

**BEFORE THE HEARINGS PANEL
FOR THE QUEENSTOWN LAKES PROPOSED DISTRICT PLAN**

IN THE MATTER of the Resource
Management
Act 1991

AND

IN THE MATTER Stage 3 Proposed
District Plan

**STATEMENT OF EVIDENCE OF MICHAEL ANDREW SMITH
ON BEHALF OF QUEENSTOWN LAKES DISTRICT COUNCIL**

**TRANSPORT
GENERAL INDUSTRIAL ZONE REZONINGS**

18 March 2020

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Appendix 1: NZTA Crash Data

1. PROFESSIONAL DETAILS

- 1.1 My full name is Michael Andrew Smith. I hold the position of Principal Transportation Engineer at Stantec, who I have been with since 1996.
- 1.2 I hold a Masters of Engineering in Transport (MET) from the University of Canterbury. I am a Chartered Professional Engineer of Engineering New Zealand (CMEngNZ / CPEng), and a Registered Professional Engineer Queensland (RPEQ).
- 1.3 I have 25 years' experience in traffic engineering, and regularly undertake assessments of resource consent applications for transport matters for various local authorities across NZ.
- 1.4 I have experience in road safety, traffic engineering, construction and assessing development applications from a traffic compliance and impact perspective. I have assessed numerous development applications in the Queenstown Lakes District.
- 1.5 I have been engaged by the Queenstown Lakes District Council (**QLDC** or **Council**) to provide evidence in relation to the following two rezoning submissions on Stage 3 of the Queenstown Lakes Proposed District Plan (**PDP**):
- (a) Cardrona Cattle Company Limited (**3349**); and
 - (b) The Station at Waitiri Limited (**3357**).
- 1.6 Although this is a Council hearing, I confirm that I have read the Code of Conduct for Expert Witness contained in the Environment Court Practice Note and that I agree to comply with it. I confirm that I have considered all the material facts that I am aware of that might alter or detract from the opinions that I express, and that this evidence is within my area of expertise, except where I state that I am relying on the evidence of another person.
- 1.7 The key documents I have used, or referred to, in forming my view while preparing this evidence are:

- (a) QLDC operative District Plan (**ODP**);
- (b) Chapter 18A PDP);
- (c) QLDC Land Development and Subdivision - Code of Practice (**CoP**);
- (d) NZTA Manual of Traffic Signs and Markings; Parts 1 & 2;
- (e) NZTA State Highway Geometric Design Manual (Draft);
- (f) AUSTROADS Guide to Road Design; Part 3: Geometric Design; 2017; and
- (g) AUSTROADS Guide to Road Design; Part 3: Geometric Design; 2009.

2. EXECUTIVE SUMMARY

- 2.1 Overall, I oppose the submissions by Cardrona Cattle Company Limited (**3349**) and The Station at Waitiri Limited (**3357**), on traffic movement/safety grounds.

3. GENERAL DESCRIPTION OF SUBMISSION SITES

- 3.1 The two submission sites are located directly adjacent State Highway (SH) 6. In this location, the SH is defined as a two-way carriageway, with a single lane in each direction. Immediately south of the Kawarau River Bridge the road is defined by the formed passing lane (southbound). This passing lane extends southward, with a merge zone being formed in the proximity of the Victoria Flat Road intersection.

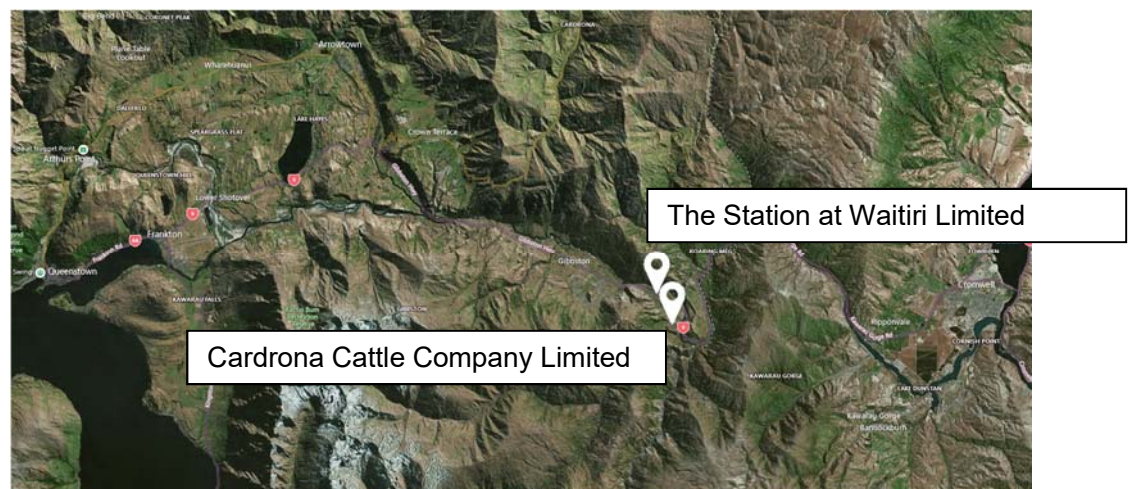


Figure 1: Submitter Site locations,
Source: Bing Maps

- 3.2** SH 6 in this location is scheduled as a Limited Access Road (**LAR**) under New Zealand Transport Agency (**NZTA**). NZTA have specific rules and requirements for any access on a LAR. Specific approval would need to be gained from NZTA for any upgrade / change / new access.
- 3.3** NZTA list an Average Annual Daily Traffic (**AADT**) volume of some 5,300 vehicles per day (**vpd**) (2018), and approximately 9% Heavy Commercial Vehicles (**HCV**).

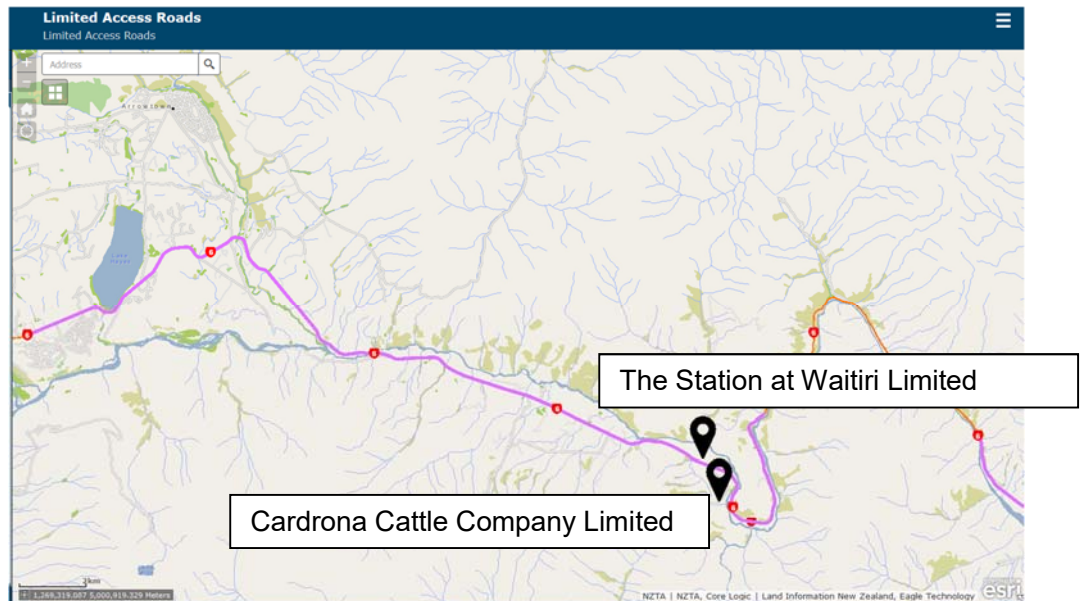


Figure 2: Submitter Site locations, SH LAR road sections

Source NZTA GIS website

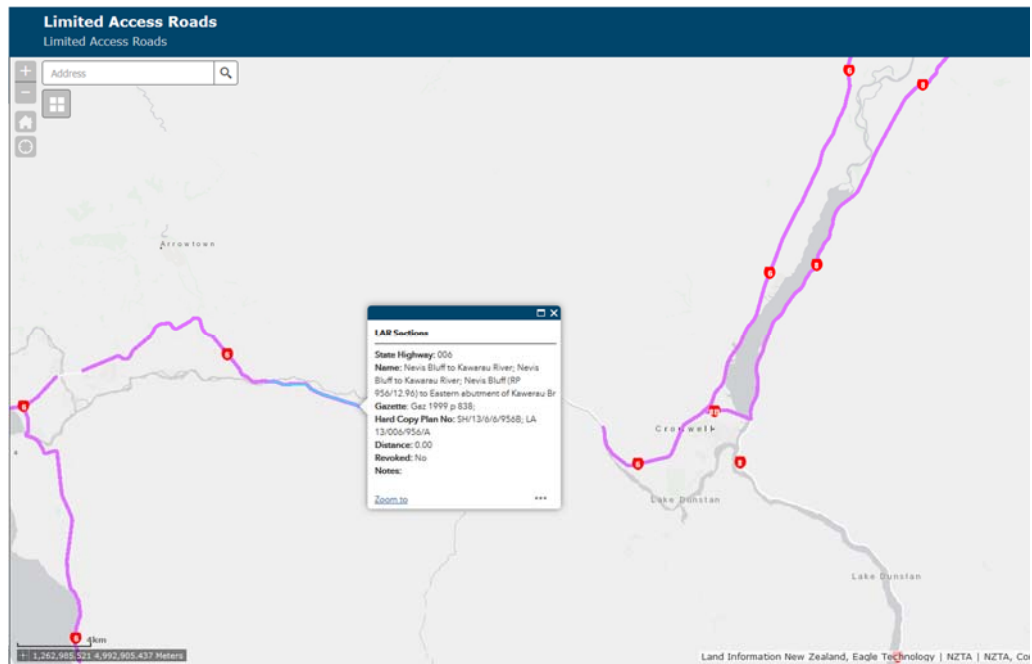


Figure 3: SH LAR road section details;
Source NZTA GIS website.

4. GENERAL ROADING ELEMENTS

4.1 The following section details the roading elements that would affect both submission sites.

Passing Lanes

4.2 The presence of the passing lane restricts any new access onto this portion of SH 6. It is unsafe forming an access within a passing lane and would generally be opposed by NZTA. The passing lane results in higher traffic speeds due to the nature of the passing movement. This high speed is carried on through into the following (southbound) road sections.

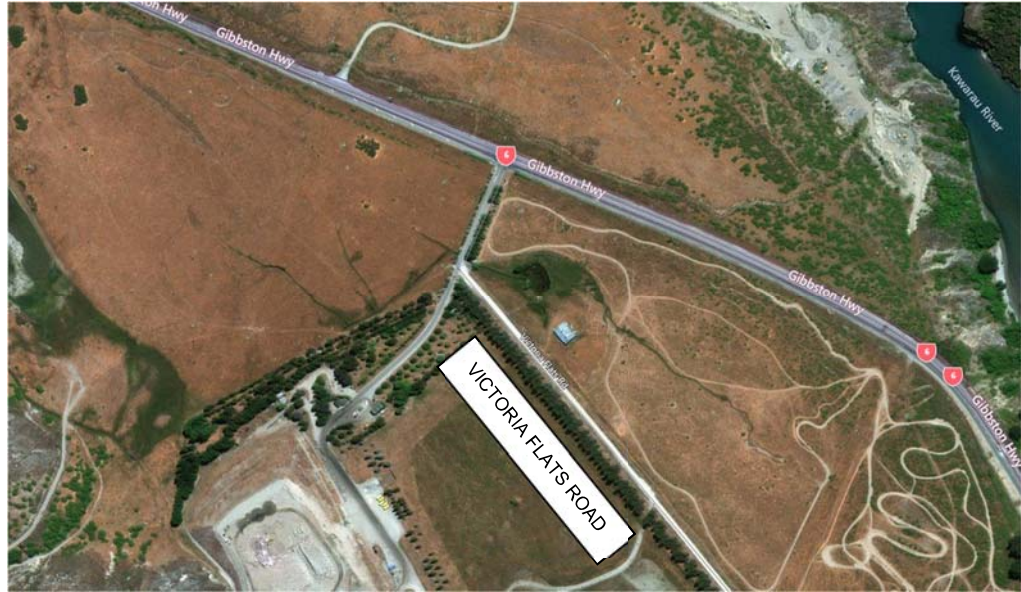


Figure 4: Victoria Flats Road intersection details;
Source: Bing Maps ©.

- 4.3** The current general low use of Victoria Flat Road (145 vpd: 2019 – Estimate; 10% HCV) results in a limited number of movements at the SH junction. It is acknowledged that the refuse tip is located down Victoria Flat Road.

Road alignment

- 4.4** The road alignment is generally defined by a combination of horizontal and vertical curves, and cuttings leading down to the Kawarau River Bridge. The formation of the passing lane has accounted for these in its design and allows vehicles to pass / overtake safely. South of the Victoria Flats Road junction, the road reverts to a single lane in each direction. This road section is characterized by horizontal and vertical curves of moderate alignment. The combination of both the horizontal and vertical curve in the same general location does limit forward visibility to any approaching traffic for any new access.

Crash history

- 4.5** To understand the nature and current safety of the road environment, an analysis of the NZ Crash Database was undertaken. A 10-year crash period was utilized due to the site being rural, and to allow a comparison as improvements have been made on the highway.
- 4.6** The diagram below indicates the location and nature of the recorded crashes. It is important to note that these are only the injury crashes, and those non-injury

crashes that were reported to the Police. Non-injury crashes could have occurred, with only an insurance claim / exchange of information being made, therefore no official Police record would be created.

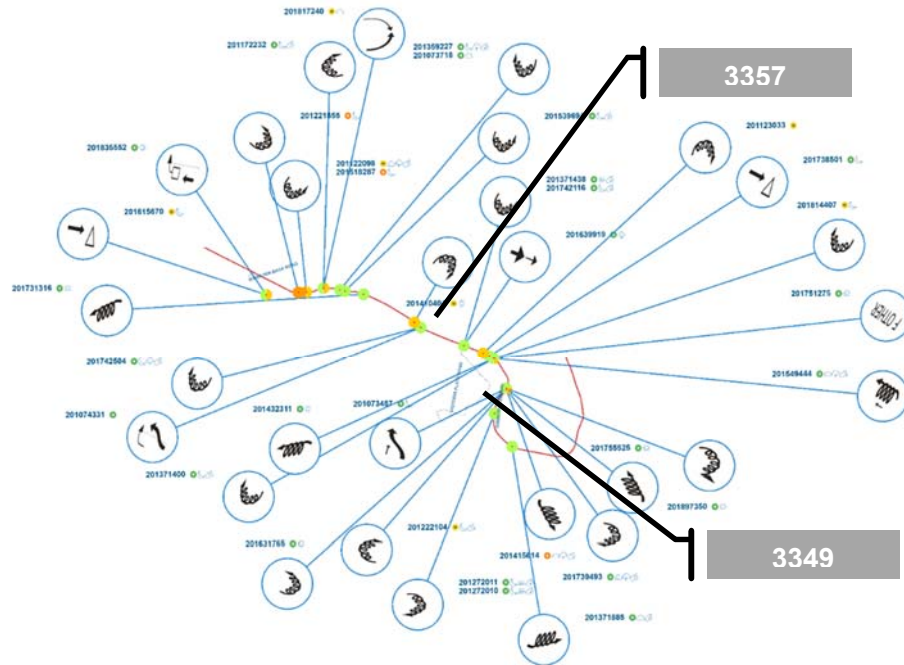


Figure 5: Crash Data,
Source NZTA CAS Database

- 4.7 The above Figure is reproduced on an A3 format in Appendix 1 for clarity.
- 4.8 The crash records indicate a series of crashes that are loss of control – off road; straight, loss of control on curve, along with merge / turning crashes on the passing lane. A high proportion of the crashes are minor injury or non-injury crashes.

5. SUBMISSION 3349 (CARDRONA CATTLE COMPANY)

- 5.1 The submission provided by Cardona Cattle Company Limited relates to an area of land between Nevis Bluff and Victoria Bridge, Victoria Flats west of the Kawarau River, totalling an area of 91.4ha as shown on **Figure 6** below. The CCC site includes rural / agricultural land located between areas of steep topography. There was limited information in terms of traffic related activities

and possible effects and no technical / expert report supporting the submission.

- 5.2** The majority of the southern part of the CCC site is zoned GCZ, with the northern portion and the southern reaches zoned 'Rural'.
- 5.3** The submission seeks to zone the site as GIZ in its entirety. It is noted that the northern and north eastern edges of the site are located within Designation 76, which provides a buffer to the adjacent existing landfill, located to the west of the site.
- 5.4** This site could only junction onto SH 6 at the Victoria Flats Road intersection, as indicated in **Figure 4**. No other access could be formed into the current passing lane due to severe road safety issues.
- 5.5** The road alignment in this area is generally straight and offers one of a limited passing opportunity in this area. It is important to note that SH 6 is characterized by the installation of no-overtaking lines along the total road section in this area.

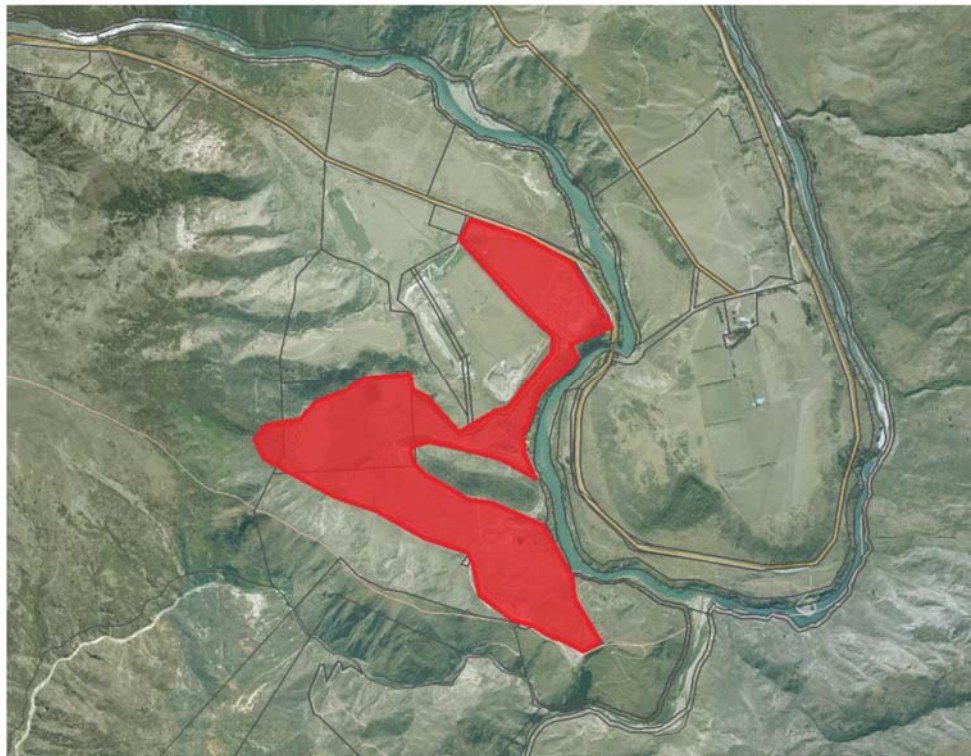


Figure 6: Submission 3349 site

- 5.6** Victoria Flat Road intersection junctions SH 6 at the merge point of the passing lane. A right turn in provision has been made by isolated widening of the northbound shoulder, allowing drivers to pull left to make sure the road is clear to undertake a right-hand turn. It is also noted that an access to land / quarry is located some 200 m south, on the opposite side of the road from the submission site.
- 5.7** It is considered unsafe to form an access or side road at the termination end merge of a passing lane. Whilst Victoria Flat Road is located at this position, the consideration for the passing lane would have been cognitive of the current form and use, and the design adjusted accordingly.
- 5.8** A rezoning from Rural Zone and Gibbston Character Zone to General Industrial Zone would ultimately result in a much higher traffic volume from the area, and a greatly increased risk to all users. The NZTA Planning Policy Manual; Appendix 3E.7 details the general position of NZTA. This document states:

Accessways

Transit places a high priority on seeking access arrangements for new developments and subdivisions that do not compromise the safety of current and future passing and overtaking facilities. For example:

- Transit will seek alternative locations for accessways at locations near passing lane tapers and 2+1 lane crossover points (transition zones);
- accessways on roads with central median barriers will have restricted movements; and
- accessways on passing lanes should be avoided if possible and any that are permitted will need to be designed to ensure the safety of accessway and other road users.

Further guidance on Transit's recommended approach to accessway location and design in relation to passing facilities and overtaking zones is provided in Transit's Passing and Overtaking Guidelines.

Transit seeks to influence accessway location and design by seeking appropriate provisions in land use planning documents and in its approach to individual development and access proposals.

- 5.9** Visibility to the right on exit could be limited due to the masking of approaching vehicles (nearside lane hiding a faster approaching vehicle in the fast lane). In this instance a right-turn out vehicle, especially HCV, could result in a high-speed side impact with the HCV. This could not be supported for the current design of the passing lane. Forming the intersection as a left turn in / left turn out would result in users driving south and then undertaking a U-Turn movement to travel north. This would be considered unacceptable.

5.10 Considering the left turn out movement, this could be catered for with traffic utilizing the merge taper. This zone also acts as the safety run over zone (a zone whereby a late overtaking movement allows safe shoulder space for drivers to merge into a single file / undertake emergency braking). Additional treatments would be required to cater for the merge and slow acceleration of HCV from the site.

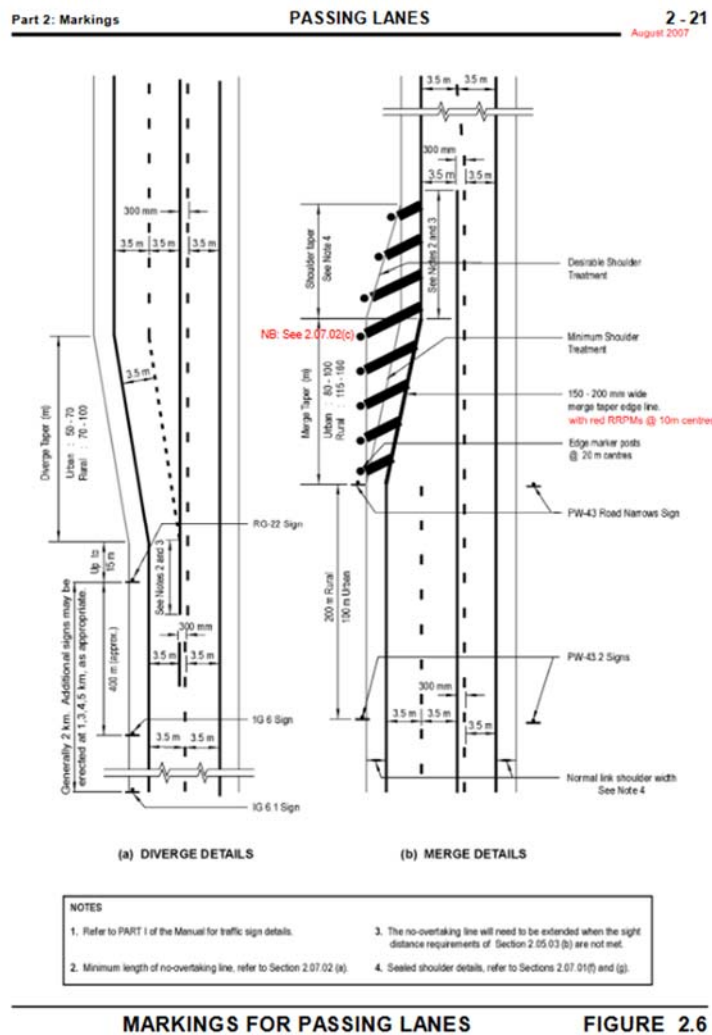


Figure 7: Markings for Passing Lanes
Source: NZTA Manual of Traffic Signs and Markings; Part 2

5.11 I have reviewed the submitters comments in regard to transport and make the following comments.

- (a) **Para i) "Access to the properties will not adversely impact on the State Highway and its functioning."**

I disagree with this statement. An increase in side road traffic will have an adverse effect on the State Highway and its function due to the physical location of the side road junction at the terminating end of a passing lane. An increase in right turn in traffic will have an impact on the flow of northbound traffic.

(b) **Para j) The key transportation issue with this proposal is catering for site generated traffic turning into and out of Victoria Flats Road.**

I agree in part. Site generated traffic turn movements is a key element, however traffic generation and development style (type of business / industry etc) will determine origin / destination movements, along with vehicle type and volume. Larger vehicles (HCV) have a slow acceleration profile and could raise road safety risks for certain movements (i.e. Right Turn Out movement). Consideration will also have to be given to the current use by HCV through the operation of the landfill site, and how the proposed land use change would effectively and safely cater for this existing traffic movement.

(c) **Para k) Any traffic related effects of the proposal are able to be suitably mitigated through the adoption of standard intersection upgrade designs such that road capacity and road safety is able to be maintained.**

I disagree. As stated in Para 5.7 above, it is considered unsafe to form an access or side road at the termination end merge of a passing lane.

5.12 In undertaking this review, I am of the opinion that this submission cannot be supported on traffic movement/safety grounds.

6. SUBMISSION 3357 (THE STATION AT WAITIRI LTD)

6.1 The Station at Waitiri Limited submission relates to an area of land adjacent to State Highway 6, Gibbston east of the Nevis Bluff, totalling an area of 44.7ha. The site is a triangular shaped piece of land that wedges between State Highway 6 (south) and the Kawarau River (north) as shown on **Figure 8** below.

There was limited information in terms of traffic related activities and possible effects and no technical / expert report supporting the submission.

- 6.2** The station site is currently zoned GCZ and the submission seeks to rezone it to GIZ in its entirety.



Figure 8: Submission 3357 Site

- 6.3** A review of the highway video for this section reveals that there is no formed property access, other than the random paddock access as could be expected for farmland.
- 6.4** In reviewing the topography of the road alignment along the site's frontage, I make the following comments:
- (a) The combination horizontal and vertical alignment, combined with the adjacent topography, severely limits locations for the formation of a safe access point;
 - (b) The topography is best described as rolling terrain;
 - (c) A high number of the curves are of moderate to tight radius and are sufficient to require the placement of curve chevrons for guidance;
 - (d) The general speed of traffic entering (southbound) to this road section is high due to drivers holding a higher speed from the end of the passing lane; and
 - (e) The available sight lines are limited, which would result in exiting traffic from an industrial development (especially HCV) being slow on acceleration and being unaware of high speed through traffic

approaching. This could lead to side impact crashes with a high severity (serious / fatal).

- 6.5 Without a specific site for exit to enable an assessment of effects, my general comment would be that it would be very complex to form a compliant access to the site.
- 6.6 I have reviewed the submitter's comments and note that there is a lack of any transport related comments in their submission.
- 6.7 In undertaking this review, I am of the opinion that this submission cannot be supported on traffic movement/safety grounds.



Mike Smith

Principle Transportation Engineer – Road Safety

18 March 2020

APPENDIX 1: NZTA Crash Data

