predominately cleared. Higher quality connective habitat is present north and west of the site.
d) Threatened species movement – being the degree to which a particular site contributes to the movement of threatened species to maintain their lifecycle;	The site contains minimal vegetation which is fragmented by buildings, fencing and areas under construction for the Sydney Metro Northwest. Movement for less mobile threatened fauna such as mammals across the site is highly unlikely due to fencing, construction works, cleared open areas and a lack of connective vegetation. Opportunities for movement across the site for highly mobile threatened fauna including birds and bats are available, however the site is not considered to be significant for the movement of any threatened species to maintain their lifecycle.
e) Flight path integrity – being the degree to which the flight paths of protected animals over a particular site are free from interference; and	The landscape surrounding the site is highly urbanised, with tall residential buildings to the east of the site and the majority of the site under construction for the Sydney Metro Northwest. Given the lack of vegetation within the site, and the high level urbanisation of the locality to the south and east, it is unlikely that the study area would be a significantly important flight path for protected animals to travel between areas of habitat.
f) Water sustainability – being the degree to which water quality, water bodies and	No natural drainage lines run though the site. An artificial concrete stormwater channel is present directly to the west of the site. Given that the channel is constructed it is not considered significant for sustenance

hydrological processes sustain threatened species and threatened ecological communities at a particular site.	of any threatened species or ecological communities. The stormwater channel will not be impacted by the proposal.