Tabled
23/7

BEFORE THE NEW PLYMOUTH DISTRICT COUNCIL

INDEPENDENT HEARING COMMISSIONERS

IN THE MATTER the Resource Management Act

AND

IN THE MATTER of a request for Private Plan Change NPDC PLC18/00048

by Oakura Farm Park Limited to rezone land at Oakura within the New Plymouth District

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SUMMARY STATEMENT OF EVIDENCE OF ANDREW DESMOND LOVAT FRASER ON BEHALF OF OAKURA FARM PARK LIMITED - PRESENTED BY KIM JANSEN

Introduction

1. My name is Kim Jansen, Senior Civil Engineer NZCE (Civil), GIPENZ.

2. I am an employee of Red Jacket Engineering Services.
   I have 22 years' experience in Civil and Environmental Engineering with the last 15 years in Taranaki. The majority of my work experience has been working for District and Regional Councils in the areas of civil engineering project management, roading, hydraulics and hydrology.

3. I have been responsible for the site investigations and civil engineering suitability assessment for this project and am very familiar with the subject site through all of my site visits.

4. I am presenting this evidence on behalf of the company principal Andrew Fraser, who is absent on leave from New Plymouth this week.

5. This document includes responses to the evidence of others who have commented on the Andrew Fraser Statement of Evidence (AFSE).

Stormwater

6. Red Jacket has carried out stormwater calculations to the design requirements of both New Plymouth District Council (NPDC) and Taranaki Regional Council (TRC). This requires the culvert passing an ARI of 10 years, being a 1 in 10-year storm without heading up and an ARI of 100 years; being a 1 in 100-year storm with heading up to 0.5 m below the crown of the road or adjacent building floor levels.
   The evidence of Matthew Peacock (MP) infers that this is not the case.[1]

7. Red Jacket have used rainfall intensities respectively of ARI of 10yrs of 60 mm/hr, and ARI of 100yrs of 101 mm/hr. These intensities are greater than stated in MP's evidence[2] and were the relevant intensities utilising Hirds V3 the rainfall intensity database at time of the Report.

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[1] Evidence – Matthew Peacock – pg 6- para 8.3
[2] Evidence – Matthew Peacock – pg 9- para 8.29

8. We note that NPDC now requires design rainfall intensities using HIRDS V4 RCP 6.0 2081-2100, not RCP 2.6 stated in MP's evidence.[3]

9. MP's evidence states[4] that the AFSE indicates that bunding up to 3 metres high above the existing ground surface will be required to form the detention ponds. Para 25 of the AFSE evidence states " Pond bunds up to 3 metres high are nominated for stormwater retention, however it is not considered that this depth of inundation will occur".
   The bunds are planned to be in the tributary channels and are only at the downstream end of the proposed pond areas, and essentially will be piped dams. Bunding of the channel sides is not planned or necessary.

10. MP's evidence Chapter 8.7 states that detention ponds do not have a secondary flow path and should be designed to a 1% AEP, being a 1 in 100 year storm which MP calculates as requiring 5021 m^3 storage.

11. The overall storage available is greater than 12,000 m^3 as shown in Appendix IV of the Red Jacket Engineering Feasibility Report included in the Request[5] and the storage required for a 1% AEP storm is 8,540 m^3 based on the rainfall intensities used by Red Jacket.

12. The detention ponds will be designed with a secondary flow path over the bund where any overflow which may occur will be able to re-enter the natural stream channel without escaping to adjacent areas of residential development.

13. The majority of the proposed subdivision development including road formations fall within the 23-hectare area to be managed through detention ponds.
    We note that this addresses the related matter raised in the Traffic Conferencing Joint Statement.[6]

14. Onsite stormwater disposal of roof and paved areas immediately to the east of the unnamed tributary will ensure increased flow contributing to flooding at 100 Wairau Road will be mitigated contrary to the assertions of MP.[7]

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[3] Evidence – Matthew Peacock – pg 9- para 8.29
[4] Evidence – Matthew Peacock – pg 6- para 8.4
[5] Request PLC18/00048 – pg 82/112 – Appendix 8 – Civil Engineering Assessment
[6] Expert Joint Conferencing Witness Statement – Traffic Effects – pg.16 para 22
[7] Evidence – Matthew Peacock – pg 8- para 8.17

15. MP's evidence states[8] that "Stormwater design in the Red Jacket PPC48 application report only accounts for 23 ha of the proposed 58 ha development and that considering flooding issues in the downstream Shearer Reserve area, where the council owned waste water pump station is located, the remaining 35 ha of stormwater catchment area should be accounted for. If the stormwater is left to flow uncontrolled it may have negative downstream effects, in particular the Shearer Reserve Area."
    In response, the 35 ha in question includes the land planned to be zoned Rural E (25.3 ha), a corridor of residential land (3 ha) immediately west of the eastern unnamed tributary adjacent to Wairau Road which natural falls to the stream and part of Open Space C (7 Ha) as identified in Appendix 11.2 of Private Plan Change Report PLC18/00048 Oakura Farm Park Limited.
    The Rural E land will require to dispose of all stormwater onsite and will have a low percentage of impervious cover.
    The residential land will also require disposing of stormwater on site.
    There will be little increase in discharge to cause negative downstream effects.
    Therefore land outside of the 23 ha served by detention ponds will not contribute an increase in flows causing negative downstream effects.

16. I note that in respect of Stormwater matters, the NPDC Planner's Report concludes "Based on this technical advice, I am satisfied the stormwater issues associated with the plan change can be effectively managed."[9]

[8] Evidence – Matthew Peacock – pg 7- para 8.9
[9] NPDC s42A Report – pg. 30 para 13.27

POTABLE WATER

17. The main requirements for determining the potable water availability are:

    A. Providing an adequate Water Supply to all Lots, and

    B. Providing the Firefighting Water demands to FW3.

Water Supply Demand and Capacity

18. The Table shows the various demands and capacities from NPDC Engineers calculations for maximum lot yield for Oakura for the reported aquifer supply.

Item	Consideration	Cubic Metres per Day (m^3/day)	Litres per Second (l/s)	Comment
Oakura Daily Average Demand	10 Years Record	~~745~~ 743	9	NPDC Data 2009-2019
NPDC Supply 1279 Lots	Current Sustainable Aquifer Capacity	2,506	(29)	Boffa Miskell Report 2018 page 28
Proposed 1417 Lots	Estimated Demand	2,773	(32)	Includes West FUD
NPDC Supply	Estimated Capacity	(3,024)	35	single bore CH2M 2002 Report
Maximum 1699 Lots	Estimated Demand	3,325	39	Boffa Miskell Report 2018 based on page 28
NPDC WTP	Capacity	3,500	(40)	
NPDC Supply	Projected Capacity	(3,715)	43	2 bores CH2M 2002 Report
TRC	Resource Consent	3,715	43	From the Aquifer Based on 2 bores
NPDC Bores	Pump Capacity	3,840	44	Based on 2 bores

Table Note 1 - From the 2018 NPDC report we understand the aquifer abstraction rate is to be further quantified in 2 to 3 years or around 2020/2021.

Table Note 2 - Alternative water supply options outlined in the 2002 Report could still be considered in the future development in Oakura.

Water Storage

19. The existing storage capacity is 2,500 m^3 from the two Council reservoirs.

Three Waters Technical Commentary – Water – Reservoir Storage states NPDC's Standard for resilience and reserve for firefighting is 24 hours at average day demand or eight hours at peak day demand.

I conclude that, in time, a third reservoir would be required to service the maximum number of 1,699 lots.[10]

Fire Fighting Water

20. The water supply requirement for FW3 Classification is a total of 50 litres per second from 3 adjacent hydrants over a period of 60 minutes; Table 2 of SNZ PAS 4509:2008.

21. The upper end of the development area will have the least system pressure and a booster pump to facilitate firefighting requirements may need to be provided as was necessary at the adjoining 'The Paddocks' development in 2015.

22. The Three Waters Technical Commentary[11] comments at "Impact of Plan Change 48 – Reticulation Capacity' that Red Jacket Engineering Feasibility Report appears to overlook the need for the trunk water main to also supply the township and its fire demand.
This point has not been overlooked, and it is arguably outside the scope of the Plan Change, and may be mitigated by installing an additional trunk main looping supply through the Plan Change area and providing an alternative supply to the remainder of the Oakura township.

23. The Three Waters Technical Commentary provides information regarding bore water consent take limits, sustainable take amounts, maximum daily demand and reservoir storage. Based on this information the AFSE asserts in paras. 39 to 44 that at times a surplus may be taken from the aquifer while meeting actual demand.

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[10] NPDC s42A Report – pg. 38 para 13.16.
[11] NPDC s42A Report – Appx 7 – Part 1A pg. 4 penultimate para.

24. AFSE states in para. 45 that "additional storage may be pumped to during low demand periods". This could either be to an additional reservoir or trickle feed to tank supply on individual Lots.

25. Additional infrastructure for future development in Oakura may be funded by way of Development Contribution.

26. MP's evidence in para. 9.8 states that the only way to clearly establish firefighting capacity is to complete comprehensive flow testing and computer modelling. I believe this can be managed in a Resource Consent application stage rather than plan change stage because it is clear there should be adequate water available.

27. MP's evidence in para 9.9 states "any conclusions reached on the Oakura piped water supply system capacity are merely opinions based on assumptions and a small amount of flow data provided by NPDC. I have assessed that the five years of flow data provided by the NPDC is significant and also sufficient for making decisions on the available capacity.

28. MP's evidence states in para 9.10 that the OAB 200 bore is "not secure" and therefore cannot be used to supply potable water to Oakura. I understand this to be outdated information and that the Council will be able to confirm that water supply in Oakura is secure with two bores available.

Oakura Land Development Feasibility

29. MP's evidence states 'Access from any point along upper and lower Wairau Road across the Wairau Stream tributary is a significant undertaking involving earthworks, culverts and the formation of a 20 metre-wide road corridor...'[12]. AFSE Appendices II and III illustrate the difference in culvert size between access to the West FUD area and South FUD/PPC48 area.[13] The AFSE evidence states[14] that development of the West FUD area will require large culverts (2x 3.66m and 1x 2.14m) and has steep contour which will limit the economic viability to develop. By contrast culvert design diameter to access FUD South (the subject site) from Upper Wairau Rd is 1.05m.

30. MP's evidence states that 'Any residential land development west of the Wairau Stream tributary will require a stormwater management system, which will involve

[12] Evidence – Matthew Peacock – pg 12- para 10.3
[13] Evidence – Andrew Fraser – Appendices II & III
[14] Evidence – Andrew Fraser – pg.6 paras 32 & 33

significant earthworks...' '...but these will come at a significant expense to the developer and the environment.'[15] In response Red Jacket envisages earthworks will be limited to construction of dam-like bunds within the existing tributary natural channels downstream of the proposed impoundment areas which will be in the order of 550 m3/dam with the bund slopes being I vertical to 2 horizontal with a 3 metre wide crest. We do not consider this a significant earthwork activity and therefore not a significant development expense. The resulting bunds will bring a net benefit to the environment as they will provide the opportunity to re-establish and/or enhance the existing natural wetland/watercourse features.

31. With regard to the scale of the proposal, MP's evidence states in 'PPC48 has the potential to increase the number of residential lots in Oakura by 60%'.[16] We note from various Council documents including the Oakura Structure Plan 2006, and the FUD Areas identified in the Operative District Plan that Oakura township is an area that has bene identified by the council for urban expansion and the FUD South Area (within the subject site) is a portion of that. This forward-looking view is supported by the capacity existing within the water supply and waste-water infrastructure. As will be highlighted by others it is envisaged that the development of Wairau estate would be staged and occur over decades.

32. MP's evidence states 'In my experience disclaimers like this are typical for small scale residential land development proposals where the impact on the surrounding landscape and population are relatively minor, and the preliminary investigations that are carried out are suitable for Resource Consent application.[17] In Red Jackets experience preliminary feasibility studies always precede detailed designed in matters of land development. Red Jacket understands that the approach it has taken in assessing the suitability of the subject site (which incorporates FUD South) is no different to the approach taken by the Council in assessing FUD areas elsewhere in the District for rezoning.

33. This summary of evidence confirms the original assessment of the proposed subdivision delivered in the Red Jacket Engineering Feasibility report.

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[15] Evidence – Matthew Peacock – pg 12- para 10.4
[16] Evidence – Matthew Peacock – pg 13- para 11.1
[17] Evidence – Matthew Peacock – pg 13- para 11.5