BEFORE THE WAIKATO DISTRICT COUNCIL INDEPENDENT HEARINGS PANEL

IN THE MATER	of Proposed Variation 3, under clause 16A of Schedule 1 of the Resource Management Act 1991, to the Proposed District Plan Change
AND	
IN THE MATTER	of submissions by Pokeno West, West Pokeno, CSL Trust and Top End Properties Limited, at Munro and Helenslee Roads, Pokeno (the **Submitters**)

PRIMARY ENGINEERING EVIDENCE OF JIGNESH PATEL FOR THE SUBMITTERS

5 July 2023

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1. INTRODUCTION

1.1 My full name is Jigneshbhai Kishorbhai Patel. I am a principal at Maven Associates Limited (**"Maven"**).

1.2 This is a statement of evidence on behalf of the Submitters in relation to the Proposed Variation 3 (Enabling Housing Supply), to the Proposed Waikato District Plan ("**PDP**"), (the "**Variation**").

1.3 I hold a Bachelor of Engineering (BE specialising in Civil) Degree and am a Chartered Professional Engineer (CPEng). I have approximately 10 years' experience as a consulting Civil Engineer specialising in land development. I have been involved on large number of residential and commercial land development projects throughout Auckland. My experience consists of conducting the following activities:

- Earthworks and sediment control design.
- Roading pavement and geometric design.
- Stormwater design including network reticulation design, stormwater quality treatment and flood mitigation.
- Wastewater design including network reticulation networks.
- Water supply local network design.
- Contract administration.
- Construction observations.
- S224C Compliance.
- Project management duties (e.g. liaising with key stakeholders, managing budgets, resources, and deadlines; acquiring and compiling quotes, etc.)

1.4 I confirm that I have read the Expert Witness Code of Conduct set out in the Environment Court's Practice Note 2023. I have complied with the Code of Conduct in preparing this evidence and agree to comply with it while giving evidence. Except where I state that I am relying on the evidence of another person, this written evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed in this evidence.

1.5 I have read and reviewed the following:

(a) The s42A Report prepared by Fiona Hill, Karin Lepoutre and Bessie Clarke (the "**reporting planners**").

(b) Statements of evidence of council experts Andrew Boldero, Mat Telfer, Ms Huls, and Keith Martin.

(c) The submission made by Anna Noakes and MSBCA Fruhling Trustee's Company Limited.

2. SCOPE OF EVIDENCE

2.1 This statement of evidence addresses Civil Engineering matters in relation to proposed Variation 3 in relation to the submitters.

2.2 Specifically, I address the following:

(a) The evidence of the Waikato District Council ("**WDC**") experts on three-waters (Andrew Boldero, Mat Telfer, Keith Martin).

(b) Evaluating increased impacts on three-waters from implementation of Medium Density Residential Standards ("**MDRS**") above the PDP.

(c) Provide commentary on flood modelling undertaken by Te Miro Water.

(d) Provide comment on infilling in flood plains.

(e) Rebutting the submission made by Noakes and MSBCA Fruhling Trustee's Company Limited.

3. WDC EXPERTS ON THREE-WATERS

<u>Andrew Boldero – Stormwater and Flooding</u>

3.1 Andrew Boldero states his preference would be for Variation 3 to avoid development in the modelled high risk areas, and for a consent to be required for development or subdivisions in all other areas within the flood plain and/or overland flow paths. He understands however, that changes to existing plan rules, along with amendments, cannot be achieved through this process, so has recommended a plan change is undertaken along with the above recommended changes to the Variation 3 rules. In the alternative, if Variation

3 is to be accepted without his recommendations, he supports the provisions proposed by Ms Huls and Ms Hill.

3.2 Andrew Boldero recommends that Council consider the following outside of Variation 3:

(a) Regular updates to the flood hazard maps (ideally without having to undertake a plan change) would be advantageous as this would enable the maps to be updated when new data (LIDAR, hydrological, climate change, routing/network) is available;

(b) As set out in his report, whether additional amendments are required to give effect to 'Te Ture Whaimana' and 'Te Mana o te Wai' and how the principles of these will be implemented through urban development (specifically the restoration of water quality in the receiving environment, including the Waikato and Waipā rivers and their tributaries).

(c) Depending on the outcome of the PDP appeals process, better alignment between the PDP with the Council's Stormwater Discharge Consent conditions and to reduce ambiguity and make the rules easier to understand and comply with.

3.3 I agree with Mr Boldero, that it is not appropriate for development to be located within a high risk flood hazard areas, and a consent should to be required for development or subdivisions in all other areas within the flood plain and/or overland flow paths. However, changes to existing plan rules, along with amendments, cannot be achieved through this process and therefore if Variation 3 is to be accepted without Andrew's recommendations, I also support the provisions proposed by Ms Huls and the reporting planners.

<u>Mat Telfer - Watercare</u>

3.4 Mat Telfer recommends the following:

(a) Council consider alternative options to create a new control point within the building consent process to ensure three water services are not compromised. Under the current PDP provisions, the development of permitted residential units without an associated subdivision

consent could result in a large number of developments that have not been assessed for mitigation on the three waters infrastructure.

(b) Council consider a permitted activity rule requiring multiple dwellings constructed on a single site to be serviced as if the site was being subdivided to create separate titles for each serviced building.

3.5 I agree with the abovementioned considerations raised by Mat Telfer.

Keith Martin – Infrastructure Overview

3.6 Keith Martin's states his primary concern with the incorporation of the MDRS through Variation 3 is our inability to know where within the towns medium density development will occur. While the Council's main trunk networks have been planned for based on overall growth (which is not expected to change), the local networks are likely to experience capacity problems if medium density development occurs in an ad hoc manner or concentrates in certain areas.

3.7 For water and wastewater, Keith Martin states the recommended approach is to tighten internal processes around approved connections to the Council' networks, particularly at the building consent stage, to ensure the Council can manage capacity and avoid adverse effects associated with over.

3.8 I agree with concerns and recommendations by Keith Martin.

4. IMPACTS ON THREE-WATERS OF MDRZ 2

Stormwater:

4.1 The MDRS in V3 include the following standards that can impact on stormwater:

(a) Maximum building coverage of 50%. Building coverage in the existing General residential zone ("GRZ") is limited to a maximum of 40%.

(b) Up to three units per site.

(c) No minimum lot size for subdivision undertaken with the development of three units.

(d) Both the GRZ (S13) and MRZ2 (S10) limit impervious area coverage to 70%.

4.2 The existing stormwater management provisions set out by the PDP provides acceptable means of mitigating adverse effects arising from development. It is my opinion that the existing provisions are also an acceptable means of mitigating the adverse effects arising from Variation 3 MDRS standards mentioned above.

4.3 PDP provisions require stormwater drainage and flood management to retain pre-development hydrological conditions and does not increase the flow of stormwater runoff onto adjoining properties adjacent land or flood plains, or reduce storage capacity on-site. PDP provisions also require stormwater treatment shall address water quality; downstream erosion and scour effects; and cumulative volume effects. Future developments can implement stormwater management approaches to achieve the requirements of the existing PDP provisions for the proposed MDRS standards.

Wastewater & Water Supply

4.4 As stated by Mathew Telfer, the risk associated with Variation 3 is the ability to construct up to three residential units without undertaking a subdivision at the same time and not triggering a consent application due to the permitted activity status.

4.5 To address this matter, changes to the council's building consents processes are suggested. This could include a requirement to have an approved capacity assessment included with any building consent applied for under Variation 3. This would require the applicant to seek approval to connect prior to applying for building consent. This would mean a capacity and mitigation assessment is completed on the impact of a development to the existing three waters infrastructure.

4.6 I understand that counsel for the Submitters and their planner will comment further on this mechanism.

5. TE MIRO WATER FLOOD MODELLING

5.1 Te Miro Water has undertaken flood analysis to consider the effects of the proposed Variation 3. Flood Hazard maps have been generated to show flood depth, high risk flood areas and zones. As the extent and nature of flood hazards change from the current zoning, the flood hazard maps should be adopted for Variation 3 and continuously updated and implemented.

5.2 Recommendations provided by Te Miro Water should be implemented where possible.

6. INFILLING IN FLOODPLAINS

6.1 As outlined by Mr Boldero, the main contributing factor to adverse stormwater effects is the increase of infilling in the flood plain and overland flow paths from the increase in building footprints. Infilling within the flood plain and/or overland flow paths will offset available flood storage which increases flooding levels and extent (therefore increasing flood risk).

6.2 Infilling of flood plains and overland flow paths results in cumulative effects as there may only be a small impact if one lot infills within the flood plain, however when multiplied over large urban areas, the results become significant.

6.3 Allowing three units per site encourages the use of the maximum allowable building coverage of a site (50%) and impervious surface area (70%). If a site is located within a flood plain or contains an overland flow path, infilling for construction for three units could have adverse effects through increased flood levels and increased flood extent.

6.4 I support the provisions proposed by Ms Huls and Ms Hill which will limit and appropriately address the infill of floodplains. Ms Huls and Ms Hill propose the amendments as part of Variation 3 to assist with stormwater and flood hazard management.

6.5 For green field sites, including the Submitters land, flood plain management can be addressed in a comprehensive manner at the time of subdivision consent application.

7. SUBMITTERS LAND AND EFFECTS OF GRZ VERSES MDRZ 2

1.1 Maven have previously assessed the 3 Waters effects and infrastructure demands of GRZ, and the Submitters Concept Plan relief which included some higher density development, for the PDP Hearings. This evidence was based on a yield of approximately 1400 dwellings for Pokeno West and 400 lots/houses for the CSL Trust / Top End properties site. This equated to 1800 total dwellings.

7.1 We concluded that the GRZ/Submitter relief was appropriate on the sites from a civil engineering perspective. Infrastructure servicing could be provided and significant adverse effects of stormwater could be avoided, remedied and mitigated.

7.2 Copies of the previous Reports and Expert Evidence can be provided to the Panel if of assistance.

1.2 For this evidence we have considered the additional capacity of housing that may be enabled by MDRZ 2 as proposed. For the additional housing I refer to the evidence of Mr Thompson and Mr Oakely. In summary, Urban Economics has estimated that Variation 3, if MDRZ 2 is applied over the existing residential zoned land, will practically yield approximately 2205 lots[1]. This is an increase of over 400 dwellings, or about 23% more, than previously assessed.

7.3 I agree with Mr Boldero that increasing the number of dwellings and the MDRZ 2 rules, mean that there could be more coverage and less permeable surfaces with the change in zoning.

7.4 However, as this will be a greenfield development scenario, I consider that there are adequate controls to achieve acceptable stormwater management outcomes in terms of both volume and quality. This includes compliance with the higher order regulatory requirements, and alignment with Te Ture Whaimana and Te Mana o te Wai.

7.5 I also agree with Mr Boldero that intensification of existing areas to provide for MDRZ 2 capacity is generally more problematic for properly managing stormwater risks and quality. There is less physical space available for

[1] Urban Economics report “Assessment of Economics Costs and Benefits”

technical solutions and they are generally fragmented, and less effective, than comprehensive and integrated large scale options that are available for greenfield development.

7.6 It is noted that there is a suggestion by the Council that there should be large lots of 450m2 further from the town centre, and this affects the Submitters land. From a stormwater, and 3 waters infrastructure servicing perspective, there is no need for this restriction, and MDRZ 2 for the entirety of the Submitters land is appropriate.

8. NOAKES AND FRUHLING TRUST RESPONSE

8.1 I have read the evidence of Anna Noakes and MSBCA Fruhling Trustee's Company Limited (as trustees of the Fruhling Trust) c/- Beresford Law, which seeks that if the Variation is approved then:

(a) The proposal not to allow further intensification of residential land at Pōkeno to address qualifying matters.

(b) The Variation be amended to address the concerns in this submission relating to the adverse stormwater effects of more intense urban development.

(c) In particular, the Submitters seek that the stormwater management provisions in the PDP address the adverse stormwater effects of more intense development in terms of altered natural flow paths, and altered the hydrological conditions, including the volume, frequency and duration of discharges and the extent of inundation on downstream properties.

(d) Consequential amendments to other parts of the PDP to address the matters outlined above.

8.2 Anna Noakes and MSBCA Fruhling Trustee's Company Ltd’s requests to include specific provisions to address specific hydrological conditions, which include volume, frequency and duration of discharge and extent of inundation on downstream properties. I disagree with this request as it may not be practically achievable for future developments to implement stormwater management which achieves all of these specific provisions.

8.3 In general terms, the current stormwater provisions in the PDP require:

(a) Retains pre-development hydrological conditions as far as practicable; and

(b) Does not increase the flow of stormwater runoff onto adjoining properties adjacent land or flood plains or reduce storage capacity on-site.

8.4 It is my opinion the current stormwater provisions set out in PDP for Variation 3 are in accordance with standard engineering practice to mitigate adverse stormwater effects. The current provisions ensure the stormwater pre-development hydrological conditions are maintained where practical and peak discharge flow rate from future developments will be limited to pre-development peak discharge flow rate and be gradually released over a length time.

8.5 Furthermore, as addressed in the evidence of Mr Boldero (par 23), for Pokeno West, post development flows have to be 70% of pre-development flows. This is to help mitigate downstream existing flooding risks to established development and in that regard is a “public benefit”. Therefore, contrary to the position put in the Noakes submission, the flood risk will most likely be reduced from the current levels if the land is rezoned MDRZ 2, and redeveloped, as per the Catchment Management Plan, regulatory provisions and stormwater management best practice.

Jigneshbhai Kishorbhai Patel
BE(Hons), CMEngNZ, CPEng

05 July 2023