BEFORE AN INDEPENDENT HEARINGS PANEL

THE PROPOSED WAIKATO DISTRICT PLAN

IN THE MATTER OF the Resource Management Act 1991 (**RMA**)

IN THE MATTER OF hearing submissions and further submissions on Variation 3 Enabling Housing Intensification to the Proposed Waikato District Plan

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EVIDENCE OF RYAN JAMES PITKETHLEY ON BEHALF OF HAVELOCK VILLAGE LIMITED [Submitter 105] FOR SUBSTANTIVE HEARING

CIVIL ENGINEERING AND STORMWATER

4 July 2023

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1. EXECUTIVE SUMMARY

1.1 My full name is Ryan James Pitkethley. I am a Senior Civil Engineer, Director and Engineering Manager at CivilPlan Consultants Limited. I am providing evidence on behalf of Havelock Village Limited (**HVL**) with a particular focus on its Havelock site.

1.2 My statement of evidence relates to three waters and potential development yields at Havelock. I have provided an overview of three waters capacities and constraints, and potential practical yields on the Havelock site based on access, earthworks and terrain.

1.3 As part of my evidence for the Proposed District Plan Hearing I estimated the potential yield for the Site to be approximately 600 lots. This included the area above RL100 that has not yet been rezoned to residential land.

1.4 I have completed further layout exercises for the area below RL100 that is zoned as residential land and I am confident that applying General Residential Zone (**GRZ**) zoning, with lot sizes of 450-600m^2, will yield just over approximately 300 lots.

1.5 Applying the Medium Density Residential Standards (**MDRS**) / Medium density residential Zone 2 (**MDRZ2**), but with lot sizes of 250-300m^2, will not double the number of lots estimated above, given the sloped terrain and space requirements for walls and driveway accesses. My estimate is that MDRS will practically yield just over approximately 500 lots in the part of the Site below RL100.

1.6 For both density options, this will require a holistic approach to earthworks and retaining walls across the land holdings, along with considered house accesses and layouts, stepped split levels and foundations to suit the terrain (to be completed by lot and house owners).

1.7 I have reviewed the Council's evidence and technical papers in relation to potential stormwater issues arising from application of the MDRZ2. I agree with some of those issues as they relate to brown fields land.

However, I do not consider they apply to greenfields land such as Havelock.

1.8 The stormwater management philosophy at Havelock is to address both runoff quality and quantity at the time of subdivision and development. A key principle of the stormwater design is to attenuate post development peak flows up to and including the 1% AEP to 80% of pre-development peak flows. As such the existing downstream network can remain as the status quo without need for upgrades.

1.9 As Havelock is a greenfields site, space is available to design coordinated communal devices offline to streams and floodplains. Therefore, there is no requirement to allow for space on lots for significant flow paths and the expected level of development in the MDRZ2 is technically possible from a stormwater perspective.

1.10 Greenfields development usually involves a comprehensive subdivision and staged development. A full stormwater assessment would be required to gain resource consents and engineering plan approvals. A site-specific stormwater management plan would be written and be based on low impact design and stormwater management devices located in series as a treatment train, as required by the Waikato Stormwater Management Guidelines, Waikato Regional Plan and Waikato District Council requirements. This would also include specific device and catchment hydrological and hydraulic modelling to ensure the proposal meets those requirements and industry best practice. This will ensure that stormwater effects are fully managed.

1.11 Watercare have made allowances in their long term planning for HVL's water and wastewater demands for a population of 2,800 people or over approximately 1,000 dwellings from the Site, well above the expected yield of 500 dwellings.

2. INTRODUCTION

2.1 My full name is Ryan James Pitkethley. I am a Senior Civil Engineer, Director and Engineering Manager at CivilPlan Consultants Limited.

2.2 I am providing evidence in relation to the submission and further submissions by HVL. In this evidence I comment on utilities, three

waters, roading and earthworks design and upgrades required to support the development and proposed rezoning sought by HVL.

2.3 I hold a BE (Civil, Hons) and since 2008 I have been a Chartered Professional Engineer (CPEng) and a Chartered Member of Engineering NZ (CMEngNZ). My work experience includes project managing and working on multi-disciplinary infrastructure and land development projects, working alongside client, local authority, and contractor organisations. I have experience in the planning, design, co-ordination, and implementation of projects involving earthworks, erosion and sediment control, roading, three waters, and utilities infrastructure associated with land development.

2.4 I have been employed by CivilPlan Consultants Limited since February 2015. I hold the position of Engineering Manager and Director at the office based in Manukau, Auckland.

2.5 My previous involvement in the Site includes:

(a) Advising on infrastructure development and design at the Site since 2018.

(b) Providing expert witness evidence regarding utilities, three waters, roading and earthworks design and upgrades required to support the development and proposed rezoning sought by HVL as part of the Proposed Waikato District Plan hearings. This evidence also explained infrastructure concepts and constraints as it specifically relates to the Site and the ability of it to be serviced.

2.6 My previous experience includes the following relevant projects:

(a) Providing land development and infrastructure evidence, including preparation of a Stormwater Management Plan, to support the rezoning of approximately 50ha of Clarks Beach Special Housing Area from rural to urban and obtaining Stormwater Discharge Consents.

(b) Large scale residential land development known as Riverside Grove, Escotts Road, Tuakau. This involved design to gain

resource consent and engineering plan approval and managing the implementation through to titles.

(c) Large scale residential development of more than 380 lots at Pokeno including the preparation of Stormwater Management Plans (forming the basis of Stormwater Discharge Consents) for various stormwater catchments in Pokeno.

(d) Providing land development and infrastructure services, including preparation of a Stormwater Management Plan, to support the rezoning of approximately 36ha of land known as the "Graham Block" from rural to urban (approximately 150 lots) and obtaining Stormwater Discharge Consents.

Expert Witness Code of Conduct

2.7 Although this is a Council hearing, I confirm I have read the Code of Conduct for Expert Witnesses, contained in the Environment Court Consolidated Practice Note (2023) and I agree to comply with it. I can confirm that the issues addressed in this statement are within my area of expertise and that in preparing my evidence I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

3. SCOPE OF EVIDENCE

3.1 My evidence addresses these matters:

(a) Three waters required to support the development and proposed rezoning sought by HVL.

(b) Potential yields from development at Havelock assuming the MDRZ2 is applied, but not the proposed minimum lot size of 450m^2.

(c) Response to the Section 42A Report[1] and Council evidence relating to stormwater.

[1] Section 42A Report: Report on submissions and further submissions, Variation 3 to the Proposed Waikato District Plan, Enabling Housing Supply, Version 2, dated 15 June 2023 (uploaded on 19 June 2023).

3.2 My evidence relies on and should be read in conjunction with my primary and rebuttal evidence regarding civil infrastructure and stormwater on behalf of HVL, for submission on the Proposed Waikato District Plan Topic 25 Zone Extents, submitted on 17 February 2021 (primary), 3 May 2021 (rebuttal), and 1 July 2021 (hearing statement).

3.3 In preparing this evidence I have reviewed the following information:

(a) Stormwater and flooding evidence of Andrew Boldero, dated 20 June 2023.

(b) Variation 3 Technical Review completed by Te Miro on behalf of Waikato District Council (version 1.2), dated 6 June 2023).

(c) Three waters infrastructure and flooding evidence of Katja Huls, dated 20 June 2023.

4. PREVIOUS ASSESSMENTS

4.1 My evidence for the Proposed Waikato District Plan (**PWDP**) hearing outlined my assessment that all servicing required for the Site, including in relation to the three waters and access, can be delivered. This will be provided at HVL's cost. The conclusions of my previous evidence regarding roading, water, wastewater and stormwater are as follows:

Stormwater

4.2 The stormwater management philosophy is to address both runoff quality and quantity at the time of subdivision and development. A key principle of the stormwater design for Havelock is to attenuate post development peak flows up to and including the 1% AEP to 80% of pre development peak flows.

4.3 This assessment would be required to gain resource consents and engineering plan approvals. A site-specific stormwater management plan would be written and be based on low impact design and stormwater management devices located in series as a treatment train, as required by the Waikato Stormwater Management Guidelines, Waikato Regional Plan and Waikato District Council requirements. This would also include specific device and catchment hydrological and

hydraulic modelling to ensure the proposal meets those requirements and industry best practice.

4.4 Site runoff from lots and roads would be treated and attenuated prior to discharging into planted gullies and streams on the Site. No off-site treatment or attenuation will be required.

4.5 My rebuttal evidence[2] in paragraphs 3.20 and 3.21 explained that the landform, infrastructure, roading and channels currently on Site allow for the safe conveyance of 1% AEP overland flows from the Site through to the Tanitewhiora Stream. This is shown on drawings 2020-08-SK05-1 and 2 and conveyed as follows:

(a) Cut off channels running within Yashili's, Synlait's and Hynd's properties which directs water to McDonald Road, Pipeline A, and then to the Tanitewhiora Stream.

(b) Water passing via McDonald Road itself to the sag to the east of the McDonald Road roundabout, which then flows into Pipeline A.

(c) This existing network can remain as the status quo regardless of whether the Site is developed without exacerbating flooding downstream. The lack of some completed infrastructure (ie Pipeline A) is not necessary to be in place for the Site to be developed, although in my opinion should be in place as soon as possible to honour the original developer's agreement.

Water and Wastewater

4.6 The Section 42A Report, Hearing 25: Zone Extents,[3] confirmed that Watercare can provide for the main infrastructure for wastewater and water supply (including for future capacity to accommodate Havelock), and that developers are to undertake extensions of this infrastructure to their site. In my experience this is typical practice for standard land development projects.

[2] Rebuttal Evidence of Ryan Pitkethley, dated 3 May 2021.
[3] Section 42A Report on Hearing 25: Zone Extents Pokeno, dated 14 April 2021.

4.7 The wastewater strategy is to discharge flows to new local pump stations which will discharge to the Hitchen Road Pump Station. From there the network pumps via Tuakau to the Pukekohe Waste Water Treatment Plant.

4.8 Water supply will come from the Pokeno town reservoir situated directly adjacent to the Site, with booster pumps and pressure reducing valves as required to suit the terrain.

5. HAVELOCK SITE

5.1 In its original submission, HVL sought that the Urban Fringe Qualifying Matter was deleted from Variation 3 (**V3**) and the appropriate incorporation of the MDRS in the PWDP. The Hearing Panel subsequently gave guidance that the urban fringe did not meet the necessary statutory tests for a qualifying matter.

5.2 Mr Tollemache's evidence outlines HVL's involvement in the hearing process for V3. Following guidance from the Hearing Panel that the Urban Fringe Qualifying Matter did not meet the necessary statutory tests for a qualifying matter, HVL developed a proposal that implements the Waikato District Council's MDRZ2 on the Site. That proposal involves the following aspects within my area of expertise:

Indictive Site yield with MDRS applied

5.3 I previously estimated a yield of 600 lots for the Site at the PWDP hearings, including the land above RL100 and the Rural Lifestyle Zone (55 lots).

5.4 I have undertaken further layout exercises as part of resolving the appeals and preparing for this hearing and I am confident that by applying the GRZ zoning in the PWDP, lot sizes of 450-600m^2 will yield approximately 300 lots on the Site. This task was done as part of resolution of the Environment Court appeals.

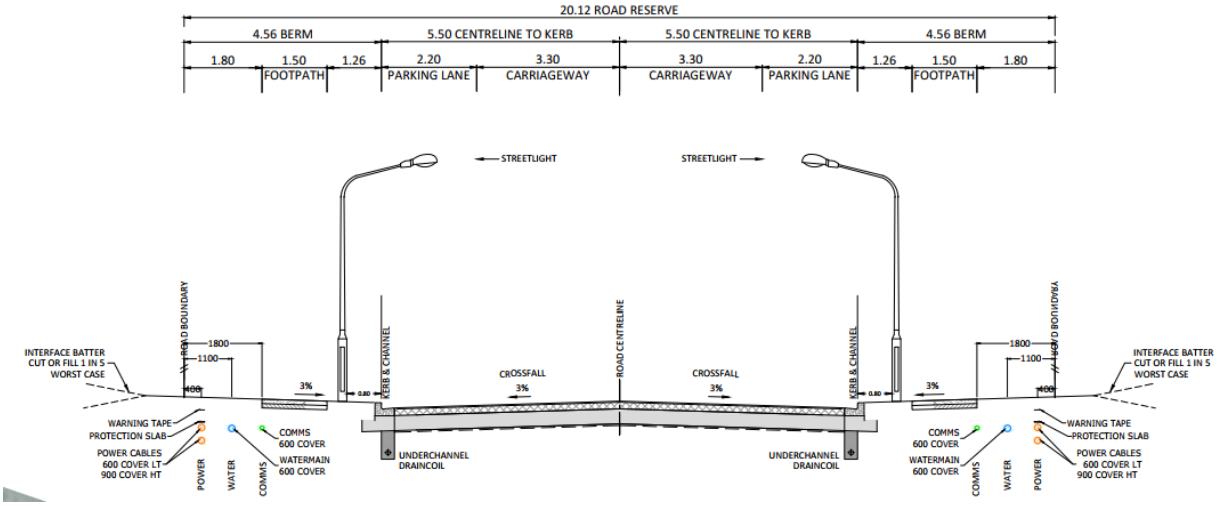
5.5 Applying MDRZ2 with lot sizes of 250-300m^2 will not double the number of lots estimated above, given the sloped terrain at the Site and space requirements for walls and driveway accesses. My estimate is that applying MDRZ2 will yield just over approximately 500 lots/houses on

the land currently zoned as residential (excluding the Slope Residential Overlay), in a higher yield scenario. A more modest or conservative layout would result in fewer lots. As a result, 500 lots represent a worst case scenario.

5.6 For both density options, this will require a holistic approach to earthworks and retaining walls across the land holdings, along with considered house accesses and layouts, stepped split levels and foundations to suit the terrain (to be completed by lot and house owners).

Stormwater

5.7 In the context of the rezoning from GRZ and MDRZ2, the maximum allowable impervious area on site will remain unchanged at 70% (impervious percentages are 70% in the GRZ (rule GRZ-S13) and 70% in the MDRZ2 (rule MDRZ2-S10)). Therefore, lot sizes and number of lots have no impact on stormwater runoff from the land, as the maximum impervious area expressed as a percentage remains the same and the minimum lot size is not relevant in a greenfields scenario. Roads are also no more than 70% impervious, the below typical cross section shows 70% impervious area (=13.0/20.12=69.5%).



Water and Wastewater

5.8 My primary evidence[4] outlined my assessment that all servicing required for the Site, including in relation to the three waters and access to the Site, can be delivered. This will be provided at HVL's cost.

5.9 Watercare has been consulted over the past years and have made allowances in their long-term planning for HVL's water and wastewater demands. The WDC Pokeno Water Network Model Masterplan Update Report (February 2020) confirms that allowances have been made for a population of 2,800 people from the Site (noted in the report as areas 'Tata A to F').

5.10 Applying 2.7 people per dwelling in accordance with the Regional Infrastructure Technical Specifications, Table 5-3,[5] this means an allowance of over approximately 1,000 dwellings can be catered for on the Site, well above the expected yield. Refer to Tables 1 and 2 in my primary evidence[6] (shown below for ease of reference).

Sub-catchment	2018 Population	2022 Population	2026 Population	2030 Population	2034 Population
Tata-A-to-F	0	0	560	1960	2800
Tata-G	0	1016	2814	4014	4112
Tata-Valley-(total)	0	1016	3374	5974	6912

Table 1: Summary of Pokeno Population Projections (additional information to split Tata-A-F from Tata-G, extract from Table 2 of "Pokeno W&WW Planning – Technical memo – Growth: Population and Flows" by GHD, dated 16 October 2018)

[4] Primary Evidence of Ryan Pitkethley, dated 17 February 2021.
[5] Regional Infrastructure Technical Specifications, Table 5-3: Population Equivalent, dated May 2018.
[6] Primary Evidence of Ryan Pitkethley, dated 17 February 2021.

Future Growth Area	2019 cumulative new dwellings	2025 cumulative new dwellings	2035 cumulative new dwellings	2045 cumulative new dwellings
Tata - A	0	27	27	27
Tata - B	0	310	310	310
Tata - C	0	147	294	294
Tata - D	0	0	123	123
Tata - E	0	0	147	147
Tata - F	0	25	294	294
TOTAL	0	509	1195	1195

Table 2: Summary of Timing and Scale of Future Growth (extract from Table 1 of "Pokeno Water Network Model Masterplan Update" by GHD, dated February 2020)

6. RESPONSE TO SECTION 42A REPORT AND COUNCIL EXPERTS

6.1 Although it is not directly stated in the Section 42A Report I understand that the proposed 450m^2 minimum lot size for the MDRZ2 may be based on potential stormwater constraints. For the reasons I have outlined below I do not consider that these concerns are relevant for greenfields development. A lower minimum lot size, with appropriate matters of assessment is appropriate.

6.2 I have reviewed the V3 Technical Review completed by Te Miro on behalf of Waikato District Council (version 1.2 dated 6 June 2023) (**Te Miro Report**). I agree with the mapping and that Havelock is not subject to any high-risk flooding areas but is subject to low – medium flood risk areas along the streams. This is consistent with the proposed approach for Havelock, outlined in my evidence for the PWDP,[7] to build all stormwater management devices offline and away from these areas.

6.3 Much of the Te Miro Report commented on potential issues with low lying existing development in Pokeno brownfield areas, sitting within the flood plains. As the Site is a greenfields site, and outside of the high risk modelled areas, it can be designed to address all potential stormwater matters by creating room as required for devices to mitigate in accordance with standard resource consent application criteria.

[7] As above.

6.4 I agree with Mr Boldero's statement in his evidence at paragraph 13,[8] where he states that "*outside of the flood plain and overland flow paths, increased intensification will have a limited effect on stormwater (flooding and water quality)".* Most of the Site falls within this definition and therefore is suitable for development.

6.5 The incised nature of the streams on the Site means small flood width extents, and little effect on the proposed lots adjacent to the streams. In addition, the minimum required building and lot boundary offsets from the stream centrelines will give space for riparian and restorative planting, shading and exfiltration.

6.6 The summary tables in the Te Miro Report, chapter 6 and 9, outline a number of main concerns which I have outlined below and I provide my response and the application to the Site.

Increase in building coverage from 40% to 50% has potential to reduce flood storage in the catchment, remove overland flow paths, and affect water quality

6.7 I agree that this is potentially an issue in brown fields areas where flood plains are already identified in their report. However, through the standard resource consent approval process for land use and/or subdivision consents, any greenfield proposals under MDRZ2 will be able to be reviewed by Council experts to ensure that flood storage, overland flow paths and water quality are not adversely affected, especially for the results of Te Miro's latest rapid flood modelling and newly identified flood extents. The Site has the benefit of being a large greenfields development with one owner, with the opportunity to design around all stormwater issues by creating room as required for devices to mitigate and treat water to Council accepted standards, as per standard resource consent application criteria.

6.8 As Havelock is a greenfields site, space is available to design coordinated communal devices offline to streams and floodplains. Sheet flow will flow off house sites onto the roads and then treatment and attenuation devices located at the road sags. These devices will then

[8] Evidence of Andrew Boldero, 20 June 2023, paragraph 13.

discharge up to the 1% AEP attenuated to 80% of pre-development peak flow via specifically designed outlet controls.

6.9 Therefore, there is no requirement to allow for space on lots for significant flow paths and the level of development expected in the MDRZ2 is technically possible from a stormwater perspective on greenfields sites.

The rule changes will encourage more developments to utilise the max allowable impervious area of 70%, although the impervious % rule hasn't changed

6.10 I agree that this could be an outcome. However, for the same reasons as above, for greenfields development, design and approvals in accordance with the Council standards will ensure that development up to the 70% impervious area will not adversely affect the catchment. Havelock is a large greenfields development with one owner, so is easier to get this right from the outset.

Downstream network is undersized and new development needs to confirm that the network has capacity to accept flows from site

6.11 My previous evidence and the paragraph 4.5 above have gone into detail showing that discharges from the Site can be passed on through existing networks as the proposal is to attenuate to 80% of pre-development flows up to and including the 1% AEP event.

6.12 There are two other matters from the Section 42A Report that I wish to comment on.

6.13 Topic 6.3 Natural Hazards, paragraphs 488-489 discuss potential amendments to address potential stormwater effects. I agree with Waikato Regional Council's submission and Council recommendation that a matter of discretion be included to SUB-R153 related to stormwater management, as assessing subdivision proposals for appropriate stormwater outcomes contributes to the management of flood risk and to good stormwater outcomes. This is consistent with my evidence above.

6.14 Topic 7.2 Infrastructure Capacity (stormwater), paragraph 677 – 678 also discuss potential stormwater management. I agree that retention and detention are some of the elements of good stormwater management and low impact design (as set out in the Waikato Regional Stormwater Management Guidelines). This is consistent with my evidence above.

7. CONCLUSION

7.1 Based on my previous evidence and technical memos, the Waikato District Council Water Report, GHD technical memos for water and wastewater, the Te Miro Report, and this evidence, I consider that the likely level of development at Havelock can be appropriately supported by the existing and upgraded infrastructure (as I have detailed above). The infrastructure will provide appropriate levels of serviceability to the proposed development through utilities provision, three waters, roading alignments and grades, and the earthworks required to facilitate these.

Ryan Pitkethley
4 July 2023