

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

IN THE MATTER of the Resource
Management Act 1991

AND

IN THE MATTER of the Hearing Stream 13
– Queenstown Mapping
Annotations and Rezoning
Requests

**STATEMENT OF EVIDENCE OF MR JOHN FRANCIS McCARTNEY ON BEHALF
OF MOUNT CRYSTAL LIMITED #150**

INTRODUCTION

1. My name is John McCartney. I am a consulting civil engineer and I am the owner and director of the consulting engineering company Civilised Limited, based in Queenstown.
2. I hold the qualifications of Bachelor of Engineering (Civil) from the University of Canterbury. I have 25 years experience in the design and construction of civil infrastructure with particular expertise in site investigation and assessment along with the design and construction of development infrastructure including roading, water supply, wastewater and stormwater disposal systems. I have experience in the design and implementation of infrastructure works for both private companies and for Local Authorities throughout New Zealand.
3. Whilst I acknowledge that this is a Council hearing I confirm that I have read the Code of Conduct for Expert Witnesses outlined in the Environment Court's Consolidated Practice Note 2014 and have complied with it in preparing this evidence. This evidence is within my area of expertise except where I state that I am relying on what I have been told

by another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

SCOPE OF EVIDENCE

4. Civilised Limited (CL) has been engaged by Mount Crystal Ltd (MCL) to assess and report on engineering related matters involving potential rezoning of land.
5. The rezoning request has been made as part of the review of the Queenstown Lakes District Council (QLDC) District Plan. The request is part of Stream 13 of the review process and the submission is number 150. The rezoning request is to amend the existing zoning of the site to a mixture of medium density and high density residential. However, upon further assessment by Mr Dent as identified within his evidence, it is proposed that the entire site be subject to the high density residential zone provisions.
6. The land is contained in certificate of title OT400/173 and is legally described as Lot 1 DP 9121. The site is located at 634 Frankton Road and the rezone request covers 2.73 hectares although as identified in Mr Dent's evidence due to geotechnical and natural hazard reasons the actual developable land area is more likely to be approximately 1.365ha.
7. QLDC engineering staff have assessed the rezoning request and prepared evidence. Mr Ulrich Glasner opposes the high density residential rezoning as there is not adequate infrastructure or planned infrastructure to service the site with an FW3 firefighting water supply.¹
8. Mr Glasner also states in his statement of evidence that the site will be able to be connect to the wastewater network downstream of a capacity constraint on Frankton Road².
9. Mr Glasner's figures indicate that there would be an additional 65 residential units (over and above the notified low density residential zone) in the 1.49ha area MCL identified in their original submission as

¹ "Statement of Evidence of Ulrich Wilhem Glasner On Behalf of Queenstown Lakes District Council Infrastructure - 24 May 2017" - paragraph 7.19.

² Ibid - paragraph 7.18.

being rezoned to high density residential³. Additionally Mr Glasner indicates that there will be an additional 15 residential lots in the area to be rezoned medium density residential⁴.

10. Civilised Ltd has been engaged to assess and respond to the points raised about infrastructure issues in Mr Glasner's evidence.
11. My evidence today is limited to infrastructure issues and in particular the feasibility of servicing the site with wastewater and water supply services.
12. From information supplied to me on behalf of MCL and due to geotechnical constraints and natural hazards on site, only half of the total site is likely to be developable. Using similar assumptions to Council for determining the number of anticipated residential units, there is estimated to be an approximate 60 additional residential units if the site is rezoned to be a high density residential zone over the current zoning of low density residential.

BACKGROUND

13. Following receipt of the Statement of Evidence of Ulrich Glasner, I met with QLDC engineering staff including Mr Glasner to discuss the proposed rezoning and to determine what information could be provided to assist with evaluating the feasibility of servicing the subject site.
14. I have also contacted the engineering consultants that hold and operate the water and wastewater reticulation models on behalf of QLDC. They have told me that they are not able to carry out modelling using the network models without instruction from Council.
15. During discussions with QLDC engineering staff, they have confirmed that modelling is not able to be undertaken in the timeframes required for the evidence exchange timeframes.
16. They have further confirmed that the provision of details around how the site could be serviced to reduce impacts on the existing reticulation would be satisfactory.

³ Ibid – paragraph 7.15.

⁴ Ibid – paragraph 7.11.

REQUIRED FIREFIGHTING WATER SUPPLY

17. The rezoning of the land to a high density residential zoning does not automatically require the coverage of the site by an FW3 firefighting water supply.
18. Firefighting water supplies are specified in: *Publicly Available Specification SNZ PAS 4509:2008 New Zealand Fire Service Firefighting Water Supplies Code of Practice* published by Standards New Zealand and the New Zealand Fire Service.
19. This document specifies that where a structure has a sprinkler system installed to an approved standard the required firefighting water supply is to meet an FW2 classification. The document also specifies that where a building is not sprinklered, the firefighting water supply classification is FW2 for housing that *"includes single family dwellings, multi-unit dwellings, but excludes multi-storey apartment blocks"*. Furthermore, the document goes on to determine the classification for the required firefighting water supply for various activities with various fire cell floor areas. Generally, multi-storey apartment blocks will require at least an FW3 water supply classification unless sprinklered⁵.
20. The scale and nature of the buildings proposed in the area of the high density residential rezoning is not yet known. It is entirely conceivable that the future dwellings will be able to be built so as to not require an FW3 firefighting water supply. This could be done by either installing a sprinkler system to an approved standard or by ensuring that the buildings are configured so they are not multi-storeyed apartment blocks that would need an FW3 firefighting water supply.
21. I note that in order to supply water to the sprinklers the inclusion of a sprinkler system in any building may require further demand on the water supply network than just the FW2 fire-fighting water supply classification. This will be subject to specific design by a suitably experienced fire engineer but it is possible that if the additional sprinkler demand is not available from the water supply, a specific reservoir and fire pump may need to be incorporated into the building design. This has

⁵ New Zealand Fire Service Firefighting Water Supplies Code of Practice SNZ PAS 4509:2008 – Table 1.

recently been done in other areas within the district including Frankton Flats.

EXISTING WATER SUPPLY

22. The Queenstown water supply services land adjacent and nearby to the site. This water scheme services zoned land from Sunshine Bay through to Quail Rise and Kelvin Heights and includes provision of water to the existing dwelling on the subject site and the surrounding area.
23. The water supply services areas of High Density Residential zoning including on the opposite side of Frankton Road from the subject site. It also services the area of visitor accommodation comprising Holiday Inn adjacent and southwest of the site.
24. I expect that the existing adjacent Holiday Inn and the High Density Zone across Frankton Road from the site may well require an FW3 firefighting water supply, either now or in the future as further development occurs. From Mr Glasner's evidence, it is not clear if an FW3 firefighting water supply is available to these adjacent sites now. However, I expect that if QLDC are requiring an FW3 firefighting water supply to the proposed high density residential zone on the subject site they should also be looking at how they can continue or implement an FW3 firefighting water supply to these adjacent sites.
25. Due to the proximity of the water supply network to the site in Frankton Road it is expected that the provision of an FW3 firefighting water supply to these nearby sites will also provide an FW3 firefighting water supply to a large part of the subject site.

FUTURE WATER SUPPLY UPGRADES

26. The water supply includes a series of pumps and elevated water supply reservoirs that provide pressure head to the pipe reticulation and ensure that the water flows through the pipes to the area to be serviced. The site is located within the Wakatipu pressure zone and the nearest reservoir that serves the subject land is the Queenstown Hill Reservoir. This is located on Queenstown Hill near Windsor Place and services much of Queenstown and the Frankton Road area.

27. I understand from discussions with QLDC and from Mr Glasner's evidence that the pressures and flows available from the Queenstown Hill Reservoir are such that due to the distance of the subject site from the reservoir and the other demands on the network in this area, there may not be enough water pressure or flow to meet the requirements for an FW3 firefighting water supply given the future level of demand expected on the water supply network as it is currently configured.
28. Recently construction has been completed on a new reservoir on the Middleton Land above Middleton Road. This reservoir and associated pumps and reticulation is currently being commissioned and is expected to be operational by the end of July 2017. This new reservoir, currently referred to as the Middleton Reservoir has been constructed in order to service current and future stages of development up Middleton Road, and the Potters Hill development immediately adjacent to the subject site. Additionally, QLDC has paid for upgrades to the reservoir and associated reticulation to enable the reservoir to benefit a wider area.
29. The Middleton Reservoir is supplied from the existing QLDC reticulation by a pump station on Middleton Road. There are dedicated rising and falling mains to and from the reservoir. Currently the falling main is not connected back into the QLDC water network.
30. Additionally, the Middleton Reservoir is connected across to the land adjacent to the subject site referred to as Potters Hill land. However, there is a non-return valve at the bottom of the Potters Hill Road that prevents flows back into the existing water supply network on Frankton Road.
31. Therefore, the Middleton Reservoir is currently operating as an end point for the QLDC water supply network. Despite there being additional capacity in the reticulation and reservoir, there will be no immediate benefit to the wider network when commissioned until QLDC configure the network connections to allow water to flow from the reservoir to the rest of the network.
32. It is anticipated that the pipe reticulation that connects the Middleton Reservoir to the Potters Hill site adjacent to the subject site could be relatively easily extended to reticulate water to the area of the proposed rezoning. Given the pipe sizes that have been constructed and the size

and elevation of the reservoir it is feasible to service the subject land with an FW3 firefighting water supply.

33. As outlined above, I believe it is feasible to reticulate a suitable water supply to the site that will enable the provision of an FW3 firefighting water supply should the developer intend to build in such a way that this is required.

WASTEWATER

34. The natural surface water drainage from the site is the existing water course and dependent upon the ultimate development plans, it is expected that the wastewater drainage would follow a similar path adjacent to the watercourse off the site. Therefore, the wastewater drainage would be connected to existing reticulation in Frankton Road.
35. It is my understanding that the capacity constraint mentioned in Mr Glasner's evidence is a relatively flat wastewater main on Frankton Road. Once the wastewater reticulation is across Frankton Road it has sufficient fall to have sufficient capacity to carry the additional flows anticipated from the subject site.
36. Mr Glasner has stated that as long as the wastewater flows from the site are connected to the existing reticulation past the capacity constraint then this development should be able to connect⁶. I concur with Mr Glasner on this and I also believe that it is entirely feasible to make the connection to the existing reticulation past the capacity constraint on the downhill side of Frankton Road.

CONCLUSIONS

37. The expected increase in the number of residential units from the rezoning request is expected to be approximately 60 across the site.
38. A suitable water supply for the site is available and feasible to undertake. This has been confirmed in principle by Mr Glasner.
39. Development of the subject land could be done in such a way as to not require an FW3 firefighting water supply. This would be done by either

⁶ Ibid - paragraph 7.18.

installing a sprinkler system to an approved standard or by ensuring that the buildings are not configured as multi-storeyed apartment blocks that would need an FW3 firefighting water supply.

40. Due to the proximity to the site of a high density residential zone (on the opposite side of Frankton Road) and a visitor accommodation subzone (comprising the Holiday Inn immediately southwest of the site), there should be an FW3 firefighting water supply available near the site. The existing fire hydrants on Frankton Road would provide coverage to much of the subject site.
41. The recent construction of the Middleton Reservoir will enable improved water flows and pressures in the vicinity of the subject land. It is feasible that water from the Middleton Reservoir could be reticulated to the site in order to enable an FW3 firefighting water supply.
42. Wastewater drainage from the site is able to be connected to existing reticulation on the downhill side of Frankton Road past the capacity constraint.

John McCartney

8 June 2017