

Under the Resource Management Act
1991 (“the Act”)
In the matter of submissions by Waka Kotahi NZ
Transport Agency on a notified
proposal for the Taupō District Plan
Change 42

**Statement of Evidence of Robert Swears for Waka Kotahi - Transport
Engineering**

9 August 2023



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1. Qualifications and Experience

- 1.1. My full name is Robert Clive Swears. I am employed as a Technical Principal - Road Safety and Traffic Engineering in the Hamilton Office of WSP New Zealand Limited. I have been in this role for approximately eight years.
- 1.2. My qualifications include a New Zealand Certificate in Engineering, a Bachelor of Engineering degree with Honours from the University of Canterbury, and a Master of Engineering Science degree (Transport) from the University of New South Wales. I am a Chartered Member of Engineering New Zealand (CMEngNZ), a Member of the Engineering New Zealand (EngNZ) Transportation Group, and a Fellow of Engineering New Zealand (FEngNZ).
- 1.3. I am a Chartered Professional Engineer (CPEng) with an assessed practice field of "Transportation".
- 1.4. I have been carrying out professional engineering tasks related to the investigation, design, and construction of roading and highway projects for 33 years. I have worked on a variety of transportation projects throughout my career for various clients including public agencies (such as Waka Kotahi and local authorities) and, to a lesser extent, private individuals and / or organisations. I have been involved with the development of various proposed district plans and plan changes throughout my engineering career. Most recently, I provided advice to Waka Kotahi in relation to their submissions, further submissions, and Environment Court appeals regarding the Thames Coromandel District Council Proposed District Plan (PDP) and their submissions on the Porirua and Upper Hutt City Proposed District Plans.
- 1.5. I have been engaged by Waka Kotahi to prepare transport engineering evidence in relation to the Waka Kotahi submission on a notified proposal for the Taupō District Plan Change 42. My evidence is complementary to the statement prepared by Mr Braithwaite for Waka Kotahi.

2. Code of Conduct

- 2.1 I have read and am familiar with the Code of Conduct for Expert Witnesses in the current Environment Court (2023)¹ Practice Note. I have complied with it in the preparation of this statement of evidence. I also confirm that the matters addressed in this statement are within my area of expertise, except where I rely on the opinion or

¹ I have used the Harvard referencing system throughout this statement. A full list of references is contained in Appendix A.

evidence of other witnesses. I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

3. Scope of Evidence

3.1 In summary, my evidence considers the matters described below and reaches the conclusions listed:

- (i) Through the s42A report the Council Officer (TDC, 2023a) has predominantly addressed the transport engineering matters raised in the Waka Kotahi (2022) submission in relation to 4b.2.1, however, as noted in this statement, I consider that some fine tuning is desirable.
- (ii) Where heavy vehicles are generated by a land use activity the TDC (2023b) Operative District Plan definitions for equivalent vehicle movements result in lower values for calculated equivalents than the methods applied in some other jurisdictions. This difference may result in unanticipated adverse effects.
- (iii) While different acceptable trip generation thresholds can be adopted for different road classifications, the considerations from a transport engineering perspective are the manner in which vehicle movements access the immediate and wider road network, rather than just the precise location at which they connect with the road network.
- (iv) While trip generation for forest harvesting activities is often relatively brief, it is also often relatively intense. Therefore, I consider that any exemptions for access to local roads should take into account the potential effects of those activities on the road network (particularly the state highway network) to which the local roads connect.

4. Equivalent Vehicle Movements

4.1 I acknowledge that the definition of equivalent vehicle movements (e.v.m.) described by TDC (2023b) is not a matter that is being considered in relation to Plan Change 42. However, the definition is relevant in relation to the Waka Kotahi submission regarding trip generation for land use activities.

4.2 TDC (2023b) defines equivalent vehicle movements as follows:

- (i) One light vehicle to and from a site = 2 e.v.m.
- (ii) Truck to and from a site = 4 e.v.m.
- (iii) Truck and trailer to and from a site = 8 e.v.m.

4.3 The TDC (2023b) definitions for heavy vehicle movements, in terms of equivalent vehicle movements, are different from definitions used elsewhere. The definitions with which I am more familiar are as follows:

- (i) One light vehicle to and from a site = 2 e.v.m.²
- (ii) Truck (as defined by TDC, 2023b) to and from a site = 6 e.v.m.
- (iii) Combination or multi-unit heavy vehicle (for example, truck and heavy trailer, tractor unit and semitrailer, B-train, et cetera) to and from a site = 10 e.v.m.

4.4 Therefore, when considering trip generation associated with land use activity, I consider that the TDC (2023b) definitions are likely to understate the effects ordinarily associated with heavy vehicles. As a result, a given threshold for equivalent vehicle movements under the Plan Change would result in greater effects if the parameters used elsewhere for equivalent vehicle movements are adopted. For example:

Table 1: Comparison between equivalent vehicle movements

Number and type of vehicles	Equivalent vehicle movements (to and from the activity)	
	TDC (2023b) definition	Definition used elsewhere
20 cars	40	40
5 trucks	20	30
5 multi-unit heavy vehicles	40	50
Total e.v.m.	100	120

4.5 The simple example illustrated in Table 1 shows that a threshold of 100 equivalent vehicle movements would not be exceeded under the Taupō District Plan, whereas if the equivalences used elsewhere were applied the threshold would be exceeded.

4.6 Where heavy vehicle movements are generated by a land use activity, the TDC (2023b) Operative District Plan definitions for equivalent vehicle movements result in lower values for calculated equivalents than the methods applied in some other jurisdictions. As a result, there will be permitted activities in Taupō District, where the

² Varying terms are used to define the equivalent vehicle movement concept. Other terms include equivalent car movement (ecm) and equivalent car unit (ecu).

trip generation falls at or slightly below the threshold, that would not be permitted activities in other district plans.

5. Performance Standards: 4b.2.1 Vehicle movements

5.1 Noting that the s42A report proposes amendments to the clause, in the notified Plan Change 42, Taupō District Council (TDC, 2022, page 18/65) proposed the following performance standard for Vehicle movements in the General Rural Environment:

- (i) “200 ‘equivalent vehicle movements’ per day for the allotment.”
- (ii) “Papakāinga - 100 ‘equivalent vehicle movements’ per day for the allotment or 24 per dwelling, whichever is the greater.”

5.2 The Waka Kotahi (2022, page 9) submission proposes that the provisions are amended to include “100 ‘equivalent vehicle movements’ per day where access is reliant on a State highway.”

5.3 There is nothing special or particularly technically relevant in relation to a threshold of 100 equivalent vehicle movements per day. In some cases a land use activity which generates that volume of traffic will result in effects that are no more than minor, while in other cases the effects may be significant. However, 100 equivalent vehicle movements is a broadly adopted threshold below which many activities are permitted and for which transport assessments are often not required.

5.4 My concern regarding the 100 equivalent vehicle movement threshold proposed by Waka Kotahi is that if there are heavy vehicle movements generated by a land use activity, the effects of an activity that falls at or below the threshold will be greater than activities outside the District where the apparent threshold for permitted activities is the same. That is, because heavy vehicles are assigned a lower equivalence within the Taupō District Plan, there can be more heavy vehicle movements before a threshold is reached. Consequently, the thresholds are actually slightly different. Therefore (but recognising it is outside the scope of the submission), I consider it preferable that the manner in which TDC (2023b) calculates equivalent vehicle movements is amended so that it is aligned with the approach used in other locations. Alternatively, I propose that the threshold proposed by Waka Kotahi is reduced, however, because of the uncertainty associated with the number of heavy vehicle movements, it is difficult to define the value to which the threshold should be reduced.

6. Forest Harvesting Trip Generation

6.1 TDC (2022) and Waka Kotahi (2022) both propose that there is an exception to 4b.2.1 in that “This performance standard shall not apply to traffic movements involved in forest harvesting operations.” The key difference between TDC and Waka Kotahi is

that Waka Kotahi (2022, page 9) proposes the exemption is extended to refer to “where access is to a local road.”

- 6.2 I acknowledge that forest harvesting operations are usually periodic and often involve relatively intense levels of trip generation. Therefore, the trip generation associated with these activities is often dissimilar to other land use activities where there will be regular and predictable numbers and volumes of vehicle movements to and from a site. However, from an effects perspective, the higher trip generating potential for forest harvesting operations and the types of vehicles associated with these operations is such that the effects can be very significant.
- 6.3 Although limiting the exception to operations where the access is directly to a local road partially addresses the potential for effects on a state highway, the exception does not address the potential for very significant adverse effects where the forest harvesting operations involve vehicle movements that connect with the state highway network at a local road intersection.
- 6.4 Therefore, while I agree with the principles of the extension that Waka Kotahi proposes to the exception, I consider that the criteria in relation to forest harvesting operations should be more specific and refer to the effects of those vehicle movements on the road network as a whole.
- 6.5 I consider that the s42A (TDC, 2023b) advice note for any accesses on to a state highway to be in accordance with the PPM (Waka Kotahi, 2007) is an appropriate addition, provided the volume of forest harvesting traffic falls within the bounds that are accommodated by the PPM criteria. That is, typically 100 equivalent car movements per day; noting that the Waka Kotahi method for calculating this equivalence is not the same as the TDC (2023b) method.
- 6.6 A simple approach to dealing with the short-term intense trip generation associated with forest harvesting operations could be to include requirements in relation to temporary traffic management. For example, the District Plan requirement could be along the lines of:
- “EXCEPTION: This performance standard shall not apply to traffic movements involving forest harvesting operations that will result in less than 200 equivalent vehicle movements per day to a local road or 100 equivalent vehicle movements per day to any other road; including state highways. Where forest harvesting operations will exceed these trip generation thresholds, appropriate access provisions and a Traffic Management Plan (TMP) approved by the road controlling authority / authorities will be required to define the manner in which the adverse effects associated with the forest harvesting trip generation will be managed.”*

Robert Swears

9 August 2023

7. Appendix A: References

7.1 I have referred to the following sources while preparing this statement:

- Environment Court, 2019, *In the matter of the Resource Management Act 1991 AND of an appeal under Clause 14 of the First Schedule to the Act BETWEEN New Zealand Transport Agency (ENV-2016-AKL-000117) AND Thames-Coromandel District Council, Consent Order*, 7 October 2019, Environment Court, Auckland.
- Environment Court, 2023, *Practice Note 2023*, Environment Court of New Zealand, Wellington.
- Taupō District Council (TDC), 2022, *Plan Change 42 to the Taupō District Plan, General Rural and Rural Lifestyle Environments, September 2022*, Taupō District Council.
- Taupō District Council (TDC), 2023a, *Plan Change 42 to the Taupō District Plan, General Rural and Rural Lifestyle Environments, September 2022 (with Section 42A Recommendations July 2023)*, Taupō District Council.
- Taupō District Council (TDC), 2023b, *Definitions for the Operative Taupō District Plan*, [online] Taupo District Plan - District Plan (isoplan.co.nz) [accessed 7 August 2023].
- Waka Kotahi, 2007, *Planning Policy Manual, for Integrated Planning and Development of State Highways, Version 1 - Effective from 1 August 2007 - for Comment*, Waka Kotahi (formerly Transit New Zealand), Wellington.
- Waka Kotahi, 2022, *FORM 5, Waka Kotahi NZ Transport Agency submission on a notified proposal for the Taupō District Plan Changes 38, 42 & 43 under Clause 6 of Schedule 1 of the Resource Management Act 1991*, 9 December 2022, Waka Kotahi, Hamilton.
- Waka Kotahi, 2023, *One Network Framework (ONF) Factsheet*, [online] <https://www.nzta.govt.nz/assets/Roads-and-Rail/onf/docs/onf-factsheet-2022.pdf> [accessed 7 August 2023].