

**BEFORE INDEPENDENT HEARING COMMISSIONERS APPOINTED BY WAIPA
DISTRICT COUNCIL**

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

AND

IN THE MATTER of an application for resource consent under section 88
of the Act for the establishment and operation of a sand
quarry and cleanfill operation located at 928 Kaipaki
Road, Cambridge

BETWEEN **SHAW'S PROPERTY HOLDINGS LIMITED**

Applicant

AND **WAIPA DISTRICT COUNCIL**

Consent Authority

**SUPPLEMENTARY STATEMENT OF EVIDENCE OF ALASTAIR JAMES BLACK FOR
THE APPLICANT**

(Traffic)

Dated: 23 November 2020

INTRODUCTION

1. My name is Alastair James Black. My qualifications and experience are set out in my primary statement of evidence¹ ("Statement").
2. In preparing this evidence I have reviewed the following information:
 - (a) Statement of Evidence of Duncan Richard Campbell (12 November 2020);
 - (b) Statement of Evidence of Mark John Apeldoorn on behalf of the Submitters: Amanda and Keith Walker (23 November 2020);
 - (c) Council's revised conditions of consent provided to the Applicant on 19 November 2020; and
 - (d) Statement of Submitter: Amanda and Keith Walker (20 November 2020).

EVIDENCE OF MR CAMPBELL

3. I have reviewed Mr Campbell's statement and disagree with his comments on the financial contributions and traffic safety at the western end of Mystery Creek Road.

Heavy Vehicle Impact Fee (HVIF)

4. Mr Campbell² is concerned that the financial contribution is minimal.
5. As set out in the ITA³ and my Statement⁴ the Heavy Vehicle Impact Fee ("HVIF") has been determined in accordance with the District Plan Rule 18.4.2.14. The HVIF has been reviewed by Mr Inder on behalf of Council and the relevant conditions have been included in the draft conditions of

¹ Statement of Evidence of Mr Black (6 November 2020)

² Statement of Mr Campbell, paragraphs 14 to 17 and paragraph 30

³ Proposed Sand Quarry, 928 Kaipaki Road, Cambridge 263 Wiseman Road, Integrated Transport Assessment' prepared by Gray Matter Ltd (Issue 3, 21 April 2020)

⁴ Statement of Evidence of Mr Black, paragraphs 65 to 69

consent. While the value per tonne is small, based on extracting 900,000m³ of sand the total contribution to be paid to Council is approximately \$65,600.

6. I consider that conditions requiring payment of a HVIF to Council is the appropriate mechanism to mitigate the pavement impacts of the Application.

Mystery Creek Road

7. Mr Campbell states *"it is believed there is a reasonable potential for truck rollovers"*⁵ and seeks a review condition allowing Council to exclude quarry heavy vehicles from this section of Mystery Creek Road⁶. Mr Campbell provides no evidence to support his views on truck stability.
8. Mystery Creek Road is a minor arterial carrying 2,260veh/day with 10%, approximately 220HCV/day with no evidence through crash records that the existing alignment creates safety issues for heavy vehicles. Mr Campbell's evidence confirms that there have been no truck rollover crashes in this location during the past five years.
9. I do not support the inclusion of a review condition that would exclude only quarry traffic from this section of Mystery Creek Road. It is unclear how such a condition could be enforced. If there was a truck stability issue, all heavy vehicles would be equally affected and it is unclear to me how excluding quarry traffic would resolve that safety issue.

STATEMENT OF MR AND MRS WALKER

10. I have reviewed the statement provided by Mr and Mrs Walker. The transport related matters they raise are generally aligned with Mr Apeldoorn's statement. I offer no specific comments on their statement but address the issues in my response to Mr Apeldoorn's statement.

⁵ Statement of Mr Campbell, paragraph 23

⁶ Statement of Mr Campbell, paragraph 25

EVIDENCE OF MR APELDOORN

11. I have reviewed Mr Apeldoorn's statement and address the matters he raises and his suggested conditions in the following sections.

Design Matters

12. Mr Apeldoorn⁷ raises a number of design related matters including overhead power lines, underground services, drainage, position of the hedge and paddock access. These matters can be dealt with at detailed design when investigations such as topographical survey and geotechnical investigations have been completed.
13. As set out in my Statement⁸, I consider the risk of conflict between a vehicle accessing the residential property and a heavy vehicle to be low. I do not support Mr Apeldoorn's amendment to Condition 31(d) (and adopted by Council as Condition 45(d)). I discuss design of the residential access at paragraphs 28 and 29.
14. Mr Apeldoorn raises concerns about how the existing paddock gate will continue to be accessed. It is unclear from the Walker's initial submission, their statement of submitter and Mr Apeldoorn's evidence how often the gate is used and by what mode (e.g. vehicles, pedestrians, or horses). The existing paddock gate is 3m wide and setback approximately 8m from the edge line. The location of the existing power pole restricts the ability of the gate to be used by vehicles.
15. I have reviewed Google Streetview and the image at Figure 1 clearly demonstrates that the paddock gate was unable to be used in December 2019 due to growth of the hedge.

⁷ Statement of Mr Apeldoorn, paragraph 21(h)

⁸ Statement of Mr Black, paragraphs 79 and 80

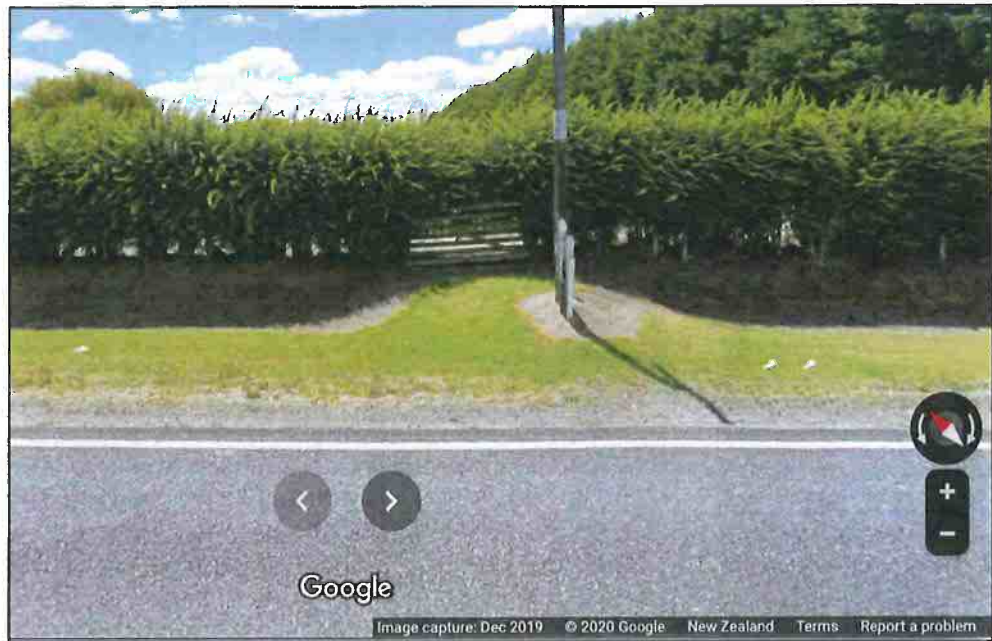


Figure 1: Walkers Paddock Gate, Google Streetview, December 2019



Figure 2: Walkers Paddock Gate, 20 November 2020

16. The current access leading up to the gate is grassed and does not comply with the Waikato Regional Infrastructure Technical Specification ("RITS") standard D3.3.4 for a rural entranceway. Mr Apeldoorn has recommended a condition requiring *"continued provision of at least an*

equivalent standard of accessibility"⁹ which is consistent with the Walker's Statement.

17. Mr Apeldoorn's suggested condition would allow a non-compliant access to be retained to the Walker's property. As discussed the frequency and nature of use is unclear, and the Google Streetview image illustrates that the gate may not be used for long periods of time. It is unclear what authorisation or approval established this paddock gate. I do not support Mr Apeldoorn's proposed condition as it would retain a non-complying access to a minor arterial.

No-Overtaking Lines

18. Mr Apeldoorn is concerned about the *"potential for adverse effects arising from the interaction of laden trucks departing the site, free flowing traffic and the vertical and horizontal curves ..."*¹⁰
19. The concept design includes extending no-overtaking lines west from the proposed vehicle crossing to connect with the existing non-overtaking lines. I recommend a new condition that specifically covers this aspect of the design, refer paragraph 23 below.
20. As set out in my Statement¹¹, I do not consider that no-overtaking lines are appropriate through the horizontal curve south-east of the site as the relevant criteria are not met.
21. I do not support Mr Apeldoorn's proposed condition which only requires consideration of no-overtaking lines. If a condition is to be included for no-overtaking line south-east of the vehicle crossing it should specifically require Council authorisation as required by the NZTA Manual of Traffic Signs and Markings ("MOTSAM") which states that:

⁹ Statement of Mr Apeldoorn, paragraph 24

¹⁰ Statement of Mr Apeldoorn, paragraph 25(a)

¹¹ Statement of Mr Black, paragraph 77

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|--|
| <p>(ii) No-overtaking lines <i>may</i> also be marked when the Road Controlling Authority, the N Z Transport Agency and the Police Highway Patrol all agree that overtaking on a section of rural road should be prohibited because:</p> <ol style="list-style-type: none">1 visibility is restricted by an unusual combination of vertical and horizontal curves, or2 there is a documented history of cross centre-line crashes, or3 there is a hidden traffic hazard(s). |
|--|

Figure 3: Visibility Criteria for No-Overtaking Lines¹²

22. On page 12 of the Stantec Peer Review¹³, Mr Apeldoorn considers that no-overtaking lines should be 420m south-east of the vehicle crossing. I have adopted his extent of no-overtaking in my proposed condition.
23. I recommend that Council's proposed Condition 36(i) be replaced with the following two items:

Condition 36(i)

Provide no-overtaking lines from the right-turn bay to the existing no-overtaking lines located north-west of the vehicle crossing.

Provide no-overtaking lines for a length of 420m (plus 100m of warning lines) south-east of the vehicle crossing if requested and authorised by Waipa District Council.

Speed Limit

24. For the reasons set out in my Statement¹⁴, I do not support Mr Apeldoorn's proposed condition which requires "Evidence of assessment and engagement with Council, and inclusion if enabled, of a reduced speed limit on Kaipaki Road that encompasses the site access area."¹⁵

¹² NZTA Manual of Traffic Signs and Markings Part 2: Markings, Section 2.05.03(a)(ii)

¹³ "The Proposed Sand Quarry – 928 Kaipaki Road, Leamington, Transportation Peer Review" prepared by Mr Mark Apeldoorn of Stantec (28 October 2020). ("Stantec Peer Review")

¹⁴ Statement of Evidence of Mr Black, paragraph 85

¹⁵ Statement of Evidence of Mr Apeldoorn, paragraph 24

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Condition 42 Travel Plan

25. There appears to be overlap between Condition 42 and Condition 18(q) which requires a letter be provided to quarry and cleanfill users outlining key requirements of entry, on site activity and departure. For ease of administration it may be useful to merge the travel plan requirements of Condition 42 into Condition 18 .

Condition 43 Agricultural Vehicles

26. I recommend that Condition 43 is deleted because:
- (a) It is unclear why the first part of the condition is required. Unless they fall into one of the exempt classifications, all motor vehicle used on the road must be registered and licenced. NZTA Factsheet 27¹⁶ states that vehicle registration and vehicle licencing are different matters.
 - (b) Agricultural vehicles are allowed to use the road as set out in NZTA's Agricultural Vehicles Guide¹⁷.
 - (c) It is unclear how the second part of the condition could be enforced without the Applicant recording the destination of every agricultural vehicle that accesses the site.
27. I am not aware of any other quarry that has a similar limitation on the type of vehicles and distance they can travel from the quarry.

Condition 45 Entrance and Access Improvements

28. For the reasons set out in the following paragraphs, I recommend the following changes to Condition 45:

¹⁶ NZTA Factsheet 27, Vehicle Exempt from registration and licensing

¹⁷ NZTA Agricultural Vehicles Guide, Updated February 2017

- (d) ~~Details of access to the residential dwelling including an entry waiting zone that is separate from the quarry access movement lane~~
- (g) A realigned access road which is at 90 degrees from Kaipaki Road extending 30m from the property boundary 25m into the site
- (j) Delete and replace with the following two new conditions
 - (new) Provide no-overtaking lines from the right-turn bay to the existing no-overtaking lines located north-west of the vehicle crossing.
 - (new) Provide no-overtaking lines for a length of 420m (plus 100m of warning lines) south-east of the vehicle crossing if requested and authorised by Waipa District Council.

Note Delete

29. Figure 4 illustrates an indicative alignment of the internal access based on my amendments to Condition 45(g). I do not consider it necessary for the Condition 45(d) to specify that a 'entry waiting zone' be provided. Providing an entry waiting zone is likely to further increase the width of the access increasing the likelihood of higher vehicle speeds. The location of the residential access will be confirmed during detailed design and Condition 48 requires a detailed design safety audit which could consider the safety of the residential access.



Figure 4: Realignment of internal access

30. The reasons for my new conditions relating to no-overtaking lines are set out above at paragraphs 19 to 24.
31. I do not support the proposed advice note to Condition 45 which requires the right turn bay to be centrally located within the road reserve. For ease of reference I have included the note below:

Note: For the avoidance of doubt, the new right turn bay intersection layout shall be centrally located within the road reserve, subject to detailed design, Road Safety Audit confirmation and Council's Team Leader Development Engineering approval. This is to help minimise effects of the turning bay on the property on the north side of Kaipaki Road and provide space for existing and future services in the berm on the northern side of Kaipaki Road (i.e. power lines and stormwater drainage).

32. I am concerned that this will result in vehicles turning right into the site to traverse across the crown of the road while decelerating in the right

turn bay potentially adversely affecting vehicle stability. Austroads¹⁸ states that

As trucks cross crowns, they are subjected to significant destabilising forces, which can lead to a loss of control. The extent of these forces depends upon the length of the crown, the change in crossfall, the crossing angle, the speed of the vehicle and the general stability of the truck.

33. Widening on both sides of the road has the potential to result in vehicles tracking directly along the seal joint increasing the likelihood of maintenance issues arising. Widening on the northern side means that the seal joint is more likely to coincide with the line marking, which would avoid vehicles tracking directly along the seal joint.
34. As there are a number of matters to be resolved during detailed design which will influence design of the right-turn bay, my recommendation is to amend the advice note as follows:

Note: ~~For the avoidance of doubt, Council's preference is for the new right turn bay intersection layout shall to be centrally located around the existing centreline within the road reserve, subject to detailed design, completion of the Road Safety Audit confirmation and Council's Team Leader Development Engineering approval. This is to~~ Providing the right-turn bay centrally around the existing centreline will help minimise effects of the turning bay on the property on the north side of Kaipaki Road and provide space for existing and future services in the berm on the northern side of Kaipaki Road (i.e. power lines and stormwater drainage).

Condition 49 and 50 Kaipaki Road/ Mellow Road Intersection

35. My Statement¹⁹ sets out the reasons I did not support Council's previous condition for this intersection. Apart from paragraph 59(c), those reasons remain valid.

¹⁸ Austroads Guide to Road Design, Part 3 Geometric Design, Section 4.2.3 Crown Lines

¹⁹ Statement of Evidence of Mr Black, paragraph 59

36. Furthermore, I do not support the inclusion of Council's proposed Conditions 49 and 50 because:

- (a) I have used the conflicting flow models from the NZTA Crash Estimation Compendium²⁰ to calculate the predicted increase in injury crashes due to the worst case of 100% of quarry traffic turning right at this intersection. I have assumed that 70% of the existing traffic on Kaipaki Road is northbound and that 25% of that traffic turns right into Mellow Road. My analysis shows that the quarry traffic increases the predicted injury crash rate by 2% for rear end crashes and 6% for other crashes involving right-turn movements from the major road.
- (b) There is no explanation of why the trigger is now based on the number of heavy vehicles when the previous condition was based on all vehicles. The Austroads warrant for turn treatments²¹ is based on total vehicle numbers and it is unclear if the analysis supporting the warrant diagram remains valid for an assessment based solely on heavy vehicles.
- (c) There is no explanation of why Council's proposed condition includes a trigger based on the daily number of heavy vehicles. The Austroads warrant for turn treatments is based on vehicles per hour (not daily).
- (d) Basing the trigger for a right-turn bay solely on the number of heavy vehicles is not equitable. All vehicles turning right at the intersection will contribute to the crash risk and would benefit from construction of right-turn bay.

²⁰ NZTA Crash Estimation Compendium, First edition, Amendment 1, Effective from 01/06/2018

²¹ Statement of Evidence of Mr Black, paragraph 38 and Figure 1

- (e) There is no explanation of why a daily average of 80HCV/day has been used in Council's proposed condition. Section 3 of the BBO Peer Review was critical of our assumption in the ITA that peak hour traffic was 10% of daily traffic. The BBO Peer Review discussed 12% and 15% peaks, but Council's proposed condition appears to adopt a 10% peak hour.
- (f) The proposed condition would still require the Applicant to financially contribute to a right-turn bay at the intersection even if the baseline monitoring shows more than 8HCV/hr (or 80HCV/day) were currently turning right. If the trigger is already exceeded the Applicant appears to be contributing to Council resolving an existing issue at this intersection.
- (g) To be able to reconcile vehicle movements this condition introduces the need for the Applicant to record hourly movements at the quarry.
- (h) The cost of the proposed right-turn bay is unknown. The right turn bay will be constructed on the inside of the curve which increases complexity of the geometric and stormwater design and potentially construction costs.
- (i) There is the potential that constructing a right-turn bay will require land from outside the current road reserve. There is no certainty that adjoining landowners would be willing to sell their land to enable the right-turn bay to be implemented.
- (j) Based on my visual inspect of the existing chipseal surface, there does not appear to be any reason for requiring a SMA surface which is more expensive than chipseal.

Condition 51 Closure of Right Turn Bay

37. I understand the intent of Condition 51 to be removal of the right-turn bay markings once the site returns to more typical rural activities. While I support that intent, resealing by the Applicant may not be required.
38. Mobileroad.org indicates this section of Kaipaki Road was resealed in 2014 and is planned for resealing in 2026/27 – a frequency of 12 years. Based on this the next reseal appears likely to be in 2038/39. If the quarry activity commences operation in 2021 and take 15 years, it will be completed in 2036, two or three years before the next planned reseal.
39. MOTSAM²² states that it is mandatory for shoulders greater than 2.5m wide to be marked with diagonal shoulder markings and that shoulders less than 2.0m should only be marked with an edgeline. I recommend that the condition adopt markings the shoulders where they are greater than 2.0m wide.
40. To provide for integration of the Council's forward work programme and closure of the right-turn bay I recommend that Condition 51 is modified as follows:

At the completion of the consented activities, the consent holder shall, at their sole expense, have the painted markings of the right turn bay ~~access~~ constructed in accordance with Condition 45 ~~above on Kaipaki Road~~, removed by resealing the extents of the access intersection and reinstate the existing lane edge and centre line markings to the satisfaction of Council's Transportation Manager, unless the resealing of the affected section of Kaipaki Road is included in the next three years of Council's Forward Work Programme. In this case, the consent holder shall only be responsible for the costs of remarking. For the avoidance of doubt, the resulting wide sealed shoulders greater than 2.0m wide shall be marked with painted hatch markings unless otherwise agreed by Council.

²² MOTSAM, Part 2 Markings, Section 2.04 Diagonal Shoulder Markings

Conditions 58 Financial Contribution

41. In Condition 58 the reference to rounding should be "*nearest \$0.01/tonne*" (not 0.01c/m³).

CONCLUSION

42. In summary:

- (a) The potential for adverse effects at the vehicle crossing are mitigated by upgrading to a right-turn bay.
- (b) I have recommended changes to Condition 45 relating to the alignment of the internal access and provision of no-overtaking lines. I recommend that the note to this condition is modified.
- (c) I have recommended changes to Condition 52 relating to closure of the right-turn bay to provide for integration with Council's Forward Work Programme.
- (d) I do not support Council's proposed conditions relating to:
 - (i) Agricultural vehicles; and
 - (ii) Monitoring and improvement at the Kaipaki Road/ Mellow Road intersection.

43. I confirm the conclusion of my ITA and my Statement of Evidence, that subject to conditions relating to limiting the quantity of sand extracted and heavy vehicle trip generation, upgrading the vehicle crossing and internal access, and payment of a financial contribution, the traffic effects on the surrounding environment are expected to be acceptable.



Alastair Black
Dated 23 November 2020

