BEFORE	Independent Commissioners appointed by Tasman District Council
IN THE MATTER	of the Resource Management Act 1991
AND	
IN THE MATTER	of an application by C J Industries Ltd for land use consent RM200488 for gravel extraction and associated site rehabilitation and amenity planting and for land use consent RM200489 to establish and use vehicle access on an unformed legal road and erect associated signage

EVIDENCE OF GARY PAUL CLARK ON BEHALF OF CJ INDUSTRIES LTD (TRANSPORT)

1. INTRODUCTION

1.1 My full name is Gary Paul Clark. I hold the position of Director of Traffic Concepts Limited.

1.2 The applicant has applied for resource consents authorising the extraction of gravel, stockpiling of topsoil, and reinstatement of quarried land, with associated amenity planting, signage and access formation at 134 Peach Island Road, Motueka:

(a) RM200488 land use consent for gravel extraction and associated site rehabilitation and amenity planting and

(b) RM200489 land use consent to establish and use vehicle access on an unformed legal road and erect associated signage

1.3 This evidence addresses the effects of the activities for which consent is sought on transportation matters.

1.4 I was initially engaged to assist the Applicant in understanding the possible traffic effects of truck and trailers entering and exiting 493 Motueka River West Bank Road. I was commissioned to advise on the access to the application site and in particular its suitability for truck and trailer movements.

1.5 I have been involved with the Application since August 2019 and have carried out multiple site visits and road inspections over that time. As part of my assessment and evidence, I have driven the roads that the trucks will use on several occasions, and I am familiar with the roads in the area.

1.6 This evidence includes an assessment of traffic effects on the wider road network in line with the mattes raised in the S42a Report.

Qualifications and Experience

1.7 I am a Chartered Professional Engineer and hold a New Zealand Certificate in Civil Engineering. I meet the standards to be a Registered Engineers Associate (REA) and I am a Member of the Institution of Professional Engineers NZ (MIPENZ) and its specialist Transportation Group. I am a Chartered Professional Engineer that specialises in traffic engineering and transportation planning.

1.8 I have post graduate passes and masters papers for traffic engineering, advanced traffic engineering and accident prevention and reduction. I am also a Certified Road Safety Auditor and was part of the working group that prepared the "Road Safety Audit Procedures for Projects" publication released by Waka Kotahi New Zealand Transport Agency ("NZTA"). I also co-published the NZTA document "The Ins and Outs of Roundabouts". I was a certified Commissioner after completing the Making Good Decisions Commissioners Course. I chose not to be recertified due to other work commitments.

1.9 I have been working in the road and traffic industry since 1982. The knowledge and experience gained over 40 years includes most road and traffic-related matters, and in particular elements around planning, design and safety. I have prepared transportation assessments for both small and large developments throughout New Zealand.

1.10 I have worked for the Ministry of Works, Ministry of Transport, Local Authorities and multi-national consultancies. More recently I was Transportation Manager at Tasman District Council and worked for Traffic Design Group (TDG) where I was a Senior

Associate and Branch Manager of the Nelson Office. In July 2018 I decided to return to my own consultancy which has been operating since July 2004. I am the Director of that company.

1.11 As an experienced and recognised road safety auditor I have conducted road safety audits for Waka Kotahi, Councils and developers. For more than 30 years I have been involved in crash investigation studies and developing measures to address road safety issues. I have also been engaged in the development of strategies for road and traffic related issues.

1.12 I have also designed, reviewed and prepared designs for roads, intersections, developments, road safety schemes and town centre redevelopments.

1.13 More recent work has involved analysis and assessments of quarries for consent applications as well as specific analysis of the safety of routes used by larger vehicles. This has been on local roads and highways in Nelson, Tasman, Wellington and Marlborough.

1.14 I have presented evidence in resource consent hearings and the Environment Court for applications in my specialist area of traffic engineering, road safety, transportation planning and road design.

Purpose and Scope of Evidence

1.15 In preparing this evidence I have reviewed the Application, the s 42A Recommendation Report including the report from Council's advisor on traffic matters, and the submissions on the Application.

1.16 My initial assessment was limited to the site access. After receiving the s 42A Recommendation Report and considering the submissions on the Application, I have conducted a wider assessment of the adjacent road network to address matters raised through the application process. This assessment analysis is provided in Section 4 below.

1.17 Information about the Proposal and effects are contained in the application documents and my access report. I do not intend to repeat this material except for the key points noted below. My evidence covers the following matters:

- Key points from the Access Report (Section 2)

- The Proposal (Section 3)
- Assessment (Section 4)
- Section 42A Recommendation Report (Section 5)
- Conditions of consent (Section 6)
- Submitters (Section 7)
- Planning instruments (Section 8)
- Summary (Section 9)

Code of Conduct

1.18 I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2014 and I agree to comply with it. My evidence is within my area of expertise, however where I make statements on issues that are not in my area of expertise, I will state whose evidence I have relied upon. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed in my evidence.

2. KEY POINTS FROM THE ACCESS REPORT

2.1 My access report dated 7 June 2020 provides a detailed assessment of the proposed vehicle access for the activity along with a set of recommended mitigation measures to address potential adverse effects. These recommendations specifically addressed the sight distance constraints at the existing access.

2.2 My analysis and assessment of the proposed vehicle access concluded that a safe and effective access can be provided at 493 Motueka River West Bank Road (MRWBR), subject to the removal of two Willow trees and some minor cutting back of the bank to the south of the access within road reserve. It is noted that the MRWBR is a low volume road with around 240 vehicles per day Average Annual Daily Traffic (AADT).

3. PROPOSAL

3.1 The application activity is fully described in the assessment of effects. I do not intend to go into the proposal in detail apart from noting the following key points from a traffic perspective.

3.2 Broadly, the application seeks to extract gravel from land adjacent to the Motueka River for the purpose of providing high quality product to the construction industry.

3.3 The extraction of gravel will be carried out within an area of around 7.3 hectares over a 15-year period. The hours of operation will be limited to 7.00 am to 5.00 pm Monday to Friday with no work on the weekends.

3.4 There will be no processing or crushing of gravel on the site.

3.5 The maximum number of heavy vehicle (mostly truck and trailer) movements per day will be 30, being 15 into the site and 15 out of the site. I note that the average number of movements per day will be less than this, as gravel will be removed from the site over shorter time intervals over one month with some days having very few or no movements. That said, due to the nature of the haul route, travel time, loading times and truck types, the number of movements per hour is expected to be four an hour at peak times (two trucks in and two trucks out).

3.6 Vehicles will access the site from 493 Motueka River West Bank Road via marginal strip and paper road (Haul Route). These haul roads will be sealed to reduce noise and dust.

3.7 It is also proposed to install truck warning signs for the approaches to the vehicle crossing for the activity on MRWBR.

3.8 I note that the routes that are going to be used by truck and trailers are designated High Productivity Motor Vehicles (HPMV) routes. As part of assessing a route for HPMV use, council would have carried out a survey to ensure the route is suitable for these types of vehicles which are long and/or heavy goods vehicles.

4. EVIDENCE IN CHIEF

4.1 This section of my evidence provides more information on the surrounding road network and response to submissions made on the application.

4.2 This section will look at various transport-related aspects under headings that focus on the themes of the Existing Road Network, Traffic Data, Crash History and Road Safety. These are, broadly, the issues that have been raised in submissions.

Existing Road Network

4.3 The roads in the area of the application site are of a typically rural nature and have a curvilinear alignment. As you move further from the site to the north and closer to the Motueka township the roads become straighter, especially in the more built-up areas.

4.4 Motueka River West Bank Road has a posted speed limit of 80 km/h and it is marked with a dashed white centre line. The road has a sealed formation of around six metres in width with narrow grass shoulders along most of its length. The road has a good geometric layout with a few out of context curves. There are two one-lane bridges at each end of this section of the road. One at Rocky River Road and the other within the Brooklyn settlement. There is a relatively new two-lane bridge near Shaggery Road. Motueka River West Bank Road is a designated and approved HPMV route that specifically provides for long and heavy trucks.

4.5 The Rocky River Road Bridge has a 30 km/h speed restriction for heavy vehicles. Due to the nature of the bridge approaches, the roads in the area of the bridge have operating speeds that are typically around 30 km/h, especially for trucks.

4.6 **Figure 1** shows Rocky River Road Bridge looking north.

Figure 1: Rocky River Road Bridge

4.7 The approaches to the bridge have good sight lines and there is a speed restriction for heavy vehicles.

4.8 The Alexander Bluff Bridge provides the connection from Motueka River West Bank Road to Motueka Valley Highway. The bridge is a relatively wide one-lane bridge with vehicles coming off Motueka Valley Highway having priority when crossing the bridge. The right turn bay provides a safe waiting area, clear of through traffic for vehicles turning to go across the Alexander Bluff Bridge. There are good sight lines for traffic waiting on the approaches to the bridge.

4.9 Motueka Valley Highway (MVH) is built to a higher standard and has a sealed width of around 7.5 metres. The carriageway is marked with white edge lines along each side of the road with a dashed white centre line. The shoulders along its length vary in width, as well as the surface treatment.

4.10 Motueka Valley Highway is also a designated and approved HPMV route.

Traffic Data

4.11 Traffic counted data has been obtained from Council for Motueka River West Bank Road and Motueka Valley Highway.

4.12 Motueka River West Bank Road carries around 285 vehicles per day (August 2021) with around 7% of these vehicles being trucks. The measured peak flows are around 30 vehicles per hour. The traffic flows increase slightly at the Brooklyn end of the Motueka River West Bank Road and near Alexander Bluff Bridge. The measured 85th percentile speed along this road is around 76 km/h, which is below the posted speed limit.

4.13 I note that both Motueka River West Bank Road and Motueka Valley Highway have seasonal variations with the analysis using the Average Annual Daily Traffic flows as per standard practice when assessing traffic matters.

4.14 My observations show that trucks travel much slower than the 85th percentile speed and closer to 65 km/h.

4.15 **Figure 2** shows the typical traffic flows over a week in August 2021.

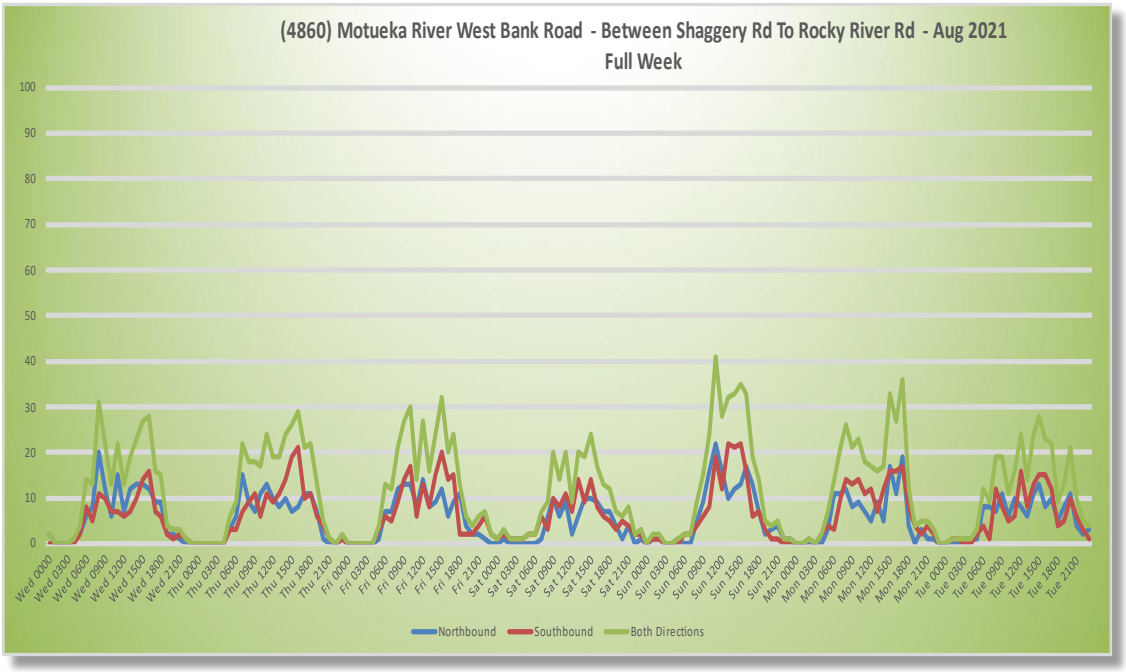

Figure 2: Traffic Count – Motueka River West Bank Road (Source: Tasman District Council)

4.16 As shown the flows in the weekend are higher than during the week which may reflect the use of the road for recreational activities in the weekends. The one-way flows are less than 20 movements in the peak hour with generally no usual distinct peaks in the morning and evening periods.

4.17 Motueka Valley Highway (ex-State Highway 61) provides the strategic connection between SH6 to the south and SH60 to the north. The highway carries around 1,100 vehicles per day with peak flows of around 80 vehicles per hour. Around 8% of the daily traffic volumes are trucks.

4.18 The measured 85th percentile speed along this road is around 86 km/h, noting that the traffic count was located on a fairly long straight.

4.19 **Figure 3** provides the traffic count data for the Motueka Valley Highway for September 2019.

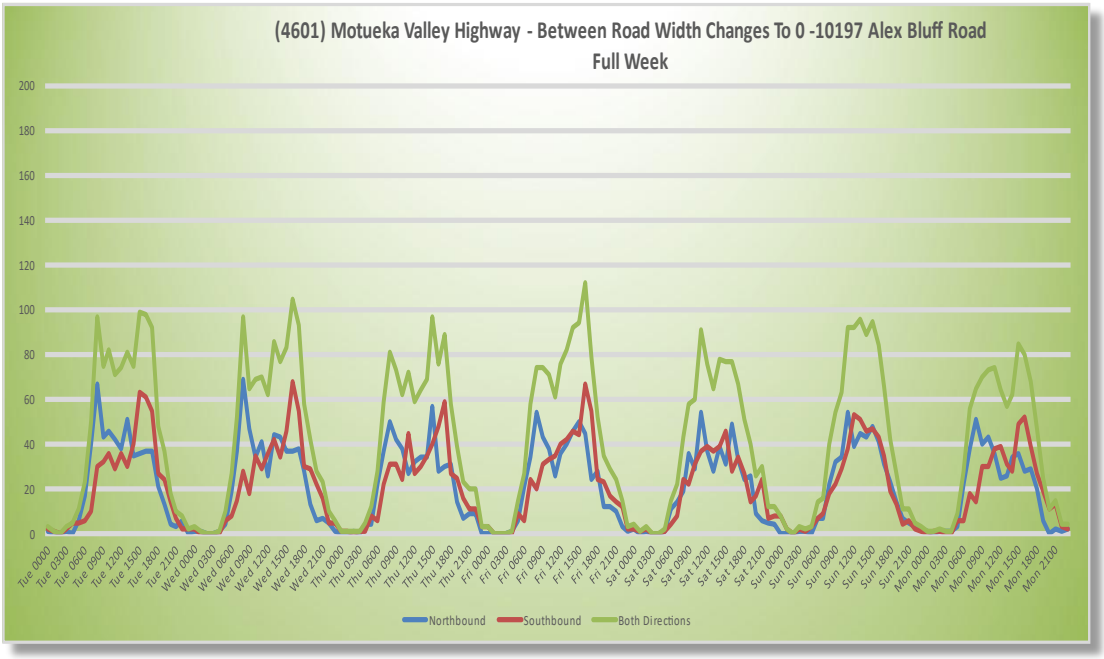

Figure 3: Traffic Count – Motueka Valley Highway (Source: Tasman District Council)

4.20 As shown the peak flows are generally around 100 vehicles with more distinct peaks in the morning and evening during the weekday. The peak direction has more traffic heading to the north in the morning which is reversed for the evening time period. The weekend flows do not have the same distribution as Motueka River West Bank Road with weekday and weekend flows being similar in total volume. However, the flows in the weekend have more "spreading" of the traffic movements than over the weekday.

Crash History

4.21 As part of preparing my evidence I have carried out an extensive review of the crash records contained within the Waka Kotahi crash database. I have done this to provide some context of the safety of the rural roads that are expected to be used by trucks associated with the application.

4.22 A number of concerns were raised by submitters relating to road safety. The analysis below provides an account of the reported crashes which is typically used for evidential based assessments of road safety and identifying any underlying road deficiencies in the road network. This is done to remove possible subjective or perceived safety issues. An assessment of the road safety is also provided in my evidence below.

4.23 My review of the crash data has focused on all reported crashes from 2017 to 2022 on Motueka River West Bank Road and the Motueka Valley Highway. My review also

included some other roads that will be used by vehicles associated with the application. However, the greatest potential impact of the application will be on the immediately adjacent roads Motueka River West Bank Road and Motueka Valley Highway.

4.24 The crash period has a complete five-year record being 2017 to 2021 with a part year of 2022. There has been one reported crash in 2022.

4.25 Typically, 10-year crash data is used in rural areas and five years for urban areas. However due to changes in speed limits and other network improvements I have used the last five years for both the rural and urban areas to remove any impacts created by those changes.

4.26 It is important to note that road crashes are rare and random events within the road network.

4.27 **Figure 4** shows the Swiss cheese model to road crashes under the safe system approach to road safety.

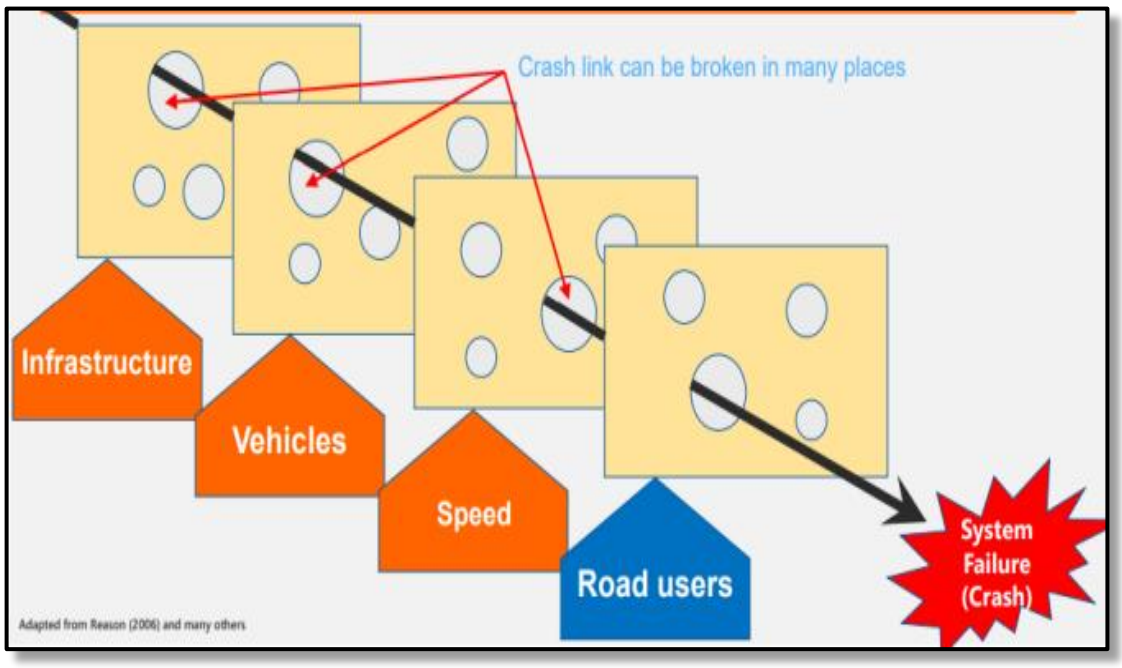

Figure 4: Swiss Cheese Model

4.28 A number of factors have to go wrong for a road crash to occur. This is best highlighted in the following diagram which shows the alignment of gaps in the road system that leads to crashes. Under the "Safe System Approach" to road safety for a crash to occur there is a failure in each element (for the holes to line up). It is possible to calculate potential

crash trends, but it is not possible to pinpoint crash locations, crash types and when a crash will occur.

4.29 There are a number of different factors that have to align for a crash to occur which include the road user, the road environment, the vehicle.

4.30 **Figure 5** shows the search area that was used for my analysis.

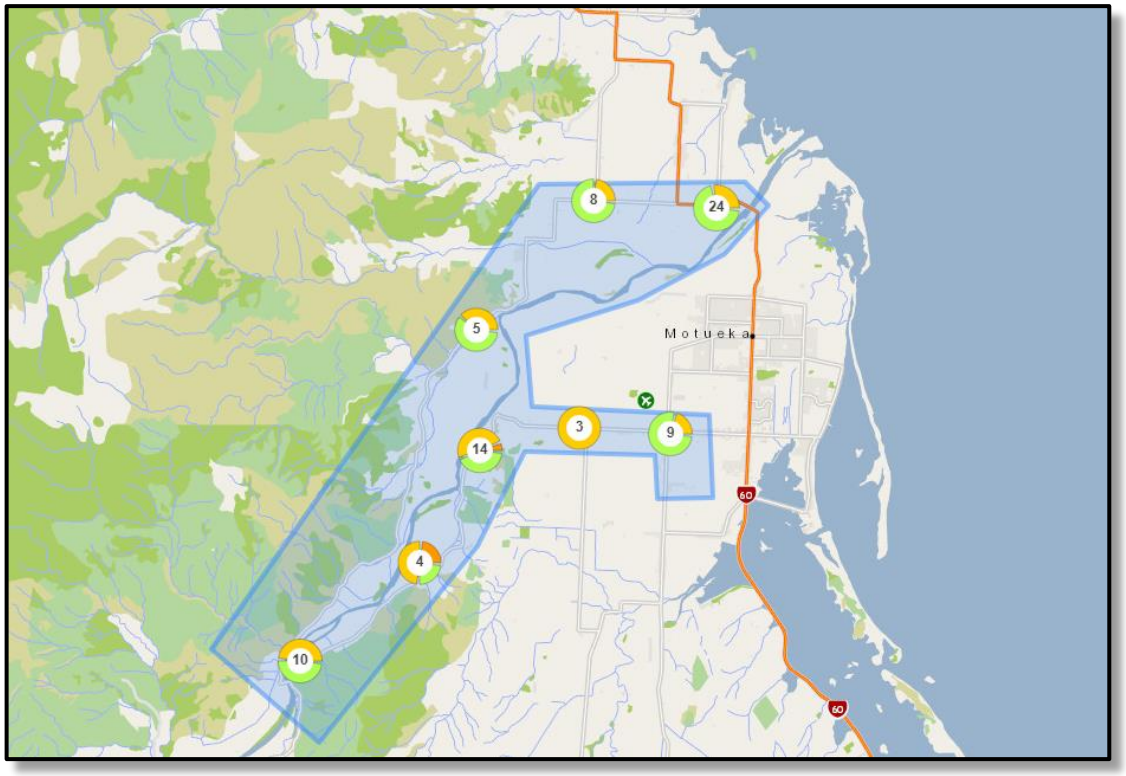

Figure 5: Crash History 2017 to 2022 (Source: Waka Kotahi)

4.31 The area shown in blue shading represents the crash data included in my review. The crashes shown in the study area are diagrammatic and not actual crash locations due to the scale of the diagram.

4.32 There were 76 reported crashes within the search area between 2017 and 2021. There has been one reported crash in 2022 at the time of analysing the crash data. As expected, most of these crashes occurred on the higher volume roads associated with the urban area or main arterial connections closer to the Motueka township. I note that there were 71 reported crashes for the same study area for the period from 2012 to 2016 which is similar to the most recent five-year period.

4.33 The crash history data for 2017 to 2022 showed that there were two serious injury, 40 minor injury and 35 non-injury crashes within the study area. Further analysis of the

crash data showed that 31 of the crashes occurred in the weekend, with a more general spread of crashes over each of the remaining weekdays.

4.34 The movement cause factor for the reported crashes were dominated by single vehicle loss of control crashes which made up over half of the incidents (48 of the 77 records). Twelve of the reported crashes were at intersections. Seven crashes involved vehicles colliding head on. Four reported crashes involved a vehicle either striking an object or colliding with another vehicle in the same direction. Four crashes involved cyclists. Two reported crashes related to vehicles carrying out reversing manoeuvres with the final crash involving a rider falling off their moped.

4.35 Most importantly my review of the crash data showed that there were only two reported truck crashes within the study area between 2017 and 2022. These two reported crashes were on Queen Victoria Street and Main Road Riwaka. Both incidents were reported as non-injury crashes.

4.36 I note that a semi-trailer truck crash is shown in some of the submissions which is not within the Waka Kotahi crash system at the point of reviewing the crash data. This is most likely due to the timing of the crash being at the end of 2021, and the lag that occurs in processing the reported crash. Accordingly details of the crash and possible cause movement factors were not available. Since completing my review the crash data for the crash noted by submitters has been coded in the crash database. This crash is not included in the 77 reported crashes noted above.

4.37 In reviewing the photographs of the crash within the submissions provided I have some comments, which are relevant to the application. The truck is a semi-trailer which has a greater swept path than the truck and trailers to be used by the applicant. This results in less room required to negotiate curves in the road. Based on the amount of damage to the vehicle and its trailer, I consider it likely that the truck driver lost control of the vehicle at a relatively low speed. It appears that the truck has hit something before coming off the road and coming to rest in the paddock.

4.38 In reviewing the traffic crash report for this incident, the reporting police officer noted that the driver appeared to have drifted a little wide on the approach to the corner, possibly as a result of the load moving. The driver was travelling at 67 km/h and felt the back of the truck lift and the steering wheel went straight. This would support my

assessment of something on the road being hit. This was a single vehicle, loss of control crash.

4.39 The reporting police officer noted that the driver was not injured in the crash. This is different to what has been stated in the submissions.

4.40 As noted above, a high percentage of crashes on the roads within the study area are lost control-type single vehicle accidents, which is typical of rural roads.

4.41 The summary above included all reported crashes on all roads within the study area. Below I go into more detail relating to reported crashes on the possible truck routes that vehicles associated with the application may use closer to the site. The focus of this analysis is on Motueka River West Bank Road and Motueka Valley Highway.

4.42 Other roads within the study area are noticeably different in terms of their formation, their alignment and the context of the adjacent road environment being more urban. These roads are typically straighter and, in some cases, go through more built-up at areas.

Motueka River West Bank Road

4.43 The section of Motueka River West Bank Road from Alexander Bluff Bridge to Old Mill Road has had 12 reported crashes since 2017. There was one serious injury crash, five minor injury crashes and six non-injury crashes on this part of Motueka River West Bank Road.

4.44 The crashes were located evenly along the road with one location (outside 172) having two reported crashes. There was one reported truck crash involving a semi-trailer losing control (as noted above and by submitters) on this section of Motueka River West Bank Road.

4.45 All but two of the crashes involved single vehicles losing control on straight sections of road or curves. Four of the reported crashes were the result of frost/ice on the road.

4.46 One of the two remaining crashes involved a motorcyclist from America travelling on the wrong side of the road and colliding with a car coming in the opposite direction (serious injury). The other crash involved a camper van reversing back into a vehicle behind it and was possibly done on purpose.

Motueka Valley Highway

4.47 The section of Motueka Valley Highway from the Alexander Bluff Bridge to College Street has had 16 reported crashes since 2017. There have been eight minor injury crashes and eight non-injury crashes.

4.48 As with the Motueka River West Bank Road, the reported crashes were generally evenly spread along Motueka Valley Highway. There were two locations where more than one crash had been reported which was north of Alexander Bluff Bridge and on the curve south of 169 Motueka Valley Highway. Again, there were no reported truck crashes on this part of the road network.

4.49 Five of the reported crashes occurred in the weekend with the remaining eleven occurring during the week. The crashes along this section of Motueka Valley Highway are more evenly spread over the full seven-day week.

4.50 Of the 16 reported crashes, 14 of these have involved single vehicles losing control. The remaining two crashes involved vehicles crossing the centre line on a bend. There were a number of movement factors listed on the crash reports which included intoxicated drivers, too fast for the conditions, inappropriate speed and the incorrect position on the road.

4.51 I note that traffic volumes along Motueka Valley Highway are higher than Motueka River West Bank Road.

Summary

4.52 There are very few reported crashes that have involved more than one vehicle with most crashes being a motorist losing control of their vehicle coming off the road.

4.53 The reported crashes on Motueka River West Bank Road and Motueka Valley Highway have been minor or non-injury crashes with only one serious accident reported. The serious crash involved a motorcyclist (tourist from America) driving on the wrong side of the road.

4.54 I have also considered the accident prediction models that could be applied to Motueka River West Bank Road and Motueka Valley Highway to better understand the change in crashes as a result of an increase in traffic flows on these roads. My findings are that

with the small increase in traffic movements that this application represents, the potential increase in crashes (based on these prediction models) is too small to measure.

4.55 I note that crash prediction models are developed from data collected across typical rural roads throughout NZ. The models have traffic volume ranges and with roads with higher crashes and higher volumes, the accuracy of the calculation is more robust. Due to the low number of movements along the study roads and expected low number of movements the crash prediction models have to be used with care

5. SECTION 42A REPORT

Planner Report

5.1 The Section 42A Recommendation Report has been prepared by Susanne Solly from WSP Consultants. It includes information provided by Ari Fon (Consultant Traffic Adviser – Affirm NZ Ltd) in Attachment 5.

5.2 Ms Solly provides her assessment of the key traffic issues in Section 9 of the 42A Report with draft conditions of consent provided in Attachment 4. There were three key issues noted being the access, road capacity and traffic safety. The draft conditions of consent are discussed later in my evidence.

5.3 I note that the maximum number of trucks per day is 15 or 30 vehicle movements. There will be a sole operator on the site who will arrive in the morning and leave in the evening. The "other traffic" movements will be less than four and not ten. In either case these movements are likely to be light vehicles and at less than ten per day would have no impact on the safety and efficiency of the access or adjacent road network.

5.4 Mr Fon's review of the application concludes that the access can accommodate the proposed truck movements subject to some minor works at the entrance. Ms Solly has accepted Mr Fon's view of this key issue.

5.5 A second matter is raised about the practical use of the bridge and weight limits. I will not comment on the structural requirements of the bridge as this is outside my area of expertise. That said, I would expect the bridge to be upgraded to accommodate the structural requirements for the types of vehicles that will be using it.

5.6 With regard to the width, I do not consider it necessary for the bridge deck to be the same width as the approaches, but I accept that there is some benefit if this was done.

5.7 Section 9.13 to 9.15 of the S42a Report provides information on the capacity assessment from the application. The application notes that "Collector Roads" are expected to carry between 1,000 and 3,000 vehicles per day. I note however that the operating capacity of Motueka River West Bank Road is much higher than 1,000 to 3,000 vehicles per day. This figure of 1,000 to 3,000 vehicles comes from an "expected capacity" analysis and not a calculation of the possible operating capacity. There are no traffic volume limits on Motueka River West Bank Road.

5.8 As correctly noted, and which I agree with, the traffic volumes on MRWBR are low and well below the anticipated flows of its listed road hierarchy designations.

5.9 An assessment of truck movements and total flows follows in the S42a Report, which state the application will double the flows along Motueka River West Bank Road. Care must be taken when using general traffic volumes and percentages when assessing effects. Small numbers with small increases can have the effect of exaggerating the real and true effects of a development, such as noted in Section 9.15 "…with a doubling of the number of heavy vehicle movement." Doubling the heavy vehicle movement does not necessary translate to the doubling of the effect especially when traffic flows are very low.

5.10 The application is for 30 heavy vehicle movements per day (15 in and 15 out) with the expected hourly flows to be around two trucks in and two trucks out per hour. The round trip including picking up gravel and then dropping it at the depot is around one hour. There will be two trucks used when the extraction is occurring. Thus, being two inward and two outward movements. This is a very low number of vehicle movements.

5.11 The hourly flows along Motueka River West Bank Road are around 23 vehicles (per hour) during the hours of operation. The activity will add four trips in these times making a total of 27 trips per hour. While the percentage increase may be high for heavy vehicles, the actual number of movements is very low.

5.12 From a capacity perspective, I note that Motueka Bridge is six metres wide which is the same width as Motueka River West Bank Road. Motueka Bridge has guardrail on both sides of the structure which limits its effective width to feel less than Motueka River West Bank Road. The traffic flows across Motueka Bridge are around 7,800 vehicles per day. MRWBR has the available width to carry much higher flows than currently using the road based on this simple example. Accordingly, road capacity is not an issue.

5.13 Section 9.16 to 9.18 correctly note that the assessment prepared for the application only considered the access and not the wider road network. This was outside my scope of commission for this consent application, and there was no request for additional traffic assessments by Council in the Section 92 process. On that basis, it had been understood that there was sufficient information provided to Council for it to evaluate the application and any potential traffic effects. However, the scope of my assessment has now been extended to cover the wider road network.

5.14 Section 9.19 to 9.23 discusses submissions which I address later in my evidence.

5.15 In concluding Ms Solly and Mr Fon accept that the access can operate safely and reserve their views on the wider road network effects pending evidence on those matters.

Mr Fon's Assessment

5.16 Mr Fon has provided his review (dated 25 February 2022) of the application and my access assessment.

5.17 He correctly notes that the traffic assessment only dealt with the access arrangements and did not include a wider road network assessment. As discussed above, the designation of the roads providing for heavy vehicle use (HMPV route) and the lack of request for further information on traffic matters, led to the understanding that no further assessment was required. An assessment of the adjacent roads is now provided within this evidence.

5.18 I do not intend to go in detail into Mr Fon's review as most of the matters have been addressed above. However, there are some points I would like to comment on.

5.19 Speeds were measured by a speed gun in accordance with Austroads. I also note that the traffic count on MRWBR included speed data information. The speed information from the traffic counter was slightly higher than observed speeds but within the expected margin of error for survey data and tube count data.

5.20 More importantly it makes no material difference to the conclusion that there is sufficient sight distance for the access to operate safely following the recommendations in my report.

5.21 Section 4.6 discusses access standards and recommends the access is formed to a Diagram 2 Standard as set out in the NTLDM. Mr Fon also makes other comments

around radii, tapers and seal widths. In principle I agree with upgrading the access, but it needs to be in recognition of the type of vehicles, traffic movements and the needs of the vehicles rather than a generic diagram contained within the NTLDM.

5.22 It is in the interest of the applicant to provide a design that meets the needs of its vehicles and staff. A specific design will be completed for the access that can be based on Diagram 2, but more specifically for its intended use. This process is controlled by Council through the Corridor Access Request (CAR) and vehicle access permit that will need to be approved by Council staff.

5.23 This matter can be dealt with under an appropriately worded consent condition requiring Engineering Plans to be submitted to Council for their certification of the upgraded access.

5.24 Mr Fon also recommends sealing of the access for 10 metres. The access (haul route) will be sealed for its whole length which addresses this matter.

5.25 Section 4.7 discusses access formation and recommends widened areas (passing bays) along the haul route. The activity is low traffic generator and a secure site in terms of access (for health and safety reasons). Truck movements are managed so vehicles do not meet on the haul route. The applicant's trucks and staff are also fitted with E-Tag and radios for vehicle management purposes. The haul route will operate in a similar way to how forestry roads operate, with drivers radioing ahead as required. The applicant may provide some passing areas for convenience, but they are not required to address an effect.

5.26 Section 4.9 discusses the existing bridge over the Peach Island overflow. This bridge is currently used by trucks and without issue. The width is sufficient for trucks. As noted in the application, the bridge structure will be assessed by a structural engineer and upgraded to meet the requirements of the vehicles for the activity should it be needed, in which case it will likely form part of the wider CAR process for the vehicle access upgrade.

6. CONDITIONS OF CONSENT

6.1 The Section 42A report provides a set of consent conditions should the application be granted. I have reviewed those conditions and make the following comments. I note

that I have also recommended a further condition to address some of the concerns raised by submitters.

6.2 I recommend a new condition (47) that limits the speed of the truck drivers using MRWBR to 60 km/h. This condition is proposed to reduce the speed of the trucks and provide a safer environment for other users of this road. The condition would read:

> "All trucks shall observe a speed limit of 60 km/h when travelling along Motueka River West Bank Road. This will be managed by the consent holder who is responsible for informing the driver."

6.3 Condition 19 addresses the sight line constraints and is acceptable.

6.4 Condition 20 is a condition requiring on-going maintenance of the sight lines which is appropriate.

6.5 Condition 21 does not provide the flexibility in terms of the design needing to meet the needs of the design vehicle or the activity on the site. While generally Diagram 2 – SD409 of the NTLDM 2020 we meet some of the needs for the design vehicle, there will be necessary modifications to ensure vehicle tracking and its connection to the new bridge are fit for purpose. I suggest a reworded condition that provides an access design that provides for a truck and trailer for Council's certification.

6.6 Condition 22 is not required. The management of the Haul Road and trucks accessing the site will hold vehicles until the route is clear. There will not be the need to provide for two vehicles passing at this location on the access or any part of the Haul Road.

6.7 Condition 23 requires a carriageway width of 4.5 metres and shoulders for a total formation width of 5.5 metres to accommodate single lane truck movements. It is assumed that this condition relates to the Haul Road passed the bridge. This width is not required for one-way heavy vehicle traffic. I recommend a minimum width of 3500mm for the seal with 500mm gravel shoulders with additional width on curves, if required. This condition will be self-monitoring as it will be important for the applicant to provide a workable and maintenance-free route.

6.8 Condition 24 is not required as the management of the Haul Road will ensure opposing traffic does not meet on the route.

6.9 Condition 25 is accepted.

6.10 Condition 26 and 27 are appropriate to manage the access.)

6.11 The wording of Condition 28 does not match the requirements under Condition 21. I recommended this condition is deleted as it is covered by reworded Condition 21, Condition 26 and 27.

6.12 Condition 45 is ok

6.13 Condition 46 is ok

6.14 Condition 47 is ok. It is unclear why this condition is required as the haul road is controlled and sealed.

6.15 Condition 48 is not required as the speeds on the haul road are self manged due to the design and health and safety requirements for the applicant.

6.16 As noted in my evidence there are some recommended conditions to address concerns around safety raised by submitters.

7. SUBMISSIONS

7.1 A large number of submissions have been received on the Application which was publicly notified. There were 33 in support and 111 submissions opposed to the Application.

7.2 The focus of my evidence below is to provide further information to the Commissioners on the concerns raised in those submissions. As noted above I have provided additional information above which may address some of the matters raised in submissions and within the Section reports. The main high-level themes from the submissions include the following:

- Increased traffic
- Road design
- Tasman Great Taste Trail
- Safety
- Congestion

7.3 I set out information in detail below to address these themes.

Increased traffic Movements

7.4 Submitters have raised concerns about the increase in traffic (trucks) using roads in the area and in particular MRWBR and MVH. This main concern relates to the additional four trucks per hour (two in and two out) or up to 30 trucks per day.

7.5 I have provided my assessment on this matter in my evidence above. In summary generally MRWBR and MVH have the width and road geometry to accommodate much higher flows safely and efficiently. Where there are more moderate curves trucks will drive more slowly and be able to track within the traffic lanes.

7.6 Trucks are using this road along with other road users each day safely and largely without incident. The low increase in truck movements of four an hour is small, and any change will be indiscernible to existing users of the road.

7.7 In terms of travel time, it is expected that a truck will take around 131 seconds to travel from the site access to Alexander Bluff Bridge when travelling at 60 km/h. Cars are likely to be travelling faster and closer to 80km/h and would travel the same route in around 83 seconds, a difference of 28 seconds. The number of vehicles travelling along MRWBR is around 30 vehicles in an hour, one vehicle every two minutes.

7.8 The likelihood of a vehicle meeting a truck associated with the application will be infrequent, if at all. Is it also expected that some of these vehicles on MRWBR will be traveling together (platoons), and therefore there would be fewer interactions.

7.9 My inspections of the road showed very little tracking off the road surface except in one location. This location (near 681 MRWBR) appears to be a site where a recent slip and road remedial works have occurred. These works appear to have reduced the road width at this location. It is recommended that this particular location is considered for some seal widening to enable trucks to stay on the sealed road surface.

7.10 **Figure 6** shows the site and road damage.

Figure 6: Road Damage

7.11 The rest of the route is suitable for truck movements and there is sufficient width for opposing trucks to pass and more so for cars.

Road Design

7.12 Submitters have also raised concerns about the road design and that it is not suitable for the proposed increase in truck movements. As previously stated, the number of truck movements is small at four in the hour. The route (MRWBR and MVH) already carries trucks along its length and with one reported crash as described above. Truck drivers have been able to travel along the road with the appropriate care without having head-on crashes or other safety impacts.

7.13 **Figure 7** shows a photograph of an opposing truck on MRWBR as it passes a truck in the opposite direction.

Figure 7: Opposing trucks passing on Motueka River West Bank Road

7.14 The absence of crashes and signs of road seal shoving or off-road tracking (exception noted above) suggests that the road design is capable of accommodating the existing truck movements and the small increase from the application.

Tasman Great Taste Trail (TGTT)

7.15 Submitters have raised concerns around the increase in trucks and the impacts on the Tasman Great Taste Trail.

7.16 The trucks associated with the application will be regular users of the route to and from the site and depot. They are professional drivers and subject to the rules and operational procedures for the company. The drivers will be aware of the TGTT and cyclists being present on the road and drive accordingly.

7.17 In one of my drive over inspections in the truck I observed that the truck offers much better forward visibility of the road ahead due to the increased height of the driver's position. While carrying out these observations, the driver came across a group of cyclists using the road. The driver was able to easily identify the cyclists and take the appropriate action to ensure the safety of these road users.

7.18 As a precautionary approach, I have suggested to the applicant that they put a reduced speed limit on their trucks using MRWBR as an additional safety measure. The applicant

has confirmed that they would accept a consent Condition reducing the speed limit for their trucks to 60 km/h while travelling along MRWBR. This is an effective method of reducing risk to cyclists and making it safer for these users and others using the road.

7.19 The trucks used by the applicant have E-Tags which allows management to monitor their location, speed and some other information. Trucks travelling over 60 km/h will result in an alert to management and a warning to the driver.

7.20 The Cycle Trust has been working with property owners to develop an off-road route along this section of MRWBR with limited success. The applicant will continue to be part of this process and hopefully adjacent landowners, some of which are submitters, will assist in making a safe off-road route for the TGTT.

Alexander Bluff Bridge

7.21 Submitters have raised concerns about sight lines and the use of Alexander Bluff Bridge.

7.22 I have carried out inspections at the bridge and considered the extra movements that will occur as a result of the applicant. As I have noted above the additional truck movements amounts to around one truck and trailer every 15 minutes over the working day. For clarity this is two trucks turning right onto the bridge each hour and two trucks turning left each hour. This is a very low number of vehicle movements.

7.23 The design of the intersection for the Alexander Bluff Bridge provides a right turn to allow vehicles to safely wait in the middle of the road while carrying out the right turn. Vehicles making the right turn have priority over traffic coming from MRWBR across the bridge.

7.24 The sight lines to the south from the right turn bay are around 128 metres from the right turn bay. The operating speed along this section of MVH is estimated to be around 70 km/h due to the nearby speed advisory of 65 km/h for the corner immediately before the bridge.

7.25 The well tested and accepted Austroads Guide was used to determine the Safe Stopping Distance (SSD). Table 5.5 in Austroads Guide to Road Design Part 3 – Geometric Design and the stopping distance formula under Section 5.3 enables the calculation of the Safe Stopping Distance requirement. The stopping distance allows approaching traffic to observe, react and stop ahead of a hazard that may be on the road.

7.26 The calculation of any sight distance requirements must make some basic assumptions which relate to reaction time and coefficient of deceleration. The sight distance calculation also requires the operating speed and grade corrections to be known.

7.27 The road environment along the MVR requires the motorists to be alert to negotiate the different bends and changes in the road geometry. A range of reaction times could be used that fall between 1.5 seconds and 2.5 seconds. For the purpose of my assessment, I have used 2.0 seconds as drivers are expected to be less alert than they would be on a more winding road or in an urban area. This is consistent with the guidance provided by Austroads.

7.28 The standard coefficient of deceleration has been used for the calculation of the SSD which is 0.36 as noted in Table 5.5 of Austroads.

7.29 The operating speed has been assumed at around 70 km/h. for the purpose of this assessment. This will give a conservative calculation of SSD.

7.30 The road grades along MVH for the purpose of this assessment are considered to be flat.

7.31 Using the SSD formula expressed in Austroads, the calculated required sight distance is 92 metres with no adjustment for grade.

7.32 As I have noted above, the available sight distance to the north is 128 metres which easily meets the minimum standard.

7.33 In considering higher approach speeds, I note that the required SSD for an assumed 80 km/h (the current posted speed limit) is 114 metres, which is still less than the available sight distance.

7.34 At 90 km/h the required SSD is 139 metres which is more than the 128 metres available. However, with motorists travelling at this higher speed they would be more alert due to the road alignment and a reaction time of 1.5 seconds would be more appropriate. The required SSD at 90km/h with this lower reaction would be 126 metres which is slightly below the available SSD.

7.35 There is sufficient SSD for vehicles to turn right on to the bridge safely and meets the minimum requirements set out in Austroads.

7.36 **Figure 8** shows the driver eye height across the bridge rails.

Figure 8: MRWBR approach sight lines for a truck.

7.37 The vehicles coming from MRWBR have good sight lines (which are better for trucks due to higher driver eye height) across the bridge of vehicles entering the bridge.

7.38 For vehicles coming off the bridge and looking to the right to carry out the left turn, they are provided with 143 metres of sight distance to carry out this manoeuvre. The same calculation of SSD which I have provided above can be applied to this movement as well. As noted above the SSD for the estimated operating speed is 92 metres and even at the higher speed the SSD is 126 metres. The available SSD is more than the minimum required under Austroads.

7.39 Accordingly, vehicles are able to use this intersection safely with the available sight distances easily meeting the best practice guidance provided in Austroads. I also note that there have been no reported crashes at this bridge that relate to road geometry.

Road Maintenance

7.40 Council is responsible for the maintenance of the road and making sure it is fit for its use. As noted above this route forms part of the HPMV route which typically requires a higher level of maintenance to manage the damage created by heavy trucks. The number

of trucks from this application is not expected to add to the general maintenance needs of this road.

7.41 Trucks are also subject to high Road User Charges (RUC) which are collected by central government to help fund the maintenance of roads.

Hau Road

7.42 Some submitters have raised concerns about the increase in trucks using the applicant's depot in Hau Road. The number of truck movements on Hau Road is likely to reduce as part of this application.

7.43 There are already truck movements that bring gravel to the Hau Road depot as part of their day-to-day business activities. The applicant will be purchasing new trucks to take heavier loads and more material. This will mean a more efficient operation and fewer truck movements that currently take gravel to the depot for processing.

Road Safety

7.44 Submitters have raised concerns about road safety which I have largely dealt with above in my evidence.

7.45 I note that the drivers of the trucks will be employees of the applicant and will be familiar with the road environment, the users and any constraints that may exist on the adjacent road network. There is also a high level of control in terms of driver compliance with conditions of consent and the operational management of the site and routes used.

7.46 I have asked the applicant to provide me details of crashes involving their drivers which would have been reported under the Health and Safety Act. The information I asked for related to the last five years.

7.47 There have been two reported incidents involving their truck driver over this time with the details provided below.

- 05 December 2019 - Outside Garin College on Champion Road a car was parked on the side of the road, just past the crossing. It was the only car parked on the left side of the road. The truck driver drove past the car and damaged the wing mirror. The truck driver left a note on the car and took photos of the vehicle and damage.

- 21 June 2017 – Driver had turned right out of Hau Road to run an errand, he was following a Mitsubishi 4WD, the driver of the Mitsubishi was erratic and unsure of where they were going. As the truck driver approached Horrell Farms entrance the driver of the Mitsubishi decided to stop, then start, then stop again. The driver could not go around as there was oncoming traffic. As the truck driver was parked behind waiting, the driver backed into him causing damage to the front right-hand indicator and light.

7.48 There are the only two reported incidents involving the applicant's drivers. It was noted in one of the submissions (86) that the applicant stated that their drivers experience some near misses. This is not unusual within the New Zealand road environment and also not unusual with trucks. The measures I have recommended along with the nature of MRWBR reduces the risks of an injury crash and for that matter any crash.

7.49 The same submitter made mention of the Marahau Quarry and near misses associated with that operation. This quarry is located on a straight, higher speed road with much higher traffic flows and is a State Highway. Comparisons cannot be with made the access and route associated with this application as they are significantly different.

7.50 This submitter also usefully provided the details they had of a semi-trailer crash where the driver had lost control of their vehicle. Another submitter (96) has raised truck safety as a concern and mentioned the semi-trailer crash which I have discussed above.

7.51 This submitter has suggested that the truck involved in this crash is similar to the those used by the applicant. This is not the case as the vehicle types for the application will be truck and trailers which have different swept paths. The swept path for a semi-trailer is commonly accepted as a worst case for road design with wider lateral clearance needed as the curve geometry tightens when compared with truck and trailers. ie, they typically need more room to negotiate tight corners.

7.52 This submitter also provided some commentary relating to a discussion with a Council staff and the suitability of the road being used by trucks. This commentary is at odds to Council's designation and certification of this route for HPMV vehicles which are for heavy and longer trucks. The route is also currently used by HPMV's trucks as well as others generally without incident. There has been one reported crash where a semi-trailer has lost control and gone off the road. The crash records show the semi-trailer

went off the road before the corner and crash factors do not suggest the corner was a factor in the crash.

7.53 The second crash this submitter has noted, I have discussed above. The motorcyclist was from America and was driving on the wrong side of the road. The road geometry and curve in the road had nothing to do with the crash, which was driver error.

7.54 The applicant-imposed speed limit of their company trucks will address some of the concerns raised by this submitter and others.

7.55 I note with interest that the application received a submission (135) from a truck driver who uses this road regularly including sometimes bringing a line haul truck and trailer unit home on Peach Island. His comments/observations agree with my own inspections which have included being a passenger in one of the applicant's trucks for a drive over inspection. I note that this submitter wishes to be heard.

7.56 Truck drivers typically drive with more care than the other road users in light vehicles. Areas where the road alignment was tighter the truck driver adjusted their speed to account for the need to move around the corner.

8. CONSISTENCY WITH POLICY DIRECTION

8.1 I have reviewed provisions relating to transport as set out in Chapter 11 of Tasman Resource Management Plan.

8.2 The underlying aim of those provisions is set out in Objective 11.1.2 which seeks to provide "A safe and efficient transport system, where any adverse effects of the subdivision, use or development of land on the transport system are avoided, remedied or mitigated."

8.3 As noted above in my evidence, the transport effects of the application meet this objective.

9. CONCLUSION

9.1 The proposed activity seeks to extract gravel for the construction industry.

9.2 The movement of material to and from the site will be carried out with Truck and trailers that will use MRWBR and MVH as the primary transport route. The maximum number of truck movements per day will 30 being made up of 15 inwards and 15 outwards.

There will also be a small number of light vehicles (less than ten) for staff working on the site. The total number of movements associated with the activity is less than 40.

9.3 The roads to be used by the truck and trailers are MRWBR and MVR which are both designated HMPV routes.

9.4 The site access assessment provided with the consent application shows that the driveway is able to provide a safe and efficient vehicle crossing, subject to some tree removal. The draft conditions of consent have recommended some changes to the access. These recommendations are acceptable, but there is a need to be more flexible. The suggested wording provides the flexibility with council still having approval of the final design.

9.5 My evidence also provides an assessment of the road network as suggested within the Section 42a Report. The evidence considers the different aspects of the activity and potential impacts. The evidence also provides material to assist the Commissioners in their decision-making process and addresses concerns raised by Submitters.

9.6 The draft conditions with amendments and additions I have noted above will enable the activity to operate safely and efficiently within the existing road environment with any effects being less than minor.

9.7 I am happy to answer any questions the commissioners may have.

Gary Clark

15 July 2022