

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 Roads, Templeton

**EVIDENCE OF TIMOTHY (TIM) MARTIN KELLY
ON BEHALF OF FULTON HOGAN LIMITED**

DATED: 23 SEPTEMBER 2019

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Introduction

- 1 My full name is Timothy (Tim) Martin Kelly. I am a self-employed traffic engineer and transportation planning consultant, based in the Nelson area.
- 2 I have been asked by Fulton Hogan Limited (**Fulton Hogan**) to provide evidence in respect of its application for resource consents to establish, operate and maintain the proposed Roydon Quarry (**Proposal**).
- 3 Specifically, my role has been to undertake a peer review of the transportation assessments of the Proposal.

Qualifications and Experience

- 4 I have worked in the traffic engineering and transportation planning field since 1983. I hold a Bachelor of Arts degree in Geography, and a Master of Science degree in Traffic Engineering and Transportation Planning, both from the University of Sheffield in the United Kingdom.
- 5 I am a full Member of the Chartered Institute of Logistics and Transport, and the IPENZ Transportation Group (a Technical Interest Group of IPENZ).
- 6 My career to date has been spent in the consultancy sector of transportation, in both the United Kingdom and New Zealand. During my career, I have provided policy advice regarding traffic and transportation matters, and undertaken assessments for a wide variety of development proposals across New Zealand.
- 7 This experience includes a number of specific assessments relating to the traffic effects associated with quarry proposals, including:
 - 7.1 Barracks Road Quarry, Blenheim;
 - 7.2 Willowbank Quarry, Judgeford, Porirua;
 - 7.3 Kiwipoint Quarry, Wellington;
 - 7.4 Winstones Quarry, Porirua;
 - 7.5 Lee Valley Limestone, Takaka; and
 - 7.6 Black Marble Quarry, Takaka.
- 8 I have read and am familiar with the Code of Conduct for Expert Witnesses in the current (2014) Environment Court Practice Note. I agree to comply with this Code of Conduct in giving evidence to this hearing and have done so in preparing this written brief. The evidence I am giving is within my area of expertise, except where

I state I am relying on the opinion or evidence of other witnesses. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed. I understand it is my duty to assist the hearing committee impartially on relevant matters within my area of expertise and that I am not an advocate for the party which has engaged me.

Scope of Evidence

- 9 In my evidence I address the following:
- 9.1 Outline my involvement in the Roydon Quarry Proposal to date;
 - 9.2 The general location of the proposed quarry in relation to the strategic road network;
 - 9.3 The methodology used to assess the effects of the proposed quarry;
 - 9.4 Potential effects: risks, consequences and mitigation; and
 - 9.5 Conclusions.

Involvement in the Roydon Quarry Proposal

- 10 I was engaged by Fulton Hogan to undertake a high-level review of the transportation assessments of the proposal.
- 11 This review has involved:
- 11.1 a review of the application material, supporting technical documentation and relevant submissions;
 - 11.2 a visit to the site and the existing Pound Road quarry (on 17 September 2019);
 - 11.3 meetings with representatives of the Applicant; and
 - 11.4 discussions and meetings with Mr Metherell (Stantec).

General Location

- 12 From my experience, the minimisation of the road distance between a quarry and its market is important, both to minimise the overall effects of truck movements and the associated transportation costs for what is a bulky and low-value product. Most quarries are located in rural areas, necessitating use of rural road networks to access the strategic road network.

- 13 The Roydon quarry is unusual in being located very close to State Highway 1 (**SH1**) and the soon-to-be-opened Christchurch Southern Motorway Stage 2 (**CSM2**). In my view, this is a significant locational advantage relative to other sites and means that the use of the local road network (and associated effects) will be minimised.

Assessment Methodology

- 14 Based upon my review of the technical background information and my questioning of Mr Metherell, I consider the assessment methodology adopted for this application to be both robust and credible. To address the complexity of issues associated with potential queuing on Dawsons Road in the vicinity of the rail crossing, Mr Metherell has responded with the application of an appropriate micro-simulation tool to enable conditions to be modelled in detail.
- 15 Like any analysis, this is reliant upon a number of key variables and assumptions. Most significantly, the geographical and temporal distributions of truck movements, the mix of truck only and truck-trailer units and the frequency / duration of the rail crossing closures. In all cases, Mr Metherell has utilised relevant observed patterns to inform these variables.
- 16 Truck activity associated with quarries is by its nature, highly variable, being governed by the needs of specific projects and contracts. The assessment by Mr Metherell has taken an appropriately conservative position, being based upon a 'worst-case' scenario involving a daily maximum of 1,200 truck movements, even though this level of truck activity will rarely eventuate.

Potential Effects: Risks, Consequences & Mitigation

Queuing at SH1 Roundabout

- 17 While I consider the modelling approach used to be robust, like all models it is subject to a degree of uncertainty. This arises primarily from the natural variability in background traffic volumes, uncertainty associated with the CSM2 forecasts and the distribution of quarry product destinations.
- 18 A key issue is the risk of traffic queues associated with a closure of the rail crossing extending back to the SH1 / Dawsons Road intersection (which is to be reconstructed as a roundabout). The modelling indicates that there is a low probability of this occurring without the operation of the quarry. With the quarry operating (and associated truck movements), this probability is increased but still remains low (even for the assessed 'worst-case' scenario).
- 19 The potential consequence of such queuing extending back into the intersection is that there will be some occasional but short-duration disruption to traffic movements

and a potential safety hazard arising from slow-moving or stationary traffic on the SH1 approaches to the roundabout.

- 20 The roundabout will be located within an 80km/hr speed limit area. As a roundabout, drivers will already have an expectation of needing to slow or stop in response to other vehicle movements. This, together with the good sight-lines in this area means that, in my view, the consequences of any occasional queue development through the intersection would be minor.
- 21 Accepting that a statistical probability remains that traffic queues will extend back to the SH1 approaches, it is appropriate to consider how the effects associated with such an occasional event might be mitigated.
- 22 In my view, conditions in the vicinity of the railway crossing could be monitored. This could take the form of CCTV recording (which might be triggered by rail closures) and could be used to determine the extent and frequency of queuing, and the contribution to such queues from quarry-related vehicles.
- 23 If this monitoring was to identify that levels of queuing are potentially problematic (causing disruption to SH1 through traffic movements with queue development on the SH1 approaches) and are the result of quarry-related truck movements, then electronic queue warning signs could be installed on the SH1 approaches to the intersection, triggered by a queue-length detector on the Dawsons Road approach to the railway crossing.
- 24 An appropriate monitoring condition could be integrated into the conditions of consent.

Truck Use of Local Roads

- 25 Local residents are understandably concerned at the possibility of truck movements on local roads.
- 26 In my view, the location of the quarry close to SH1 will remove an incentive for truck drivers to use other routes. Nonetheless, a small risk exists that some drivers may be tempted to avoid perceived delays on other routes by using local roads.
- 27 Proposed conditions identify routes which are not to be used by truck movements during night-time hours and to avoid routing through Templeton unless delivering in that area. I understand that Fulton Hogan intends to instruct its drivers regarding the routes to be used. For other contractors visiting the site, a condition of the supply contract will be that drivers will adhere to stipulated routes. This will be subject to monitoring (required by proposed conditions of consent) and also enforced through a process of community engagement (to report any potentially errant truck

movements). Linkage to weigh-bridge records will allow any offending vehicles to be identified and appropriate action taken.

- 28 A similar process was adopted for a Foodstuffs distribution warehouse on the northern edge of Palmerston North, a significant generator of truck movements. A Memorandum of Understanding was developed between Foodstuffs and the council stipulating routes to be used by truck movements, to avoid the use of inappropriate rural roads. As far as I understand, this has operated successfully.

Positive Effects

- 29 The existing Jones Road / Dawsons Road priority intersection has a poor crash record. Despite this, no upgrade work is programmed within the Selwyn District Council Long Term Plan.
- 30 In my opinion, the Proposal will, by upgrading this intersection to a roundabout, result in a significant improvement in the safety environment at this location and provide more queuing space between the intersection and the rail crossing. These benefits will be funded by the Applicant at no cost to local rate-payers.

Conclusions

- 31 Overall, I am satisfied that the potential traffic effects of the Proposal have been assessed using a robust methodology.
- 32 I consider the likelihood of any adverse effects, associated with both general truck activity and the safe and efficient operation of SH1, to be low. This is because monitoring can be used to review truck numbers, routing, and queue development at the rail crossing. Measures are then available to mitigate effects, if required.
- 33 Accordingly, I am able to support the proposal.

Dated 23 September 2019

Tim Kelly
Self Employed Traffic Engineer & Transport Planning Consultant