Waitaki PDP Stormwater Evidence — 24 September 2026

Ben Stratford – speaking notes

Introduction

Good morning. My name is Ben Stratford, a hydraulic engineer, appearing on submission 111.1. James has addressed the planning framework; I will focus on the engineering basis for the approach we recommend.

Hydraulic neutrality

I support hydraulic neutrality as a stormwater tool, particularly where development adds runoff to a constrained downstream system, or where there is genuine uncertainty about that system's capacity.

But the question I would normally start with is: what hydraulic problem are we actually managing? That depends on where the runoff goes, the downstream system's capacity, and whether a constraint is actually identified. It does not follow that onsite attenuation is necessary in every case.

My written evidence gives an example of the opposite too: the Johnstone subdivision, where I recommended attenuation despite no local flooding issue, because of its contribution to a wider constrained catchment. So, this is not about opposing neutrality — it is about targeting it.

Different catchments require different responses

In the Muddy Creek catchment at the North End of Oamaru, ORC and Fluent modelling shows flooding driven by fluvial flow and channel and culvert capacity, not by lack of residential attenuation.

In the Kakanui catchment, flooding risk is linked directly to river flows, not urban subdivisions. These examples reinforce that the appropriate response should follow the actual hydraulic circumstances, not a blanket rule.

Public network constraints

There is an important distinction between preventing a development from worsening an existing problem and resolving an existing public network constraint.

To test this, we overlaid a depressions analysis against Council's stormwater GIS network to identify where flood risk is real and where network constraints may exist.

Map 1, Trent Street: this depression zone, about 300 metres from the coast, has flooded repeatedly, including the Barnardos kindergarten needing the fire brigade to pump it clear. Lot 23 Trent Street, recently subdivided, sits about a metre below kerb level and must pump stormwater up to the street. Attenuation there only slows the flow into the pump, which then discharges at a high rate to the road, it does not reduce the flood risk to this small sub catchment.

Map 2, Humber Street: this catchment discharges to the coast through a single 150mm pipe, despite draining a much larger area through small, old culverts. Council required attenuation on our 16 Usk

Street subdivision because of ponding on Humber Street — but the constraint here is clearly the network, not the development's runoff.

In both cases, the appropriate long-term response is likely to be network maintenance, renewal or targeted capacity improvement, not a standard attenuation device that will not resolve the underlying flood risk.

An alternative pathway

Turning to the pathway James has discussed, I consider it can be expressed through hydraulic performance criteria: measurable questions about post-development peak discharge, downstream capacity, and whether flooding of buildings or roads would result, rather than a general opinion on acceptability.

Importantly, if the available information is insufficient to establish downstream capacity, the alternative pathway should not be available — hydraulic neutrality would remain the conservative default. That also guards against successive developments each arguing their own contribution is too small to matter.

Conclusion

In summary, I support retaining hydraulic neutrality as the straightforward solution, alongside an alternative pathway where compliance with clear hydraulic performance criteria can be objectively demonstrated.

This provides a technically robust framework while letting the response reflect the actual circumstances of the development and catchment.

This concludes my comments — James and I are happy to answer any questions the Panel may have.