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15<sup>th</sup> March, 2018

#### RE: 293 Matcham Road, Matcham

This letter provides an addendum update to the Ecological Assessment (Clarke Dowdle & Associates, dated April, 2017) for the above stated property. This addendum provides an update to the amended building location/size; tree loss; and bushfire requirements within subject site along with a review of changes to listing since the original assessment was completed (See attached figure). Finally, this addendum provides an adequacy review of the assessment of significances undertaken pursuant to Section 5A of the Environmental Planning & Assessment Act 1979.

It is noted that as the application was lodged during the savings and transitional period of the *Biodiversity Conservation Act 2016*, it is a 'pending or interim planning application' and is to be assessed in accordance with the former planning provisions of Section 5A of the Environmental Planning & Assessment Act 1979 (*clauses 27 and 28 of the Biodiversity Conservation (Savings and Transitional) Regulation 2017*).

An inspection of subject site was undertaken on the 16<sup>th</sup> February 2018.

The location of the amended application occurs in the approximate vicinity of the original design, however is larger in size and located closer to the western boundary and will be constructed over an ephemeral drainage line. Since the original site inspection, vegetation within the lower south portions has been significantly modified through the removal of all Lantana of which formed a large dense area in this vicinity previous. The removal of this noxious weed has resulted in the a cleared understorey and with sparse native trees existing including, but limited to *Alphitonia excelsa*- Red Ash, *Eucalyptus saligna*-Blue Gum, *Eucalyptus pilularis* – Blackbutt and *Syzygium smithii*- Lilly Pilly along with native palms including *Archontophoenix Cunninghamiana*- Bangalow Palm and *Livistona australis*- Cabbage Tree Palm. As stated the understorey containing Lantana has been completely removed and generally comprises of regrowth weed and some native ferns as listed in the previous ecological assessment.

The proposed dwelling and associated works including landscaping and drive way construction and the provision of Asset Protection Zones will result in the following impacts;

- Removal of approximately 22 trees as shown in the attached figure. Inspection to these trees found no hollow bearing sections or ecologically important habitat features.
- The proposed dwelling will be constructed partially over an incised ephemeral drainage line (approximately 20m) and involve diversion of the drainage pathway.

Due to the predominately cleared nature of the site, in respect to bushfire asset protection, in addition to the tree removal, only a small area to the north and south of the proposed dwelling will require vegetation management of the shrub and ground layer. Minor tree removal or thinning may also be required at to assist with bushfire asset protection although this impact is unlikely to adversely affect important habitat for any threatened species or populations.

As stated the proposed dwelling will be located and constructed over an ephemeral drainage line of which is not a mapped water course. The proposal will remove approximately 20m of this drainage line and involve the construction of a diversion feature in order to alter the existing water path (detailed of the diversion were not available at the time of this report). The Inspection of this drainage line found no water within and the drainage line would only contain water in rain events. No threatened frogs surveys were identified with the site inspection and/or with the previous survey's conducted. However, due to the habitat features present and the removal of some of the habitat, an updated Section 5A assessment will be conducted for threatened frog species.

Due to the amended design and updated location, an updated Section 5A assessment will be conducted for the Lowland Rainforest EEC to assess the proposals impact upon this community.

In review of the adequacy of the existing Section 5A assessments, updated database searches were completed to ensure any recent threatened species listing or records were considered. These searches comprised of the following databases;

- BioNET Atlas of NSW Wildlife (Office of Environment & Heritage 2018)
- EPBC Protected Matters Search Tool (Department of the Environment 2018)

No additional threatened species, populations, ecological communities or their habitat, that have been listed / modified or recorded since the 2017 report, are considered likely to occur within the subject site.

As detailed within the Section 5A assessments within this addendum and with the inclusion of the recommendation with the previous studies the proposed development of the subject site is unlikely to lead to a significant impact on threatened species, populations, ecological communities or their habitat. In addition the findings, recommendation and statutory Section 5A assessments completed within this letter and the Ecological Assessment (Clarke Dowdle & Associates, dated April, 2017) remain valid and accurate in terms of the proposed residential development of the subject site.

Therefore it is our conclusion that the proposed development of the subject site is unlikely to lead to a significant impact on threatened species, populations, ecological communities or their habitat if the previous recommendations and following recommendations are included in the conditions of consent;

The proposed drainage line diversion should be designed with the following criteria;

- Be able to accommodate natural watercourse functions.
- Establish natural bed and bank profiles, for example meanders, chain of ponds, surface water pools and riffles and bed controls.
- Allow for the movement of sediment and woody debris.
- Protect against scour by designing and providing necessary scour protection, for example, rock rip-rap and vegetation.
- Prevent increased scour and erosion of the watercourse banks in any storm events.
- Accommodate site hydrological conditions, for example maintain low flows.
- Do not change the gradient of the drainage line.
- Do not increase velocities by constricting flows.
- Stabilise and rehabilitate all disturbed areas including topsoiling, revegetation, mulching, weed control and maintenance in order to adequately restore the integrity of the riparian corridor.
- Monitor and maintain all in-stream works until suitably stabilised.

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#### PART 5A ASSESSMENTS

#### Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions

An ecological community of subtropical rainforest and some related, structurally complex forms of dry rainforest. Lowland Rainforest, in a relatively undisturbed state, has a closed canopy, characterised by a high diversity of trees whose leaves may be mesophyllous and encompass a wide variety of shapes and sizes. Typically, the trees form three major strata: emergents, canopy and sub-canopy which, combined with variations in crown shapes and sizes results in an irregular canopy appearance. The trees are taxonomically diverse at the genus and family levels, and some may have buttressed roots. A range of plant growth forms are present in Lowland Rainforest, including palms, vines and vascular epiphytes. In disturbed stands of this community the canopy cover may be broken, or the canopy may be smothered by exotic vines.'

(a) In the case of a threatened species, whether the action proposed is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction;

Not applicable to an EEC.

(b) In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction;

Not applicable to an EEC.

- (c) In the case of a critically endangered or endangered ecological community, whether the action proposed:
  - (i) Is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction; or
  - (ii) Is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction;

The proposal will directly involve removal approximately 20 trees within the EEC area. This EEC area has been cleared of the previous significant Lantana infestation and therefore limited ground cover and shrubs exist.

Indirect impacts as consequence of edge effects, changes to water quality (water chemistry, such as pH, nutrient and suspended sediment loads) and hydrology (changed surface and subsurface flow - rates/duration/regularity) from runoff. Most of the indirect effects will be directed down slope and to the drainage line but extra controls relating to weeding, sediment erosion control and the onsite septic system have been put in place (previous Ecological Assessment). In addition, a Bushland Management Plan will be recommended to control weeds within the EEC areas and provided a better ecological outcome than what currently exists. Given these controls a viable local population of the EEC is unlikely to be placed at risk of extinction.

### (d) In relation to the habitat of a threatened species, population or ecological community:

## (i) The extent to which habitat is likely to be removed or modified as a result of the action proposed;

Approximately 20 trees of this community will be impacted/removed as result of the proposal. The proposal will also impact an unknown precise area due to the indirect consequence of edge effects, changes to water quality (water chemistry, such as pH, nutrient and suspended sediment loads) and hydrology (changed surface and subsurface flow - rates/duration/regularity) from runoff. Most of the

indirect effects will be directed down slope and to the drainage line. Such disturbances are considered unlikely to represent a significant impact to a large area of habitat of the EEC if the controls requested are put in place.

## (ii) Whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action;

No areas of known habitat are likely to be isolated as a result of the proposal.

(iii) The importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality;

The extent of habitat to be removed, modified, fragmented is not considered to be important due to the small area.

### (e) Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly);

None of the site has been designated 'critical habitat' under Part 3 of the TSC Act.

## (f) Whether the proposed action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan;

There is currently no Recovery Plan in place or Threat Abatement Plans currently in operation for any Key Threatening Processes threatening the Lowland Rainforest. There are 21 priority actions identified by the Office of Environment and Heritage to assist the recovery of this community. The proposed development is not inconsistent with the overall strategies and actions listed in the priority action statement. The proposal will be consistent with the following priority actions for Lowland Rainforest;

- Promote best practice management guidelines;
- Incorporate consideration of EEC protection in regional open space planning;
- Manage, to best practice standards, areas of EECs which have conservation as a primary objective, or where conservation is compatible;
- Public authorities will promote management agreements to landholders through their ongoing land use planning activities.

## (g) Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.

KTP are listed in Schedule 3 of the *TSC Act 1995*. Those applicable to the current proposal and this species (both directly and indirectly) would appear to be 'Clearing of Native Vegetation''.

#### AMPHIBIAN

#### Heleioporus australiacus

Found in heath, woodland and open dry sclerophyll forest on a variety of soil types except those that are clay based. Spends more than 95 % of its time in non-breeding habitat in areas up to 300m from breeding sites. Breeding habitat of this species is generally soaks or pools within first or second order streams. They are also commonly recorded from 'hanging swamp' seepage lines and where small pools form from the collected water. Whilst in non-breeding habitat it burrows below the soil surface or in the leaf litter. Individual frogs occupy a series of burrow sites, some of which are used repeatedly.

#### Litoria aurea

The Green and Golden Bell Frog is a predominantly aquatic species, found among vegetation within or at the edges of permanent water. The males call mainly after rain from spring to autumn while afloat among vegetation, usually in larger permanent dams, swamps and lagoons. Breeding often peaks after heavy rains in January to February

#### Litoria brevipalmata

Isolated localities along the coast and ranges from just north of Wollongong to south-east Queensland.

Green-thighed Frogs occur in a range of habitats from rainforest and moist eucalypt forest to dry eucalypt forest and heath, typically in areas where surface water gathers after rain. Breeding occurs following heavy rainfall in late spring and summer, with frogs aggregating around grassy semi-permanent ponds and flood-prone grassy areas. The frogs are thought to forage in leaf-litter.

#### Mixophyes balbus

This species inhabits rainforest and wet, tall open forest in the foothills and escarpment on the eastern side of the Great Dividing Range. They feed principally on insects and small frogs. Adults breed in rocky streams during summer after heavy rain. Outside of the breeding season adults live in deep leaf litter and thick understorey vegetation on the forest floor

#### Mixophyes iteratus

**Giant Barred Frog** This large frog inhabits the coast and ranges from south-eastern Qld to mid northern NSW. It is associated with flowing streams in wet sclerophyll forest or rainforest. Males call during spring and summer from the ground, often on leaf litter, near streams or ponds

#### Pseudophryne australis

The Red-crowned Toadlet has a restricted distribution. It is confined to the Sydney Basin, from Pokolbin in the north, the Nowra area to the south, and west to Mt Victoria in the Blue Mountains.

Occurs in open forests, mostly on Hawkesbury and Narrabeen Sandstones. Inhabits periodically wet drainage lines below sandstone ridges that often have shale lenses or cappings. Shelters under rocks and amongst masses of dense vegetation or thick piles of leaf litter. Breeding congregations occur in dense vegetation and debris beside ephemeral creeks and gutters. Red-crowned Toadlets have not been recorded breeding in waters that are even mildly polluted or with a pH outside the range 5.5 to 6.5.

#### In the case of a threatened species, whether the action proposed is likely to have an (a) adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction;

Previous and current surveys did not identify the presence of these species. Due to the previous significant weed infestation (Lantana) and the current cleared conditions only sub-optimal habitat for these species occurs surrounding the ephemeral drainage line. Portions of this drainage line will constructed over and involved the removal and disturbance of approximately 20m of this drainage line. It is noted that downstream habitats are restricted to a dam within the adjoining developed and cleared property. Due to the small area of associated impacts, along with the retention of the larger areas within the site to the north, the life cycle of these species is unlikely to be disrupted by the proposed development such that a viable population of the species would be placed at risk of extinction.

### **Green Thighed Frog**

Green and Golden Bell Frog

**Giant Burrowing Frog** 

#### Stuttering Frog

**Red- crowned Toadlet** 

# (b) In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction;

No populations of any of the species considered for this assessment (that are relevant to this locality) have been identified under Part 2 of Schedule 1 of the *TSC Act*.

## (c) In the case of a critically endangered or endangered ecological community, whether the action proposed:

- (i) Is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction; or
- (ii) Is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction;

Not applicable to threatened species.

- (d) In relation to the habitat of a threatened species, population or ecological community:
  - (i) The extent to which habitat is likely to be removed or modified as a result of the action proposed;

The proposal will involve the removal/modification of approximately 20m of an ephemeral drainage line of which due to the previous and current land conditions provides sub-optimal habitat for these species.

## (ii) Whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action;

No areas of known habitat are likely to be isolated as a result of the proposal.

# (iii) The importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality;

The removal/modification of approximately 20m of ephemeral drainage line of which is potential habitat for these species is small impact in relation to similar habitat surrounding and being retained the site.

## (e) Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly);

None of the site has been designated 'critical habitat' under Part 3 of the TSC Act.

## (f) Whether the proposed action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan;

The proposal is deemed to be consistent with any recovery plan or threat abatement plan.

## (g) Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.

KTP are listed in Schedule 3 of the *TSC Act 1995*. Those applicable to the current proposal and this species (both directly and indirectly) would appear to be the following;

Clearing of native vegetation (as defined and described in the final determination of the Scientific Committee to list the key threatening process)