BEFORE THE HEARING PANEL APPOINTED BY KAIPARA DISTRICT COUNCIL

Under the	Resource Management Act 1991
In the matter	Private Plan Change 85 (Mangawahi East) to the Kaipara District Plan

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EVIDENCE OF MELISSA PAMELA PARLANE ON BEHALF OF KAIPARA DISTRICT COUNCIL

Water supply

1 December 2025

SIMPSON GRIERSON

Warren Bangma
T: +64-9-358 2222
warren.bangma@simpsongrierson.com
Private Bag 92518 Auckland

1. INTRODUCTION

1.1 My full name is Melissa Pamela Parlane. I hold the position of Manager, Asset Management at Kaipara District Council (**Council**). I have been responsible for waters asset management at Council since June 2023.

1.2 I have a Bachelor of Science in Mechanical Engineering from the University of Alberta, Canada. I have 15 years' working experience in Northland where I have held roles responsible for project management, infrastructure planning and asset management, with a focus on water and wastewater assets.

1.3 Although I have set out my qualifications and experience above, I am presenting this evidence as a Council representative, rather than as an independent expert witness. However, to the extent my evidence addresses matters in respect of which I have expertise I confirm that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023 and have complied with it in preparing this evidence. I confirm that the issues addressed in this evidence are within my area of expertise and I have not omitted material facts known to me that might alter or detract from my evidence.

1.4 The Council, as my employer, has authorised me to make this statement on its behalf. I understand that this statement will be attached to the report under section 42A of the Resource Management Act 1991 (**RMA**) that is being prepared by Jonathan Clease.

2. SCOPE OF EVIDENCE

2.1 In this evidence I will address the effects associated with proposed Private Plan Change 85 (**PPC 85**) on the water supply network. In particular, I will:

(a) Describe the existing reticulated water supply system in Mangawhai; and

(b) Consider and comment on the water supply proposed to service growth enabled under PPC85.

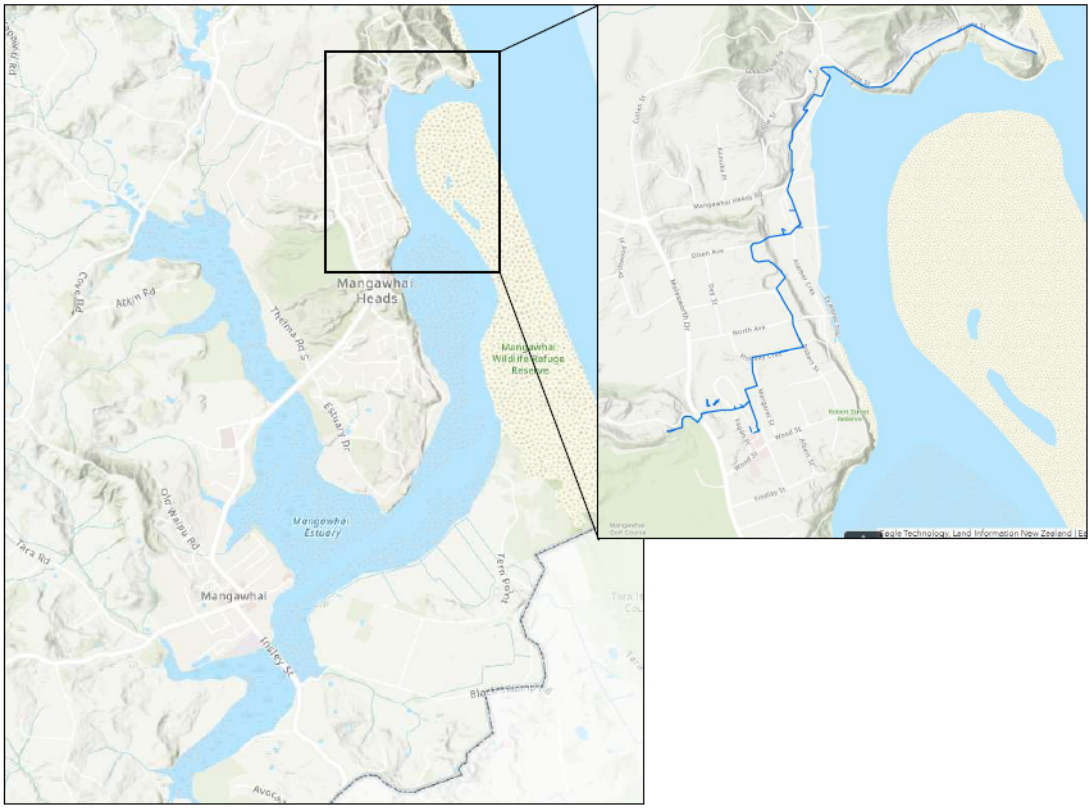
2.2 In preparing this evidence I have reviewed the following documents:

(a) "Plan Change (Private) - Mangawhai East Development Area" dated July 2025 (**PC 85**); and

(b) submissions on PC 85 raising issues relating to potable water supply;

3. Existing Water Supply Infrastructure

3.1 The Mangawhai Water Supply network currently services limited areas through a reticulated system fed by a bore and reservoir. This network extends from Fagan Place in Mangawhai Village to the end of Wintle Street.



3.2 The Kaipara District Council (**KDC**) has confirmed that there are no immediate plans to expand the capacity of either the water supply network or the Potable Water Treatment Plant in Mangawhai.

3.3 Accordingly, the majority of properties within the Mangawhai area continue to rely on private rainwater harvesting systems for their potable water needs.

3.4 The regional Water Services Delivery Plan adopted by KDC has allocated $40 million in its 30-year investment plan for FY42 to FY46 for a project titled "Mangawhai New Water Supply Scheme." The scope and extent of the proposed new water supply scheme remain undefined at this time.

4. Potable Water Supply Proposal for PPC85

4.1 The applicant for PPC85 has proposed, in the Infrastructure Report (page 17), that properties within the plan change area will utilise rainwater collection systems with storage tanks for both potable and non-potable water use.

4.2 I support the use of rainwater harvesting and storage for residential water supply, including both potable and non-potable applications.

5. Non-potable Supply Proposal for PPC85

5.1 On page 9 of the Water Acumen report under the heading of non-potable supply the option to provide a non-potable reticulated supply from a bore is presented.

5.2 I support the use of non-potable water for outdoor purposes (e.g., irrigation) but am reluctant to endorse internal use.

5.3 I hold concerns regarding the internal use of dual plumbing systems due to the elevated risk of cross-connection between potable and non-potable water supplies. Such cross-connections pose significant public health risks.

5.4 KDC will not accept vesting of any additional non-potable water supplies. Responsibility for the operation, maintenance, and ownership of any reticulated non-potable water systems should lie with a private utility or body corporate.

6. Recycled Water Supply Proposal for PPC85

6.1 On page 10 of the Water Acumen report under the heading of "Third Pipe System and recycled water" the option for KDC to develop a non-potable reticulated supply using treated wastewater is presented.

6.2 KDC has no plans to establish wastewater recycling in Mangawhai.

7. Rainwater Tank Sizing and Site Constraints

7.1 The applicant has provided Table C12 from the Auckland Regional Council Countryside Living Toolbox, which outlines minimum rainwater tank sizes based on roof area and number of bedrooms. I support this methodology for residential water supply planning. A copy of Table C12 is **attached** to my evidence as **Attachment 1**.

7.2 This approach is consistent with existing practices in Mangawhai where rainwater harvesting is a primary source of potable water. A similar table is included in PC84 in Table MDHA.2, in Chapter 16B of the Operative Kaipara District Plan.

7.3 In terms of the ability of rainwater tanks to provide an adequate supply of potable water that meets or exceeds the requirements in Table C12, in my experience this is typically not an issue where the lot site is 600m^2 or more (with this typically resulting in dwellings with larger roof areas, and more space on a property for rainwater tanks). For lot sizes smaller than 600m^2 a careful assessment is required. Depending on the level of development it may be difficult for sufficient roof size and a sufficient sized rainwater tank to be accommodated on a smaller site. While rainwater tanks may be supplemented by water tanker deliveries, the availability of this method is likely to be constrained during drought conditions and can be cost-prohibitive.

7.4 I recommend that PPC85 plan provisions require lots smaller than 600m^2 to be subject to careful assessment through the plan provisions to ensure that on sites smaller than 600m^2 there is the ability for rainwater tanks to provide an adequate

supply of potable water that meets the requirements of Table C 12. Table C12 provides for increased water storage requirements depending on the number of bedrooms in a property. In practice, this may mean that on smaller sections dwellings with a larger number of bedrooms are not approved.

7.5 Rainwater tanks as potable water supply for commercial and retail activities is common in Mangawhai. Determining the appropriate storage volume is done through the building consent process.

7.6 Tables C13 and C14 of the Auckland Regional Council Countryside Living Toolbox is a useful guide for commercial activities reliant on rainwater. Using the guide, assumptions need to be made regarding the number of people that will occupy the workplace, the roof area and the percentage of time that roof runoff can meet daily demand. In most scenarios where the building occupancy exceeds 5 people, a minimum storage of more than 25,000l is required.

8. Firefighting and Future Water Supply Planning

8.1 KDC will not accept vesting of any additional non-potable firefighting water supplies. Responsibility for the operation, maintenance, and ownership of any communal systems should lie with a private utility or body corporate. Individual firefighting supplies should remain as private assets. This is consistent with development elsewhere in Mangawhai.

8.2 The Water Acumen memo states *"Should KDC establish a water treatment facility at the Mangawhai Wastewater Treatment Plant site and reticulate water for firefighting purposes, this would enhance community resilience."*

8.3 Whilst reticulated recycled treated wastewater is a theoretical solution for addressing firefighting supply, it would require the funding and installation on an entirely new reticulated network with associated pump stations and/or storage facilities across the township.

9. RESPONSE TO SUBMISSIONS

9.1 The Northland Regional Council, submitter 43, is concerned about small lot sizes being able to fit the required water infrastructure onsite. I agree with the submitter's concerns and this is addressed in paragraph 7.4 above.

9.2 I agree with Submitter 60, Fire and Emergency New Zealand, that the development must provide sufficient water supply for both potable and firefighting use. And that firefighting capacity must be maintained at all times. I agree that it must be clear that table C12 referred to in paragraph 7.1 above does not include firefighting water and that 10,000l per property additional must be provided if on-site firefighting capacity is preferred.

9.3 Submitters 62, 63, 64, 70, 71, 75, and 79 argue that reducing required tank volumes as roof size increases is inappropriate. I support the use of Table C12, which specifies lower storage requirements for houses with larger roof catchments but the same number of bedrooms. The capacity to replenish water supplies during rainfall depends on roof area, while household demand is more accurately reflected by the number of bedrooms.

10. CONCLUSION

10.1 In summary, the proposed reliance on rainwater harvesting and on-site storage for potable and non-potable supply within PPC85 is consistent with existing practice in Mangawhai and, in principle, provides a feasible means of servicing residential development. However, the resilience of such systems is contingent on adequate tank sizing, roof catchment areas, and site constraints.

10.2 Looking ahead, the Council's long-term planning identifies a future potable water supply scheme for Mangawhai, but its scope and timing remain undefined. Until such time as a reticulated network is established, PPC85 must ensure that water supply arrangements are robust, safe, and sustainable, with clear provisions to mitigate risks associated with small lots and inadequate storage.

10.3 Firefighting supply must be managed either by individual property owners or any communal systems through a body corporate arrangement, rather than vested in Council.

10.4 Overall, while there are practical considerations around tank sizing, site constraints, and the management of non-potable supplies, these matters are capable of being addressed through appropriate plan provisions. There is no water supply reason to decline PPC85.

Melissa Pamela Parlane

1 December 2025

Attachment One

Table C12, Auckland Regional Council Countryside Living Toolbox

Table C12 Minimum Tank Size for RDC Homes Having Tanks as Sole Water Source					
Usable Roof Area (m^2)	Bedrooms				
	1	2	3	4	5
100	20	50			
120	15	35	75		
140	10	30	60		
160		20	50		
180			45	75	
200			35	65	
220			30	55	90
240			30	50	80
260				45	70
280				40	65
300				35	60

Colours indicate units of 25 cubic metres (5,000 gallons):

1 x 25 m^3	2 x 25 m^3	3 x 25 m^3	4 x 25 m^3