

**Before Independent Hearings Commissioners Appointed by Canterbury
Regional Council and Selwyn District Council**

In the matter of The Resource Management Act 1991

And

In the matter of Applications by **Fulton Hogan Limited** for all
resource consents necessary to establish, operate,
maintain and close an aggregate quarry (**Roydon
Quarry**) between Curraghs, Dawsons, Maddisons
and Jones Road, Templeton

**SUMMARY STATEMENT OF ANDREW METHERELL
ON BEHALF OF FULTON HOGAN LIMITED**

TRANSPORT

DATED: 13 NOVEMBER 2019

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Introduction

1. My name is Andrew Alan Metherell, I am a consulting transportation engineer, and have been asked by Fulton Hogan to provide expert evidence on transportation related matters for the proposed Roydon Quarry. This summary statement of evidence provides a brief summary of my evidence. As set out in my primary evidence, I have read and agree to comply with the Environment Court Code of Conduct for Expert Witnesses.
2. I have previously prepared two briefs of evidence for the consent application by Fulton Hogan to establish, maintain, operate and close an aggregate quarry at Jones Road in the Selwyn District:
 - (a) A primary brief of evidence (“evidence in chief”), dated 23 September 2019, providing an assessment of the transportation effects of the proposed Roydon Quarry.
 - (b) Rebuttal Evidence (“rebuttal”), dated 21 October 2019 responding to transport matters raised in evidence of other transport experts, and submitters.
3. I have also participated in expert conferencing on 12 November 2019, and have jointly prepared the Transport Joint Witness Statement, dated 12 November 2019.
4. In my evidence I have provided a transportation engineering assessment of the proposed Roydon Quarry. That evidence is based on, and builds upon, the assessment included in the Stantec Integrated Transportation Assessment (“ITA”) included with the Application.
5. I have assessed how the proposed quarry can achieve safe and efficient access to the arterial and strategic transport network, including State Highway 1 (“SH1”), and mitigation measures that will be required. I have also assessed the potential transport effects on the Council operated transport networks. I have concluded that subject to conditions of consent relating to traffic generation, improvements to the transport network, and management plans to address heavy vehicle movement on Jones Road through Templeton and queue management at the Dawsons Road railway crossing, the quarry proposal can be supported from a transportation perspective.

Evidence Corrections

6. At Annexure B of my evidence in chief, there is a two-page Traffic Management Plan included ahead of the Modelling Report. The Traffic Management Plan is a duplication of the document in Appendix E, and can be disregarded as it was incorrectly positioned in the pdf document.
7. Within my rebuttal evidence at Paragraph 12(c), I provided a correction to Table 2 of my Evidence in Chief. Table 1 in my rebuttal evidence sets out those corrections.

Surrounding Transport Network

8. The quarry is located in the Selwyn District, north of Jones Road, between Dawsons Road and Curraghs Road. This is close to SH1, a strategic road managed by the NZ Transport Agency ("NZTA") that currently carries 25,000 vehicles per day (vpd).
9. Traffic patterns on SH1 will change as a result of the Christchurch Southern Motorway Stage 2 ("CSM2"), which is being constructed and is due for completion in 2020. SH1 near the site (and east of the motorway) will have decreased through-traffic, with improved opportunities for access to and across it from the District road network. A notable change in the vicinity of the site is that as part of CSM2, NZTA will be constructing a roundabout at SH1 / Dawsons Road. The reduced volume on SH1, and proposed roundabout will enable safe and efficient access between Dawsons Road and SH1.
10. Site access will be from Jones Road, to the west of Dawsons Road. Jones Road currently carries approximately 3,500 vpd, and has a rural formation. It is anticipated that Jones Road traffic volumes will reduce following the opening of CSM2, as improved access to SH1 will reduce the use of Jones Road by through-traffic.
11. Jones Road intersects with Dawsons Road, a rural road classified by the Selwyn District Plan as an arterial road providing a route between SH1, and SH73. After CSM2 opens, Dawsons Road is anticipated to have increased traffic. At present, Dawsons Road carries low volumes of traffic, particularly north of Jones Road which carries only 600vpd.
12. NZTA is also undertaking some modifications to the cross-road intersection of Jones Road / Dawsons Road which has a history of serious road crashes.

The modifications are limited to improvements to delineation and installation of traffic islands. They are not transformational, with existing short stacking issues between Jones Road and the railway to remain.

Quarry Traffic Generation and Distribution

13. Fulton Hogan propose to limit the Quarry's traffic generation, through consent conditions, to a maximum of 1,200 heavy vehicle movements per day¹, and a rolling average of 800 heavy vehicle movements per day over 60 consecutive calendar days. The proposed traffic generation is lower than the 1,500 heavy vehicle movements per day originally applied for and assessed through the ITA.
14. Assessment of traffic generation and traffic distribution have been based on patterns observed at the Fulton Hogan Pound Road quarry. This has allowed consideration of variability in daily traffic volumes, how traffic could be spread on an hourly basis across the day, and where in the greater Christchurch area generated traffic is expected to go to and be from.
15. From the patterns at Pound Road, I have forecast a heavy traffic volume of 840vpd on a median operating day (excluding Sundays).
16. In my opinion, the site is well located within the transport network for efficient access to the locations that material is required. The dominant movement is expected to be to and from Christchurch City. The strategic SH1 route is close by, enabling most movement to occur on the arterial and strategic transport network.
17. Assessments of route choice indicate the primary route will be via Jones Road and Dawsons Road to access SH1, and then along SH1 to the east. That comprises over 85% of the generated traffic.
18. The remaining traffic would be spread across other routes such as SH1 to the west, Jones Road to the west, and Waterholes Road for movement to and from areas in the Selwyn District. The detailed assessment I have carried out of material destinations and traffic distribution shows that the use of these and other local road routes will be at a very low level. The roads currently do and can expected to continue to carry trucks irrespective of the quarry proposal. I consider the change in traffic volume on these other

¹ Where a vehicle movement is either a vehicle entering the site, or a vehicle exiting the site. A truck entering the site, then exiting the site will be 2 vehicle movements.

routes will be difficult to deduce when considering other traffic use of the roads.

19. However, to further limit the use of Jones Road through the Templeton urban area which is a parallel route to the primary SH1 route, a transport route management plan is proposed by conditions of consent. That will limit truck movement on that part of the road network to those with a local origin or destination. I am confident that combined with the high standard of access that is to be made available at SH1 / Dawsons Road, the transport route management plan will be effective in limiting quarry traffic on Jones Road east of Dawsons Road.

Site Access and Road Network Mitigation

20. Heavy vehicle access to the site will be provided to an intersection standard, and include separate left and right turning bays on Jones Road, together with an acceleration lane for exiting the site to the east. Light vehicle access will either be combined with the heavy vehicle access, or be provided further west at a separate access with localised road widening.
21. Jones Road between the site access and Dawsons Road will be widened to a standard that can readily accommodate the safe and efficient movement of heavy vehicles.
22. The widening of Jones Road will tie in with a major improvement to the Jones Road / Dawsons Road intersection. It is proposed the intersection will be formed as a roundabout to address the serious safety concerns with the cross-road intersection form. It will also provide a safe stacking distance for trucks on the north side of the railway. Two options have been put forward in concept form, and it is my opinion it is appropriate to retain flexibility in the design at this stage.

Transport Modelling

23. Extensive transport modelling has been undertaken, which supports the assessment of route choice based on first principle assessment of routes. The modelling also demonstrates that the quarry traffic generation is modest in terms of the overall transport network carrying capacity. The future performance of the transport network, as represented by “level of service” would continue to be acceptable. The level of service at the SH1 / Dawsons Road intersection would remain unchanged in the without and with quarry scenarios at year 2028, across all periods.

Safety Assessment of Queues at the Dawsons Road Railway Level Crossing

24. The traffic modelling method has allowed detailed assessment of how queuing will occur at the railway on Dawsons Road, and the adjacent intersections. When a train passes through the level crossing, queues can form. The analysis indicates this will be an infrequent event, and the queue length will depend on the overall traffic volume on Dawsons Road, the length of train which impacts level crossing closure time, and the composition of vehicle types.
25. The assessment indicates that without the quarry the queue on the south approach could extend from the railway to the SH1 roundabout on occasion. That is likely to increase in frequency with the quarry operational. Based on the normal operating conditions at the roundabout, which will involve queueing vehicles on all approaches, and the design of the roundabout itself as a “safe system” intersection control, I have assessed the effect of the quarry on queuing as being difficult to deduce from a road safety perspective.
26. Following consultation with NZTA, as the affected road controlling authority, a management plan is now proposed. That will provide for monitoring of the queues, and further assessment of whether there are safety concerns (as identified in accordance with a standard safety assessment framework) identified with the roundabout operation. Where a change in safety concern is identified, mitigation will be warranted through the management plan process.
27. Mitigation measures, if required, are expected to be in the form of warning signs (static, active, or variable message) that are linked to queueing activity on Dawsons Road.
28. I have also assessed² the effect of the potential southbound queue back from the SH1 roundabout to the railway crossing. I consider the concern would exist without the quarry and would also be influenced by the existing deficiencies at Jones Road / Dawsons Road and measures could be considered to mitigate safety concerns. The quarry proposal reduces the complexity of the approach from the north side of the railway. To ensure safety concerns are appropriately identified and addressed based on actual traffic conditions, I agreed with the outcome of the Traffic Expert Witness

² My Rebuttal evidence Para 49 to 54 of

Conferencing that the management plan will be expanded to incorporate a similar monitoring and mitigation response for the southbound queue.

29. Fulton Hogan has proposed a condition of consent requiring the management plan, as set out by Mr Kyle. I understand this is largely an agreed outcome between NZTA and the Applicant.
30. A revision of the draft SH1 / Dawsons Road Queue Management Plan prepared in consultation with NZTA will be required to incorporate the additional outcomes from expert conferencing, and will be provided at the hearing.

Safety Assessment

31. Overall, I consider the proposed mitigation measures, and controls on vehicle movement proposed through management plans and conditions of consent will ensure the safety of the road network is addressed, and improved, in the immediate vicinity of the site.
32. Use of lower volume roads in the vicinity of the site will be limited due to the proximity to the more desirable arterial road network.

Traffic Expert Joint Witness Statement

33. I consider the joint witness statement (JWS) prepared as part of traffic expert witness conferencing shows a high level of alignment on the transport related effects of the quarry proposal. The conferencing covered transport related matters with a focus on the issues where there was potential difference of opinion between the experts, as identified through the evidence.
34. At the conclusion of the conferencing, it was agreed between experts that the mitigation and management measures proposed (as included within conditions, and with proposed amendments as referred to in the JWS), would allow the quarry traffic to be accommodated safely and efficiently.
35. The experts agreed that based on the assessed traffic generation and traffic distribution, the traffic effects of the proposal were focused on the primary access route between the site and SH1 (at Dawsons Road). Appropriate access provisions, together with upgrades to Jones Road and the Jones Road / Dawsons Road intersection are proposed to ensure the route can safely and efficiently accommodate the level of traffic proposed by the consent application.

36. A management plan approach to monitoring and mitigation was agreed as being appropriate for ensuring the quarry traffic does not cause an increase in safety concern associated with queuing on Dawsons Road between the railway and SH1 (in both directions). This approach also addresses any residual uncertainties associated with how traffic patterns will change, and how traffic will respond to the altered traffic environment following CSM2 opening, and with the quarry operational.
37. Specific area wide traffic effects beyond the access route from the site access to SH1 were not identified.

Comment on the Noise Joint Witness Statement

38. I have reviewed the Joint Witness Statement by the Noise Experts, and comment on paragraphs 18 and 19.
39. As I have set out at Paragraph 4.6, I consider there will be low levels of traffic movement on other local roads, as supported by the extensive transport modelling of material destination and route choice. The difference between typical and short duration peak activity would in my opinion likely fall within the traffic volume variability observed on those roads³. I disagree with the suggested requirement of some experts to restrict movements to the primary route to SH1. Use of rural roads for local access is intended by the rural road hierarchy.
40. I have also addressed the comments from some of the experts about road and roundabout design between the site and SH1, noting these will be designed to a standard typical for a rural road environment⁴ and provide an improvement to the existing carriageway formation where there is regular usage by heavy vehicles. This primary access route is adjacent to a railway line, and in close proximity to the high volume SH1 which carries large volumes of traffic. It only has two existing accesses next to it, both to commercial activities between SH1 and the railway. It is not clear why additional noise sensitive road design is being suggested.

Conditions of Consent

41. The conditions of consent proposed by Mr Bligh, and with the recommended modifications following expert conferencing provide for the key provisions to ensure the quarry traffic can be safely and efficiently accommodated:

³ Stantec Response to Request for Information 16 August 2019

⁴ My rebuttal evidence Para 70a)

42. Requirements for establishment of transport network improvements, at the site access, Jones Road and the Jones Road / Dawsons Road intersection. These will provide for safe and efficient movement of heavy vehicles between the site access and SH1;
43. Traffic generation thresholds, which control the overall level of traffic, and in some cases the time of day that traffic can use the quarry;
 - (a) Implementation of a transport route management plan to limit the use of Jones Road east of Dawsons Road through Templeton by quarry generated heavy vehicles to those vehicles making local area deliveries;
 - (b) Monitoring of traffic movement and distribution at the quarry, and on the transport network close by;
 - (c) Management of queue back from the Dawsons Road railway crossing to SH1, and from the SH1 to the railway through monitoring and mitigation (if required).

Conclusion

44. Based on my assessment of transport effects, and the proposed provisions through site design, transport network mitigation, and transport management plans, it is my opinion that the proposed quarry can be supported from a transportation perspective.

Andrew Metherell

13 November 2019