

Before Queenstown Lakes District Council

In the matter of The Resource Management Act 1991

And The Queenstown Lakes District proposed District Plan –
Rezoning Hearing Topic 12 – Upper Clutha mapping

STATEMENT OF EVIDENCE OF ANDY CARR FOR

Glendhu Bay Trustees Limited (#583)

Dated 4 April 2017

Solicitors:

Maree Baker-Galloway | Rosie Hill
Anderson Lloyd
Level 2, 13 Camp Street, Queenstown 9300
PO Box 201, Queenstown 9348
DX Box ZP95010 Queenstown
p + 64 3 450 0700 | f + 64 3 450 0799
maree.baker-galloway@al.nz | rosie.hill@al.nz

**anderson
lloyd.**

Qualifications and Experience

- 1 My full name is Andrew (Andy) David Carr.
- 2 I am a Chartered Professional Engineer and an International Professional Engineer (New Zealand section of the register). I hold a Master's degree in Transport Engineering and Operations and also a Master's degree in Business Administration.
- 3 I am a member of the national committee of the Resource Management Law Association and a past Chair of the Canterbury branch of the organisation. I am also a Member of the Institution of Professional Engineers New Zealand, and an Associate Member of the New Zealand Planning Institute.
- 4 I have more than 27 years' experience in traffic engineering, over which time I have been responsible for investigating and evaluating the traffic and transportation impacts of a wide range of land use developments, both in New Zealand and the United Kingdom.
- 5 I am presently a director of Carriageway Consulting Ltd, a specialist traffic engineering and transport planning consultancy which I founded in early 2014. My role primarily involves undertaking and reviewing traffic analyses for both resource consent applications and proposed plan changes for a variety of different development types, for both local authorities and private organisations. I am also a Hearings Commissioner and have acted in that role for Greater Wellington Regional Council, Ashburton District Council, Waimakariri District Council and Christchurch City Council.
- 6 Prior to forming Carriageway Consulting Ltd I was employed by traffic engineering consultancies where I had senior roles in developing the business, undertaking technical work and supervising project teams primarily within the South Island.
- 7 I have been involved in a number of proposals comparable to the activities that would be permitted under the rezoning sought. This includes the consenting of a resort-type development in Gibbston Valley, and The Hills golf club, and plan changes such as Selwyn District Council District Plan Change 25, to rezone 616ha for the expansion of Porters ski area and Queenstown Lakes District Plan Change 18 (Mount Cardrona), to relocate and consolidate a Rural Visitor Zone. I have also been involved in numerous proposals for visitor accommodation.
- 8 I have carried out transportation-related commissions for a variety of new developments in the Wanaka area for more than 12 years.

- 9 As a result of my experience, I consider that I am fully familiar with the particular traffic-related issues associated with the rezoning of areas of this nature.
- 10 I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note. This evidence has been prepared in accordance with it and I agree to comply with it. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

Scope of Evidence

- 11 I have been asked by counsel for Glendhu Bay Trustees Limited to prepare evidence in relation to the traffic and transportation issues arising from their submission to the District Plan review. In brief the provisions sought for the inclusion of a new Glendhu Station Zone which will result in a greater potential extent of development beyond what has already been consented by the Environment Court.
- 12 My evidence addresses the following matters:
- (a) A description of the prevailing future transportation networks in the area.
 - (b) The traffic likely to be generated by the proposed provisions for the zone, and a discussion about the development that could occur within the zone as of right at present under existing resource consents.
 - (c) An assessment of the performance of the transportation network under an increased traffic loading, taking account of safety and efficiency.
- 13 My evidence is primarily focussed on the (geographic) area relevant to the submission, but as cumulative effects are important for traffic matters, where relevant I have also considered the traffic issues further afield.
- 14 In preparing this evidence I have reviewed:
- (a) The reports and statements of evidence of other experts giving evidence relevant to my area of expertise, including:
 - (i) Mr John Darby;
 - (ii) Mr John McRae; and
 - (iii) Mr Brett Thomson
 - (b) Proposed Glendhu Station Zone provisions (as amended) attached to the evidence of Mr Ferguson.
 - (c) The submission made by Glendhu Bay Trustees Limited.

- (d) The Statement of Evidence of Ms Wendy Banks on behalf of Queenstown Lakes District Council.

Existing Transportation Networks

- 15 The site subject to the submission is located approximately 12km to the west of Wanaka, west of Glendhu Bay and south of Parkins Bay.
- 16 The only roading link between the site and Wanaka is Wanaka – Mount Aspiring Road, which is a Collector Road in the Queenstown Lakes District Plan roading hierarchy. It provides two traffic lanes (one in each direction) over the vast majority of its length, and the carriageway is sealed.
- 17 Wanaka – Mount Aspiring Road commences at McDougall Street in Wanaka, where it forms the continuation of Ardmore Street westwards. In this location it has a 50km/h speed limit and a typical urban formation with parking lanes / shoulders on each side and traffic lanes of 3.4m width.
- 18 The speed limit increases to 70km/h just west of Bills Way (approximately 1.8km west of McDougall Street) and in this location the road frontage transitions to become noticeably more rural. The road provides two traffic lanes of around 3.0m width each, but typically with a very narrow sealed shoulder on each side. The speed limit increases to 100km/h around 2.2km west of McDougall Street.
- 19 From Bills Way westwards, the road has a rolling vertical alignment with gentle horizontal curves, and there are 'no overtaking' centrelines marked in several locations. The curves become more pronounced further west but forward visibility generally remains good over much of its length.
- 20 The road then reaches Glendhu Bay where it runs parallel to the shoreline and serves the Glendhu Bay Motor Camp. At the access to the motor camp, there are widened shoulders on Wanaka – Mount Aspiring Road to assist vehicles turning into the site from each direction.
- 21 Approximately 0.7km northwest of the motor camp access, Motatapu Road meets Wanaka – Mount Aspiring Road at a priority intersection, where traffic on the latter retains priority. The intersection has no auxiliary turning lanes.
- 22 Some 0.4km further west, the road has a sharper horizontal curve with a 55km/h advisory speed limit and associated supplementary chevron boards around the curve. Immediately to the west of the curve, Wanaka – Mount Aspiring Road crosses a small watercourse (the Fern Burn) via a single-lane bridge, where eastbound vehicles have priority.

- 23 The road then continues towards the northwest, remaining with a rolling curvilinear alignment, a 100km/h speed limit and with traffic lanes in the order of 3.0m and narrow sealed shoulders.
- 24 To the west of Glendhu Bay and Parkins Bay, Wanaka – Mount Aspiring Road continues with a curvilinear alignment but the curves are tighter and this will reduce the maximum possible vehicle speeds.
- 25 Traffic flows on Wanaka – Mount Aspiring Road to the east of Motatapu Road are in the order of 1,200 vehicles per day. These flows were recorded in October/November and are therefore outside the peak times of traffic flow. Because the road serves the Glendhu Motor Camp as well as providing the route to the Mount Aspiring National Park and the Treble Cone ski area, traffic volumes are seasonal. The Council's data indicates that at peak times, the daily traffic volumes double to around 2,400 vehicles per day.
- 26 Taking into account that the road will not have typical 'commuter'-type patterns for flow, this means that the peak hour traffic flows will be around 180 vehicles per hour in the shoulder season and 360 vehicles per hour in the busiest summer and winter periods.
- 27 I understand that the area subject to the submission already has a resource consent in place for an 18-hole golf course, clubhouse, jetty, 12 visitor accommodation units, and 42 residences/visitor accommodation units. Taking these into account, the peak hour traffic flows would rise to 270 to 450 vehicles per hour.
- 28 I have used the NZTA Crash Analysis System to identify all reported accidents on Wanaka – Mount Aspiring Road from west of Bills Way to east of West Wanaka Road, for the period 2012 to present. This shows that there have been 17 reported accidents, of which 10 involved a driver losing control of their vehicle (that is, there was no other vehicle involved). In my experience, this type of accident is common for a rural road.
- 29 All 17 accidents occurred in different locations on Wanaka – Mount Aspiring Road and typically had different contributing factors.
- 30 Two accidents resulted in serious injuries. One involved an intoxicated overseas driver who was travelling on the incorrect side of the road, and struck another vehicle. The other involved an intoxicated and drugged driver who fell asleep and left the road.
- 31 Four accidents resulted in minor injuries. Two involved overseas drivers, one of who lost control of their motorcycle and left the road, and the other struck a pedestrian who was walking by the side of the road. One accident involved a

driver, who was distracted by scenery and left the road, and the fourth accident was due to a driver travelling too quickly, and who lost control and left the road.

- 32 The remaining accidents did not result in any injuries. Two accidents involved drivers who fell asleep and left the road. Three accidents involved drivers travelling too quickly and who lost control. Six accidents had different contributing factors:
- (a) A driver turning right was struck by an overtaking vehicle;
 - (b) A driver was distracted by a warning light, failed to notice the curve in the road, and left the road;
 - (c) A driver slowed to pass a cyclist, and was struck by a following vehicle;
 - (d) A driver aquaplaned on standing water and left the road;
 - (e) A driver pulled into the side of the road, and the following driver hit the side of the vehicle; and
 - (f) A driver turning into a minor road and was struck from behind by another vehicle.
- 33 While the 'safe systems' approach to road design seeks to eliminate injury accidents, it is of note that both accidents resulting in serious injuries involved drivers who were intoxicated.
- 34 The NZTA Crash Estimation Compendium sets out equations whereby the typical injury crash rate on a road can be calculated. Taking into account the characteristics of the road such as length, lane width and shoulder width, and the prevailing traffic flows, this suggests that 1 or 2 injury accidents should be recorded per year (equating to a total of 7 or 8 injury accidents over a five-year period). The accident record of Wanaka – Mount Aspiring Road is slightly better than this with 6 injury accidents recorded¹.
- 35 Moreover, the accidents are distributed along the length of the road with no clusters being evident, and the records indicate that driver inattention was a major contributing factor. Accordingly, I do not consider that there is any evidence that there are any inherent geometric deficiencies on Wanaka – Mount Aspiring Road.
- 36 The Austroads Guide to Traffic Management Part 3 'Traffic Studies and Analysis' sets out a methodology whereby the level of service provided by a road can be

¹ For clarity, there is no comparable calculation method available for non-injury accidents

found. Using this, and taking into account the consented development, Wanaka – Mount Aspiring Road currently provides Level of Service C in the shoulder season and Level of Service D in the busiest seasons. Level of Service C is noted in the Austroads Guide as a “zone of stable flow, but (where) most drivers are restricted to some extent in their freedom to select their desired speed and to manoeuvre within the traffic stream”. Level of Service D is “close to the limit of stable flow (where) all drivers are severely restricted in their freedom to select their desired speed and to manoeuvre within the traffic stream.”

Traffic Generation of the Proposed Provisions

- 37 Although the site already has resource consent for development, the proposed zoning would make provision for further activities, specifically additional visitor and residential accommodation.
- 38 I note that there are other activities signalled in the proposed zone provisions, such as small commercial activities, a function venue, small scale tourism activities and activities ancillary to the farming operations, but these require a resource consent as a Restricted Discretionary Activity, and one of the matters of discretion is “traffic generation, access and car parking”. Since these activities cannot establish as of right, I have not considered them further within my assessments.
- 39 Because the proposal is for a rezoning of land rather than a specific development, it is not possible to quantify the extent of additional traffic generation that could be facilitated, and in turn this means that any assessment of the traffic-related effects can only be carried out cautiously. However there are some general issues that can be determined.
- 40 In my view, the potential for expanding the visitor accommodation will be limited by the location. A person wishing to stay within a less urban area, or in close proximity to the Treble Cone ski area, is more likely to find the site attractive than a person wishing to stay within an urbanised area with the associated amenities that are provided, such as Wanaka itself. This means that demand for visitor accommodation units will necessarily be tempered.
- 41 Furthermore, because of the distance to travel, visitors staying at the site are unlikely to travel to and from Wanaka on several occasions each day, but, they are likely to depart the site once in the morning (if they choose to leave the site) and return once later in the day. By way of contrast, at visitor accommodation within an urban area, guests often arrive and depart their unit several times a day.

Effects of Increased Traffic Volumes

- 42 Although determining the traffic generation cannot be carried out with certainty, it is possible to identify potential changes arising from future traffic generation.
- 43 In the first instance, the level of service provided on Wanaka – Mount Aspiring Road would not reduce to below Level of Service D unless traffic flows were to increase by around 500 vehicles per hour, in other words, more than double the prevailing situation (that is, the peak hour traffic volumes plus consented development). This would equate to an increase commensurate with 550 visitor accommodation units, residences and/or occupied lots within the campground which is far beyond the scale enabled by the proposed zone provisions.
- 44 Rather, in my view the more likely scenario is that even with a more intensive development within the site, the level of service on Wanaka – Mount Aspiring Road would remain at the same as at present.
- 45 With regard to road safety, the increase in traffic volume will inevitably lead to an increase in exposure to accidents. However this does not mean that the road will become more unsafe, but rather that as more vehicles use any road, the greater the risk of a conflict. This is recognised in the NZTA accident prediction equations, whereby a doubling in the traffic flows on any rural road leads to an expected doubling in the number of accidents. Overall then, while I expect that there will be an increase in the number of accidents as a result of higher traffic flows, I consider that this will be proportional to the increase in volume. However I also expect that the injury accident rate on Wanaka – Mount Aspiring Road will remain at or below the typical rate for roads of this nature since there is no evidence of any inherent safety-related deficiencies.
- 46 Accordingly, I consider that the traffic likely to be generated by development that would be permitted within the proposed rezoned area can be accommodated on the roading network without adverse efficiency or safety effects arising. Any transportation effects arising from activities that require resource consent as a Restricted Discretionary Activity can be reviewed as and when applications for consent are made.

Response to Officer Report

- 47 I have read the report of Ms Wendy Banks, consultant transportation engineer to the Council, in respect of the submission. She raises two concerns with the proposed rezoning.
- 48 The first matter raised is that the issue of increases in traffic has not been discussed within the submission. In this regard, Ms Banks states that the proposed rezoning would “enable a variety of activities including additional

visitor and residential accommodation, wedding venue and services, extension of camp ground farm tours and eco themed visitor accommodation". However, of these, only visitor and residential accommodation could establish as of right, as the other land uses require consent as a Restricted Discretionary Activity, with "traffic generation, access and car parking" being a matter of discretion.

49 I have addressed the issue of traffic generation in some detail previously in my evidence, and on the basis of my analysis, I consider that the movement of vehicles can be accommodated safely and efficiently.

50 The second matter relates to the road safety issues on Wanaka – Mt Aspiring Road, where she highlights the narrow road width of the existing carriageway, and the frequency of vehicle crashes. I have assessed this matter by way of reviewing the accident records and the equations in the NZTA Crash Estimation Compendium, and in my view, the injury accident rate is slightly better than the typical rate for a road of this nature.

51 I have also specifically assessed Wanaka – Mt Aspiring Road within Glendhu Bay, which Ms Banks says is a "black spot for vehicle crashes". For a distance of 2km east and west of the motor camp, between 2012 and 2017, there were four accidents recorded:

- (a) A driver turning right was struck by an overtaking vehicle. This did not result in any injuries;
- (b) A driver was distracted by a warning light, failed to notice the curve in the road, and left the road. This did not result in any injuries;
- (c) An intoxicated overseas driver was travelling on the incorrect side of the road and struck another vehicle. This resulted in serious injuries; and
- (d) A driver was travelling too quickly and lost control. This did not result in any injuries.

52 Based on my review, and that the only injury accident which occurred involved intoxication and the driver struck another vehicle (rather than any roadside feature), I do not consider that this section of the road presents significant road safety concerns.

53 The NZTA 'High Risk Rural Roads Guide' indicates that a blackspot is a location where there have been 3 or more fatal or serious accidents in a five-year period, or 5 or more fatal or serious accidents in a ten-year period (Section 4.1 of that report). As is evident from the above, the former of these criteria is not fulfilled (there was only one serious accident recorded). Having reviewed the CAS database for the period 2007 to 2017 for this section of road, there was

one fatal accident and three serious accidents. Again, the criterion for a blackspot is not met.

- 54 Overall, while I acknowledge that an increase in traffic flows on the road will lead to an increase in exposure to risk, this is a wholly different matter to Wanaka – Mt Aspiring Road being intrinsically 'unsafe' or being a blackspot.

Conclusion

- 55 Having reviewed the submission made by Glendhu Bay Trustees Limited, I am able to support the rezoning of land west of Glendhu Bay and south of Parkins Bay as Glendhu Station Special Zone. Having reviewed the prevailing transportation characteristics of Wanaka – Mt Aspiring Road, I consider that it is able to accommodate increased traffic flows likely to arise from permitted activities within the area without adverse efficiency or safety effects arising.

Dated this 4th day of April 2017

Andy Carr