

**BEFORE HEARING COMMISSIONERS
IN THE WESTERN BAY OF PLENTY DISTRICT**

UNDER THE

Resource Management Act 1991 (“**Act**”)

IN THE MATTER OF

RC13360L: an application for resource consent to authorise development works departures and the operation of industrial activities within part of the Te Puna Business Park prior to all pre-requisite requirements being met.

BETWEEN TE PUNA INDUSTRIAL LIMITED

Applicant

**AND WESTERN BAY OF BAY OF PLENTY DISTRICT
COUNCIL**

Consent authority

**REPLY EVIDENCE OF ALEX JEFFCOAT,
TRANSPORTATION ENGINEER**

Before a Hearing Panel: Rob van Voorthuysen (Chair), James Whetu (Commissioner) and Fraser Cambell (Commissioner)

INTRODUCTION

Background, qualifications and experience

1. My full name is Alex James Jeffcoat. I am employed by Beca Ltd (Beca) as an Associate in the Transport Advisory business.
2. I hold a Bachelor of Engineering Technology (Civil) from the Waikato Institute of Technology.
3. I have 12 years of experience in transport engineering. I have worked across New Zealand and Australia. I have been based in

Tauranga for 9 years and I am regularly involved in transportation engineering and traffic modelling projects within the Western Bay of Plenty. I am an experienced Safe System Auditor (previously Road Safety Auditor) and Audit Team Leader as per the NZTA Safe System Audit Guidelines.

4. I am a member of Engineering New Zealand and its subsidiary the NZ Transportation Group.
5. I have reviewed the transportation aspects of the application on behalf of Western Bay of Plenty District Council (Council).
6. I confirm that I have visited the site and am familiar with the existing activities occurring on the site. I am familiar with the surrounding roading networks and intersections and roading requirements of the Te Puna Business Park Structure Plan.

Expert witness code of conduct

7. I have been provided with a copy of the Code of Conduct for Expert Witnesses contained in the Environment Court's 2023 Practice Note. While this is not an Environment Court hearing, I have read and agree to comply with that Code. This evidence is within my area of expertise, except where I state that I am relying upon the specified evidence of another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

Purpose and scope of evidence

8. The purpose and scope of my evidence is to provide a response to the applicant's evidence and in particular, Mr Harrison's evidence on transportation related matters associated with the resource consent application.
9. I have reviewed a summary of submissions received from members of the public with regard to transport matters.
10. I will address the following principal matters in my evidence:
 - (a) Proposed access to and function of Te Puna Station

- Road;
- (b) The temporary and permanent upgrade of the Te Puna Station Road / Te Puna Road intersection; and
 - (c) The function of Te Puna Road.

EVIDENCE

Te Puna Station Road

11. Mr Harrison outlines his assessment of the proposed upgrade to the access intersection on Te Puna Station Road within sections 6.33 to 6.41 of his evidence and his drawings 01 to 03.
12. I consider the proposal to construct a right turn bay on Te Puna Station Road to access the site as adequate to accommodate the anticipated turning movements and vehicle sizes.
13. The timing of this upgrade is unclear. If the right turn bay is not constructed before earthworks commence, there will need to be a safe and resilient alternative given the number of truck movements anticipated to transport fill (103 movements per eight-hour day¹, or a truck movement approximately every 10 minutes in each direction).
14. Mr Harrison describes how Council intend to widen Te Puna Station Road and provide a shared path next to the road. I understand this is dependent on the decision to reopen, or not, the eastern end of the Te Puna Station Road.
15. The TAR discusses the suitability of Te Puna Station Road requiring an 8.5m carriageway, and a 3.0m shared path. I agree with this assessment.
16. The Landscape Concept plans² indicate that the new site access from Te Puna Station Road includes a shared path on the southern side of Te Puna Station Road, however only for the extent of the works proposed, as opposed to the full length of Te Puna Station Road. This will result in any path users having to be

¹ Harrison, B

² [Appendix 3 - MPAD Dwg 002 - Landscape Plan](#)

on-road or use the berm until the full road side shared path is provided.

17. Until the shared path is provided consistently, I consider that a potential conflict between a cyclist and truck will remain.
18. The guardrail proposed opposite the site access (on Te Puna Station Road), has a 0.5m shoulder and this may introduce another pinch point for on-road cyclists if a truck is turning right and another vehicle is passing.

Intersection of Te Puna Station Road and Te Puna Road

19. The applicant has proposed a two-stage approach to upgrading the Te Puna Station Road / Te Puna Road intersection.
 - A temporary intersection layout to facilitate earthworks related activities (Fulton Hogan Design):
 - A permanent intersection upgrade, including a right turn bay, to accommodate permanent turning movements to and from Te Puna Station Road (Harrison Grierson Technical Memo & Harrison Transportation Design).

Temporary Intersection Layout

20. The Applicant had previously proposed the temporary option to be in situ for a two-year period. I understand from the evidence of Mr Harrison that this has been revised to now apply during the earthworks season over two consecutive years, so seven months on, five months off and seven months on again.
21. The draft Temporary Traffic Management Plan (TTMP) provided, proposes a Temporary Speed Limit (TSL) reduction (to 50km/h), from either the current (70km/h) or proposed (60km/h) speed limit. The effectiveness of the TSL is essential to the safe operation of the intersection in the TTM scenario as lower approach speed is necessary to mitigate the existing sight distance deficiency.
22. In addition, the New Zealand guide to temporary traffic

management³ indicates that a TSL must be set by approval of the Road Controlling Authority (i.e. WBOPDC).

23. Without any physical changes to the road and the extended duration of the TTM, I consider the TSL may not be effective at controlling vehicle speeds. Therefore, using TTM with a TSL to manage the risk of construction traffic at the intersection may not be possible.
24. My interpretation of the above is that the Road Controlling Authority, WBOPDC, may not be able to approve a TTMP where the purpose is not obvious to drivers and without sufficient justification for a TSL.
25. In the previous Beca assessment, (summarised in the 42A paragraph report 146 (i)) there is a minor/moderate concern where vehicle tracking is shown to occur in close proximity to the adjacent power pole, and visual evidence of tracking within the berm.
26. I acknowledge that vehicle tracking represents a Semi-trailer which is considered a worst-case scenario for tracking, however as vehicles are shown to need more than the current road width to complete the turn, this indicates that not all drivers are able to complete movements in line with the tracking design.
27. As noted, this is considered a minor/moderate risk, however the unknown element is if the powerlines were to be affected. This is further mitigated by the applicant proposing that single trucks (as opposed to Semi-Trailer or Truck and Trailer Units) are proposed to transport fill.
28. Vehicle tracking has been undertaken for the intersection of Te Puna Road and Te Puna Station Road, however this tracking should be extended through to the curve south of the intersection (on Te Puna Station Road) to confirm if two trucks are able to safely pass each other. Acknowledging that a Semi Trailer has been used to test the “worst case scenario”.

³ <https://www.nzta.govt.nz/assets/Roads-and-Rail/nzgttm/docs/New-Zealand-guide-to-temporary-traffic-management.pdf>

Permanent Intersection Layout

29. The Applicant has proposed a right turn bay to enable the permanent operation of the site. Beca has previously reviewed the design and provided feedback to the Applicant which has been addressed. Mr Harrison has demonstrated sight distances and traffic performance of the permanent option to be adequate, with foliage and ground clearance as proposed.
30. It is noted due to the steep gradient of the Te Puna Station Road approach that truck drivers may find it difficult to accelerate out of without stalling, submissions discussed this and I consider the safety risk is primarily what may happen after the truck has stalled (rolling back or stalling on Te Puna Road in front of an approaching driver). Further assessment is needed to understand vehicle weights and grades to further evaluate this risk.
31. Beca provided a review to inform the 42A report that states the left-turn bay may no longer be needed, this assumes a permanent closure of Te Puna Station Road. I note that under the permanent option design, the left turn bay is shifted to the east and not retained in its current location. The Structure Plan includes a requirement to *“include provision for left turn and right turn movements or similar traffic management alternatives”* at the intersection.
32. Left-turn bays with no lateral offset are generally perceived as increasing crash risk⁴ as through traffic can be obstructed by left turning vehicles and are able to approach at a faster speed. Increasing the lateral offset is unlikely to be viable in this location and retaining the left turn bay (through road widening) may put the right turn bay installation at risk due to construction complexities/costs.
33. I support a Safe System Audit (SSA) being required to be undertaken prior to construction and upon the completion of

⁴ NZTA High Risk Rural Roads Guide 2013

construction to ensure that the compliance summarised by the TAR (and subsequent reviews) is achieved.

Te Puna Road

34. Mr Harrison has acknowledged that the majority of additional traffic on Te Puna Road will travel south of Te Puna Station Road, however there is no assessment of the impact that this additional traffic may have on road safety in the TAR.
35. Te Puna Road is approximately 8.5m wide, with variable shoulders typically 0.5-1.0m wide. I note that the shared path in proximity of the Te Puna Station Road intersection is as wide as 1.5m.
36. Without knowing the number of users of the shared path, it is difficult to comment on the appropriateness of the width, however a typical shared path would be closer to 3.0m (i.e., that proposed for Te Puna Station Road).
37. As a 1.5m path is unlikely to be suitable for two oncoming users to pass, on-road cyclists are more likely to ride on the carriageway of Te Puna Road.
38. An extract of the Safe System Audit scoring system for exposure is summarised below relevant to pedestrians, cyclists and motorcyclists⁵:

Score	Crash Exposure
0	No exposure
1	<10 people a day
2	10 to 50 people a day
3	50 to 100 people a day
4	>100 people a day

39. Exposure is only 1/3 of the scoring system, severity outcomes (between vulnerable road users and a heavy vehicle) are likely to be higher than the Safe System Injury Threshold.

⁵ Safe System audit guidelines for transport projects, NZTA October 2022

40. Likelihood then becomes the primary variable, where a <1.0m shoulder with a 1.5m buffer to a 2.5m truck is likely to result in the truck needing to cross the centreline to safely overtake a cyclist.
41. Mr Harrison has determined that a truck is anticipated (on average) every 10 minutes in each direction during construction, it is expected to be reasonably common for two trucks to pass each other on Te Puna Road (assuming a two-minute travel time along the section between SH2 and Te Puna Station Road), and more common for trucks and cars to pass.
42. Mr Harrison briefly addresses this in 8.10, however without any robust cycle numbers has assumed that on site observations indicate these numbers are low. The accuracy of this cannot be determined. Consequently, the likely exposure to the above conflicts cannot be confirmed. I consider the number of cyclists using Te Puna Road, during the summer season to coincide with the earthworks period, is necessary to determine the level of risk.
43. With the information currently available, I consider the proposed development could create a significant safety risk for users of Te Puna Road, particularly cyclists, in its current form and without mitigation.

Alex Jeffcoat
04 July 2024