

BEFORE THE HEARINGS PANEL

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of proposed Plan Change G: Aokautere Urban
Growth to the Palmerston North City Council
District Plan

**SUPPLEMENTARY STATEMENT OF DR ADAM FORBES ON BEHALF OF PALMERSTON NORTH
CITY COUNCIL**

ECOLOGY

Dated: 11 March 2024

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SUPPLEMENTARY STATEMENT OF ADAM FORBES

A. INTRODUCTION

- [1] My full name is Adam Sean Forbes.
- [2] I prepared a s 42A report dated 15 September 2023 (**s 42A Report**) and reply evidence dated 28 November 2023 (**Reply**) on ecology matters for PCG.
- [3] My experience and qualifications are set out in my s 42A Report.
- [4] I repeat the confirmation given in my s 42A Report that I have read and will comply with the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2023, and that my supplementary report has been prepared in compliance with that Code.

B. SCOPE

- [5] My supplementary statement responds to the following matters raised by the Hearing Panel during the week of 4 December 2023, and my appearance before it on 5 December.
- [6] Specifically:
- (a) Whether there are any further matters that need to be considered as part of my assessments now that the National Policy Statement on Indigenous Biodiversity 2023 (**NPS-IB**) is operative and whether my opinions are the same;
 - (b) Whether any of the NPS-IB provisions have been triggered by PCG;
 - (c) If the hydroclass stream classification work undertaken can be linked to the National Policy Statement on Freshwater Management 2020 (**NPS-FM**);
 - (d) Whether there are any particularly sensitive environments in the PCG area when considering the NPS-FM, in terms of both the existing environment and development enabled by PCG;
 - (e) The extent of Forest E's inclusion in the PCG area;

- (f) Clarification over responses to natural character and offsetting questioning by Commissioner McGarry to Mr Hudson and Dr Forbes during the hearing; and
- (g) The amendments to the Structure Plan roading and zoning requested by Palmerston North Industrial and Residential Developments Limited (**PNIRD**).

C. NATIONAL POLICY STATEMENT ON INDIGENOUS BIODIVERSITY

- [7] To my knowledge, overall, there were few changes between the exposure draft of the NPS-IB circulated in 2022, and the operative version of the NPS-IB adopted in 2023.
- [8] In my view, with respect to PCG, there are no further matters that need to be considered now that the NPS-IB is operative.
- [9] As to whether any provisions of the NPS-IB are particularly triggered, Policies 6 and 7 relate to the identification and protection of Significant Natural Areas (**SNAs**).¹ In my assessment, there are matters of statutory significance under both the draft and operative versions of the NPS-IB significance assessment criteria. This is described in my 2020 constraints assessment report (Appendix A to my s 42A Report)². The results of this assessment are still applicable in regard to identifying features of ecological significance.
- [10] NPS-IB Policy 13 requires local authorities to promote and provide for restoration of indigenous biodiversity by way of objectives, policies and methods in policy statements and plans. Of relevance to Policy 13, Section 3.21 Restoration of the NPS-IB must prioritise threatened ecosystems (in the case of PCG these are Kanuka forest and wetlands) and areas that provide important connectivity in the form of corridors at a landscape scale (in the case of PCG these are the gully systems).
- [11] Further, the NPS-IB Policy 14 target for Councils to achieve > 10% native cover in urban and rural areas (ie: in those areas that currently do not meet 10% native cover) is applicable to PCG. My calculations (given in my 2020 constraints assessment report)

¹ NPS-IB, Policy 6: significant indigenous vegetation and significant habitats of indigenous fauna are identified as SNAs using a consistent approach, and Policy 7: SNAs are protected by avoiding or managing adverse effects from new subdivision, use and development.

² Section 42A Report – Ecology (15 September 2023), Appendix A: Aokautere Structure Plan Ecological Features, Constraints, and Restoration, at pg 45.

estimate that native cover within PCG was at that time c. 6.3% and this could be increased to 13% with the restoration recommendations I have made.

D. NPS-FM

[12] Regarding the link between the hydroclass assessment and NPS-FM, primarily, the hydroclass assessment defines which waterways are Rivers pursuant to the Resource Management Act 1991 (**RMA**), and under the NPS-FM. In essence, perennial and intermittent waterways are considered Rivers and ephemeral waterways are not considered Rivers. Therefore, my hydroclass work provides a decision point spatially regarding which considerations are relevant when applying both the RMA and NPS-FM. For example, the NPS-FM at cl 3.24, covers what regional councils need to apply through regional consenting processes when considering Rivers. Other examples of where the status of Rivers are important in the NPS-FM include Appendix 4 – Details for In-Stream Structures’, and Appendices 6 and 7 – Offsetting and Compensation Principles. Other examples exist also.

[13] As to whether there are any particularly sensitive environments within PCG when considering the NPS-FM, generally speaking the perennial and intermittent waterways present have some sensitivity to sediment deposition. This is because most of the systems would naturally be hard bottomed and they are therefore vulnerable to sedimentation. These are within Gullies 1, 2, 3, 8, 9, 10, and 11 (refer Fig. 4 A & B in my s 42A Report).

[14] Wetlands present on the Waters’ block, although held in a grazing regime, are sensitive to changes in hydrological regime, sedimentation, or direct modification.

E. FOREST E

[15] I have considered the extent of Forest E against the Structure Plan boundaries. I can confirm that Forest E falls outside the plan change area.

F. RESPONSE TO QUESTIONS OF COMMISSIONER MCGARRY TO MR JOHN HUDSON AND DR ADAM FORBES REGARDING NATURAL CHARACTER AND OFFSETTING

- [16] I wish to clarify that the figure cited by Mr Hudson during questioning by Commissioner McGarry relates to my discussion on pages 35 and 36 of my 2020 constraints report, where in the context of the NPS-IB directive for Councils to achieve >10% native cover in urban and rural landscapes, I calculated the existing level of native cover as 6.3%. I then went on to calculate that transitioning the existing gorse stands to native cover through management, including enrichment planting, would boost native cover to 13%. I have copied below Figure 18 of my 2020 assessment where I have shown the 6.3% native cover in blue and the gorse stands in yellow. It is the sum of blue and yellow that equates to 13% native cover (in due course). The figure of 13% was intended purely in the context of the NPS-IB 10% native cover objective and was not the result of or recommendation for any offset calculation for development of the site.
- [17] The high level offsetting calculations that I have provided relate to the need to address residual adverse effects to freshwater from anticipated instream works driven by erosion and stormwater controls. Those figures are linear lengths of stream restoration required to achieve a no-net-loss (or net-gain) position for freshwater biodiversity. The freshwater offset will need to be calculated and prescribed at the time of regional consenting. However, my work to date indicates that based on estimates of instream work required, there is ample length of unaffected waterways to address the likely scale of residual adverse effects from stream works.

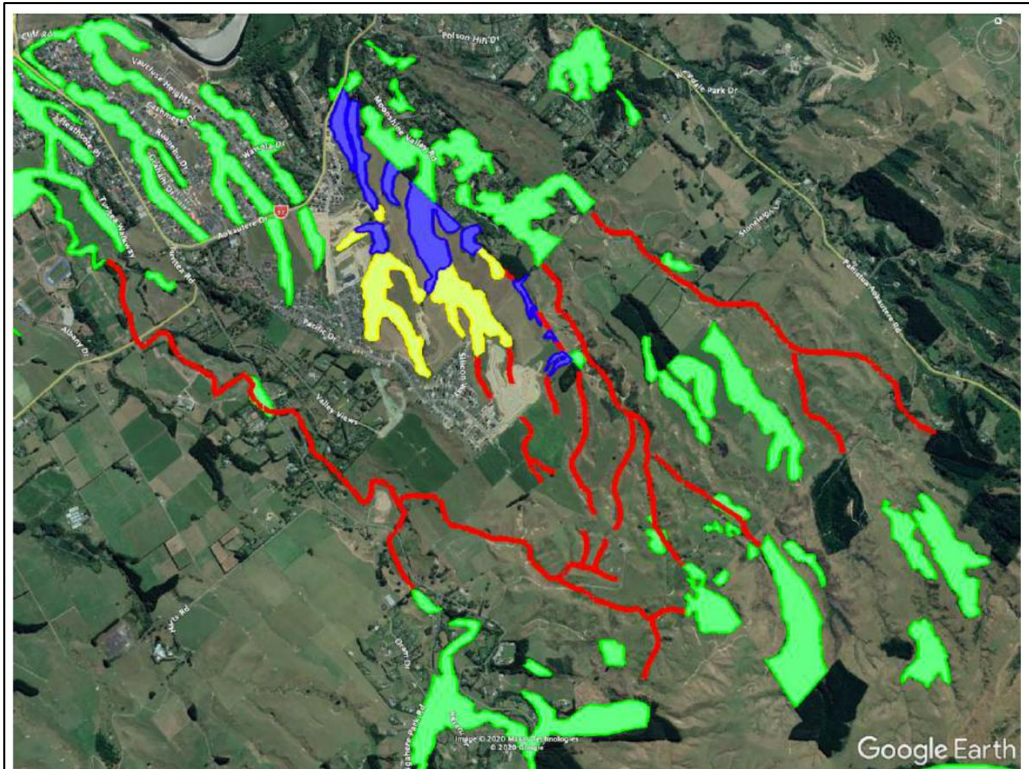


Figure 18. Approximate extents of existing indigenous cover surrounding the structure plan area (green), existing indigenous cover within the structure plan area (blue), and gorse cover within the structure plan area (yellow). Red lines indicate general alignments of recommended biodiversity corridors with the intention of connecting to the eastern hill country.

G. RESPONSE TO PALMERSTON NORTH INDUSTRIAL & RESIDENTIAL DEVELOPMENTS LIMITED

Proposed Roding Connections

[18] I have considered the suitability of roading connections proposed by Ms Pilkington on behalf of PNIRD. Specifically, those described as the ‘Terrace Link’ and ‘Gully 9’ connections³ outlined in Appendix A of her planning statement dated 7 December 2023. One of the proposed links would cross Gully 9 near the gully’s upper extent. In this location there are few ecological sensitivities. The proposed crossing point as drawn⁴ avoids direct effects to intermittent stream habitat as the location contains only an ephemeral waterway. There would appear to be an interaction with a small area of mānuka/kānuka, which at this scale is of little ecological concern. I suggest appropriate

³ Planning Statement of Christle Pilkington dated 7 December 2023, Appendix A.

⁴ I have referred to the two latest Resonant plans titled Proposed Alternative Cross-link Plan and Terrace Link Road Plan, both dated 01/24.

culverting be installed to maintain the natural hydrology (i.e., to prevent water being held artificially above the crossing) of this area of Gully 9. Overall, I would consider the ecological effects of this proposed road crossing as manageable in due course.

[19] A second road link is proposed referred to as the Terrace Road Link. The land where the upper section of this road link is proposed is covered in improved exotic pasture, and does not contain features of ecological importance. The ecological effects of this upper section of the proposed road link are not of concern.

[20] However, the lower section of this proposed road link passes through wetland habitat (see Fig. 4 below), as I discuss further at paragraph 22. I would not support the proposed road alignment between Valley View Road and Turitea Road on this basis.

Rural-Residential Zoning

[21] I have considered PNIRD's request to rezone the areas "A" and "B" of the Green block to rural-residential.⁵

'Area A'

[22] Of concern to ecological constraints is a wetland located on the low terrace, east of Turitea Road and south of where the Turitea Stream crosses under the road.

[23] On 26 February 2024 I undertook a site walkover of the area concerned. When on site I made observations of vegetation cover in terms of wetland indicator status. I also looked for other indicators of wetland presence such as soil and hydrology indicators.

[24] As a result of my site walkover, I have drawn a recommended extent for Conservation and Amenity zoning in this area of PCG which is represented as the green line in Figure 1 I describe the nature of that area further below.

⁵ Planning Statement of Christle Pilkington dated 7 December 2023, Appendix B.



Figure 1. The green line shows the extent of my recommendation for Conservation and Amenity zoning. The characteristics within the green area make the land unsuitable for roading or residential development.

- [25] Indicated by “A” in Figure 1 is a stand of raupo (*Typha orientalis*) which is a native wetland sedge and a very reliable indicator⁶ of wetland conditions. Ground conditions at the north eastern margin of the raupo stand were heavily waterlogged with standing water. The ground was spongy underfoot and a hydrogen sulphide odour was released from the ground when disturbed by walking. The ground surface was heavily pugged from cattle grazing the waterlogged soils. The soil type was clearly organic, having a very dark brown to black colour and a highly fibrous texture (i.e., peat; see Figure 2).
- [26] In a number of locations an iron oxide sheen occurred on the surface of the ponded water, the chemical nature of this was confirmed on site as the film behaved by cracking into angular fragments when touched (Figure 3).

⁶ Has the wetland indicator status of Obligate Wetland – rarely in uplands/drylands (MfE, 2022).



Figure 2. Black coloured peat soils strongly indicate long term contributions of organic matter from wetland vegetation.



Figure 3. Iron oxide sheens are reliable indicators of soil processes specific to wetland soils.

[27] This area of raupo has an area of 0.17 ha. The composition and landform position indicates that the wetland is a seepage wetland. Under the rapid vegetation test (MfE,

2022), this raupo area qualifies as a Natural Inland Wetland. Under the Horizons One Plan Schedule F the seepage wetland would be a rare habitat type exceeding the minimum area threshold of 0.05 ha, meaning the site is a wetland habitat in terms of Schedule F criteria.



Figure 4. Wetland area viewed from the top of the terrace riser looking west towards Turitea Road. The raupo stand is central in the photograph. Rautahu is at bottom left of the raupo stand cloaking part of the fenceline which is running towards Turitea Road. The proposed road alignment across the wetland is approximated using the red line.

- [28] Adjoining the raupo stand is a stand of rautahu (*Carex germinata*) (FACW; “B” in Figure 1) which also qualifies the area as Natural Inland Wetland and Schedule F seepage wetland.
- [29] The lower section of the PNIRD Link Road alignment is loosely indicated on site by the existing fence line (Figure 4). Approximately parallel with that fence line, the road alignment proposed crosses directly through both of these vegetation compositions. If built, this would result in a significant adverse effect to the wetland by modification of hydrology and loss of wetland habitat. I would not support the proposed lower section of the PNIRD road alignment on this basis.
- [30] Areas to the north and south also trigger Natural Inland Wetland status.

- [31] To the south the large lobed area (“C” in Figure 1) featured less standing water, but was dominated by willow weed (*Persicaria maculosa*; FACW), creeping buttercup (*Ranunculus repens*; FAC), lotus (*Lotus pedunculatus*; FAC), Yorkshire fog (*Holcus lantus*; FAC), and various rush species. The land surface is pugged from cattle accessing waterlogged soils.
- [32] A terrace riser exists along the southern margin of the basin floor and at least three discrete seepages are clearly discernible due to localised waterlogged soils and FACW species dominating the seepage areas.
- [33] Further seepages exist on the terrace riser at the eastern side of the southern lobe (“C” Figure 1) as indicated by wetland species. Most of the remaining vegetation on the eastern terrace riser are exotic woody weeds such as barberry (*Berberis glaucocarpa*) and gorse (*Ulex europaeus*).
- [34] The seepages occurring on the surrounding terrace riser have led me to recognise the connection and importance of the landform for the adjacent wetland hydrology. For this reason I have recommended the Conservation and Amenity zone boundary should extend to the upper extent of the terrace riser (see green line in Figure 1).
- [35] The area to the north of the Raupo stand (“D” in Figure 1) features areas of waterlogged soils, man-made drainage channels and a flora containing mānuka (*Leptospermum scoparium*; FAC), willow weed (*P. maculosa*; FACW), creeping buttercup (*R. repens*; FAC), lotus (*L. pedunculatus*; FAC) and various rush species. For these reasons I have included this northern area in the recommended Conservation and Amenity zone (Figure 1).

‘Area B’

- [36] I have assisted the PCG project team in defining Amenity and Conservation Zoning for Gully 19 (c. 3 ha), which is located within Area B of the Green Block (Figure 5). I have advised on the mapping of the zoning extent so that native vegetation (mānuka/kānuka in grazed pasture) and waterways (c. intermittent hydroclass extending 270 m upgradient from the PCG boundary; light blue line in Figure 5) are encompassed within the proposed Conservation and Amenity zone, thereby protecting those features from

development. In the uppermost extent of the headwater of Gully 19 I have previously mapped wetland habitat (i.e., the fork-shaped dark blue line in Figure 5).

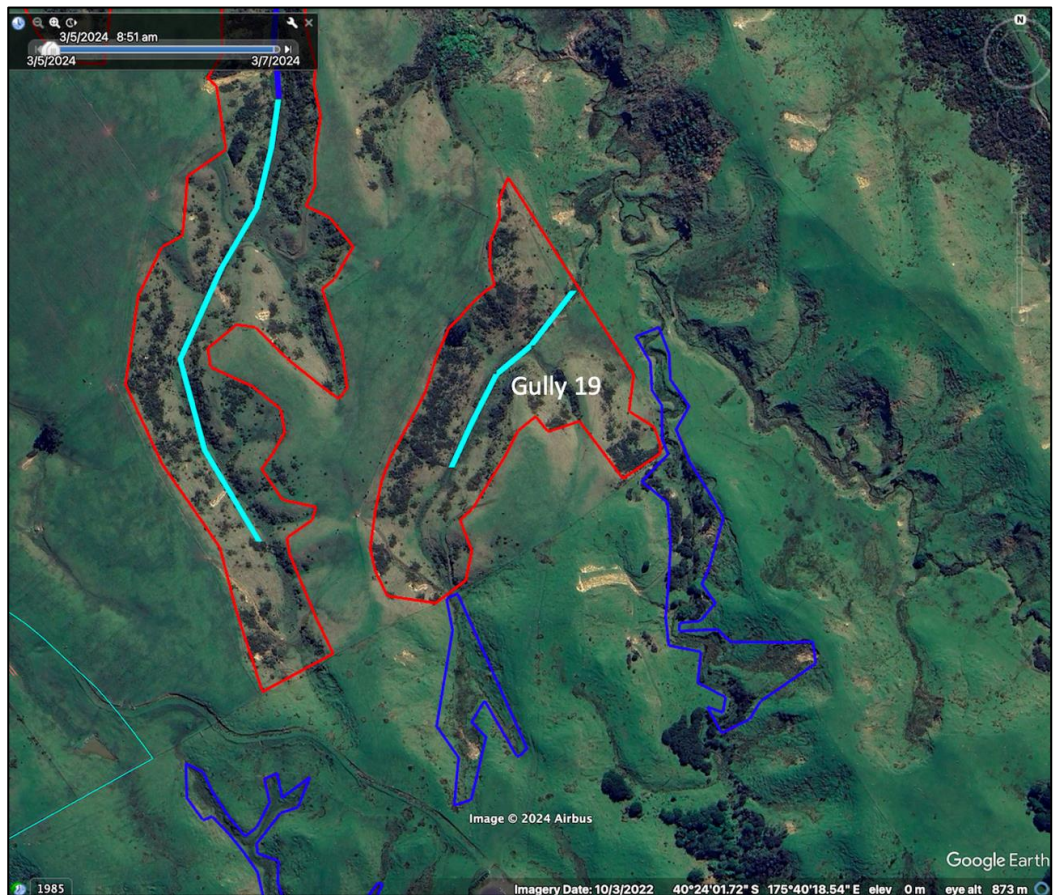


Figure 5. Proposed Conservation and Amenity zone in Gully 19. Red line indicates proposed zone extent. Light blue line indicates intermittent stream habitat.

11 March 2024

Dr Adam Forbes