

**Before the Hearings Panel
At Waimakariri District Council**

Under the Resource Management Act 1991

In the matter of the Proposed Waimakariri District Plan

Joint Witness Statement – Transport Ranga waka - (TRAN)

Date: 30 November 2023

INTRODUCTION:

- 1 This Joint Witness Statement (JWS) relates to expert conferencing on Transport - Ranga waka.
- 2 The following participants were involved in this conferencing and authored this JWS:
 - (a) Lisa Williams (Novo Group for Kāinga Ora)
 - (b) Robert Swears (WSP for Waka Kotahi)
 - (c) Shane Binder (WDC).
- 3 A meeting between 2.30pm and 5pm was held on 27 September 2023 at the Waimakariri District Council, and further discussions and / or email exchanges have been held since. This JWS has resulted from the meeting, discussions, and email exchanges.
- 4 In preparing this statement, the experts confirm they have read and understand the Code of Conduct for Expert Witnesses as included in the Environment Court of New Zealand Practice Note 2023.

PURPOSE AND SCOPE OF CONFERENCING:

- 5 The conferencing was focused on matters identified in Minute 9, dated 4 September in relation to conferencing.
- 6 The JWS considers the following matters listed within Appendix 1 – Expert conferencing table within Minute 9:
 - a. When should an accessway be required to be built to a road standard (TRAN –R6 point 3)?*
 - b. What should the accessway width be within TABLE TRAN7?*
 - c. What matters of discretions should be considered when applicants seek resource consent to breach TRAN-R6?*
- 7 In addition, the following questions were considered by the experts, as these matters were in contention during the TRAN hearing:

- d. *What should be the threshold for a high traffic generating activity (TRAN-R20 and TRAN-1: High Traffic Generation Thresholds)? How should this be calculated?*
- e. *What sight distance should be used in Table TRAN-19 (Minimum sight distances from vehicle crossings)?*

ACTIONS TAKEN:

8 N/A

MATTERS THAT THE EXPERTS AGREE ON:

It was agreed that:

When should an accessway be required to be built to a road standard?

This question in relation to TRAN-R6, part 3 was discussed by Mr Binder (WDC) and Ms Williams (Kāinga Ora).

- 9 It was agreed by both experts that:
- (a) Clauses (a) and (b) should apply unchanged in the rural zone.
 - (b) In the residential zone, the threshold for a new vehicle accessway should be increased to 11 or more units or sites, noting discussion of a common term in paragraph 31.
 - (c) The vehicle movement threshold in clause (b) should remain unchanged, noting discussion of equivalent car movements in paragraph 32, and the potential renumbering if a new clause is added for residential as discussed above.
- 10 Refer to Appendix A for proposed changes to Rule TRAN-R6. See paragraphs 31 and 32 for discussion of related other matters that the commissioners could consider.

What should the accessway width be within TABLE TRAN-7?

This question was discussed by Mr Binder (WDC) and Ms Williams (Kāinga Ora).

11 It was agreed by both experts that:

- (a) The formed and legal widths for Table TRAN-7 should be amended as shown in Appendix A for 1- 2 and 3-6 units.
- (b) A new row within Table TRAN-7 should be added for 7-10 units as set out in Appendix A.

What matters of discretions should be considered when applicants seek resource consent to breach TRAN-R6?

This question was discussed by Mr Binder (WDC) and Ms Williams (Kāinga Ora).

12 It was agreed by both experts that:

- (a) Matter of discretion MD6(12) would be amended to refer to '11 or more' as a consequential amendment, if a change to Rule TRAN –R6 3. is adopted.

What should the threshold be for a high traffic generating activity (TRAN-R20 and TRAN-1: High Traffic Generation Thresholds)? How should this be calculated?

This question was discussed by all experts.

13 It was agreed by all experts that:

- (a) Equivalent car movements (ECM) (which are sometimes also defined as equivalent car units (ECU)) should be used for traffic generation calculation within TRAN-R20 and TRAN-1.
- (b) The equivalent car movements set out within paragraph 79 of Mr Swears' evidence are recommended for adoption and should be included in the District Plan definitions:

one equivalent car movement (ECM) = 1 car / light vehicle movement, 3 ECM = 1 heavy commercial vehicle movement, 5 ECM = 1 combination heavy commercial vehicle movement.

14 The experts agree with the concept of replacing Table TRAN-1 and Table TRAN-2 with one table modelled on the example included within paragraph 88 of Mr Swears' evidence, as set out below. However, as noted in this joint witness statement, the experts consider that changes are required to both the column headings and the values listed in the left-hand column:

Table 5-1: Trip generation thresholds for transport assessments (source: Environment Court (2019, Appendix A)

<u>Table 8: Type of Assessment of Effects on the Transport Network</u>				
<u>Vehicle Trip Generation</u>	<u>Road Hierarchy</u>			
	<u>Local</u>	<u>Collector</u>	<u>Arterial</u>	<u>Regional</u>
<u>Low (51-100 ECU per day)</u>	<u>n/a</u>	<u>n/a</u>	<u>Traffic Impact Assessment</u>	<u>Traffic Impact Assessment</u>
<u>Medium (101-250 ECU per day)</u>	<u>n/a</u>	<u>Traffic Impact Assessment</u>	<u>Traffic Impact Assessment</u>	<u>Integrated Transport Assessment</u>
<u>High (>250 ECU per day)</u>	<u>Integrated Transport Assessment</u>	<u>Integrated Transport Assessment</u>	<u>Integrated Transport Assessment</u>	<u>Integrated Transport Assessment</u>

15 The experts note that the table in Mr Swears' evidence refers to equivalent car units; however, the experts consider it preferable for TRAN-1 to refer to equivalent car movements (ECM).

16 The experts agree that the column headings for the table should be amended so they are aligned with the road hierarchy descriptions used in the District Plan (noting this includes Strategic Roads in place of Regional Roads called out in the Environment Court example).

17 The experts note there is complexity in analysing the effects of traffic generation on the transport network because of the variable manner in which roads of different classification connect with roads of other classification within the existing roading network.

18 The experts agree that an amendment is required to TRAN-R20(1) to explain that Table TRAN-1 will set the thresholds for high traffic generating activities.

19 The experts did not reach agreement regarding the thresholds that should be listed in the left-hand column of the table or whether residential traffic generation should be considered separately from other land use activities. These areas of disagreement are defined in the relevant section of this joint witness statement.

What sight distance should be used in Table TRAN-19 (Minimum sight distances from vehicle crossings)?

This question was discussed by Mr Binder (WDC) and Mr Swears (Waka Kotahi).

20 It was agreed by both experts that:

21 The minimum sight distances from vehicle crossings within the amended Table TRAN-19 below should be incorporated into the District Plan.

Posted speed limit (km/h)	Required sight distance (m)
30	50
40	70
50	90
60	125
70	150
80	180
90	225
100	260
110	300

22 The experts note that the sight distances in the table are based on safe intersection sight distance values for cars on a level grade as derived from Table 3.2 of the Austroads Guide to Road Design Part 4A (2023). The sight distances have been identified using reaction times of 1.5

seconds for 30-50 km/h speed limits, 2.0 seconds for 60-80 km/h, and 2.5 seconds for 90-110 km/h.

MATTERS THAT THE EXPERTS DISAGREE ON:

23 There was disagreement regarding parts of the following question.

What should the threshold be for a high traffic generating activity (TRAN-R20 and TRAN-1: High Traffic Generation Thresholds)? How should this be calculated?

24 The areas of disagreement relate to what ECM levels and Full v. Basic ITA requirements should be included in the Table replacing Table TRAN-1 and Table TRAN-2 as set out below.

25 Ms Williams (Kāinga Ora) prefers a specific table be included within the Plan for Residential Activities in Residential zones, in addition to the table preferred by Mr Binder and Ms Swears which would apply to all other activities.

Equivalent Car Movements per day	Access is to a road classified as:			
	Local	Collector	Arterial	Strategic
0-200 Residential Activities	n/a	n/a	n/a	n/a
201-400 Residential Activities	n/a	n/a	Basic	Basic
401 -960 Residential Activities	Basic	Basic	Basic	Full
>961 Residential Activities	Full	Full	Full	Full

26 Ms Williams explanation for the above recommendations are summarised as:

- (a) Considers that the thresholds suggested by others are too low (in general) and could result in a significant number of and onerous consenting costs and requirements. Noting that the Kāinga Ora submission relates to residential activities appropriate thresholds have been considered for these activities. It is noted that the notified version of the rule already separated residential from rural and other zones and as such separate thresholds could also be applied with the proposed table structure.

(b) Consistency with other District Plans (ref Table 5 of her evidence) which generally require a “Basic” ITA for 50 or more residential units and a “Full” ITA for 120 or more residential units.

(c) These have been translated to the Equivalent Car Moments using an average of 8 trips per unit per day (50 units x 8 trips = 400 ECM and 120 units x 8 trips = 960 ECM).

(d) Further reasoning for the residential thresholds above being appropriate for residential activities and zones is set out in paragraphs 4.35- 4.38 of her evidence.

27 Mr Swears (Waka Kotahi) prefers the following:

Equivalent Car Movements per day	Access is to a road classified as:			
	Local	Collector	Arterial	Strategic
0-100	n/a	n/a	n/a	n/a
101-200	n/a	Basic	Basic	Full
201-400	Basic	Basic	Full	Full
>400	Full	Full	Full	Full

28 Mr Swears’ reasons for the above recommendations are listed below:

(a) Mr Swears considers that, from a transport engineering effects perspective, it is essentially irrelevant as to whether a particular vehicle movement is associated with (for example) residential land use or industrial land use. Therefore, he considers there should not be differentiation in the thresholds for assessment being required based on land use activity. On this basis, Mr Swears considers that, regardless of the assessment thresholds adopted by Waimakariri District Council, there should not be land use activity differentiation in the table.

(b) As described in Paragraph 86 of Mr Swears’ primary statement, there is merit in adopting a threshold of 100 ECM below which assessment is not required. In that regard, Mr Swears notes that the 100 ECM threshold is higher than the 50 ECM threshold described by

the Environment Court in relation to the Thames-Coromandel District Plan, as referenced in paragraph 88 of his primary statement.

- (c) Because of the uncertainty as to the location at which any given road connects with the wider road network, it is appropriate for the thresholds to be conservative. While a multi-level matrix type table could be produced to account for the configuration of the road network where a road onto which an activity gain access, this is likely to result in a greater degree of complexity than is appropriate for a District Plan. Therefore, Mr Swears considers the thresholds should be relatively conservative, with consideration of the network complexity being evaluated through the analysis required for any given level of traffic generation.
- (d) Based on discussions through the expert conferencing, Mr Swears notes that his proposed thresholds are closely aligned with those proposed by Mr Binder. He also notes that, while in some cases, the assessments conducted will identify that the effects associated with a land use activity will be no more than minor, he also considers it preferable for the analysis to be conducted and that conclusion drawn than for analysis to not be conducted and adverse effects that are more than minor to eventuate as a result.

29 Mr Binder (WDC) prefers the following:

Equivalent Car Movements per day	Access is to a road classified as:			
	Local	Collector	Arterial	Strategic
0-100	n/a	n/a	n/a	n/a
101-200	n/a	Basic	Basic	Basic
201-400	Basic	Basic	Full	Full
>400	Full	Full	Full	Full

30 Mr Binder's reasons for the above recommendations are:

- (a) Mr Binder notes that his proposed thresholds are very closely aligned with Mr Swears' proposal following the same logic. The

difference in requiring a Basic ITA for a low volume Strategic Road (101-200 ECM/day) is intended to align generally with the outcomes from those in the originally-notified Tables TRAN-1 and TRAN-2, which were based on ECM and activity status, not road classification.

(b) Mr Binder also notes that, in general, there is not a major difference in character between the Strategic and Arterial Roads within the District. The Limited Access Roads portion of the State Highway network are the notable exception to this, but limited access assessments to the satisfaction of Waka Kotahi would apply to new accesses along these corridors.

OTHER MATTERS:

31 The experts note that Table TRAN-7 defines accessway standards by number of units whereas Rule TRAN-R6 uses sites. The experts understand there could be multiple residential units per site; therefore, they consider it desirable for traffic generation to consistently reference units rather than sites.

32 The experts agree that the ECM approach should be applied to all descriptions of quantifiable vehicle movements in the District Plan. For example, the reference in paragraph 9(c) of this JWS should be amended to refer to "100 equivalent car movements" rather than to "100 vehicle movements."

33 The experts note that throughout the proposed District Plan the use of dimensional units is often not in accordance with the International System of Units (SI). While the experts anticipate that readers of the District Plan will be able to understand the intended meaning of matters associated with those incorrectly used units, the experts consider it preferable for units to be consistent with the International System. For example, TRAN-S5 refers in its title to "[...] posted speed limit is 60km/hr or above"; this should be presented as "[...] posted speed limit is 60 km/h or above."


- 34 Ms Williams and Mr Binder note that Table TRAN-7 has a note 2 referencing two separate one-way crossings in Commercial, Mixed Use, and Special Purpose Zones. This note references a “minimum width,” while the table specifies “minimum legal width” and “minimum formed width.” In the context of note 2, the experts suggest that the intent is to specify a “minimum formed width” of 3.5 m for each of the two separate one-way crossings.
- 35 The experts understand that where scope exists to amend the errors identified in paragraphs 30 – 33 above, these will be amended within Mr MacLennan’s reply report.

Signatories

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**Shane Binder – Senior Transportation
Engineer**

Date: 30 Nov 2023



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**Lisa Williams - Senior Transport
Engineer and Planner**

Date: 30 Nov 2023

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**Robert Swears - Technical Principal -
Road Safety and Traffic Engineering**

Date: 30 Nov 2023

APPENDIX A

In order to distinguish between the recommendations made in the s42A reports, the recommendations that arise from Initial Reply Reports, and the recommendations that arise from this JWS, the following format is used:

Appearance	Explanation
Black text	Text as notified.
Red text with <u>underlining</u> or strikethrough	Amendments recommended in section 42A report or reply report.
Blue text with <u>underlining</u> or strikethrough	Additional amendments recommended by the Initial Reply Report.
Purple text with <u>underlining</u> or strikethrough	Additional amendments experts are recommending as part of a Joint Witness Statement.

The following version of 'Table TRAN-7: Design standards for new vehicle accessways' is supported by the experts:

Table TRAN-7: Design standards for new vehicle accessways

Zone	Number of residential units	Number of marked parking spaces provided	Minimum legal width (m)	Minimum formed width (m)	Maximum formed width (m)	Footpath and Passing bays ¹
Residential Zones, Special Purpose Zone (Kāinga Nohoanga), Special Purpose Zone	1 – 32 <u><50m long</u>		5.5 <u>4.0</u>	3.4 <u>3.5</u> ¹	5.0	<u>Yes</u> (for 2 or more residential units) <u>No</u>

¹ Fire and Emergency NZ [303.27]

(Pines Beach and Kairaki Regeneration)	<u>1 – 2</u> <u>>50m long</u>		<u>4.5</u>	<u>4.0</u>	<u>5.0</u>	<u>Passing bay at the front and one per 50m</u>
	<u>3 – 6</u> <u><50m long</u>		6.0 <u>5.0</u>	<u>4.5</u> <u>3.5</u>	5.5	<u>Yes</u> <u>No</u>
	<u>3 – 6</u> <u>>50m long</u>		<u>5.0</u>	<u>4.0</u>	<u>5.5</u>	<u>Passing bay at the front and one per 50m</u>
	>6 <u>7-10</u>		7.0 <u>8.0</u>	5.5 <u>4.5</u>	6.0 ² <u>5.5</u>	<u>Physically separated footpath 1.5m wide</u> <u>Passing bay at the front of the site and one additional passing bay per 50m</u>
Commercial and Mixed Use Zones, all other Special		< 15	8.0	5.5	8.0	
		≥ 15	8.0	6.0	8.0	

² George Jason Smith [270.15]

Purpose Zones ²						
Rural Zones			10.0	4.0	8.0	Yes
<p>1. Where an accessway does not provide sufficient width for two-way vehicle movement, then in order to allow vehicles to pass, accessways in Residential Zones and Commercial and Mixed Use Zones shall provide passing bays in the form of widening of <u>Where passing is required, this shall not be</u> less than 5.5m over a 15m length at not more than 50m spacing. Accessways in Rural Zones may have passing bays at up to 100m distances where visibility is available from bay to bay.</p> <p>2. Access can be provided by two separate one-way crossings each with a minimum width of 3.5m.</p> <p>3. <u>Where a footpath is required, this can be provided within the minimum legal width but is additional to the minimum formed width.</u>³</p> <p>4. <u>Where any new vehicle accessway in Residential Zones or Rural Zones will serve six or more sites; or where vehicle movements on any new accessway will exceed 100 per day exceed the above thresholds, see TRAN-R6.</u>^{4 5}</p>						

The following version of 'TRAN-R6' is supported by the experts:

TRAN-R6	Formation of a new vehicle accessway	
All Zones	<p>Activity status: PER</p> <p>Where:</p> <ol style="list-style-type: none"> any activity that includes the formation of a new vehicle accessway shall comply with the design standards for new vehicle accessways in TRAN-S4 below; any new vehicle accessway that serves three or more sites shall achieve the minimum sight lines for pedestrian safety by way of a visibility splay as shown in Figure TRAN-4; and <u>notwithstanding Table TRAN-7,</u>⁶ in the circumstances specified in (a), <u>and (b), or (c)</u>⁷ below, a new vehicle accessway shall be designed to the standard of a new road as per Table TRAN-3 or Table TRAN-4, with the 	<p>Activity status when compliance not achieved: as set out in TRAN-S4</p>

³ Kainga Ora [325.86]

⁴ Schedule 1 Clause 16(2)

⁵ Kainga Ora [325.86]

⁶ Schedule 1 Clause 16(2)

⁷ Schedule 1 Clause 16(2)

	<p>applicable standard based on the posted speed limit of the road with which the accessway will connect:</p> <ol style="list-style-type: none"> a. where any new vehicle accessway in <u>Residential Zones or Rural Zones</u> will serve six or more sites; or b. <u>where any new vehicle accessway in Residential Zones will serve 11 or more sites; or⁸</u> c. where vehicle movements on any new accessway will exceed 100 per day. 	
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The following version of 'TRAN-MD6' is supported by the experts:

<p>TRAN-MD6</p>	<p>Vehicle accessway design</p> <ol style="list-style-type: none"> 1. The extent to which the accessway serves more than one site and the extent to which other users of the accessway may be adversely affected. 2. The extent to which there are adverse effects on the safety and amenity values of neighbouring sites and/or the function of the transport system. 3. The extent of effects on the safety and security of people using the accessway. 4. The extent to which the design or use of the accessway disrupts, or results in conflicts with active frontages, convenient and safe pedestrian circulation and cycling flows, or will inhibit access for emergency service vehicles where on site access is required. 5. The extent to which the safety of pedestrians, particularly the aged and people whose mobility is restricted, will be compromised by the length of time needed to cross a wider accessway or multiple accessways closely spaced. 6. The extent to which the required legal width of the accessway is restricted by the boundaries of an existing site or building. 7. The extent to which the gradient or width or other design aspect of the accessway will make the use of the accessway impractical, including inhibiting access for emergency service vehicles where on site access is necessary. 8. The extent to which accessway drainage is adequately designed and will not cause adverse effects on neighbouring sites. 9. The extent to which vehicles exiting the accessway, and cyclists on the frontage road or shared use path or pedestrians on the footpath, are likely to be aware of each other in time to avoid conflicts. 10. The extent to which the speed and volume of vehicles using an accessway and/or the volumes of cyclists and pedestrians on the footpath or shared use path or frontage road, will exacerbate the adverse effects of the accessway on people's safety. 11. If a visibility splay is unable to be provided, the extent to which alternative adequate methods of improving pedestrian and cycle safety at the accessway have been provided.
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⁸ Kainga Ora [325.86]

	12. <u>Where the accessway serves six or more sites in Rural Zones and 11 or more sites in Residential Zones, the extent to which the accessway will fulfill the requirements of a road.</u> ⁹
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The following version of 'TRAN-R20,' 'Table TRAN-1,' and 'Table TRAN-2' is supported by the experts:

TRAN-R20	High traffic generators	
All Zones	Activity status: RDIS Where: <ol style="list-style-type: none"> 1. any activity <u>that requires a Basic ITA or Full ITA as indicated in Table TRAN-1</u> ¹⁰generates an average daily traffic volume that exceeds the thresholds contained in Table TRAN-1 below; and 2. for the activities in (1) above: <ol style="list-style-type: none"> a. either a Basic ITA or Full ITA shall be required <u>as indicated in Table TRAN-1;</u> <u>and</u> b. the type of ITA to be provided shall be determined by the circumstances set out in Table TRAN-2 below; and c. the ITA shall be prepared by an independent suitably qualified <u>and experienced transport engineer transport planner, transport engineer, or other suitably</u> 	Activity status when compliance not achieved: N/A

⁹ George Jason Smith [270.15]

¹⁰ NOTE: If the additional table supported by Ms Williams is preferred by the Panel, this reference would be to 'Table TRAN-1(a) or (b)'.

	<p style="text-align: center;"><u>qualified professional</u>.¹¹</p> <p>Matters of discretion are restricted to:</p> <ul style="list-style-type: none"> • TRAN-MD11 – High traffic generators 	
<p>Advisory Notes</p> <ul style="list-style-type: none"> • The following is a guide to determining whether an activity is a high traffic generator, and whether a Basic ITA or Full ITA is required. Any activity that generates an average daily traffic volume that exceeds the traffic generation thresholds contained in Table TRAN-1 below is a high traffic generator, and requires resource consent as a restricted discretionary activity under TRAN-R20. For the purposes of that resource consent application either a Basic ITA or Full ITA is required. The type of ITA required is determined under Table TRAN-2 below. Unless otherwise specified, any activity is subject to all applicable District Plan rules, therefore to correctly apply Table TRAN-2 the status of the activity must first be determined under all other applicable rules. Under Table TRAN-2, if an activity requiring resource consent under TRAN-R20 would (for example) be a permitted activity under all other applicable rules, a Basic ITA would be required; or if that activity would (for example) be a discretionary activity under all other applicable rules, a Full ITA would be required.¹² • The intended scope of a Basic ITA or Full ITA is identified in TRAN-MD11. Consultation with the District Council may be undertaken to confirm the scope of the ITA. • The table in TRAN-APP6 provides a guide to the level of traffic generation that could be expected for a range of activities. The purpose of this table is to assist a plan user to estimate their traffic generation. This table has been based on information contained in the Waka Kotahi Research Report 453 'Trips and Parking Related to Land Use'. Where a proposed activity does not align with the listed activities, and/For greater certainty regarding the estimated level of traffic generation, it is recommended that guidance is sought from an independent suitably qualified and experienced transport engineer. 		

The introduction of the following definition is supported by the experts:

<p><u>EQUIVALENT CAR MOVEMENTS</u></p>	<p><u>means one equivalent car movement (ECM) = 1 car / light vehicle movement, 3 ECM = 1 heavy commercial</u></p>
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¹¹ Kainga Ora [325.83]

¹² Kainga Ora [325.83]

	<u>vehicle movement, 5 ECM = 1 combination heavy commercial vehicle movement.</u>
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The experts agree with the deletion of Table TRAN-1 and Table TRAN-2, but do not agree on the content of the table that would replace them; see paragraphs 23 – 29 of the JWS.

Table TRAN-1: High Traffic Generation Thresholds

	Residential Zones / Special Purpose Zone (Kāinga Nohoanga), Special Purpose Zone (Pines Beach and Kairaki Regeneration)	Commercial and Mixed Use Zones / All other Special Purpose Zones / Industrial Zones	Rural Zones
Average daily traffic generation	> 200 vmpd > 50 hvmpd	> 250 vmpd > 50 hvmpd	> 200 vmpd > 50 hvmpd

Table TRAN-2: ITA Requirement

Activity status under all other applicable rules	Type of ITA required
Permitted	Basic
Controlled	Basic
Restricted discretionary	Full
Discretionary	Full
Non-complying	Full

The following version of 'Table TRAN-19' is supported by the experts:

Table TRAN-19: Minimum sight distances from vehicle crossings

Posted speed limit (km/hr)	All activities Residential activity except high traffic generators <u>All uses</u> (m)	Other activity (m)
30	40-50	
40	60-89-70	75
50	80-113-90	100
60	100-140-125	125
70	120-170-150	150
80	150-203-180	180
90	170-240-225	215
100	200-282-260	250
110	300 ¹³	

¹³ Waka Kotahi NZ Transport Agency [275.20]