

**BEFORE COMMISSIONERS APPOINTED BY
QUEENSTOWN LAKES DISTRICT COUNCIL**

IN THE MATTER of Resource Management Act 1991

AND

IN THE MATTER of submissions by Jeremy Bell
Investments Limited

OS 782 and FS 1030

EVIDENCE OF ANDREW DAVID CARR

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Introduction

1. My full name is Andrew (Andy) David Carr. My qualifications and experience are set out in my Evidence in Chief.
2. This Summary of Evidence sets out the key points within my Evidence in Chief. I have also read Ms Banks' rebuttal evidence, and I have responded to her comments within this statement.
3. I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2014. This summary of 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.

Prevailing Transport Networks

4. In my Evidence in Chief, I described the existing geometry of the roading network, noting that the flat and straight alignment of State Highway 6 meant that excellent sight distances were provided for all drivers turning to and from Mt Barker Road and the airport access
5. Traffic flows in the vicinity of the submitter's site are presently low, with the highway carrying 340 to 420 vehicles (two-way) in the morning and evening peak hours respectively, and Mt Barker Road carrying around 30 vehicles (two-way) in the peak hours.
6. The road safety record in the immediate area shows just four crashes over the past five years, all of which occurred in different places and with different contributing factors.
7. Accordingly, I concluded that the roading network in the immediate vicinity of the proposed zone presently operates with good levels of service in respect of safety and efficiency.

Traffic Generation of the Rezoning

8. To evaluate the effects of the rezoning sought, I have derived the expected traffic generation based upon the size and types of activity that could occur under the proposed provisions. This scenario was provided to me by Mr Brown. Ms Banks notes (Banks rebuttal paragraph 5.10)

that in her view, a greater amount of development could take place as of right, and implies that as a result, my calculation of traffic generation results in a volume that is too low.

9. I understand that Mr Brown will discuss this further but that the scenario that I have modelled is robust. Further, I have used higher traffic generating activities in my calculations, meaning that the resultant total volumes will be at the upper end of the range expected. In this regard, Ms Banks has not raised any concerns or queries regarding the traffic generation rates that I have used for each activity. Notwithstanding this, I discuss the extent of permitted development subsequently in this summary statement
10. In my calculation, I allowed for a small amount of visitor accommodation to establish. I am advised that this is now no longer to be permitted in the site, meaning that the traffic generation will reduce even further.

Traffic Effects of the Rezoning on Intersection Capacity

11. I have added the traffic expected to be generated by the proposal to the prevailing flows, and modelled the results on efficiency at both the Mt Barker Road and Airport Way intersections with State Highway 6.
12. This showed that at the Airport Way intersection, the greatest delay was in the order of just 20 seconds on any movement in the peak hours. The delays were greater at the Mt Barker Road intersection, at 44 seconds in the morning peak hour for right-turning vehicles emerging from Mt Barker Road. However this delay only occurred on this movement and in the morning peak hour – all other movements in the morning peak hour, and all movements in the evening peak hour, had delays that were considerably lower than this.
13. Forty-four seconds represents Level of Service E, which is higher than I would anticipate on a state highway. In my Evidence in Chief, I set out that if just 20 vehicles less in the morning peak hour turned right out of Mt Barker Road, then the delays would reduce such that Level of Service D would arise, which in my experience is appropriate for an intersection on a state highway. I noted that in practice, lower flows were likely to arise because of my traffic generation calculations being biased towards higher trip-generating activities.

14. Ms Banks expresses concern that the extent of vehicles turning right out of the site is “rather high” (Banks rebuttal paragraph 5.12) and that the expected queue is ten vehicles. However I do not share her concerns because both the volume and queue would reduce with only a small reduction in right-turn movements, as I consider is likely to arise. Moreover, it is not the queue length but the delay for drivers that is more critical (this is why the concept of level of service is based on the latter and not the former).
15. However in view of Ms Banks comments, it is proposed to give greater certainty to the traffic-related effects by limiting the amount of development that can take place within the site as a Permitted Activity.
16. To determine this threshold, in the first instance I have reduced the traffic flows generated by the site by 4% and remodelled the State Highway 6 / Mt Barker Road intersection. This shows the following outcomes in the morning peak hour (being the period where forecast delays are greatest):

Road and Movement		Morning Peak Hour		
		Avg Delay (secs)	95 %ile Queue (veh)	Level of Service
Mt Barker Road	L	6.0	0	A
	R	34.1	7	D
SH6 (east)	L	8.2	0	A
SH6 (west)	R	11.2	2	B

Table 1: State Highway 6 / Mt Barker Road Intersection with Proposed Rezoned Area Fully Developed, 4% Reduction

17. The delays for vehicles turning right out of Mt Barker Road reduce by ten seconds under this scenario compared to my earlier analyses and Level of Service D is provided which I consider is acceptable for such an intersection in the peak hours.
18. Such a reduction means that the site would generate 880 vehicle movements (two-way) in the peak hour, rather than 920 vehicle movements (two-way) as I set out in my Evidence in Chief.
19. If it is assumed that all of these vehicles are associated with general commercial services, then this would equate to the traffic generation from 44,150sqm GFA. Conversely, if these vehicles are all associated

with warehousing / storage / industrial uses then this would equate to the traffic generation from 88,300sqm GFA. In practice, the mix of activities within the site is likely to lie between the two values of GFA.

20. In my experience, there are a number of ways in which the traffic generation of the site can be limited to no more than 880 vehicle movements (two-way) such as through monitoring the traffic flows, limiting the development of the overall site, or limiting the development of each individual lot. Mr Brown will discuss the particular method proposed in this instance.
21. In general however, in my view, Ms Banks' concerns regarding the delays at the State Highway 6 / Mt Barker Road intersection would be fully addressed if the amount of Permitted development was limited to this threshold of 880 vehicle movements (two-way) in the peak hours.

Geometry of the Intersections

22. The volumes of turning traffic mean that auxiliary lanes are required for vehicles turning left into both Mt Barker Road and Airport Way, and right into Mt Barker Road. For clarity, these lanes are required even if the traffic generation was to be a little lower than I have calculated. Ms Banks does not appear to disagree with this.

Road Safety

23. With regard to safety, I acknowledge that there will be increased volumes of turning traffic but in my view the auxiliary lanes will have a positive effect (and in fact one historic crash arguably would not have occurred if a right-turn lane was in place at the Mt Barker Road intersection). The auxiliary lanes also mean a driver turning right from Mt Barker Road can almost immediately move into the left-turn auxiliary lane for Airport Way and out of the through traffic lane (and vice versa for vehicles emerging from Airport Way). The 40m width of the road reserve for the highway means that there is ample area available to construct the auxiliary lanes.
24. In view of this, I consider that subject to detailed design, the overarching layout and positions of the two access intersections (at Mt Barker Road and Airport Way) means that they will function safely.

25. Ms Banks sets out that she remains concerned about road safety, particular for the right-turn movement out of Mt Barker Road, and suggests that safety effects have not been addressed (Banks rebuttal paragraph 5.14). In my view though, safety matters were well-traversed in my Evidence in Chief, and I consider that significant adverse effects are unlikely to arise because:
- a. There is no evidence of any existing road safety deficiencies on the roading network that could be exacerbated by the higher volumes;
 - b. Sight distances at the intersections meet (and in fact considerably exceed) requirements;
 - c. The presence of auxiliary lanes will provide a safety benefit to traffic turning off the highway; and
 - d. Delays for drivers are not excessive, to the extent that drivers will feel pressured to emerge from the minor approaches and into an unsuitable gap in the traffic stream on the highway.
26. For these reasons I do not share Ms Banks views regarding the road safety effects of the proposal.

Potential for an Eastern Site Access

27. There is an unformed legal road at the eastern boundary of the site, and in due course I consider that this could be developed further to provide a second access for the site. The access is not required to be in place for the site to be served with an appropriate level of service, but rather, could create efficiencies by reducing travel distances for tenants.

Internal Layout

28. In view of the size of the zone, I do not foresee that there will be any difficulties in meeting the transportation-related requirements of the District Plan in full, although improvement measures will be required to Mt Barker Road (within the road reserve).

Queenstown Airport Corporation

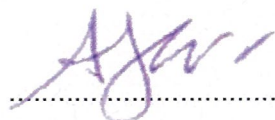
29. I understand that Queenstown Airport Corporation has submitted in support of the proposed rezoning, and in respect of transportation matter

this support is conditional on the provision of “safe pedestrian and vehicular connection between the airport and the site”.

30. I have set out above that I consider the access arrangements will operate safely for vehicles, subject to appropriate provision of auxiliary turning lanes.
31. In respect of pedestrian movements, there is the potential that the rezoning will lead to a greater number of people walking between the airport and the site. There are no equations by which the number of these movements can be forecast, but I anticipate that it will depend on the nature of the activities that establish. It is quite possible that in practice there will be very few pedestrian crossing movements.
32. There are a number of ways in which pedestrian movements can be assisted, but to an extent this depends on the configuration of the traffic lanes on the highway and whether NZTA considers that it would be beneficial to reduce the speed limit. Under a reduced speed limit, a flush median would provide a suitable way of crossing the road, as it enables pedestrians to cross one traffic stream and then the other.
33. However assuming that the speed limit remains at 100km/h, then grade-separation is the only viable option. Under this scenario, I consider that an underpass would be the most likely arrangement. The width of the legal road reserve in this location (40m) means that there is sufficient space for this to be provided without utilising any third party land.

Conclusions

34. Having reviewed Ms Banks’ rebuttal evidence, I remain of the overall views expressed in my Evidence in Chief and continue to support the submission of Jeremy Bell Investments Limited for the rezoning of land adjacent to State Highway 6 for airport-related activities.



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Andy Carr

13 June 2017

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Date