

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

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of Hearing Stream 17 – Chapter 18A – General
Industrial Zone

**STATEMENT OF EVIDENCE OF JASON BARTLETT ON BEHALF OF SCOPE RESOURCES
LIMITED (FS3470)**

Dated 5th June 2020

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INTRODUCTION

Qualifications and experience

- 1 My name is Jason Bartlett. I am an experienced traffic and transportation engineer. My academic and professional qualifications are:
 - (a) New Zealand Certificate in Engineering, Civil Option obtained in 1993;
 - (b) Bachelor of Engineering (BE) from the University of Canterbury awarded in 1996;
 - (c) Engineering New Zealand Member (MEngNZ), I have been a member since 1995; and
 - (d) Chartered Engineer and Member of the Institution of Civil Engineers (CEng MICE), since 2007.
- 2 I have over twenty years' experience in road design, network management, traffic and transportation engineering including nine years in the UK. During my time in the UK I became a Chartered Engineer and a Member of the Institution of Civil Engineers.
- 3 Since April 2008 I have been working as a traffic and transportation engineer in Queenstown. The first four of these years was for GHD Limited. I now operate my own traffic engineering consultancy, Bartlett Consulting, which I established in July 2012.

Expert witness code of conduct

- 4 I have been provided with a copy of the Code of Conduct for Expert Witnesses contained in the Environment Court's Consolidated Practice Note dated 1 December 2014. While this matter is not before the Environment Court, 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.

Involvement in project

- 5 In this matter I have been engaged by Scope Resources Limited (**SRL**) to provide transport engineering evidence in support of their further submission (FS 3470) opposing the submission (3349) by Cardrona Cattle Company Limited (**CCCL**) to rezone its land General Industrial Zone (**GIZ**).
- 6 SRL operate the Victoria Flats Landfill (**Landfill**) at Victoria Flats Road which borders the land identified in the rezoning request of CCCL.

- 7 I have been engaged by SRL to assess potential traffic that would be generated as a result of allowing CCCL's rezoning submission, and to assess whether this will have any adverse effect on access to the Landfill.
- 8 In preparing this evidence, I have reviewed the following documents or reports relevant to my area of expertise:
- (a) The CCCL submission dated 18 November 2019;
 - (b) QLDC Transport Engineering Evidence of Mr Michael Smith;
 - (c) QLDC Section 42A Report/Evidence of Mr Luke Place, Sections 9.19 to 9.63, which includes a summary of traffic considerations at 9.39.
- 9 I have prepared my evidence based on my:
- (a) Expertise as a traffic and transport engineer;
 - (b) Knowledge of the transport provisions of the QLDC Operative and Proposed (Decision Version December 2019) District Plans;
 - (c) Familiarity with the Submitter's site and the surrounding transport environment;
 - (d) Familiarity with the above mentioned documents.

Scope of evidence

- 10 My evidence addresses the following matters:
- (a) Assessment of the potential traffic generation of the requested rezoning and the effects this may have on access to the Landfill;
 - (b) Response to the Transport Evidence of Mr Michael Smith relating to the rezoning submission;
 - (c) Response to transport elements of the QLDC Section 42A Report with respect to the requested rezoning.

Submission

- 11 CCCL requests that land bordering the Landfill be rezoned GIZ with a number of additional bespoke provisions. The proposed GIZ will be accessed from Gibbston Highway SH6 via Victoria Flats Road. The total land area is some 91.4ha. Based on Mr Geddes calculations he suggests that this could result in a net developable land area of approximately 50.4ha¹.

¹ Refer Planning Evidence of Mr Nick Geddes, Paragraph 25.

Transport Environment

- 12 The Landfill and the CCCL property are accessed via Victoria Flats Road, this is a public local road within the Council's road hierarchy.
- 13 The initial section of Victoria Flats Road is a sealed road with a carriageway width of 6m. This initial section of road predominantly provides access to the Landfill and the sealed road carriageway extends into the Landfill. Information provided by SRL is that the Landfill has a traffic flow of approximately 45vpd, the majority being heavy vehicles. The QLDC traffic flow estimates for this road suggest approximately 145vpd² which includes heavy vehicles associated with the Landfill.
- 14 Beyond the Landfill, Victoria Flats Road is a narrow 5m unsealed carriageway road which serves farming and tourism activities in the area including the Nevis Bungy site and quad bike tours. Overall, Victoria Flats Road is considered a low volume local access³.
- 15 Victoria Flats Road is accessed from Gibbston Highway (SH6) which is an arterial road and a regional state highway providing a major inland north-south transport route. This road is managed by the New Zealand Transport Agency (NZTA) and is a Limited Access Road (LAR). The intersection with Victoria Flat Road generally meets the requirements of a Diagram E⁴ access type.
- 16 Traffic flow data for SH6 is collated by NZTA, Table 1 below provides a summary of the latest traffic count data nearest to the site. This traffic count data is provided as Average Annual Daily Traffic (AADT).

Table 1 – SH6 Traffic Count Data, source NZTA State Highway Traffic Volumes 2014 – 2018

Site	2014	2015	2016	2017	2018
SH6 – Gibbston (before Gibbston Back Rd), ID:00600970	3561	3868	4431	4965	5373

- 17 The data shows that the averaged annual growth rate on SH6 is approximately 10.9%. Assuming a constant traffic growth rate this suggests that the current (2020) traffic flow on SH6 would be approximately 6600vpd. Although this is likely to be reduced for a time as a result of the Covid-19 pandemic.
- 18 The posted speed limit of SH6 is 100km/hr. The intersection with Victoria Flats Road is located on a long straight section which includes a westbound (towards Queenstown) passing lane. A specific speed survey has not been undertaken although it is assumed

² Traffic estimate dated August 2019 from Mobile Road App, mobileroads.org

³ Land Transport Safety Authority (now NZTA) Guidelines for visibility at driveways (RTS6) defines local roads as having a traffic flow of less than 100vpd and a low volume access as less than 200vpd.

⁴ Refer Transit (now NZTA) Planning Policy Manual version 1 (August 2007), Appendix 5B Accessway standards and Guidelines.

that the operating speed at the intersection will be greater than the current legal speed limit, possibly 110km/hr to account for passing vehicles.

- 19 Based on NZTA guidance⁵ the existing intersection is appropriate for Victoria Flats Road traffic flow of less than 100vpd including heavy vehicles. The existing intersection design would need to be upgraded to meet current design guidance for the existing and any further development activities served by Victoria Flats Road. My experience with similar accesses from Gibbston Highway is that the intersection would require the development of a right turn bay to accommodate right turning vehicles from SH6 (to Victoria Flats Road) to minimise vehicle delays and safety effects.

Transport Assessment

- 20 The CCCL submission to apply the GIZ provisions to the area will enable a greater level of traffic generation than the farming and tourism (quad bike tours and Nevis Bungy access) activities that currently occur on site and utilise Victoria Flats Road.
- 21 My assessment considers the possible traffic generation which would be experienced at the access to the Landfill and at the intersection with SH6.

Traffic Generation

- 22 There are three source of traffic generation rates that may be applied to an industrial subdivision. These are listed below with their values provided in Table 2 below:
- (a) NZTA Research Report 453 (RR453), Trips and Parking Related to Land Use (2011), This document provides average trip rates based on the built floor area (per 100m² GFA). This rate can be based on a mixture of warehousing and manufacturing type industrial activities⁶.
 - (b) Roads and Traffic Authority (RTA) Guide to Traffic Generating Developments (2002) which is an Australian (NSW) guidance and may provide a better understanding of the anticipated traffic generation for larger developments. The suggested trip rates from this guidance are also based on the built floor area (per 100m² GFA). This rate is based on a mixture of factories and warehousing type industrial activities⁷.
 - (c) Local Comparison, Glenda Drive. Prior to the extension of Hawthorn Drive, Glenda Drive was cul-de-sac accessed from SH6. At this time, it was possible to review the Glenda Drive traffic flow to calculate an average traffic generation rate for the (then)

⁵ Refer Transit (now NZTA) Planning Policy Manual version 1 (August 2007), Appendix 5B Accessway standards and Guidelines.

⁶ Refer NZTA Research Report 453 (RR453), Trips and Parking Related to Land Use (2011), Table C.1 New Zealand trip generation and parking demand.

⁷ Refer Roads and Traffic Authority (RTA) Guide to Traffic Generating Developments (2002), Sections 3.10.1 Factories & 3.10.2 Warehouses.

24ha Glenda Drive area. The Glenda Drive zoning (Industrial B Zone) allows for a similar or comparable building coverage and activity types as the proposed GIZ. This comparison would be based on overall development area enabled by the rezoning⁸.

- 23 The following Table 2 provides a comparison of these different possible traffic generation rates.

Table 2 – Possible Traffic Generation

Source	Daily Rate	Assumptions	Traffic
NZTA RR453	9.6 vpd/100m ² GFA	50.4ha at maximum 80% built density, 403,200m ² GFA Max.	38,700vpd
RTA Guide (NSW)	4.5 vpd/100m ² GFA	50.4ha at maximum 80% built density, 403,200m ² GFA Max.	18,100vpd
Local Comparison	286vpd/ha	50.4ha developable area.	14,400vpd

- 24 This traffic generation assessment suggests that the proposed GIZ rezoning could have a traffic generation between 14,000vpd and 38,000vpd. I believe this level of traffic generation will have an effect on the Landfill operation by delays and reduced safety at the access to the Landfill from Victoria Flats Road and at the nearby intersection of Victoria Flats Road and SH6.

Landfill Access from Victoria Flats Road

- 25 I have looked at similar comparable accesses to establish possible effects at the Landfill access. Recently I reviewed a simple low volume residential access onto the Ladies Mile Highway (SH6). At this location SH6 (between Howards Drive and Lower Shotover Roundabout) has a current (2020) traffic flow of approximately 17,000vpd which is a good comparison for the Landfill access from Victoria Flats Road serving the requested GIZ. The traffic modelling undertaken showed delays of approximately 15 seconds (level of service C) for the right turn to the access and left turn from the access.
- 26 This suggests that the Landfill access from a future Victoria Flats Road serving the GIZ rezoning will have approximate 15 second (level of service C) delay. This will be for every vehicle movement associated with the Landfill should the GIZ rezoning be accepted.

Victoria Flats Road intersection with SH6

- 27 It is possible to review potential effects at the Victoria Flats Road intersection with SH6 through comparison with the intersection of Ladies Mile Highway (SH6) with Howards Drive (Lake Hayes Estate access). These two intersections have T-intersection layouts and would have comparable traffic flows when allowing for the requested GIZ. Recent

⁸ Based on QLDC traffic Counts for Glenda Drive, 5,082vpd Oct 2014, 5,888vpd Feb 2008 and 9,634vpd Nov 2006.

developments at Lake Hayes Estate mean that there have been several recent studies of this intersection. Modelling shows that the intersection of SH6 and Howards Drive experiences delay of up to 23 seconds (level of service C) in the am peak and 62 seconds (level of service F) in the pm peak period. I consider this to be similar to the delay which will be incurred by Landfill vehicles (and others) at the intersection of Victoria Flats Road and SH6 as a result of the requested GIZ.

- 28 The current traffic flows at the Howards Drive intersection with SH6 has resulted in poor road safety. NZTA have stated that this intersection is to be upgraded to a roundabout intersection to improve road safety, the improvements are being funded as a road safety project. It is understood that NZTA will undertake this work in the next 2 years. This suggests that the traffic increase resulting from the GIZ will compromise road safety at the intersection of Victoria Flats Road and SH6. In my experience I expect that the possible GIZ will require significant upgrades at the intersection of Victoria Flats Road with SH6 to maintain safety and minimise traffic delay experienced by road users. However, this intersection type may be difficult given the current passing lanes and high traffic speeds at the existing intersection of Victoria Flats Road with SH6.
- 29 The submission claims that access will not adversely impact on the state highway and that a key transportation issue will be catering for traffic turning at the intersection of Victoria Flats Road and SH6⁹. Given the size of the proposed rezoning in my opinion it is likely that significant intersection improvements will be required to accommodate the anticipated traffic generation. The submission provides no details on how these improvements can be accommodated or if the Road Controlling Authorities (NZTA or QLDC) would accept these in this part of the road network. Until any acceptance can be attained from the Road Controlling Authorities for any required upgrade works I consider that the submission is premature.
- 30 In my experience, a key component of any rezoning proposal of the magnitude proposed here it would be appropriate to consider and investigate vehicle access, and to ascertain if this is at least possible following consultation with NZTA. The NZTA road network will be significantly affected by the anticipated traffic generation and any required intersection works. This consultation does not appear to have been undertaken.
- 31 I also record here the transport evidence of Mr David Smith on behalf of QLDC presented in the Stage 2 District Plan Review hearings¹⁰. Mr Smith recommended rejection of any new developments to the east of the Shotover River which does not mitigate transport

⁹ Refer CCCL submission (3349), Paragraphs 9. i & j.

¹⁰ Refer Stage 2 District Plan Review, Hearing Stream 14, Statement of Evidence of Mr David Smith on Behalf of QLDC, Traffic and Transportation, dated 28 May 2018.

effects along the SH6 corridor in the vicinity of the Lower Shotover Bridge, Edith Cavell Bridge or Arrow Junction. This recommendation was based on Mr Smith's assessment of potential transport effects in these areas. The requested GIZ at Victoria Flat will add significant traffic onto these parts of the road network including especially on the SH6 corridor, the Lower Shotover River Bridge and Arrow Junction. This is a further reason to reject the CCCL submission.

Transport Assessment Summary

32 I consider that the requested GIZ will have significant effects on the operation of the Landfill. This will include delay to all vehicle movement at the access to the Landfill, the nearby intersection of Victoria Flats Road with SH6 and possibly other critical locations within the road network. In addition, the significant increase in traffic on Victoria Flats Road will reduce safety at the Landfill access and at the nearby intersection with SH6. It may be possible to upgrade the Victoria Flats Road intersection with SH6 to maintain safety although, at this stage, this does not appear to have been fully considered and there no evidence of consultation or agreement from the relevant Road Controlling Authorities.

QLDC TRANSPORT EVIDENCE and SECTION 42A REPORT

33 The QLDC Transport Evidence of Mr Michael Smith considers the requested rezoning submission. Mr Smith's evidence considers there will be a much higher traffic volume if the submission is allowed¹¹, and the potential effects this may have at the current intersection of Victoria Flats Road and SH6. Mr Smith considers the existing passing lane, vehicle speeds and crash history together with the increased traffic movements from a GIZ zoning at this intersection. Mr Smith concludes that the rezoning request cannot be supported on traffic movements or safety grounds¹². I concur with Mr Smith's assessment given the significant traffic increase possible at Victoria Flats Road.

34 QLDC Section 42A Report/Evidence of Mr Luke Place considers the CCCL submission and a similar nearby submission at Sections 9.19 to 9.63. Mr Place adopts the traffic findings of Mr Smith at section 9.39.

CONCLUSION

35 In my opinion allowing the CCCL submission would introduce a volume of traffic on to Victoria Flats Road which will compromise the current level of service and safety of this local road and its intersection with Gibbston Highway (SH6).

¹¹ Refer QLDC Transport Evidence of Mr Michael Smith, Paragraph 5.8

¹² Refer QLDC Transport Evidence of Mr Michael Smith, Paragraph 5.12.

- 36 The vehicle movements required for the current and continued operation of the Landfill will incur significant delays at the access to the Landfill and the intersection of Victoria Flats Road with Gibbston Valley Highway (SH6).
- 37 It is likely that this increased traffic flow would result in the need for significant intersection upgrades to achieve safe and efficient access. These upgrades would need to be agreed by the Road Controlling Authority (NZTA or QLDC). I have not seen any evidence of consultation or approvals from these Road Controlling Authorities.

Jason Bartlett

5 June 2020