



Memorandum

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Office	Hamilton
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Subject	PPC12 Technical Review of Ecological Impact Assessment

This memorandum, prepared by WSP, provides a technical review of an Ecological Impact Assessment (herein referred to as the Assessment) that was prepared to support a plan change application to rezone the T2 growth cell (the Project) from Deferred Residential to Residential.

1 Scope

To undertake a peer review of PPC12 application to:

- Identify any information gaps required to complete the assessment; and
- Consider whether the Assessment is adequate for the purpose and that the mitigation recommendations are appropriate to address the effects on ecological values.

2 Basis of the review

The documents consulted in undertaking this review were:

- Plan Change 12 Application; Growth Cell T2 Rezoning. *Prepared by BBO for Sanderson Group Ltd and Kotare Properties Ltd.*
- Ecological Impact Assessment. Ecology New Zealand. *Prepared for Sanderson Group Ltd. 6 August.*
- Automated acoustic long-tailed bat survey and potential ecological constraints, Boffa Miskell.

A site walkover was conducted by WSP Ecologist Caitlin Dodunski on 26th August, 2020.

3 Review of documentation

3.1 Assessment Methods

The Assessment included field surveys of vegetation, birds, bats, lizards and aquatic habitats. The scope and methods used to conduct the surveys were adequate for the purposes of

defining the ecological characteristics and values of the site and predicting significant ecological effects. The results of the acoustic bat survey may not be entirely representative of how bats utilise the environment, due to the time of the year it was carried out. Ideally bat surveys are carried out between late October - early April, when temperatures are warmer.

The assessment of effects for the development of the T2 growth cell (the Project) broadly followed the "*Environmental Impact Assessment: EIANZ guidelines for use in New Zealand: terrestrial and freshwater ecosystems*" (Roper-Lindsay *et. al.*, 2018) which was used to assign values, assess the level of effects and determine an overall level of effect. The methodology used was appropriate for this purpose.

3.2 Assessment outcomes

3.2.1 Vegetation

A site visit conducted on the 30th July 2020, determined that the vegetation present within the Project area was mostly exotic, dominated by agricultural rye grass pasture and scattered with exotic trees. Ground cover consisted of pasture grasses, blackberry and pastoral weeds. Minimal native subcanopy vegetation was identified such as karamu, mapou and hangehange.

There was a low abundance and diversity of native plant species and there were no At-Risk or Threatened plant species observed at the site.

The intrinsic quality and value of the vegetation within the Project area was assessed as **Low**. The magnitude of the effect of removal of this vegetation was considered **Low** therefore the overall level of effect is assessed as **Very Low**. WSP concur with this assessment.

No specific measures to avoid, remedy or mitigate effects on vegetation are proposed and this is appropriate given the **Very Low** level of effect.

3.2.2 Bats

An acoustic bat survey was undertaken in May 2020, with 12 monitors being deployed across the Project site with half of the monitors recording bat activity. A total of 23 bat passes were recorded across all monitors over 20 valid nights. Activity was detected predominantly towards the northern half of the site towards Pirongia Road, and also detected around the ephemeral farm pond (identified in the Assessment as the southern FW ecosystem). Bat activity was very low with the highest activity site (ABM 1) recording 17 passes over only two of the twenty valid nights.

The Assessment acknowledges that conducting an acoustic survey in May is not the ideal time of year as bat activity can be significantly reduced in cooler temperatures. The Assessment has addressed this matter by proposing another survey be carried out between November-April to completely understand how bats utilise the Project area. WSP agree with this suggestion.

The Assessment concluded that the site has **Very High** ecological value due to the long-tailed bat having a threat status of 'Nationally Critical'. The Assessment identifies and considers the following actual and potential effects arising from the Project:

- Indirect effects due to loss of commuting and/or potential foraging habitat, and ongoing disturbance from artificial light. Potential effects may lead to decreased activity, a change in habitat utilisation by bats, or complete avoidance of the site by bats. This was considered as having a **Moderate** effect, and a **High** overall level of effect. WSP concur with this assessment.
- Direct effects by way of injury/mortality to roosting bats during tree clearance. The Assessment indicated that there were no potential roost trees identified on site. Therefore, the magnitude of this effect on bats was considered **Negligible** and the overall level of effect is **Low**.

- WSP did not undertake a full risk assessment of each tree within the Project area during the site visit on 26th August. However, some trees were noted that in our opinion had some roost potential features and therefore at this stage cannot confirm the accuracy of this assessment.

Due to the **High** level of effects rating, the Assessment proposed the following measures to manage effects of the Project on bats:

- Completion of a further acoustic survey between the months of November-April;
- Consider stormwater design to provide better feeding habitat (i.e. open water areas with robust planting will increase invertebrate presence and water availability); and
- Incorporation of low lumen, directional lighting design for external lighting and street lighting be avoided or minimised where possible.

WSP agrees with these proposed measures and also recommend the following:

- The effects Assessment should be reviewed and possibly revised if findings from the acoustic survey are significantly different;
- A further risk assessment of all trees proposed for removal be undertaken closer to construction to identify any possible roost trees. Given the presence of many mature exotic trees it is unlikely that there are no roost features present, also, possible features may develop between this assessment and when construction begins, if there is a significant time interval between the two. If roost features are present, then tree removal protocols need to be implemented by an appropriately qualified bat ecologist to avoid harm to roosting bats. It is important to note that any direct harm caused to bats is illegal under the Wildlife Act, 1953, and could result in prosecution, therefore a conservative approach should be taken.

3.2.3 Birds

A typical mix of common native and exotic bird species were noted during the site visit. No At-Risk or Threatened bird species were noted and based on the low quality of habitat present, it is unlikely that any of these species would be more than transient visitors to the site.

Given that most of the Project area is exotic habitat and agricultural grassland the site was assessed as having **Low** value for birds. It is considered that the Project will result in the loss of some habitat, but this represents only a small proportion of these types of habitat in the surrounding landscape. The magnitude of the loss of these habitats was assessed as **Low**, therefore the overall level of effect is **Very Low**. WSP concur with this assessment.

No measures to avoid, remedy or mitigate are required given the **Very Low** overall level of effect, however all native birds are protected under the Wildlife Act.

Due to the possibility of direct harm to native bird species during tree clearance, the Assessment recommends the following to avoid native bird injury or mortality:

- Vegetation clearance should be undertaken outside the main bird breeding season which is October - April; or
- If this cannot be avoided, vegetation must be inspected by an experienced ecologist to ensure no active nests are present during tree clearance. Where active nests are identified, they must be left undisturbed until chicks have fledged.

WSP agree with these proposed management measures.

3.2.4 Lizards

The majority of habitats within the Project area are highly modified and prone to disturbance, however there is some suitable habitat present for the native copper skink (*Oligosoma*

aeneum), a species classified as 'Not Threatened' and the plague skink (*Lampropholis delicata*). These habitats include rank grass, woody debris and residential gardens. Native lizards were not confirmed as present on-site during brief manual searches during the site walkover.

The Project area was assessed as having **Low** value for lizards due to the sparseness of habitat for ground dwelling lizard species. It was considered that earthworks and vegetation clearance on-site may result in a loss of potential habitat and resources for resident lizards and has the potential to result in lizard mortality. The magnitude of the loss of these habitats was assessed as **Low** resulting in an overall level of effect of **Very Low**. WSP concur with this assessment.

Due to the **Very Low** overall effect, measures to avoid, remedy or mitigate effects on lizards are not necessary. However, the Assessment points out that all indigenous lizard species are 'absolutely protected' under the Wildlife Act (1953) and any lizard habitat is protected by the Resource Management Act (1991).

Due to possibility of direct harm to lizards during earthworks, the Assessment recommends the following to avoid lizard mortality:

- A targeted survey for lizard species within the suitable habitats should be undertaken (this needs to occur in warmer months of the year).
- If lizard species are found, a Lizard Management Plan should be prepared outlining actions to be taken before and during vegetation removal (e.g. salvage and relocation) to avoid harm to lizards.

WSP agree with these proposed recommendations, and suggest that, if lizards are found, the Department of Conservation be consulted with prior to and in conjunction with development of a Lizard Management Plan.

3.2.5 Aquatic Ecology

There are two freshwater ecosystems identified within the site:

- An ephemeral seep and drain that may periodically hold water for short periods of time (FW ecosystem - South).
- A large pond upstream of an ephemeral/intermittent waterway and riparian wetland flowing towards Mangapiko Stream (FW ecosystem - North)

A high-level assessment was carried out including classification of aquatic features, documentation of overall aquatic quality and determining the likely presence of native fish based on habitat. No fish or macroinvertebrate surveys, or stream valuations were undertaken however, this was likely due to the time of the year that this assessment was completed.

The freshwater investigations determine that the Northern freshwater ecosystem has **Moderate** ecological value, while the Southern freshwater ecosystem has **Low** ecological value. Ecological values of native fish are **Moderate** due to the possible presence of protected species such as longfin eel and black mudfish. WSP concur with this assessment.

The Assessment identifies and considers the following actual and potential effects arising from the Project:

- Direct effects on resident fish (injury and mortality) associated with modification of aquatic habitats; and
- Permanent or temporary loss of fauna habitat.

Table 6 gives an overall level of unmitigated effects on native fish and loss of habitat ranging from **Very Low** to **Moderate**. WSP concur with this assessment.

The Assessment recommends the following to address the effects on freshwater ecology:

- Targeted fish surveys during a suitable time of the year to determine species presence and densities; and
- Subject to findings of surveys, preparation of a Fish Management Plan outlining actions to be taken before and during any works (e.g. relocation) to avoid harm or injury to native fish.

WSP agree that the above proposed measures will appropriately address effects of the Project on freshwater ecosystems.

One matter that is not covered in the report are the potential effects of erosion and sedimentation on watercourses. However, this has been addressed in Section 6.2 of the Plan Change 12 Application.

4 Summary and Conclusions

The Assessment has used appropriate methods to identify the ecological characteristics and values within the proposed Project area and inform the assessment of effects on ecology. The information provided is sufficient to support the conclusions made concerning ecological values and levels of effects and provide a basis for the measures proposed to address adverse effects.

For the most part, the terrestrial values of the project are **Low** and overall effects on ecological values **Very Low**. Only long-tailed bats, due to their threatened status, are of **Very High** ecological value. Due to a **Moderate** magnitude of effect from the loss of commuting, foraging and possibly roosting habitat the overall effects on this species is **High**.

The Assessment states that there is no roosting habitat present within the Project area and that the overall level of effect on causing harm to bats during tree clearance is **Low** due to negligible roosting habitat within the site. WSP did not undertake a full risk assessment of each tree within the Project area during the site visit on 26th August. However, some trees were noted that in our opinion had some roost potential features and therefore at this stage cannot confirm the accuracy of this assessment.

One of the two aquatic ecosystems has **Moderate** ecological values due to possible presence of threatened native fish and the Project may cause some habitat loss for these fish. The overall level of effect for this ecosystem is **Moderate**, however providing that targeted fish surveys are carried out and a Fish Management Plan be implemented, if necessary, the residual level of effect will be **Low**. The other freshwater ecosystem is of **Low** ecological value and overall a **Very Low** level of effect by the Project.

WSP agree with all management measures outlined in Table 8 of the assessment to avoid, remedy or mitigate effects on all flora and fauna. However, with regard to long-tailed bats, WSP recommend that a further detailed tree assessment be undertaken closer to the time of construction to ensure that there is no risk of bats roosting in trees at the time of felling.