

**PPC48: SUMMARY OF EVIDENCE OF MATTHEW DOUGLAS PEACOCK  
LAND DEVELOPMENT & SUBDIVISION INFRASTRUCTURE ENGINEERING**

1. My name is Matt Peacock I am a consultant civil and structural engineer and have been involved with this project since early 2018. I have been involved with land development and infrastructure engineering for the past 15 years in the Taranaki Region.
  
2. I consider that I have a good understanding of Oakura as I live in the area and experience the environmental effects ranging between peak to off peak times not just that of a couple site visits typically involved in preliminary assessments of projects.
  
3. My statement of evidence addresses the engineering matters which relate to the land development and infrastructure engineering of the PPC48 application. Specifically the assessment of Stormwater, Potable Water and Firefighting water supply and Oākura Land Development Feasibility.
  
4. I have undertaken a review of the Oakura Farm Park PPC48 application specifically the Red Jacket Feasibility report and Andy Frazer's statement of evidence. I have also undertaken a review of the Oākura West FUD area land development potential to assess the general level of feasibility between the south and west FUD areas.
  
5. In summary, based on my engineering experience with other land development and infrastructure projects, my assessment of the proposed subdivision associated with PPC48 is as follows.
  
6. PPC48 has the potential to increase the number of residential lots in Oākura by 60%. This is a significant change within a relatively small community and when compared to other residential developments in the New Plymouth region it dwarfs them with respect to population percentage increase.

### **PPC48 Application review**

7. Proposed PPC48 application contains a report by Red Jacket Engineers titled '*Feasibility Report on the proposed subdivision of lot 29 DP 497629 Wairau Road Oākura*'.
8. The report covers assessments of geotechnical, building platforms, water supply, stormwater, wastewater and roading; all of which have been assessed only for feasibility purposes.
9. The Red Jacket PPC48 report clearly states '*it should be noted that this is a preliminary feasibility study and further assessment and engineering design will be required, as is usual practice in land development, throughout the development process*'.
10. 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 a Resource Consent application.

### **Stormwater Review**

11. The existing stormwater network in areas through Oākura is not suitable to carry the current rainwater flow down to the sea during high intensity storm events and ponding occurs in various locations in Oākura.
12. NZS4404 standard for Land Development and subdivision infrastructure states that for larger catchments or where ponds are incorporated in a development surface water run-off should be determined using a computer analysis hydraulic model.
13. The council owned wastewater pump station located in Shearer Reserve is within a flood zone. Stormwater has the potential to inundate the pump station in storm events of shorter return periods than originally considered. The flood return period for the pump station could be as low as 1 in 20 years.

### **Potable Water and Firefighting water supply**

14. The current water supply from the Wairau bore has no redundancy due to only one bore servicing the Oākura village. The second bore is currently not being used because the casing has leaking welds, the screen is deformed and biological growth has been detected. At present the water supply is unreliable and should problems arise with the single remaining bore Oākura would only have a water supply for between 1.7 – 3.4 days.
15. NPDC three waters report indicates the aquifer capacity is currently not certain but work is planned for the next 2 – 3 years to determine the sustainable yield from the aquifer.
16. Increasing water supply demand on the Oākura bore, which has questionable supply reliability, is likely to increase the risk of further bore failures and its adequacy to supply water to Oākura.
17. The Oākura Water Supply has areas of low pressure which currently do not provide the required firefighting supply for Council's FW 3 requirements.

#### **Oakura land development potential**

18. In my opinion land development in Oākura which is required to cross the Wairau Stream Tributary, control stormwater runoff and provide the necessary infrastructure will be a significant and costly undertaking. A significant amount of money will be invested in just getting from Wairau Road across the stream to the development area.
19. The land topography to the west of the Wairau Stream Tributary, to the north and south of SH45, is all relatively similar grass covered farm grazing land which is sloping and contains gullies and ridges. Soil conditions are also relatively similar to areas west of the Wairau Stream Tributary, to the north and south of SH45.
20. The west FUD area currently has an 80 meter length of road formed as Cunningham Lane which stops before the Wairau Stream Tributary. Accessing the west FUD area would involve extending Cunningham Lane over the Stream and installing culverts to take the water flow.

21. Should PPC48 application be approved in full it appears that there would be required a number of existing road upgrades to meet the increased traffic flow created by the development. These works are likely to involve the widening of upper Wairau Road for approximately 470 meters, a roundabout within a state highway, if one fits, and possibly a state highway access, west of Oakura, which would require modification to the state highway road. The access road from Upper Wairau Road through the Thurman land over Wairau Stream Tributary into the PPC48 development area would be approximately 200 meters long. All of this development works will come at a financial cost as will those of accessing the west FUD area.

#### **Recommendations for PPC48 Land development Engineering**

22. Due to the large scale residential land development proposal of PPC48, potentially increasing the number of lots in Oakura by 60%, I consider a more rigorous detailed design based assessment for the engineering aspects of the project is required, to adequately understand the potential adverse effects on the environment, before any decision can be made on the PPC48 application.
23. Taking into account the size of the proposed development and the New Zealand standards NZS4404 and SNZ 4509 requirements I would expect detailed computer modelling combined with robust site testing and analysis to be completed for the current Oākura village area linked with the proposed PPC48 development, for:
- Stormwater flows combined with ocean tidal effects, and
  - Potable water and firefighting water supply.

Thank you for your time Commissioner(s)

**Matt Peacock**

**24 July 2019**