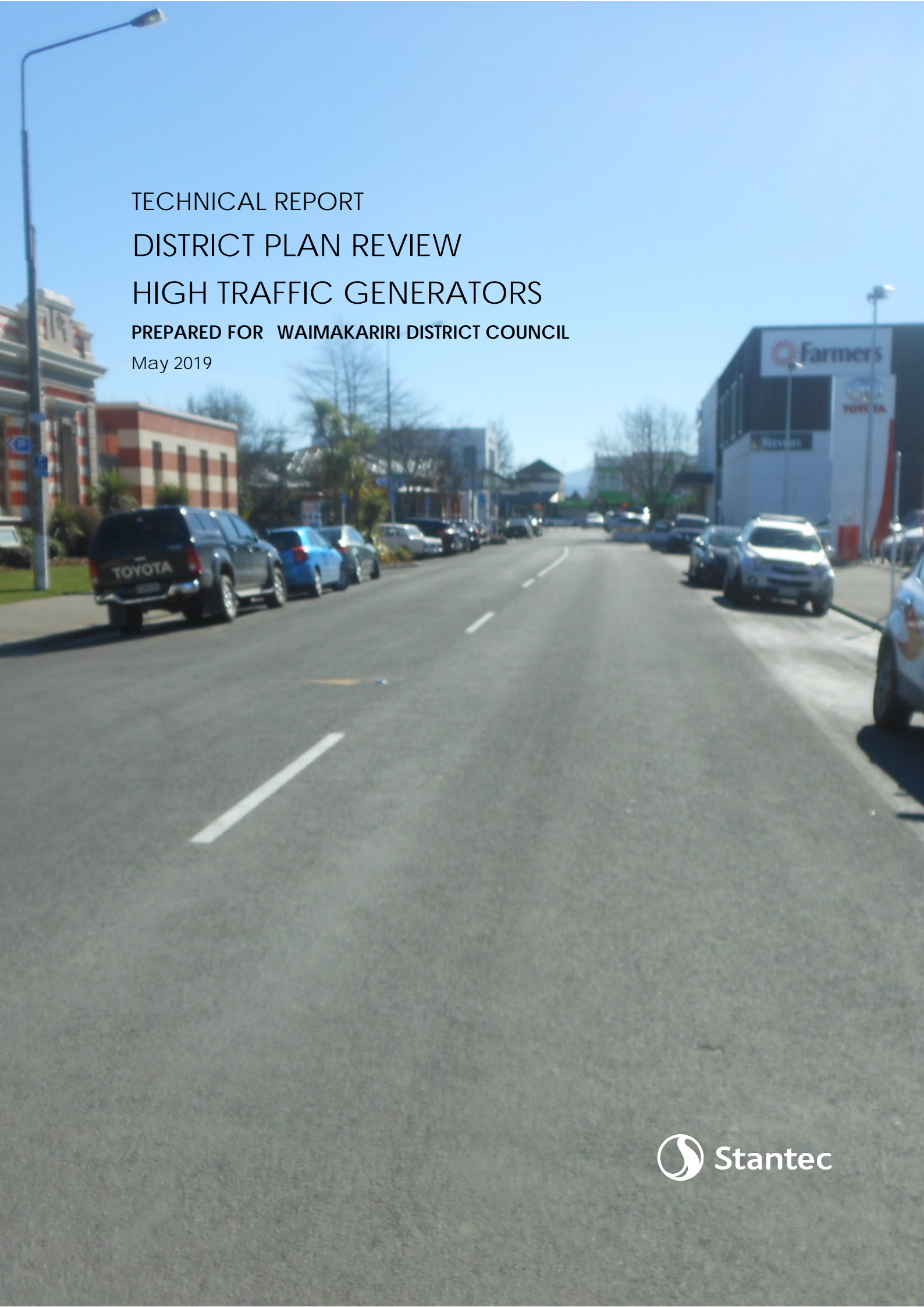


TECHNICAL REPORT
DISTRICT PLAN REVIEW
HIGH TRAFFIC GENERATORS
PREPARED FOR WAIMAKARIRI DISTRICT COUNCIL
May 2019



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Waimakariri District Council

High Traffic Generators

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1. Introduction

Waimakariri District Council is currently undertaking a review of its District Plan and has sought advice on the following transport related matters:

- 1) Road widths;
- 2) Footpath widths;
- 3) Vehicle Crossing Widths;
- 4) Cycle provisions;
- 5) Various Design Criteria, Tables and Figures; and,
- 6) High Traffic Generating Activities.

This report focuses on High Traffic Generating Activities. It provides a comparison of the different styles of controls that are included in other District Plans and makes recommendations on appropriate controls for the Waimakariri District.

2. Statutory Framework

The Canterbury Regional Policy Statement (RPS) includes objectives to guide the recovery and rebuild of the Greater Christchurch area following the earthquakes in 2010-11.

Objective 6.1.2 provides guidance on managing adverse effects arising from development.

Development can result in adverse effects on the environment, which if not identified and avoided, remedied or mitigated where appropriate, could result in inappropriate outcomes for the region's natural and physical resources, and reduce Greater Christchurch's resilience and ability to provide for the needs of people and communities. Poorly planned development can increase risk from natural hazards and the effects of climate change, create resource use conflicts, increase community isolation, prevent the efficient and effective delivery of infrastructure and services, reduce economic viability and result in greater overall energy consumption.

Objective 6.2.4 addresses transport effectiveness.

Ensure that an efficient and effective transport network that supports business and residential recovery is restored, protected and enhanced so that it maintains and improves movement of people and goods around Greater Christchurch by:

1. *avoiding development that will overload strategic freight routes;*
2. *providing patterns of development that optimise use of existing network capacity and ensuring that, where possible, new building projects support increased uptake of active and public transport, and provide opportunities for modal choice;*
3. *Providing opportunities for travel demand management;*
4. *Requiring integrated transport assessment for substantial developments; and*
5. *Improving road user safety.*

The methods for implementing this objective include a requirement for territorial Authorities to include trigger thresholds in district plans for development where an integrated transport assessment is required.

The associated policy framework also requires development of integrated transport assessments for substantial developments. By focusing on large developments that have the potential to impact on strategic transport networks, territorial authorities will be able to fully consider all the transport impacts together, and developers will be able to develop better responses to contribute to an efficient transport system.

In summary, the RPS effectively requires the District Councils to implement a rule to manage the effects High Traffic Generating activities on the transport network.

3. High Traffic Generating Activity Controls

3.1 Christchurch City Council

The Christchurch City Council District includes a complex set of controls to both identify what constitutes a high traffic generating activity and also what level of assessment is required as shown in Figure 3-1. The controls include two sets of thresholds to determine the extent of assessment that is required.

The rule for development outside the Central City was subject to extensive review when the Christchurch City Plan was replaced with the Christchurch District Plan, following the Canterbury Earthquakes. The thresholds for high traffic generating activities are typically defined in terms of a readily identifiable scale of activity metric, such as Gross Floor Area. It also includes a clause for any activity not specifically listed, or for mixed use activities, that generate more than 50 vehicle trips per hour (vph) during the weekday peak period, 3:00pm to 7:00pm, or more than 250 heavy vehicle trips per day (vpd).

Where an activity triggers this rule, an Integrated Transport Assessment report is required that addresses some or all of the following as specified by Figure 3-1.

- **Access and manoeuvring (safety and efficiency):** Whether the provision of access and onsite manoeuvring area associated with the activity, including vehicle loading and servicing deliveries, affects the safety, efficiency, accessibility (including for people whose mobility is restricted) of the site, and the transport network (including considering the road classification of the frontage road).
- **Design and Layout:** Whether the design and layout of the proposed activity maximises opportunities, to the extent practicable, for travel other than by private car, including providing safe and convenient access for travel by such modes.
- **Heavy vehicles:** For activities that will generate more than 250 heavy vehicle trips per day, whether there are any effects from these trips on the roading infrastructure.
- **Accessibility of the location:** Whether the proposed activity has demonstrated the accessibility of the site by a range of transport modes and whether the activity's location will minimise or reduce travel to and from the activity by private vehicles and encourage public and active transport use.
- **Network effects:** Having particular regard to the level of additional traffic generated by the activity and whether the activity is permitted by the zone in which it is located, whether measures are proposed to adequately mitigate the actual or potential effects on the transport network arising from the anticipated trip generation (for all transport modes) from the proposed activity, including consideration of cumulative effects with other activities in the vicinity, proposed infrastructure, and construction work associated with the activity.
- **Strategic framework:** Whether the proposal is consistent with the local and regional transport policy framework.

The activity status, the report format, and the need to address the above matters varies based on whether the activity is otherwise permitted by the zone, whether a second threshold test of the scale of activity is triggered, and whether the site is adjacent to strategic transport infrastructure.

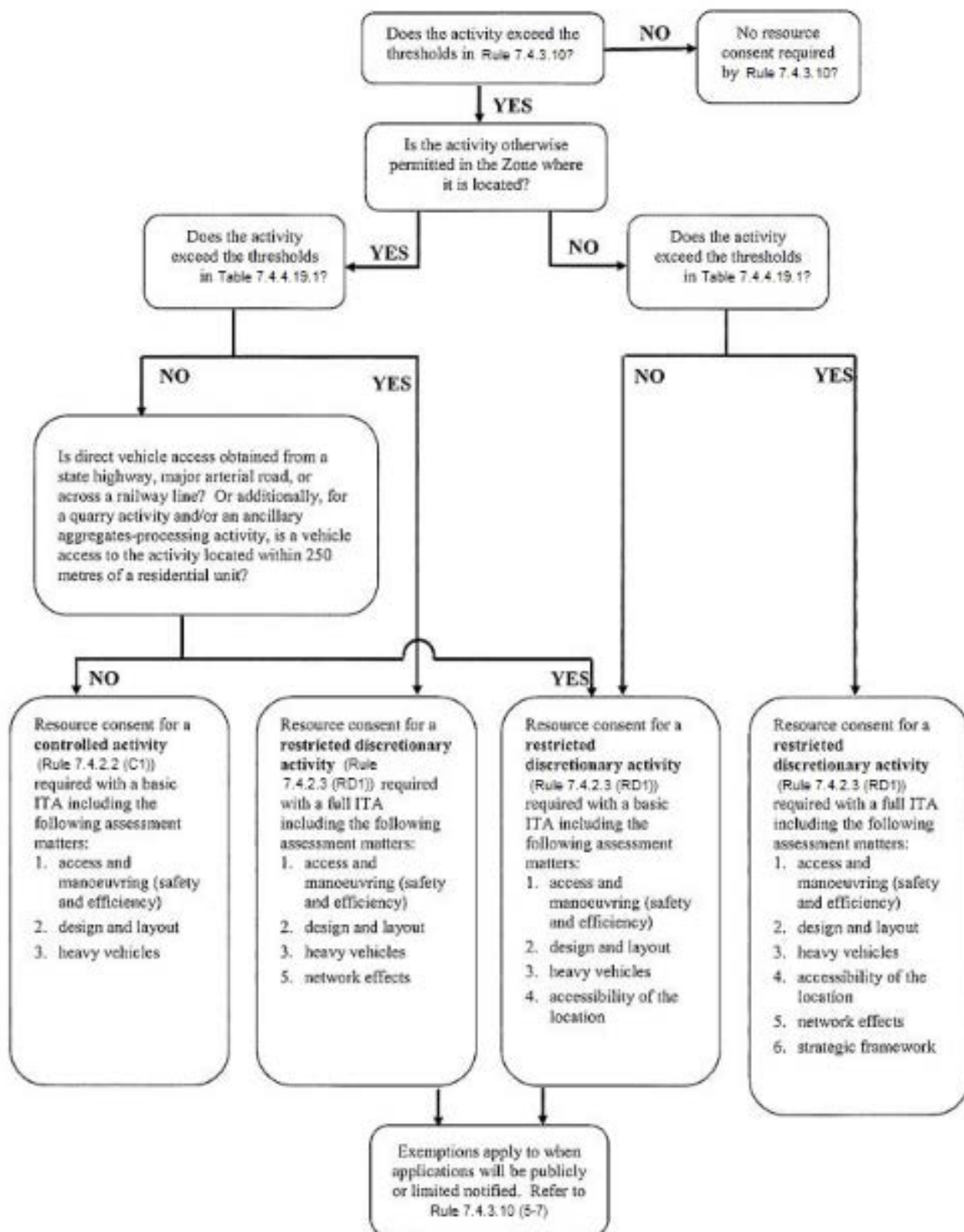


Figure 3-1: CCC High Traffic Generator Rule

Table 3-1 provides a summary of the expected content for an ITA based on the activity status and expected traffic generation.

Table 3-1: CCC Matters of Control or Discretion for High Trip Generators

Matters of Control or Discretion	Permitted Activities		Other Activities	
	Basic ITA	Full ITA	Basic ITA	Full ITA
Access and manoeuvring	✓	✓	✓	✓
Design and layout	✓	✓	✓	✓
Heavy Vehicles	✓	✓	✓	✓
Accessibility			✓	✓
Network Effects		✓		✓
Strategic Framework				✓

3.2 Dunedin City Council

The Dunedin City Second Generation District Plan includes provisions to address the effects of High Trip Generators, that is, activities that will generate more than 250vpd. High Trip generators are required to prepare an Integrated Transport Assessment to ensure that effects on accessibility, road safety and the efficiency of the road network can be appropriately managed.

Any activity that will generate more than 250vpd is treated as a Restricted Discretionary activity with Council discretion limited to the effects on the safety and efficiency of the road network. The District Plan provides the following guidance for applicants of high traffic generating activities

General assessment guidance:

iii. The assessment will consider the findings of an Integrated Transport Assessment (see Special Information Requirements - Rule 6.14.2).

iv. For activities that are likely to generate trips by bicycle, Council will consider whether the site and vehicle access design provides for the safety of cyclists entering and exiting the road network.

v. In assessing the effects on the safety and efficiency of the transport network, Council will consider:

- 1. the effects of the physical works on safety on the frontage road.*
- 2. the effects of the physical works on congestion on the frontage road.*
- 3. the effects of the physical works on pedestrian and cycle connectivity and safety.*
- 4. the capital and maintenance costs of the physical work.*

vi. Council will generally only consider new transportation infrastructure (e.g. traffic signals, roundabouts etc.) as acceptable when there are no other practicable design solutions.

Potential circumstances that may support a consent application include:

vii. Traffic entering and exiting the site does not cause adverse safety or congestion effects on any frontage road.

3.3 Hamilton City Council

The Hamilton City Council (HCC) District Plan requires that an Integrated Transport Assessment (ITA) is prepared when a new activity exceeds the following thresholds:

Table 3-2: HCC ITA Requirements

Activity	Average Daily Traffic Generation (Vehicle movements per day)						
	Outside Sensitive Road Network			Sensitive Road Network			Other
	<100	100-499	500-1,499	<100	100-499	500-1,499	>1,500
Permitted			Simple ITA			Simple ITA	Broad ITA
Restricted Discretionary		Simple ITA	Broad ITA		Simple ITA	Broad ITA	Broad ITA
Central City							Broad ITA

The District Plan also includes a series of specific rules requiring either a simple or broad ITA depending upon the nature of the activity and access location as shown below.

Existing Vehicle Access Triggers

b) For existing vehicle accesses to a strategic network or major arterial transport corridor, or where it takes access across an existing railway level crossing:

- i. A Broad ITA shall be prepared for any restricted discretionary activity in the relevant zone (including subdivision), or
- ii. A Simple ITA shall be prepared for any permitted activity in the relevant zone, that increases the use of the vehicle access by more than 100 vehicles per day.

This standard shall not apply if the relevant road controlling authority or Kiwirail (in the case of railway level crossings) provides written confirmation that an ITA is unnecessary.

Specific Activity Triggers

c) A Broad ITA shall be prepared for new:

- i. Schools.
- ii. Hospitals.
- iii. Transport depots (goods).
- iv. Drive-through services.
- v. Emergency service facilities (with traffic control signals controlling access).
- vi. Transport corridor.

d) A Simple ITA shall be prepared for new:

- i. Emergency service facilities (without traffic control signals controlling access).

Area Specific Triggers

e) i) A Broad ITA shall be prepared for any new activity within the 'Area A' identified in Volume 2, Appendix 15-8, Figure 15-8a, which exceeds the following traffic generation rate based on gross site area.

e) ii) A Broad ITA shall be prepared for subdivision creating any additional lots, and/or any new development which generates greater than 100vpd, within 'Area B' identified in Volume 2, Appendix 15-8, Figure 15-8a

3.4 Queenstown Lakes District Council

The Queenstown Lakes District Council (QLDC) introduced a high traffic generating activity rule (Rule 29.4.11) in its recent District Plan Review as follows:

High Traffic Generating Activities

Any landuse or subdivision activity that exceeds the traffic generation standards set out in Table 29.6 is a Restricted Discretionary activity with discretion restricted to:

- Effects on the transport network, including as a result of:
 - any proposed travel planning, provision of alternatives to private vehicle, or staging of development;
 - any proposed improvements to the local transport network within or beyond the site, including proposed additions or improvements to the active and public transport network and infrastructure and the roads themselves, in accordance with Council standards and adopted infrastructure network development plans either within or beyond the site. This may be required by direct construction activities, or by collecting funds towards a wider project that would achieve the modal shift aim of the specific development, as promoted in the application;
 - the amount, design, and location of cycle parking, e-bicycle charging areas, showers, changing rooms and lockers provided;
 - the amount of accessory parking and any non-accessory parking proposed; and
 - the design of the site and/ or its frontage in regard to its ability to accommodate any proposed public transport infrastructure proposed by Council;

- the provision or upgrading of pedestrian and cycle infrastructure; and
- the provision of a Travel Demand Management Plan.

The thresholds at which an activity is considered to be a high traffic generator are higher than in other districts but broadly allow for up to 400vpd as a permitted activity.

Table 3-3: QLDC District Plan Table 29.6

Activity	Threshold
Residential	50 Dwellings
Visitor Accommodation (unit type construction)	100 units
Visitor Accommodation (guest room type)	150 rooms
Commercial Activity (Not listed below)	2,000m ²
Office	2,000m ²
Retail	1,000m ²
Industrial	5,000m ²
All other activities	50 or more parking spaces
All other activities	50vpd during commuter peak or 400vpd

3.5 Selwyn District Council

The Selwyn District Council (SDC) includes the following provisions for high traffic generating activities.

In living zones, activities that generate more than 100vpd are restricted discretionary with discretion limited to:

5.3.3.1 Any adverse effects on the ease and safety of vehicle manoeuvres, and on the visibility and safety of pedestrians, cyclists and motorists.

5.3.3.2 Any potential increase in the cost or difficulty of maintaining the road and vehicle crossings, including transporting of mud and chip on to any sealed road, if the vehicle crossing or vehicle accessway is not sealed.

5.3.3.3 Any visual effects on street design and residential amenity values from not forming the vehicle crossing or vehicle accessway to the specified standards.

5.3.4 Any activity which does not comply with Rule 5.3.1.4 shall be a restricted discretionary activity.

5.3.5 Under Rule 5.3.4 the Council shall restrict its discretion to consideration of:

5.3.5.1 Whether the site can have access from another road which is not a State Highway or arterial road listed in Appendix 7.

5.3.5.2 The design and location of the vehicle crossing.

5.3.5.3 The number and type of vehicles or pedestrians and using the access.

5.3.5.4 Any adverse effects, including cumulative effects, on traffic safety or flow on the State Highway or arterial road.

In business zones, any vehicle crossing to a site which generates more than 250 vehicle movements per day, or any vehicle crossing providing shared access to sites which cumulatively generate more than 250 vehicle movements per day, is a restricted discretionary activity.

3.6 Comparison of District Plan Provisions

The five district plans that have been reviewed have each taken different approaches to addressing the effects of high traffic generating activities. Table 3-4 provides a comparison of some of the key characteristics of each approach.

Table 3-4: High Traffic Generator Rule Characteristics

Attribute	CCC	DCC	HCC	QLDC	SDC
Activity Status	Yes	No	Yes	No	No
Location	No	No	By Traffic Volume	No	By Zone

Attribute	CCC	DCC	HCC	QLDC	SDC
Base Threshold	250vpd	250vpd	100vpd	400vpd	100vpd Living 250vpd Business
2 nd Threshold	1,000vpd		500vpd		
Peak Period	50 vph			50vph	
Type of ITA	Basic / Full	Not specified	Simple / Broad	Not specified	Not specified

The CCC and HCC rules use the activity status as part of their rule structures to determine the level of assessment that is required. A simpler and more basic level of assessment is generally sought for permitted activities compared with discretionary activities. Adopting this approach does require that an activity-based plan is adopted.

The HCC and SDC take the location of the proposed activity into account when identifying the type of assessment requirement. HCC uses the daily volume of traffic on the road network whereas the SDC rules refer to Living and Business zones.

Each District Plan rule identifies a base level of traffic generation above which further assessment is required. The DCC rule is the simplest and is based on a single threshold while SDC adopts a different threshold for residential and business zones. Although the CCC, HCC and QLDC rules specify thresholds by Gross Floor Area for many activities, the CCC and HCC threshold generally represent an average daily traffic generation level of 250vpd with the QLDC thresholds reflecting an average daily traffic generation level of about 400vpd.

Having a single threshold to trigger the requirement for an ITA provides a very simple rule structure but does require that a developer complete some preliminary analysis of the expected traffic generation to determine whether or not an ITA is required. Providing multiple thresholds based on Gross Floor Area, dwelling or room numbers as appropriate for an activity can simplify this process for a developer but will generate more discussion over what represents an appropriate threshold for the activity. One drawback of this approach is that it is not possible to define thresholds for every activity. This can result in separate thresholds being defined for more common activities but with there still being a need for a catch-all clause for activities that do not explicitly identified. In practice, it is considered that having a single threshold results in a simpler rule and does not affect the amount of assessment required to determine the traffic generation but rather when that initial assessment needs to be completed.

The CCC and HCC rules include a second threshold to determine when a more extensive ITA is required to address network wide effects. Again, there are benefits for having a single threshold higher threshold rather than a multitude of activity specific thresholds.

The CCC and QLDC rules also include a specific clause to address the traffic effects of activities that have a high traffic generation during commuter peak periods. The CCC District Plan specifies this as 3:00pm to 7:00pm on weekdays whereas the QLDC District Plan states commuter peak hour which could include the morning and evening peak periods. One advantage of the CCC approach is that it clearly specifies what is the critical time period for assessment. The QLDC approach places a greater onus on the developer to establish the critical periods for assessment.

Overall, it is considered that the DCC and SDC provisions are the simplest and are based on simple thresholds that triggers a requirement for detailed assessment of the effects of a development on road safety and efficiency. On potential criticism of their simplicity is that the rules do not take into account the activity status or location of the activity and this could result in an Applicant needing to complete an assessment when a proposed activity is already anticipated. In these instances, it would be expected that any development specific assessment would be undertaken within the context of any wider area or zone specific assessment that had already been undertaken. It should be noted that while an activity may be anticipated, site specific access effects are unlikely to have been addressed in any high level assessment and it will still be necessary for site specific access effects to be assessed. On this basis, it is considered that a high traffic generating rule that takes into account the activity status when determining the level of assessment that should be provided. The level of assessment required should also take into account any higher level of assessment that has been completed, for example, assessments of land rezoning requests will normally preclude the need for further network wide assessment.

4. Recommendation

Since the Waimakariri District has a more rural character than Christchurch or Hamilton, it is considered that a High Traffic Generator rule that combines the simplicity of the SDC and DCC approaches with some

aspects of the HCC approach to identify the level of assessment that is required would be appropriate. The following proposed rule structure aims to provide a simple to understand approach for managing the effects of high traffic generating activities that is zone type specific rather than activity specific. The proposed rule could take the following form:

Any landuse or subdivision that has the potential to generate an average daily traffic volume in excess of the thresholds contained in Table 4-1 or a peak hourly traffic generation of more than 50 vehicle movements is a Restricted Discretionary activity and an Integrated Transport Assessment shall be prepared.

As a minimum, a Basic ITA shall address:

- Access and manoeuvring (safety and efficiency);
- Design and Layout;
- Heavy Vehicle Movements; and,
- Accessibility of the location.

In addition to the preceding items, a Full ITA shall also address:

- Network effects; and
- Strategic planning framework.

Table 4-1: Proposed High Traffic Generator Rule Thresholds

Activity	Average Daily Traffic Generation (Vehicle movements per day)					
	Residential Zones		Commercial / Industrial / Mixed Use Zone		Rural Zones	
	<100	≥100	<250	≥250	<100	≥100
Permitted		Basic		Basic		Basic
Controlled		Basic		Basic		Basic
Restricted Discretionary	Basic	Full	Basic	Full	Basic	Full
Discretionary	Basic	Full	Basic	Full	Basic	Full
Non-complying	Full	Full	Full	Full	Full	Full

Council Discretion shall be restricted to effects on the transport network, including as a result of:

- **Access and manoeuvring (safety and efficiency):** Whether the provision of access and onsite manoeuvring area associated with the activity, including vehicle loading and servicing deliveries, affects the safety, efficiency, accessibility (including for people whose mobility is restricted) of the site, and the transport network (including considering the road classification of the frontage road).
- **Design and Layout:** Whether the design and layout of the proposed activity maximises opportunities, to the extent practicable, for travel other than by private vehicle, including providing safe and convenient access for travel by such modes.
- **Heavy vehicles:** For activities that will generate more than 250 heavy vehicle trips per day, whether there are any effects from these trips on the roading infrastructure.
- **Accessibility of the location:** Whether the proposed activity has demonstrated the accessibility of the site by a range of transport modes and whether the activity's location will minimise or reduce travel to and from the activity by private vehicles and encourage public and active transport use.
- **Network effects (Full ITA only):** Having particular regard to the level of additional traffic generated by the activity and whether the activity is permitted by the zone in which it is located, whether measures are proposed to adequately mitigate the actual or potential effects on the transport network arising from the anticipated trip generation (for all transport modes) from the proposed activity, including consideration of cumulative effects with other activities in the vicinity, proposed infrastructure, and construction work associated with the activity.
- **Strategic framework (Full ITA Only):** Whether the proposal is consistent with the local and regional transport policy framework.

Further guidance on the content of a Basic and Full ITA can be found in the CCC document, Integrated Transport Assessment Guidelines¹. Table 4-2 provides a tabular summary of the expected assessment matters to be addressed in an ITA.

Table 4-2: Proposed Matters of Control or Discretion for High Trip Generators

Matters of Control or Discretion	Activity Status			
	Permitted	Controlled	Discretionary	Non-Complying
Access and manoeuvring	✓	✓	✓	✓
Design and layout	✓	✓	✓	✓
Heavy Vehicles	✓	✓	✓	✓
Accessibility		✓	✓	✓
Network Effects			✓	✓
Strategic Framework				✓

The following table provides a guide to the level of traffic generation that could be expected for a range of activities. This table has been based on information contained in the NZTA Research Report 453 Trips and Parking Related to Land Use. Where a proposed activity does not align with the listed activities, then it is recommended that guidance is sought from a qualified transport engineer.

Table 4-3: New Zealand Traffic Generation Rates

Category	Activity	Peak hourly traffic generation rate	Daily traffic generation rate
Assembly	Church	1.1vph / person	
Commercial	Office	2.5vph / 100m ² GFA	26.1vpd / 100m ² GFA
Education	Preschool	1.4vph / student	4.1vpd / student
	Primary	0.7vph / student	1.6vpd / student
	Secondary	0.1vph / student	0.4vpd / student
	Tertiary	0.2vph / student	1.4vpd / student
Industrial	Warehousing	1.0vph / 100m ² GFA	2.4vpd / 100m ² GFA
	Contractor	6.2vph / 100m ² GFA	
	Manufacturing	2.7vph / 100m ² GFA	30.0vpd / 100m ² GFA
Medical	Centre	11.6vph / professional	79.4vpd / professional
	Hospital (Small)	3.0vph / bed	13.5vpd / bed
Residential	Dwelling (Inner Suburban)	1.2vph / unit	10.9vpd / unit
	Dwelling (Outer Suburban)	0.9vph / unit	8.2vpd / unit
	Dwelling (Rural)	1.4vph / unit	10.1vpd / unit
	Retirement Home	0.4vph / unit	2.4vpd / unit
	Retirement unit	0.3vph / unit	2.6vpd / unit
	Hostel	0.6vph / unit	2.5vpd / unit
	Motel	1.4vph / unit	3.0vpd / unit
	Hotel	1.2vph / unit	6.4vpd / unit
Retail	Shop	42.5vph / 100m ² GFA	125vpd / 100m ² GFA
	Shopping Centre (Small)	18.9vph / 100m ² GFA	141vpd / 100m ² GFA
	Shopping Centre (Medium)	17.2vph / 100m ² GFA	101vpd / 100m ² GFA
	Shopping Centre (Large)	9.9vph / 100m ² GFA	83.7vpd / 100m ² GFA
	Shopping Centre (CBD)	8.5vph / 100m ² GFA	55.9vpd / 100m ² GFA
	Garden Centre	27.8vph / 100m ² GFA	147vpd / 100m ² GFA
	Discount Store	15.3vph / 100m ² GFA	100vpd / 100m ² GFA
	Supermarket	17.9vph / 100m ² GFA	129vpd / 100m ² GFA
	Bulk	5.6vph / 100m ² GFA	44.8vpd / 100m ² GFA

¹ <http://www.ccc.govt.nz/assets/Documents/Consents-and-Licences/resource-consents/ITAGuidelines.pdf>

Category	Activity	Peak hourly traffic generation rate	Daily traffic generation rate
Retail	Restaurant	0.5vph / seat	6.1vpd / seat
	Fast Food	52.2vph / 100m ² GFA	362vpd / 100m ² GFA
	Bar	15.6vph / 100m ² GFA	92.1vpd / 100m ² GFA
	Service Station	100.9vph / 100m ² GFA	718vpd / 100m ² GFA
	Market	2.4vph / 100m ² GFA	22.4vpd / 100m ² GFA
	Produce	68.8vph / 100m ² GFA	487vpd / 100m ² GFA

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