

**BEFORE INDEPENDENT HEARINGS COMMISSIONERS APPOINTED BY  
CANTERBURY REGIONAL COUNCIL AND SELWYN DISTRICT COUNCIL**

**IN THE MATTER** of the Resource Management Act 1991  
("the Act")

**AND**

**IN THE MATTER** Applications by Fulton Hogan Limited for  
resource consents necessary to establish,  
operate, maintain and close an aggregate  
quarry (Roydon Quarry) between Curragh,  
Dawsons, Maddisons and Jones Roads,  
Templeton

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**EVIDENCE OF DAVID SCARLET ON BEHALF OF THE NZ TRANSPORT AGENCY**

**14 October 2019**

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My name is **DAVID SCARLET** of Christchurch and I work for the NZ Transport Agency (the Agency). I have been requested by the Agency to assist them in the provision of evidence regarding their submission on the resource consent application lodged by Fulton Hogan Limited for the proposed Roydon Quarry.

## **1 Qualifications**

- 1.1 I am employed by the Agency as a Senior Traffic & Safety Engineer for Canterbury and the West Coast. I have worked in this role since 2015. I have worked for the Agency and its predecessor organisation for 15 years in the roles of Safety Engineer and Senior Investment Advisor. Prior to this I worked in local government as an Engineering Officer.
- 1.2 I have a New Zealand Certificate in Civil Engineering (NZCE) and a degree in Economics from Otago University.

## **2 Expert Witness Practice Note**

- 2.1 While not a Court hearing I note I have read, and agree to comply with, the Code of Conduct for Expert Witnesses as required by the Environment Court's Practice Note 2014. In providing my evidence all of the opinions provided are within my expertise and I have considered and I have not omitted to consider any material facts known to me which might alter or qualify the opinions I express.

## **3 Scope of Evidence**

- 3.1 Resource consent has been lodged by Fulton Hogan Limited to establish, operate, maintain and close an aggregate quarry known as Roydon Quarry. I note as part of the proposal the applicant has revised the maximum number of vehicle movements down from 1,500 vehicles per day to 1,200 vehicles per day.
- 3.2 The application, section 42A reports and evidence of experts on behalf of the applicant have provided detailed descriptions of the proposal including assessment of the various aspects of the proposed activity. The submission of the Agency was in opposition to the proposal and the content of the submission was limited to concerns around the impact of the associated vehicle movements from the quarry on the safe operation of the State Highway.
- 3.3 This evidence is limited to those matters within my expertise and those matters within the scope of the submission lodged. This evidence is to be read in conjunction with the evidence of Ian Clark and Richard Shaw who have also submitted evidence on behalf of the NZ Transport Agency.
- 3.4 In my evidence I provide comment on:

- The formation of the intersection as part of the motorway network;
- The operation of the intersection;
- The risk of potential queueing into the State Highway intersection;
- The impacts of queueing into the intersection;
- Potential mitigation measures; and
- A summary of my evidence.

#### **4 Intersection and Motorway Network**

- 4.1 As part of Christchurch Southern Motorway Stage 2 the existing cross intersection is being changed to a two lane roundabout; which is a threshold to separate the highway section from the adjacent motorway. The highway will have an 80 km/hr speed limit.
- 4.2 It is anticipated that, as a consequence of the formation of the motorway, that vehicle movement numbers will be significantly less than what they are now but this section of State Highway will still provide an important connection for vehicles travelling north / south or destined for areas on the western side of Christchurch.
- 4.3 Construction of the roundabout has commenced and is scheduled to be completed in May 2020. The area is continually changing at the moment as the motorway project progresses including the removal of the passing lanes between Dawsons Road and Templeton.
- 4.4 It is noted that extensive work was undertaken in the design of the Christchurch Southern Motorway project including consultation with various parties. This project has progressed over more than a decade.

#### **5 Operation of Intersection**

- 5.1 The proposed roundabout will have two lanes to provide for both turning and straight through movements and will be similar to other roundabouts on State Highway 1 on Russley and Johns Roads.
- 5.2 The roundabout is designed on the basis of accommodating traffic volumes once the motorway is operational but is also designed for future projected traffic as it increases. A copy of the design for the roundabout is appended to this evidence as Appendix 1.

- 5.3 It is noted that the design of the roundabout took into account the adjacent level crossing.

## **6 Risk of Excessive Queueing**

- 6.1 It is understood on average there is 25 trains per day which result in the closure of the level crossing. The period of time that the crossing will close will depend on the length and speed of train but it is understood the closure could generally be up to eighty seconds.
- 6.2 The quarrying activity will increase the volume of traffic that is using Dawsons Road. Logically as the number of vehicle movements are increased, and the type of vehicles become longer, the risk of queueing increases. Many of the vehicles will be truck and trailer units which could be up to 23 metres in length. On this basis the stacking distance is only sufficient for two vehicles of 23 metres in length plus a smaller vehicle.
- 6.3 As shown in the evidence of Ian Clark there is an increased risk of the queue length exceeding the stacking space available (see Table 3-1 in Ian Clarks Evidence).

## **7 Potential Effects of Queueing**

- 7.1 There are several possible effects from a queue on Dawsons Road exceeding the available stacking space which could lead to a breakdown of normal operation of the roundabout.
- 7.2 Vehicles may enter the roundabout and then find that they cannot exit, which may result in vehicles stopped in the circulating lanes of the roundabout with a risk of collisions.
- 7.3 If vehicles have to stop within the roundabout this blockage will result in queues forming on State Highway 1. This will increase the risk of noise to tail crashes because vehicles will be required to stop unexpectedly.
- 7.4 It is recognised that from time to time queueing of vehicles through intersections may occur. However, the Agency seeks to minimise the risk of queueing occurring due to the increased likelihood of crashes.

## **8 Mitigation Measures**

- 8.1 A possible mitigation could be to use electronic signs to warn drivers to not enter the roundabout when the level crossing is closed to traffic.
- 8.2 This would need to be explored in detailed design to confirm that this is a viable solution. There may be other mitigation measures available which could be explored.

## **9 Summary**

- 9.1 The Agency is currently constructing a roundabout at the intersection of State Highway 1 and Dawsons Road. Vehicle movements will reduce following the opening of the motorway but there will remain high volumes of vehicle movements on State Highway 1.
- 9.2 The proposed quarry will generate a significant number of additional vehicle movements through the Dawsons /State Highway 1 intersection. This will increase the crash risk at the roundabout and its approaches due to the potential for queuing at the railway crossing and this then extending back into the roundabout.

**David Scarlet**

**14 October 2019**

Rev	Description	Checked	Approved	Date
0	FOR CONSTRUCTION	AW	KF	14/07/2016

Tab	Scale	Original Size
0	1:1000 (A3)	A1

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# CSM2 TEAM

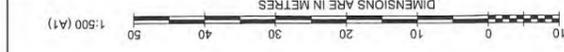
## URS AECOM GHD



**LAYOUT PLANS**  
**JONES ROAD**  
**CHAINAGE 1260 - 1320**

**FOR CONSTRUCTION**  
 Drawing Number **CSM2-C-01-216**  
 Revision **0**

FOR CONSTRUCTION



- LEGEND:**
- 1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE COMPLETE PROJECT DOCUMENT SET, INCLUDING THE SPECIFICATIONS.
  - 2. REFER TO C-05 SERIES DRAWINGS FOR PLAN & LONGITUDINAL SECTIONS.
  - 3. REFER TO C-06 SERIES DRAWINGS FOR TYPICAL CROSS SECTIONS.
  - 4. REFER TO C-07 DRAWINGS FOR CROSS SECTIONS.
  - 5. REFER TO C-08 SERIES DRAWINGS FOR DRAINAGE LAYOUT.
  - 6. REFER TO C-09 SERIES DRAWINGS FOR PAVEMENT CONSTRUCTION DETAILS, INCLUDING ACCESSWAY.
  - 7. REFER TO C-10 SERIES DRAWINGS FOR ROAD MARKINGS.
  - 8. REFER TO C-11 SERIES DRAWINGS FOR SIGNAGE AND LIGHTING.
  - 9. REFER TO C-15 SERIES DRAWINGS FOR LANDSCAPING DETAILS.
  - 10. REFER TO STRUCTURAL DRAWINGS FOR UNDERPASS AND OVERPASS DETAILS.
  - 11. REFER TO C-19 SERIES DRAWINGS FOR STOCKWATER RACE DETAILS.
  - 12. REFER TO NZTA'S M/23 AND MANUFACTURERS SPECIFICATION FOR SAFETY BARRIER MANUFACTURE AND INSTALLATION DETAILS.
- PROPOSED FEATURES**
- EDGE OF SEAL
  - EDGE OF METAL
  - EARTHWORKS
  - PROPOSED FENCES
  - WIRE ROPE BARRIER TL4
  - CONCRETE BARRIER TL4
  - CONCRETE BARRIER TL5
  - W-SECTION SAFETY BARRIER TL3
  - W-SECTION SAFETY BARRIER TL4
  - PEDESTRIAN/CYCLE FENCING
  - HARD SURFACE AREA
  - PLANTED AREA
  - SHARED USE PATH
  - ACCESS TRACK
  - PROPOSED LIGHTING COLUMNS
  - PROPOSED ROAD SIGNS
- EXISTING FEATURES**
- EXISTING ROAD BOUNDARY
  - EXISTING PARCEL BOUNDARY
  - EXISTING CENTRELINE
- TRAFFIC LIGHTS**
- UNKNOWN VALVE
  - SIGN MISC
  - TOP OF BANK
  - EDGE OF BUSH
  - WATER METER
  - RUBBISH BIN
  - LETTER BOX
  - TRAFFIC LIGHT
  - INVERT LEVEL
  - BUSH
  - TREE
  - STREET LIGHT
  - DOWN PIPE
  - GULLY TRAP
  - SPOT HEIGHT
  - BLANK CAP
  - ROUND COVER
  - STOP SIGN
  - FIRE HYDRANT
  - PEEL VALVE
  - POWER POLE
  - GAS VALVE
  - GATE
  - FENCE
  - POST
  - AIR VALVE
  - FLUSH PIT
  - EAVE
  - BUILDING
  - CESSPIT
  - STORMWATER MH
  - BOREHOLE
- XML BOUNDARY**
- POWER BOX
  - TELECOM PLINTH
  - BOTTOM OF BANK
  - SANITARY SEWER MH
  - UNKNOWN MANHOLE
  - LIGHT POLE

NOTES: