BEFORE HEARING COMMISSIONERS
IN THE WESTERN BAY OF PLENTY DISTRICT

UNDER THE	Resource Management Act 1991 ("**Act**")
IN THE MATTER OF	an application for resource consent to authorise four existing industrial activities within part of the Te Puna Business Park structure plan area, for a term of two years
BETWEEN	**TINEX GROUP LIMITED**
	Applicant
AND	**WESTERN BAY OF BAY OF PLENTY DISTRICT COUNCIL**
	Consent authority

REPLY EVIDENCE OF CALUM MCLEAN

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

INTRODUCTION

Background, qualifications and experience

1. My full name is Calum McLean.

2. I am employed by Western Bay of Plenty District Council (**Council**) as a Senior Transportation Engineer.

3. I hold a Bachelor of Engineering (Civil) from the University of Paisley.

4. I have more than 27 years of civil engineering experience. I have been in my current role since January 2021. Previously I worked for Tauranga City Council as a Transportation Contracts Manager for 2 years. I have worked in the field of transportation engineering for 14 years.

5. I have reviewed the transportation aspects of the application, on behalf of Council's Transportation Department.

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 in 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 retrospective resource consent application for the existing activities on the site located at 245 Te Puna Station Road.

9. To add to and compliment Ms Wilton's reply evidence, I will further address the two principal matters that remain in contention, those being:

   (a) the upgrade and function of the Te Puna Station Road/Te Puna Road Intersection
   (b) the upgrade and function of the site access to Te Puna Station Road (as well as the question of material being tracked onto Te Puna Station Road); and

EVIDENCE

10. I understand that the Commissioner's have taken Ms Perring's section 42A report as read, which contained my review of the transportation effects (paras 119 – 134).

Te Puna Station Road/Te Puna Road Intersection

11. Regarding the Te Puna Station Road/Te Puna Road intersection, I understand that Ms Perring will comprehensively address the debate over the impact of the signed Memorandum of Agreement and what Rule 12.4.16.2.d.ii of the District Plan requires.

12. However, I confirm that I have made my assessment on the basis that (and as recorded at para 120 iv of Ms Perring's 42A report) the need for a right turn bay on Te Puna Road was first identified by the applicant's former transportation expert, Ian Carlisle who noted in his Statement of Evidence to the Private Plan change Hearing in 2003:

"I have identified several existing deficiencies with this intersection including poor sight distance to the south; left turn into Te Puna Road is steep and tight for heavy vehicles; and lack of turning space for right turn from Te Puna Road. 32. The following upgrade works are proposed to mitigate the impact of the proposed development on this intersection:

- *Installation of right turn bay from Te Puna Road. This feature will mitigate the impact of additional right turning traffic at this intersection and less than desirable sight distance to the south.*
- *Installation of left turn bay from Te Puna Road.*
- *Widening of intersection to accommodate the turning path of heavy vehicles.*
- *Re-grading of Te Puna Road profile (for left turn out of Te Puna Station Road)."*

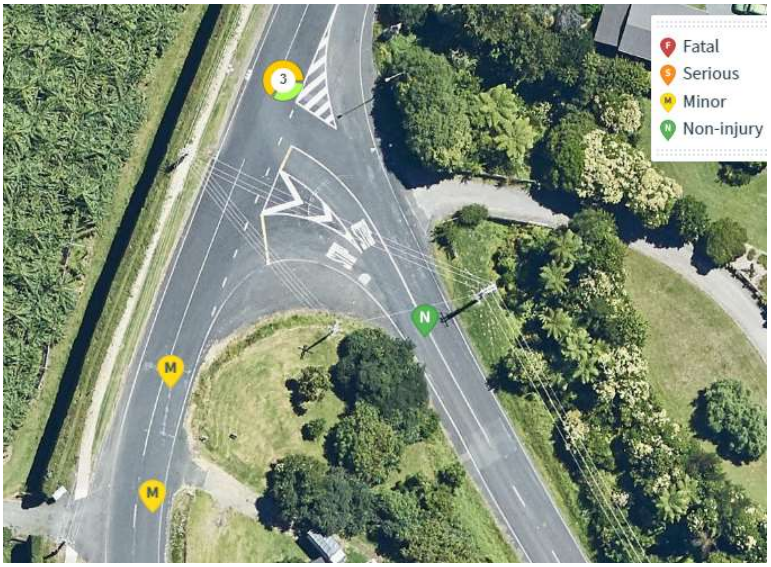
13. Mr Carlisle himself proposed the following plan change provision which made it into the Plan as Rule 12.4.16.2.d.ii:

"To mitigate the impact on the Te Puna Road/Te Puna Station Road Intersection:
Prior to commencement of any land use activity on the Industrial Business Zone land, Te Puna/ Te Puna Station Road intersection must be upgraded to include provision for left turn and right turn movements or similar traffic management alternatives."

14. I re-confirm my opinion as outlined at para 120 vi of Ms Perring's 42A report that *"I do not agree that the Te Puna Road/ Te Puna Road intersection has been upgraded in accordance with the requirements of the Structure Plan because a right turn bay has not been constructed on Te Puna Road as originally recommended by the applicant's former transportation expert."*

15. In his Statement of Evidence Mr Harrison has stated that *"the factual situation is that the traffic from these activities has been occurring and utilising this intersection for the last 3-4 years, without any crash history".*

16. I do not agree with the above statement. Waka Kotahi's Crash Analysis System (CAS) records six crashes in the vicinity of the intersection within the last five years.



Note: only crashes that have been reported to NZ Police are recorded.

17. I consider that a channelised right turn treatment, commonly known as right turn bay, should be implemented at the Te Puna Road/Te Puna Station Road intersection to reduce the risk presented by right turning traffic.

Site Accessway Formation

18. Regarding the proposed formation of the site accessway, I previously advised that:

    i. Section 8 of the TA estimates the traffic generated by the existing activities to be 25 vehicles per day (vpd) and that 60% are heavy vehicles and 40% are light vehicles. When vehicle factors are applied in accordance with section DS4.2.4 of Council's Development Code, this equates to between 100 and 250 passenger car equivalents.

    ii. Appendix 5B.3 of the Waka Kotahi Planning Policy Manual specifies:

"*As for accessway spacing, accessways that are likely to generate 100 or more ecm/day or have peak hour flows of 20 or more ecm/hr, will normally be treated as intersections for the purposes of accessway safety and will generally be required to comply with the intersection design standards contained within the relevant Austroads guides, which are listed in the draft SHGDM*."

i. The joint witness statement of transport experts[1] records that:
"*The experts agree that access design shall be in accordance with Waka Kotahi's current "Planning Policy Manual for Integrated Planning and Development of State Highways" (or its successor) for the traffic conditions that will exist on TPSR at the time that the vehicle access is formed, or otherwise as agreed with Council. It is anticipated that the form of the intersections will be T intersections*."

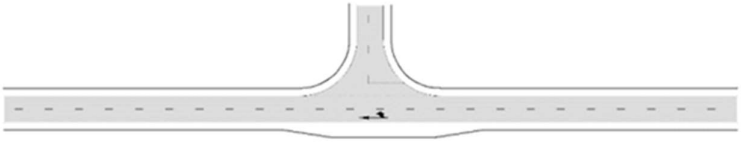
19. However, as outlined by Ms Wilton in her reply evidence, the calculation methodology I utilised was incorrect. I can confirm that I now concur with both Mr Harrison's and Ms Wilton's reviewed calculation, with the correct value being between 50 and 125 equivalent car movements (ecm).

20. The Planning Policy Manual, Table App 5B/4 specifies that the minimum requirement for an accessway being used by 31 to 100 ecm and including more than one slow, heavy, or long vehicle movement per week is Diagram E.

21. Diagram E includes a Basic Auxiliary Right (BAR) turn treatment. A rural BAR treatment features a widened shoulder on the major road that allows through vehicles to pass to the left of turning vehicles i.e., the road carriageway is widened opposite the accessway. See Austroads Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings Management (AGTM06-20), Figure 3.1 reproduced below:

[1] Joint Witness Statement on Transportation, ENV-2022-AKL-000189, 9 February 2023.

Figure 3.1: Rural basic (BA) turn treatments



Basic Right Turn (BAR)
on the Major Road (Two-Lane, Two-Way Road)

22. Austroads Guide to Road Design Part 4: Intersections and Crossings – General (AGRD04-17), section A.7.5 describes the BAR treatment as:

"The minimum treatment for right-turn movements from a through road to side roads and local access points. This treatment provides sufficient trafficable width for the design through vehicle to pass on the left of a stationary turning vehicle. This is achieved by widening the shoulder to provide a minimum width sufficient to allow the vehicles to pass."

23. I concur with Mr Harrison's assessment that a Channelised Right (CHR) turn treatment, typically called a right turn bay, or right turn lane, is not warranted but note that the same assessment confirms that a BAR treatment is necessary. See figure 1 of TA Additional Information issued 30 May 2023 reproduced below:

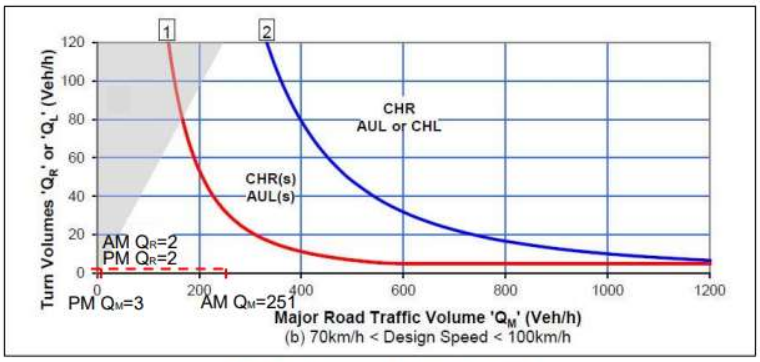
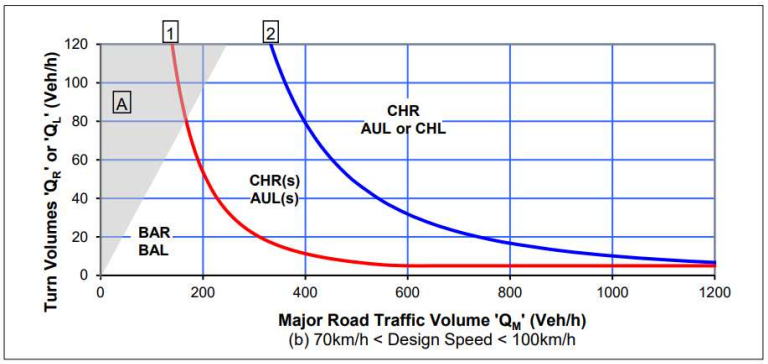


Figure 1: Warrant for Right Turn Lane

Note: on a two-lane two-way road curve 1 represents the boundary between a BAR and a CHR(S) treatment, as evidenced by AGTM06-20 Figure 3.25 reproduced below:



24. Mr Harrison considers that the modified Diagram D treatment that does not include a BAR treatment is appropriate because *"Te Puna Station Road differs from a typical state highway in that it is classified in the District Plan as a Local Road with a function, defined in the Plan, to principally provide access to the adjoining properties and catering for minimal through traffic."*

25. I do not consider Te Puna Station Road to be significantly different to a rural state highway. The Waka Kotahi One Network Framework (ONF) classification for Te Puna Station Road is 'rural connector'. Waka Kotahi defines 'rural connectors' as follows:

"Rural connectors make it easy for people and goods to move between different parts of rural areas, and link rural roads with interregional connectors. They support an increased level of traffic moving through the area, while also providing access from the land they pass through."

26. Prior to the introduction of the ONF classification system Waka Kotahi used the One Network Road Classification (ONRC) system to categorize roads. The ONRC classification for Te Puna Station Road is 'primary collector'. Waka Kotahi describes 'primary collectors' as follows:

"These are locally important roads that provide a primary distributor/collector function, linking significant local economic areas or population areas."

27. Mr Harrison has assessed the risk presented by a truck turning right into the accessway to be *"relatively low"*. I do not agree with

this assessment. I consider the probability of a rear end crash to be unlikely but the severity to be fatal. By applying these factors to the Waka Kotahi Safe System Audit Guidelines, Table 6 (reproduced below) I have assessed the risk to be 'Serious'. Implementation of a BAR treatment would have the effect of reducing the probability of a crash to 'very unlikely' and thereby the overall risk to 'significant'.

Table 6: Safety concern risk rating matrix

		Severity outcome			
		Non-injury	**Minor**	**Serious**	**Fatal**
		Property damage only (PDO)	Injury which is not 'serious' but requires first aid, or which causes discomfort or pain to the person injured.	Injury (fracture, concussion, severe cuts or other injury) requiring medical treatment or removal to and retention in hospital.	A death occurring as the result of injuries sustained in a road crash within 30 days of the crash.
Probability of a crash	**Very likely**	Minor	Moderate	Serious	Serious
	Likely	Minor	Moderate	Serious	Serious
	Unlikely	Minor	Minor	Significant	Serious
	Very unlikely	Minor	Minor	Significant	Significant

Safe System injury threshold

28. I reconfirm my opinion that that the modified Diagram D formation proposed by Mr Harrison is not appropriate for the volume of traffic on Te Puna Station Road and the type of traffic accessing/egressing the site, because it does not include a Basic Auxiliary Right (BAR) treatment i.e., a widened shoulder on the major road that allows through vehicle to pass to the left of turning vehicles.

Site Accessway and Privateway Sealing

29. Regarding the proposed lack of sealing within the site, I have assessed the safety risk (safe system audit guidelines) on this point as unlikely but potentially fatal, and overall, a serious risk. This is partly because research indicates that crash risk exponentially reduces with increase in skid resistance.

30. Upon Ms Perring's invitation (at para 147 of the 42A report) for comment on a suitable length of sealing into the site, Mr Harrison

has recommended that the internal road be sealed for a length of 30m.

31. I agree that 30m should be adequate provided that the area is extended to include all trafficable surfaces within 30m of the accessway.

Calum McLean

10 October 2023