

## SUMMARY OF EVIDENCE OF ADAM FORBES - ECOLOGY

### PROPOSED PLAN CHANGE G – AOKAUTERE URBAN GROWTH

#### A. INTRODUCTION

[1] My full name is Adam Forbes and I prepared a s 42A report dated 15 September 2023 (**s 42A Report**) and Statement of Reply Evidence dated 28 November 2023 (**Reply Evidence**) on Ecology on behalf of the Palmerston North City Council (**Council**) for proposed Plan Change G: Aokautere Urban Growth to the Palmerston North District Plan (**PCG**).

#### B. UNRESOLVED MATTERS

##### Ecological values and potential of PCG gully systems

[2] Predicted natural vegetation cover for the PCG was shown in Figure 2 of my June 2020 ecological constraints assessment and I have reproduced the figure below. The point to be taken from Figure 2 is that the land encompassed by PCG supported, prior to the influences of humans, highly diverse forest cover comprising native conifer-broadleaved and conifer forests. These were the tall forests which today are highly reduced and benefit from only poor levels of protection and management.

[3] While human settlement has greatly altered the composition and structure of the PCG area, the gully systems provide critical opportunities for restoration of biodiversity. These restoration opportunities are supported by regional and national regulations such as the One Plan and the more recent National Policy Statements for Freshwater Management and for Indigenous Biodiversity. PCG provides the ideal opportunity to establish the natural baseline for the gullies and provide for and enable their restoration. I have recommended restoration and management of forest, wetland and freshwater ecosystems in the gullies across PCG.

[4] Regarding constraints to development, the current, terrestrial vegetation constraints within PCG area range from very high (kānuka forest) to low (exotic grassland or gorse). In the outer eastern area five additional areas of native forest and a number of wetland areas have also been identified for protection and restoration. PCG includes the rezoning of the abovementioned gullies, wetlands and forest remnants to Conservation and Amenity zoning and I support this change in zone status.

- [5] A range of stream hydroclasses are present within the plan change area and effects should be managed, particularly in permanent and intermittent reaches which by definition have the status of a River under the Resource Management Act 1991 (**RMA**). I have worked with the Regional Council regarding the stream classification process used in my field work.

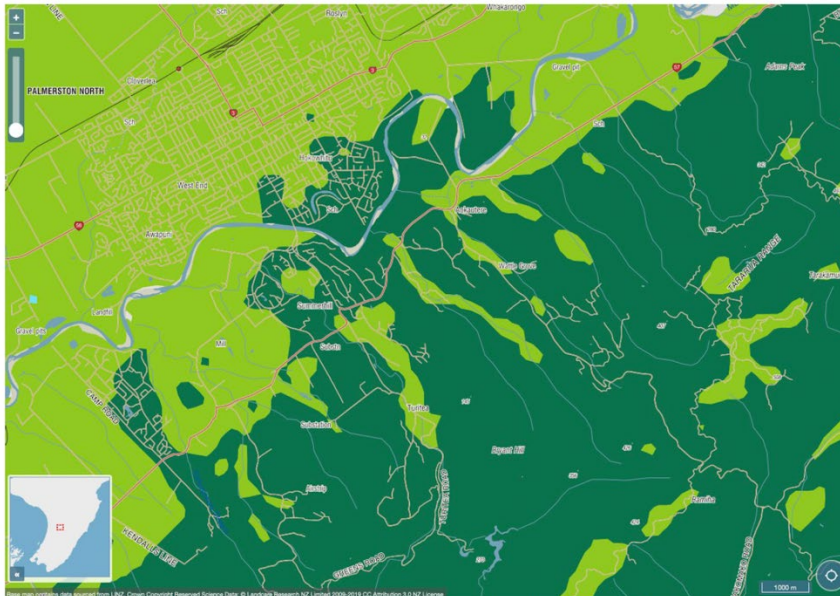


Figure 2. Predicted potential natural vegetation (Leathwick *et al.*, 2005) for the Aokautere area and surrounds. Dark green areas (hill country and elevated terraces) would have supported rimu-tawa forest in pre-human times. Light green areas (gullies and alluvial surfaces) would have supported indigenous conifer forests.

### Ability to address ecological effects within PCG

- [6] Works and structures are required in and around waterways for stormwater management purposes. I have worked with the project's stormwater specialists and understand the mitigation hierarchy has been applied to its fullest extent possible. Some residual adverse effects remain and these will require freshwater offsets. I have assessed these offsets at a high level using readily available data and it appears there is sufficient freshwater habitat to achieve a no-net-loss, or net-gain, position for freshwater biodiversity within PCG.
- [7] More recently, following the pre-hearing meeting I attended with Rangitāne, I expanded on Table 3 from my Evidence in Chief to provide a more complete assessment of the availability of permanent and intermittent reaches within PCG. The revised Table 3<sup>1</sup> shows that to address

<sup>1</sup> Further work was undertaken on Table 3 of s 42A Report of Adam Forbes dated 15 September 2023, with revised Table 3 circulated to submitters on 17 October 2023, and is available from Council website at <https://www.pncc.govt.nz/files/assets/public/v/1/documents/council/district-plan/plan-change-g/s42a-reports/ecology-table-3-updated-offsetting-calculations-oct-2023.pdf>

adverse effects to freshwater arising from the anticipated 715 m of stream works, 1773 m of stream restoration would be required to achieve a no-net-loss position for freshwater biodiversity. Following implementation of this across PCG, a surplus of around 6082 m of non-restored and non-affected permanent and intermittent reaches would remain. This is a high level estimation. The actual requirement for freshwater offsetting would be defined through detailed assessment of effects for a regional consenting process, based on the nature of effects (based on engineering designs) and of specific restoration reaches. While this surplus in permanent and intermittent reaches provides some comfort of flexibility for future development, biodiversity offsetting (as per NPS-FM 2022) is a last resort method of effects management and should only be used once all other effects management options through the mitigation hierarchy have been exhausted.

**4 December 2023**

**Adam Forbes**