IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of proposed Plan Change E: Roxburgh Residential Area to the Palmerston North City Council District Plan

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SUPPLEMENTARY STATEMENT OF EVIDENCE OF CHRISTOPHER MURRAY MCDONALD

ON BEHALF OF PALMERSTON NORTH CITY COUNCIL

URBAN DESIGN

Dated: 25 JUNE 2025

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SUPPLEMENTARY STATEMENT OF CHRISTOPHER MCDONALD

A. INTRODUCTION

[1] My full name is Christopher Murray McDonald.

[2] I prepared a s 42A report dated 23 April 2025 (**s42A Report**) and reply evidence dated 16 May 2025 (**Reply**) on Urban Design matters.

[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 my supplementary report has been prepared in compliance with the code.

B. SCOPE

[5] My supplementary statement responds to the following matters raised at the Hearing on 20 May 2025, and in Minute 3 of the Hearing Panel:

(a) 500m^2 maximum lot size.

(b) Yield calculations for 500m^2 and 600m^2 maximum lot sizes.

(c) Options for development controls at Tilbury Avenue interface.

(d) Minimum number of storeys in Riverbank area.

(e) Maximum building height and number of storeys.

[6] I do not comment further on the justification for a 250m^2 minimum lot size, which is addressed in my s 42A Report.

C. 500M^2 MAXIMUM LOT SIZE

[7] PCE enables but does not require small lots. Furthermore, PCE does not impose an average lot size for individual lots in PCE subdivisions or for the Roxburgh Residential Area (**RRA**) as a whole. Maximum lot size is therefore the only method in PCE for ensuring that development intensity within the RRA exceeds that achievable elsewhere

in the Residential Zone. I understand use of a maximum lot size within PCE to be supported by Frances Holdings Limited (**FHL**). It is only quantum which is at issue.

[8] Higher-density development is considered appropriate because the RRA has access to a range of amenities. Higher density is also necessary to meet the objectives of PNCC's *Future Development Strategy* (**FDS**), which anticipates a yield of 105 homes from the RRA.

[9] In my view, imposing a maximum lot size is preferable to imposing an average lot size for two reasons:

(i) Existing properties are likely to redevelop at different times, so imposing an RRA-wide average lot size would be ineffective. Early developments would be unconstrained by the average, while later developments would be constrained to an unreasonable degree.

(ii) Existing properties vary greatly in size, so it would be difficult to apply an average lot size to every subdivision. Furthermore, if applied to individual subdivisions, the averaging rule could encourage layouts in which all lots approximate the stipulated average size. This outcome could reduce housing diversity.

[10] Design studies show that it is possible to subdivide existing RRA parcels so that only one lot exceeds 500m^2. In the case of the FHL property, the size and shape of future residential lots can be managed over a large area. This means that there is scope to adjust lot boundaries so that all parcels meet the proposed 500m^2 maximum.

[11] I remain of the view that a 500m^2 maximum lot area does not limit the range of dwelling types that is possible within the RRA. Because maximum site coverage is higher at 45%, parcels of 500m^2 can accommodate a 225m^2 detached single-storey house. Larger floor areas are possible with two and – in the Riverfront area – three-storey construction. These dwelling types augment the more compact attached and semi-detached units that are feasible on smaller lots. I consider this amount of diversity to be appropriate.

D. YIELD CALCULATIONS FOR 500M^2 AND 600M^2 MAXIMUM LOT SIZES

[12] The RRA's net developable area is approximately 3.3ha. Dividing this area into 600m^2 lots yields fifty-five parcels. Dividing the area into 500m^2 lots yields sixty-six parcels i.e., eleven additional parcels. In this theoretical example, reducing the size of all lots from 600m^2 to 500m^2 results in a 20% increase in yield.[1]

[13] For comparison, fifty-five 600m^2 lots represents approximately half the RRA yield anticipated in the FDS, i.e., 105 new homes. A design exercise confirms the feasibility of the FDS target when proposed maximum and minimum lots sizes are applied.[2]

[14] Resonant's Conceptual Plan for FHL land provides another speculative model for assessing the effect of increasing maximum lot size to 600m^2. This plan contains nine oversized lots with a total area of 5,336m^2. (Note: Two of the plan's oversized lots exceed 600m^2.) This total area divides into eleven compliant lots i.e., parcels no larger than 500m^2. By this measure, the inclusion of oversized lots results in the loss of two parcels from Resonant's plan. However, as noted in paragraph 79 of my s 42A Report, the Conceptual Plan already produces a low overall yield from RRA land that is best suited to intensive development.

E. OPTIONS FOR DEVELOPMENT CONTROLS AT TILBURY AVENUE INTERFACE

[15] Discussion at the Hearing resulted in four options being considered for controlling development at the RRA's interface with Tilbury Avenue properties:

(a) Option A - Proposed PCE provisions.

(b) Option B - Proposed PCE provisions plus 5m separation distance (replacing 1.5m) along shared rear boundary.

(c) Option C - Proposed PCE provisions plus 4m separation distance (replacing 1.5m) along shared rear boundary.

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1 In paragraphs 60 and 61 of my s 42A Report and paragraph 31 of my Reply, I note that the RRA Structure Plan contains regularly shaped areas that are suitable for subdivision into 250m^2 (approx.) parcels i.e., significantly smaller than the proposed maximum lot size.

2 A design study shows that as many as 110 lots are feasible if proposed PCE provisions are applied to existing properties within the RRA.

(d) Option D - Proposed PCE provisions plus single-storey (5m) height limit within rear third of lot.

[16] Each option can be assessed in terms of the degree of protection it affords to Tilbury Avenue properties and the constraints it imposed on buildings and on-site open spaces within RRA developments. Consistency with Operative District Plan Residential Zone provisions provides a further assessment criterion. The following table sets out what, in my view, are the advantages and disadvantages of the four approaches.

	Advantages	**Disadvantages**
Option A Proposed PCE provisions (retaining 1.5m separation distance along shared rear boundary).	Maintains consistency with ODP Residential Zone provisions. Imposes no additional constraint on development. Allows south-facing open space to be minimised.	Fails to recognise loss of amenity associated with re-zoning of open space. Allows some overlooking of Tilbury Avenue properties. Provides little space for screening vegetation along rear boundary of RRA lots.
Option B Proposed PCE provisions plus 5m separation distance (replacing 1.5m) along shared rear boundary.	Recognises loss of amenity associated with re-zoning of open space. Provides generous space for screening vegetation along rear boundary of RRA lots. Applies to both one and two-storey building volumes. Enables viable development options. Discourages rear lots.	Produces south-facing open space with limited amenity value. Only marginally reduces overlooking of Tilbury Avenue properties. Causes 'fragmentation' of ODP by adding a bespoke provision. Imposes additional constraint on development. Relies heavily on screening vegetation.

	Advantages	Disadvantages
		Fails to require planting / maintenance of vegetation along shared rear boundary.
Option C Proposed PCE provisions plus 4m separation distance (replacing 1.5m) along shared rear boundary.	Recognises loss of amenity associated with re-zoning of open space. Approximates required 3.7m Height in Relation to Boundary **(HRTB)** setback for two-storey (6.5m) volume. Provides generous space for screening vegetation along rear boundary of RRA lots. Applies to both one and two-storey building volumes. Enables viable development options. Discourages rear lots.	Produces south-facing open space with limited amenity value. Only marginally reduces overlooking of Tilbury Avenue properties. Causes 'fragmentation' of ODP by adding a bespoke provision. Imposes additional constraint on development. Relies heavily on screening vegetation. Fails to require planting / maintenance of vegetation along shared rear boundary.
Option D Proposed PCE provisions plus single-storey (5m) height limit within rear third of lot (retaining 1.5m separation distance along shared rear boundary).	Recognises loss of amenity associated with re-zoning of open space. Significantly reduces overlooking of Tilbury Avenue properties. Avoids over-reliance on screening vegetation. Allows south-facing open space to be minimised.	Provides little space for screening vegetation along rear boundary of RRA lots. Causes 'fragmentation' of ODP by adding a bespoke provision. Potentially results in more complex building envelope. Reduces likelihood of two-storey dwellings.

	Advantages	Disadvantages
	Matches effect of stepped HRTB controls on narrow lots. Encourages two-storey building volumes to be located forward on the lot. Imposes no additional constraint on single-storey development.	

[17] I consider Option D to be the preferred approach. Its chief advantage is that it replicates the degree of protection afforded by HRTB controls on narrow lots i.e., single-storey construction within the rear third of an adjoining RRA lot. This outcome recognises that single-storey building volumes are not visually dominant and pose little threat to neighbours' privacy. Although a stepped height limit may result in a more complex building envelope, a dwelling's ground-floor footprint is less constrained that would be the case with a 4m or 5m rear setback. Finally, a 1.5m minimum rear setback avoids the need for a larger south-facing yard with little utility or amenity value.

[18] In Option D, the single-storey height limit would operate in conjunction with proposed HRTB controls on side and rear boundaries. HTRB controls continue to have effect because they usefully limit the bulk of single-storey construction placed close to the Tilbury Avenue boundary.

F. JUSTIFICATION FOR MINIMUM NUMBER OF STOREYS IN RIVERBANK AREA

[19] In the case of PCE, I am of the view that single-storey dwellings in the Riverfront area represent under-utilisation of a scarce resource i.e., exceptional visual and recreational amenity along the river corridor. Under-utilisation occurs in two ways:

(a) Single-storey construction is associated with lower density. Therefore, it is likely that fewer households will benefit from the riverfront location.

(b) The stop bank prevents a visual connection between single-storey dwellings and the river corridor.

[20] Single-storey dwellings have a poor relationship with the public walkway atop the stop bank. From this vantage point, single-storey dwellings are experienced primarily as roof forms. In the absence of significant vegetation, the elevated walkway offers uninterrupted sightlines down into ground-level outdoor living areas at the rear of Riverbank lots. This visual relationship is uncomfortable for residents and passersby alike.

[21] In contrast, two and three-storey dwellings present frontally to observers on the stop bank walkway. Houses of this stature are experienced primarily in elevation i.e., as walls rather than roofs. If the dwellings' have first-floor living areas, residents and passers-by are more-or-less on the same level. The two groups are visible to one another. However, the sense of over-looking is less acute because there is no difference in elevation.

[22] Further, single-storey dwellings make little – if any – contribution to passive surveillance of the stop bank walkway. In paragraphs 113 to 115 of my s 42A Report, I describe the CPTED benefits associated with having two-storey dwellings in the Riverfront area.

[23] Taking these factors into account (see paragraphs 19 to 22), I believe it is desirable that PCE retains the two-storey minimum height for dwellings in the Riverfront area.

G. MAXIMUM BUILDING HEIGHT AND NUMBER OF STOREYS

[24] The following comments (paragraphs 25 to 32) respond to the Panel's request for an explanation of the practical effect of 9m and 11m maximum building heights particularly their relationship to number of storeys in residential construction.

[25] The 9m building height limit reflects a long-standing rule within the Residential Zone. 11m is consistent with the height limit stipulated for Tier 1 cities within New Zealand's Medium Density Residential Standards. 11m also matches a provision within the proposed Medium Density Residential Zone for Palmerston North.

[26] PCE provisions have been tested using 3m floor-to-floor intervals with a 0.5m freeboard. Allowing 0.3m for building fabric between levels, a 3m interval delivers a floor-to-ceiling height of 2.7m. This is generous but not uncommon for higher-value residential development. As a dwelling's plan dimensions reduce, it is beneficial to increase ceiling height beyond the standard 2.4m. The added height helps to create a more spacious interior. For this reason, a 3m floor-to-floor height is appropriate for compact units in medium-density housing.

[27] Applying the 0.5m freeboard and 3m floor-to-floor interval, a two-storey dwelling measures 6.5m to the roof space. This dimension allows a 2.5m high roof form without breaching the 9m maximum height. A roof of this height is technically and aesthetically feasible.

[28] Under the same scenario, a three-storey dwelling measures 9.5m to the roof space. Within the RRA's Riverfront area, dwellings with pitched roofs are permitted an additional metre of height i.e., 12m rather than 11m. This increment allows a three-storey dwelling to have a 2.5m high roof form. Again, a roof of this height is technically and aesthetically feasible.

[29] A 9m height limit permits the construction of a three-storey dwelling. However, dimensions are extremely tight i.e., 2.7m floor-to-floor intervals with minimal freeboard and a flat or near-flat roof. Furthermore, a 9m building height is only realisable on larger lots. On small narrow lots, HRTB controls confine construction to two full floors. Therefore, any additional effects from three-storey dwellings are mitigated by larger parcel size.

[30] In theory, an 11m height limit permits four-storeys of domestic construction. In this case, the dimensional constraints are particularly acute e.g., a 2.7m floor-to-floor interval produces a four-storey structure measuring 10.8m in height. This dimension makes no allowance for freeboard or roof fall. However, as noted above, pitched roofs qualify for an additional 1m in height. This increment makes a four-storey building feasible, especially if the uppermost level of accommodation is housed within the roof form. HRTB controls mean that an 11m building height is only realisable on larger lots. Therefore, any additional effects from four-storey dwellings are mitigated by larger parcel size.

[31] Four-storey construction triggers additional building regulations including a requirement for lift access, which adds considerably to cost. A third above-ground floor suggests apartments rather than the more familiar town-house format, which rarely exceeds three-storeys in height. Taken together, these factors indicate that four-storey construction is very unlikely within the RRA's proposed Riverfront area.

[32] If an additional storey is 'squeezed' beneath the maximum building height, the environmental effects of the extra floor are relatively minor. This is because the permitted building envelope remains unchanged. Occupancy may increase along with vehicle trip generation and demands on local services. Overlooking could be more problematic owing to the increased number of openings at first floor or above. Finally, an additional floor could detract from appearance, if dimensions are compressed, elevations become too 'busy' and the whole dwelling acquires a 'miniature' scale. More generally, if bulk and location remain constant, squeezing in an additional floor of accommodation leaves shading and visual dominance largely unchanged.

25 June 2025

Christopher McDonald