

APPENDIX 4 – SPECIALIST WORKING PAPER – ECOLOGY

Peka Peka to Otaki – Assessment of Alternatives

Specialist Working Paper - Ecology

1.0 Introduction

This working paper provides a desktop assessment of route options A, B, C and D for the Peka Peka to Otaki Expressway. It identifies, assesses and rates risks and effects from an ecology perspective for the four options being considered.

2.0 Methodology and Assessment Criteria

Methodology

This assessment is based on a review of:

- Existing technical feasibility report and option plans;
- KCDC's Heritage Register and associated background information;
- New Zealand Freshwater Database records relating to rivers and streams crossed;
- Aerial photographs to assess extent of impact on known sites of ecological significance and identify additional risk areas not identified in Kapiti Coast District Council's (KCDC) Heritage Register;
- Survey data collected for Option D in connection with the SAR and AEE to be prepared for the Preferred Option.

For Alternatives A, B and C the assessment has been based on desk study only. While such assessments usually allow identification of sites of known or potential ecological significance there are limitations with desktop only assessments. The risks associated with such assessments include areas of ecological importance being entirely missed (although this is rare), incorrect attribution of values (a high risk since only a very approximate assessment of likely ecological values is possible without field survey).

Ecological vegetation and habitat surveys have been undertaken for Alternative D in connection with the SAR and AEE to be prepared for the Preferred Route. This survey data has been taken into account for this assessment.

Assessment criteria

Since no detailed field investigation could be undertaken for most of the sites impacted by the various alternatives the assessment largely relies on the significance ratings given in KCDC's Heritage Register.

Some of the ecological sites along Alternative D, the Preferred Route, are not included in KCDC's Heritage Register. The values of these have been determined using survey data collected in connection with the preparation of the SAR and AEE for the Preferred Route.

There are various tools and approaches that can be used to assess the ecological significance of sites. The system used to assess and rank sites in the Kapiti District is detailed in the report listing sites to be included in the Heritage Register prepared by Wildland Consultants Ltd (2003). These criteria are adapted from guidelines used to determine significant indigenous vegetation and significant habitat of indigenous fauna in the Waikato Region (Wildland Consultants, Environment Waikato, 2002). While this system has some shortcomings it has been used by this assessment to rank sites along the Preferred Route that have not previously been listed in the KCDC Heritage

Register. This has been done to ensure consistency with rankings of sites already listed in the Register.

3.0 Desktop Effects Assessment

This section assesses the effects of the various options on ecology. It identifies the sites of significance actually or potentially impacted by the options. The source of the rating is provided in brackets. For those sites where the rating has been taken from the KCDC Heritage Register “KCDC” is shown in brackets after the significance ranking in the tables below. Where the significance ranking has been undertaken by the Project Ecologist “JT” is shown in brackets after the significance ranking. The assessment briefly described the nature and significance of effects, providing an overall effects rating for each option. It also identifies the risk of previously unidentified sites of significance occurring along the various options.

The assessment is focused on terrestrial ecosystems. A brief assessment of effects on river and stream ecosystems has been undertaken. There are records in the New Zealand Freshwater Fish Database held by NIWA of fish species for a number of streams and rivers impacted by the four options. Rivers and stream crossed by all options are expected to support significant ecological values. However, while effects on these rivers and streams would need to be assessed and mitigated for any of the options, these effects are expected to be localised and relatively minor. Furthermore, the effect of the various options on river and stream ecosystems is expected to be similar and therefore is not expected to significantly influence effects ratings or the route selection process. Effects on river and stream ecosystems have therefore been excluded from this assessment.

Alternative A – Eastern Foothills

Impacted sites:

Site	Significance	Comment
Hautere Bush B	Regional (KCDC)	Impacts edge – potential to avoid?
Hillas Bush	National (KCDC)	Impacts edge – potential to avoid?
Rahui Rd Bush D	District (KCDC)	Impacts edge – potential to avoid?

Risks:

A number of areas of vegetation occur along this alternative that are not identified in the Heritage Register and which could comprise native vegetation. If this proves to be the case they could be ecologically significant and influence the effects rating.

Effects:

The principal adverse ecological effect of this alternative is the loss of habitat from edge of significant sites due to the road footprint. Alternative A rates major negative due to the impact Hillas Bush. Hillas Bush is one of only two known habitats for one species of native snail. Shifting the alignment to the west could avoid this site and also Rahui Road Bush D. This would significantly reduce the effects rating of this alternative.

Alternative B – Eastern Plains

Impacted sites:

Site	Significance	Comment
Stevens Bush	District (KCDC)	Impacts edge – potential to reduce footprint?
Marycrest	Regional (JT)	Complete severance - potential to avoid?
Mangaone B	Regional (KCDC)	Impacts edge – potential to avoid?
Braeview Bush	District (KCDC)	Complete severance – may be limited potential to avoid.
Cottle Hill Farm Bush	Regional (KCDC)	Impacts edge – potential to avoid?

Risks:

A number of areas of vegetation occur along this alternative that are not identified in the Heritage Register and which could comprise native vegetation. If this proves to be the case they could be ecologically significant and influence the effects rating.

Effects:

The principal adverse ecological effects of this alternative are loss of habitat from edge of Stevens Bush, Mangaone B and Cottle Hill Farm Bush due to footprint, and habitat loss and severance effects at Braeview Bush and Marycrest. Alternative B rates as a major negative due to effects on significant sites, including complete severance of Marycrest, and also cumulative impacts on a number of sites. However, there may be scope to avoid or reduce impacts on a number of sites by shifting the alignment. Complete avoidance of all sites is however unlikely, particularly Braeview Bush, which would require a significant shift of the alignment to avoid.

Alternative C – Western or Te Waka

Impacted sites:

Site	Significance	Comment
Stevens Bush	District (KCDC)	Impacts edge – potential to reduce footprint?

Risks:

It is possible that there are areas of permanent or ephemeral wetlands along this alignment that are not obvious from analysis of the aerial photographs. If this proves to be the case they could be ecologically significant and influence the effects rating.

Effects:

This alternative has minimal ecological impacts with the only known site of ecological significance affected being the area of bush on the Stevens Property, hence a rating for the alternative of minor/moderate negative.

Alternative D – Central or Preferred

Impacted sites:

Site	Significance	Comment
Stevens Bush	District (KCDC)	Impacts edge – potential to reduce footprint?
Marycrest	Regional (JT)	Complete severance - potential to avoid?
Cottle Bush	Local (KCDC)	Impacts edge – potential to avoid?
Hautere Bush F	Local (KCDC)	Impacts edge – potential to avoid?
Railway wetland	Local (JT)	Offset loss by recreating habitat within project stormwater ponds

Risks:

The ecology of this alignment is well known and there is little risk of there being unidentified sites of ecological significance along this alignment.

Effects:

The principal adverse ecological effect of this alternative is the habitat loss and severance effects at Marycrest. There are also likely to be losses of habitat from the edges of Stevens Bush, Cottle Bush and Hautere Bush F. The railway wetland will be completely lost. Due to impacts on Marycrest together with cumulative effects on other sites this option rates as a major negative. However, there may be scope to avoid or reduce impacts on a number of sites by shifting the alignment and this could reduce the effects rating.

4.0 Rating of Effects

Route	Ranking
Alternative A – Eastern Foothills	--
Alternative B – Eastern Plains	--
Alternative C – Western or Te Waka	-
Alternative D – Central or Preferred	--

5.0 Conclusion

From an ecology perspective Alternative C impacts on very few sites of ecological significance, avoiding the Marycrest sites and sites identified in the KCDC Heritage Register. This would be the preferred alternative from an ecology perspective based on the available information.

Alternative A rates as a major negative as this site is ranked nationally significant being one of only two known habitats for one species of native snail.

Both Alternatives B and D rate as major negatives due to their effects on significant sites and also cumulative effects on significant sites.

For Alternatives A, B and D there may be scope to avoid sites or minimise the encroachment of the footprint. If sites can be avoided then effects ratings could reduce. To undertake a proper comparison of options this needs to be undertaken once avoidance has been incorporated into the design as this could significantly affect the ratings.

References

Environment Waikato; Wildland Consultants Ltd. 2002: Areas of Significant Indigenous Vegetation and Habitats of Indigenous Fauna in the Waikato Region: Guidelines to applying Regional Criteria and Determine Level of Significance. *Environment Waikato Technical Report TR 2002/15*.

Wildland Consultants Ltd., 2003. Kapiti Coast District Council: 2002-2003 Ecological Site Surveys. *Contract Report No. 662*.