



APPENDIX D

Integrated Traffic Assessment - CKL



Planning | Surveying | Engineering | Environmental

INTEGRATED TRANSPORTATION ASSESSMENT

Sand Quarry

Beacon Hill Contracting Limited

599 Oreipunga Road, Maungatautari

DOCUMENT CONTROL

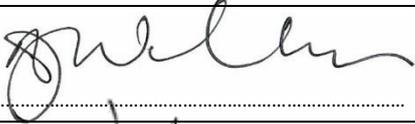
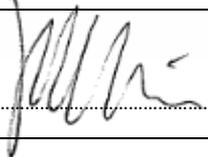
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1.0 Introduction

- 1.1.1 CKL has been asked by Beacon Hill Contracting Limited (the Applicant) to prepare an Integrated Transportation Assessment (ITA) assessing the traffic and transportation effects of a sand quarry at 599 Oreipunga Road, Maungatautari.
- 1.1.2 Sand quarrying activities have already begun on the site and therefore this ITA accompanies an application to both authorise the established activities and seek consent for the proposed expansion.
- 1.1.3 The site is within the Rural Zone of the Waipa District Council (WDC) Operative District Plan (ODP). Mineral (sand extraction) is a discretionary activity in the zone.
- 1.1.4 In summary, it has been concluded that subject to access upgrade works, internal access arrangements as described in this report, a heavy vehicle impact fee, and a Site Management Plan, the activity can be appropriately integrated with the surrounding transport network. As such, it is considered that there are no transportation reasons why resource consent cannot be granted.

2.0 Site Location

- 2.1.1 The site is located at 599 Oreipunga Road on the western side of the upper reaches of Lake Karapiro. It is located approximately 8.5km south of State Highway 1 (SH1) and approximately 21km south-east of Cambridge. The site location is shown on Figure 1.

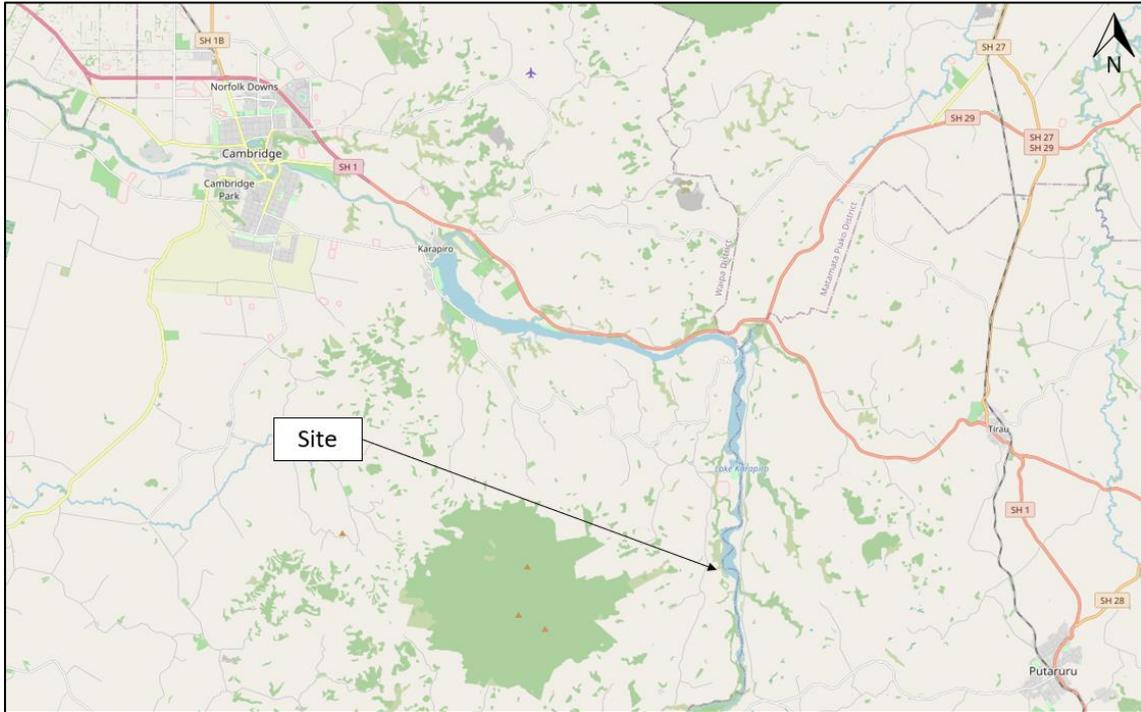


Figure 1: Site Location (Base Map Source: Open Street Maps)

2.1.2 An aerial view of the site (shaded red) and surrounding area is shown as Figure 2 below. It has approximately 610m of frontage to Oreipunga Road and a single point of access formed near the southern end of the property.



Figure 2: Existing Site and Surrounding Area (Source: WDC Intra Maps)

3.0 Existing Environment

3.1 Road Network

3.1.1 The site location relative to the WDC road hierarchy is shown as Figure 3.

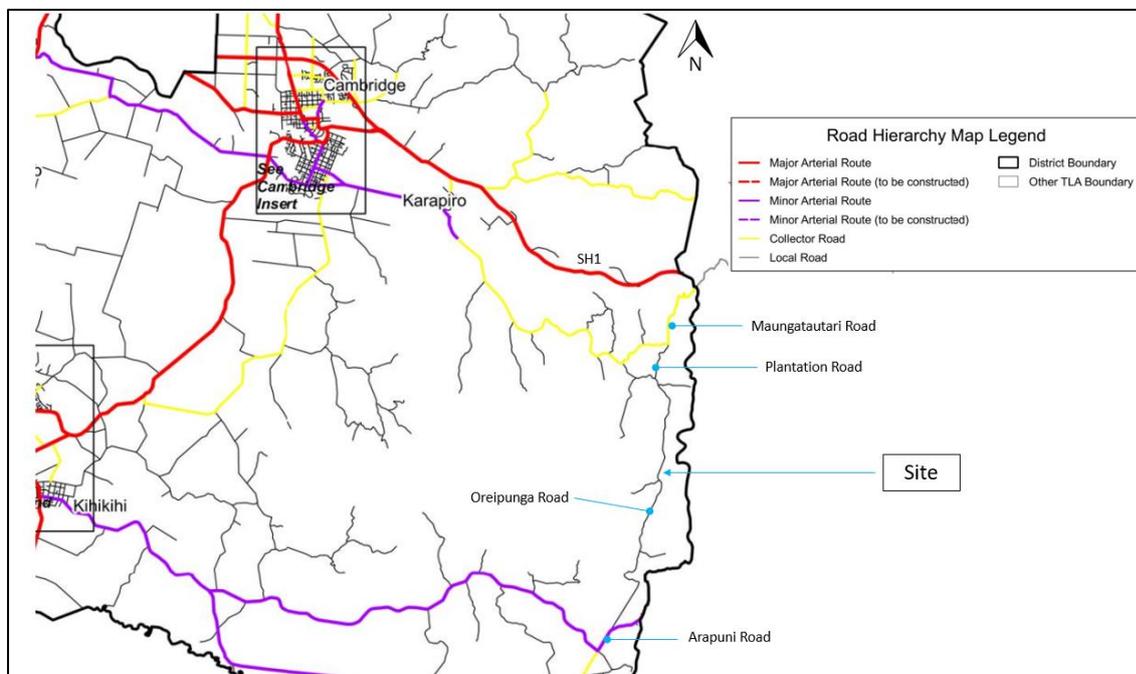


Figure 3: Road Hierarchy Context (Source: WDC Planning Maps, annotations added)

3.1.2 Oreipunga Road is classified as a local road. It runs generally north-south between Arapuni Road in the south and Maungatautari Road in the north.

3.1.3 Maungatautari Road is classified as a collector road. It provides an east-west connection between SH1 and the Waikato River bridge in the east, and Karapiro township in the west.

3.1.4 Plantation Road connects Oreipunga Road and Maungatautari Road. It is the more direct route to and from the north, compared to Oreipunga Road which takes a turn to the west before meeting Maungatautari Road. It is classified as a local road.

3.1.5 To the south, Arapuni Road provides a minor arterial connection between Te Awamutu and Kihikihi, and Arapuni (in South Waikato District).

3.1.6 Along the site frontage, Oreipunga Road has a sealed width of approximately 6m with a painted centreline and grass berms. An open road speed limit of 100km/h applies. The existing form of the road is shown as Figure 4.



Figure 4: Oreipunga Road, Viewed Looking North from in Front of Site

3.1.7 The intersections of SH1/Maungatautari Road, Maungatautari Road/Plantation Road, Plantation Road/Oreipunga Road and Oreipunga Road/Awapuni Road are all priority-controlled. Their layouts are shown as Figure 5.



Figure 5: Intersection Layouts (Aerials Sourced from WDC Intra Maps)

3.1.8 The SH1 intersection has a right turn bay, for traffic turning into Maungatautari Road from the west. All other intersections operate with single approach lanes on all legs. The Oreipunga Road/Arapuni Road intersection is split into two, with movements to/from the south using one T-intersection and movements to/from the north using another some 90m away.

3.2 Traffic Volumes

3.2.1 Traffic volumes have been sourced from the Mobileroad website, which collates data from the road asset management databases maintained by Councils. Daily volumes on roads around the site are summarised in Table 1. Peak hour volumes have also been estimated on the basis that they typically account for 10-12% of the daily total.

Table 1: Traffic Volumes

Road	Daily Volume (vpd)	% HCV	Estimated Hourly Volume (vph)
Oreipunga Road	350	10%	35-42
Plantation Road	425	10%	43-51
Maungatautari Road (north of Plantation Road)	600	10%	60-72
Maungatautari Road (south of SH1)	720	10%	72-86
Arapuni Road	1,000	8.8%	110-132

3.2.2 These volumes indicate that roads in the area are lightly trafficked and operating well within their practical carrying capacities.

3.3 Road Safety

3.3.1 A search was undertaken using the Waka Kotahi New Zealand Transport Agency (Waka Kotahi) Crash Analysis System (CAS) for all reported crashes that occurred within a five-year period from 2016 to 2020, including all available results from 2021. The search area included the full route from SH1 to Arapuni Road, using Oreipunga Road and Plantation Road, inclusive of all intersections.

3.3.2 A total of 14 crashes were reported during this time. They generally occurred in three groups: around the SH1/Maungatautari Road intersection; the Plantation Road/Oreipunga Road intersection; and the Oreipunga Road/Arapuni Road intersection. There was also a crash on the southern side of the Maungatautari Road bridge. The crash locations and details are summarised on Figure 6 and in Table 2.

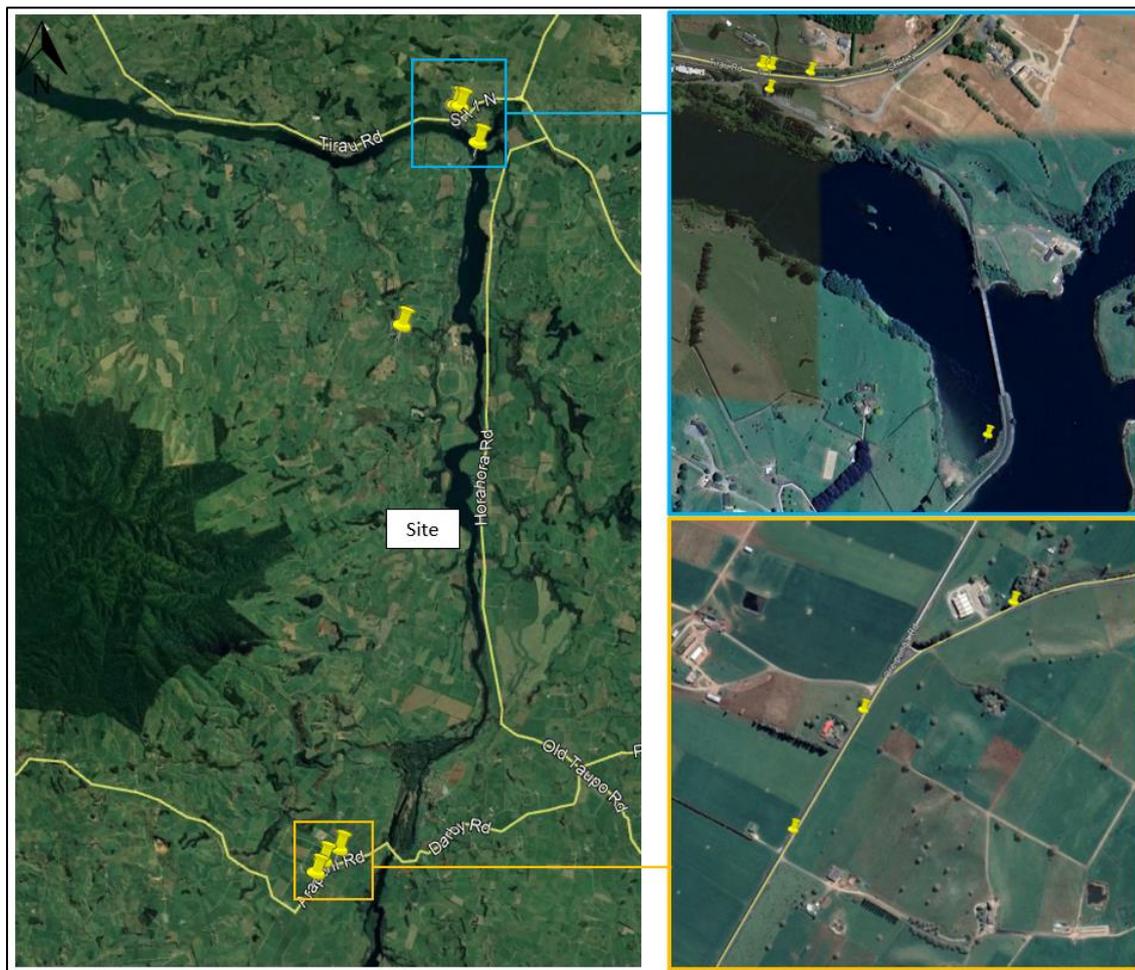


Figure 6: Crash Locations (Aerials Sourced from Google Earth)

Table 2: Crash Summary

Location	Crash Severity			Crash Types & Factors
	Non-Injury	Minor	Serious	
SH1/Maungatautari Road	6	2	0	Failure to give way (4), loss of control, hit rear, overtaking, cutting corner. Uneven road surface, fatigue, driver unfamiliar with NZ conditions.
Maungatautari Road Bridge	1	0	0	Loss of control, loose material on seal
Plantation Road/Oreipunga Road	1	1	0	Loss of control (2), excess speed, loose material on seal
Oreipunga Road/Arapuni Road	1	1	1	Hit rear, hit fallen tree, overtaking. Alcohol, too far left, heavy rain.
TOTAL	9	4	1	-

3.3.3 Five of the 14 reported crashes involved trucks. Four of these occurred at the SH1/Maungatautari Road intersection. Three of those crashes involved failure to notice or give way (two by a car driver, one by a truck driver). One involved a small trailer uncoupling from a small truck and flipping (although staying attached due to its safety chains). The fifth crash involving a truck occurred on Arapuni Road, when a bulk spreader that had stopped to turn right was hit by a distracted driver following behind.

3.3.4 No crashes involving light or heavy vehicles were reported on the midblock sections of Oreipunga Road, or along the site frontage.

3.3.5 The causes of the crashes and the types of vehicles involved are mixed. Loose material on the road surface is noted twice. This has been considered in the mitigation measures discussed later in this report.

4.0 Sustainable Travel Modes

4.1.1 Consistent with the rural nature of the area and the low density of population and activity, there are no walking or cycling facilities in the vicinity of the site, and no existing public transport services.

5.0 Committed Environmental Changes

5.1.1 It is understood that there are no committed environmental changes in the area that would significantly affect the transport network in the vicinity of the site.

6.0 Proposal

6.1 Development

6.1.1 The proposed development is a sand extraction activity with supporting functions. The site is to include four staged working areas, staff parking and internal accessways. No processing is proposed on site. A plan showing the proposed extent of works and other key features of the site is shown as Figure 7.

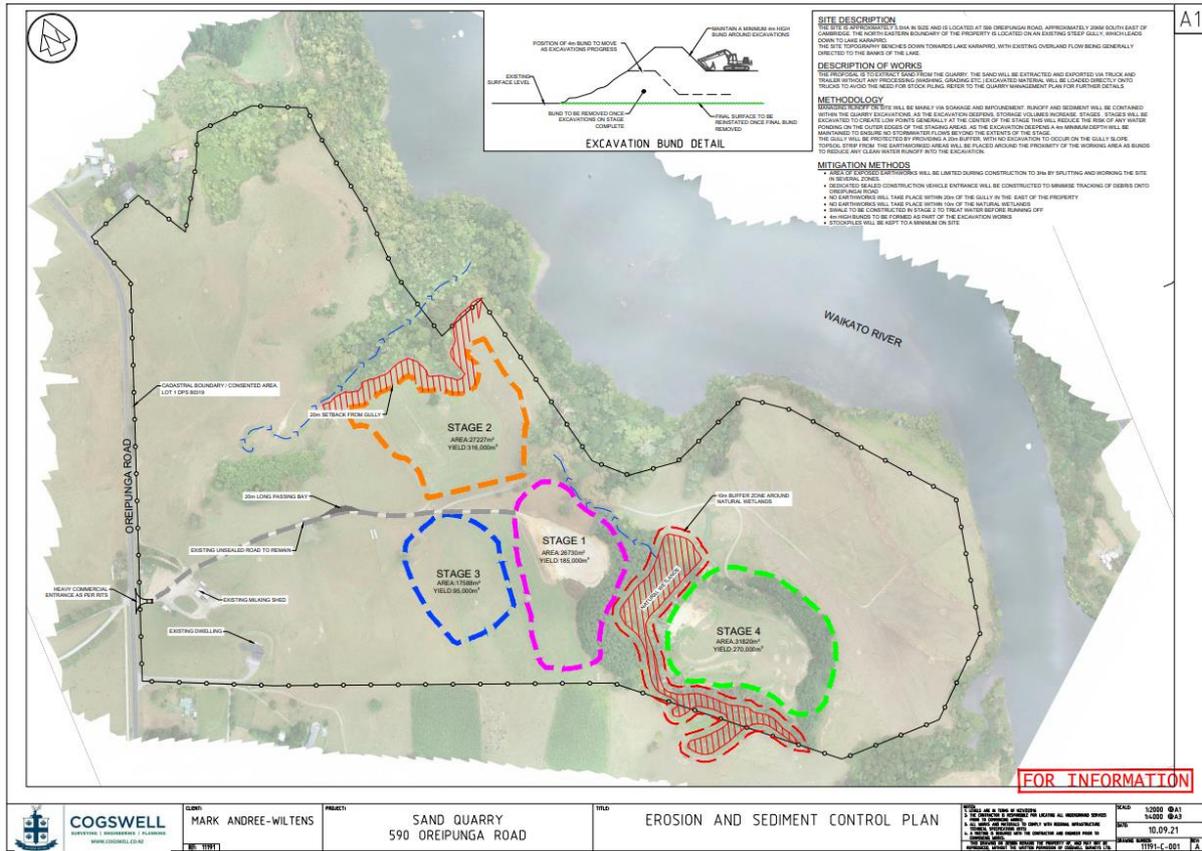


Figure 7: Site Plan (Prepared by Cogswell)

- 6.1.2 The site is estimated to have potential for 900,000m³ of sand from four separate stages. The rate at which sand will be extracted will vary and will be dependent on a number of factors including market demand. A maximum extraction limit of 95,000m³ per year is proposed, which equates to exhausting the resource in 9-10 years. Consent is to be sought for a longer period (no expiry) to give the Applicant the flexibility to respond to changing market demands.
- 6.1.3 The proposed hours of operation are 7:00am to 5:30pm Monday to Friday, and 7:00am to 12:00pm on Saturday. No operation is proposed on Sundays or public holidays. Up to four full-time and two part-time staff are expected to be employed on site.
- 6.1.4 A Site Management Plan (SMP) is proposed to document all management, monitoring and operational procedures that will be implemented at the site to minimise environmental effects on and off the site.

6.2 Access

6.2.1 The site has an access established on the eastern side of Oreipunga Road. This access is shown below as Figure 8. It is located directly opposite the access to a rural property at 590 Oreipunga Road. The property opposite the site is owned by the Applicant. Both accesses are unsealed.



Figure 8: Existing Site Access

6.2.2 The existing access is proposed to be upgraded to meet the Regional Infrastructure Technical Specification (RITS) standard for Rural Heavy Commercial Crossings (>20ha) (Figure 3-16). This access treatment is shown as Figure 9.

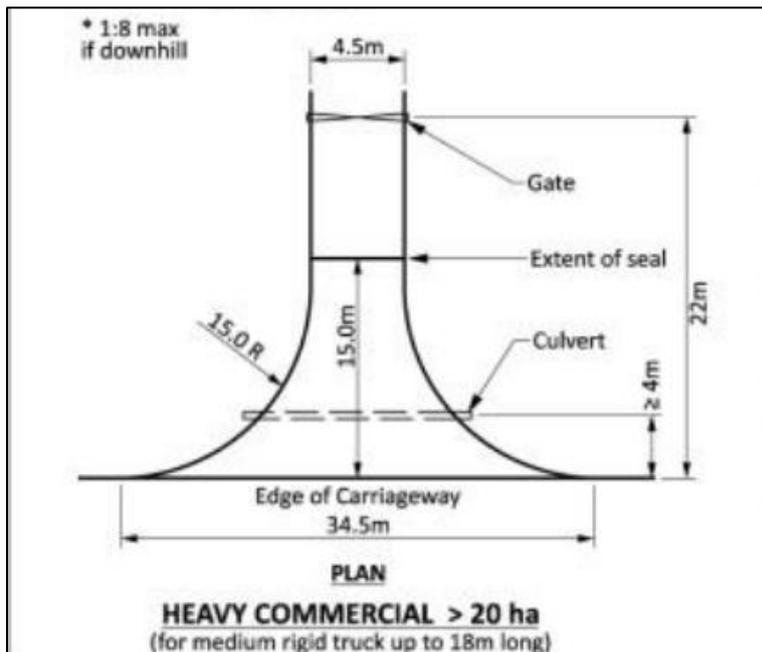


Figure 9: RITS Heavy Commercial Access (Figure 3-16)

- 6.2.3 The peak hour traffic movements expected at the access, in combination with the existing volumes on Oreipunga Road were reviewed against the Austroads (Guide to Traffic Management Part 6) warrants for right and left turn treatments.
- 6.2.4 Different scenarios were tested with various directional patterns assumed on Oreipunga Road, growth applies, and different directional distributions adopted for the site, including all demand from one direction, or the other on any given day.
- 6.2.5 None of the scenarios reached the threshold for either right or left turn auxiliary treatments. This is primarily because of the low volume on Oreipunga Road, estimated as some 35-42 vph (two-way). This would need to increase to at least 200 vph (two-way) before more than a basic treatment is potentially warranted. On this basis, the RITS heavy commercial access treatment is appropriate.
- 6.2.6 Conditions are recommended to require the detailed access design to be developed in consultation with, and subject to final approval of the WDC roading team.

6.3 Traffic Generation

- 6.3.1 The activity is expected to generate an average of 40 heavy vehicle movements per day (HCV/day) (20 inbound, 20 outbound). At its maximum weekly extraction, it could reach up to 60 HCV/day (30 inbound, 30 outbound).
- 6.3.2 Up to six staff (four full-time and two part-time) are expected to be employed on site. Assuming they are all present on the same day and they all travel independently by car, staff would generate 12 vpd. In total, the access would therefore accommodate between 52 vpd and 72 vpd at the average and peak levels.

6.4 Traffic Distribution

- 6.4.1 The Applicant anticipates that demand will come predominantly from Cambridge. There may also be some demand from Te Awamutu. The proposed transport routes to the north (to SH1 at Maungatautari Road) and west (to SH3 in Kihikihi) are shown below as Figure 10 and Figure 11, respectively.



Figure 10: Transport Route North to SH1 (Map Source: Google Maps)

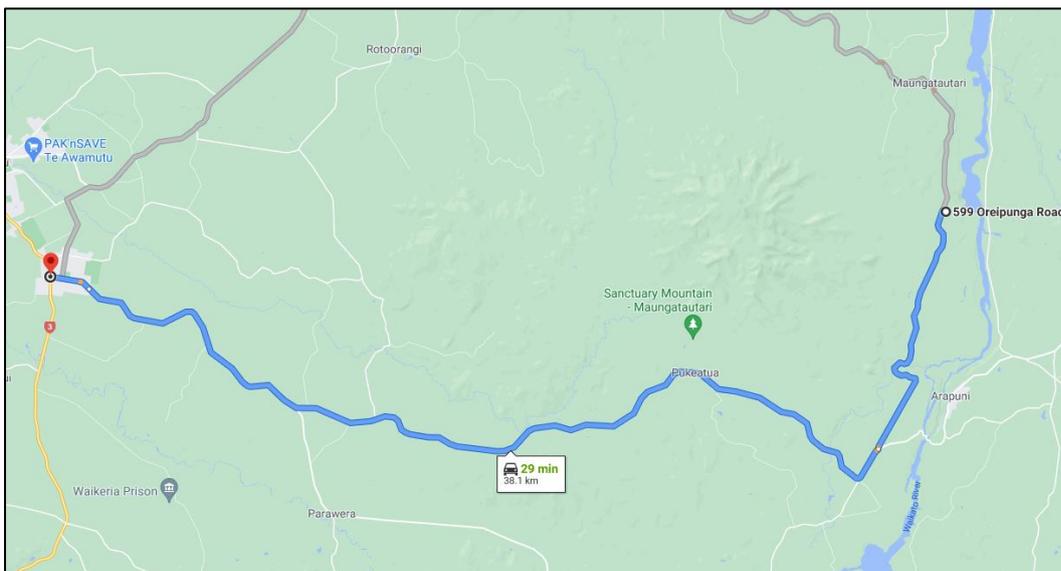


Figure 11: Transport Route West to SH3 (Map Source: Google Maps)

7.0 Assessment of Effects

7.1 Access Effects

7.1.1 The Waipa ODP refers to RITS (Section 3.3.5) which in turn refers to RTS 6¹ for sight distance requirements at driveways. Because the driveway accommodates less than 200 vehicle movements per day (vpd) it is classified as low volume by RTS 6. Low volume driveways on 100km/h local roads² are recommended to provide at least 210m of sight distance.

7.1.2 More than 210m is available in both directions from the existing access point. The views north and south are shown as Figure 12 and Figure 13, respectively. These photographs show visibility at car driver eye height, with greater visibility being available at truck driver eye height.



Figure 12: View Looking North from Access

¹ Guidelines for visibility at driveways, Land Transport Safety Authority

² As per the note under Table 1 of RTS 6, in the absence of a speed survey an operating speed of 115km/h (posted speed plus 15%) has been adopted.



Figure 13: View Looking South from Access

7.1.3 The access is proposed to be sealed to a width of 4.5m for 50m into the site. It will then be generally 3m wide with passing bays (a minimum of 6m wide and 18m long, excluding tapers) provided at 100m intervals along its length.

7.1.4 To further minimise dust effects the SMP is expected to include enforcement of appropriate on-site speed limits and the use of water spray/carts in certain wind conditions. It will also include contacts and communication protocols to enable feedback from neighbours and other stakeholders to be received and acted upon.

7.2 Traffic Effects

7.2.1 The activity is expected to generate between 52 vpd and 72 vpd at the average and peak levels. This activity would be spread over the 10.5 hours that the activity is operational for each weekday.

7.2.2 Conservatively allowing for some peaking of demand (20% of the daily activity occurring in one hour), the activity could generate 10-14 vehicle movements per hour.

7.2.3 Given the low existing traffic volumes on this part of the network (summarised earlier in Table 1), this incremental increase in traffic volumes is not likely to generate adverse operational effects on the network.

7.3 Parking Effects

7.3.1 The site will not be open to the public and therefore parking demand will be limited to staff, and occasional visitors associated with the operational needs of the quarry.

7.3.2 It is recommended that one space be provided per staff member (six in total) and at least one be allowed for visitors. Given the nature of the activity, these spaces are to be provided on an unsealed surface.

7.3.3 Matters such as parking, loading and manoeuvring requirements on the site, and the separation of these from working areas of the quarry, are expected to be managed through the SMP. The site has adequate size to accommodate to meet expected parking demand. Therefore, no off-site effects are anticipated.

7.4 Road Safety Effects

7.4.1 The CAS report interrogated in Section 3.3 shows no underlying issues with the road network in the area.

7.4.2 The access will be designed to the relevant heavy vehicle standard, and it is able to meet the sight distance requirements set out in RTS 6. The design treatment has been checked against Austroads warrants is appropriate given the expected volume combinations.

7.4.3 Mitigation is proposed to manage the potential transfer of material from the site to the road in the form sealing the first 50m of the access, and other measures captured in the SMP.

7.5 Pavement Effects

7.5.1 Pavement impacts have been assessed using the methodology set out in the WDC ODP (Rule 18.4.2.14). The financial contribution (heavy vehicle impact fee (HVIF)) to mitigate pavement effects has been assessed based on the following assumptions:

- The site has a total resource of approximately 900,000m³, correlating to approximately 1.6 million tonnes;
- Sand is extracted over approximately 9 years at an average of 40 HCV/day
- The average load size is 16m³ per HCV;
- Renewal cost is \$350,000/km;
- The financial assistance rate from Waka Kotahi is 51%; and
- 80% of sand is transported north to SH1, and 20% is transported south-west to SH3.

7.5.2 On this basis, the HVIF is \$0.25 per tonne of material transported on public roads. This contribution is proposed as a condition of consent to mitigate pavement effects on the local road network.

8.0 District Plan Compliance

8.1.1 The sand quarry has been assessed against the provisions set out in Appendix 16 of the ODP. Table 3 lists the relevant rules and provides commentary on compliance.

Table 3: District Plan Compliance Assessment

Rule	Requirement	Proposed	Compliance
Road Hierarchy			
16.4.2.1	All structure plans, plan changes, developments, and subdivision must be consistent with the road hierarchy, as contained in Appendix T5.	No changes to the road hierarchy are proposed.	Complies
16.4.2.2	To maintain the effectiveness of the road hierarchy, a road network must be designed so that a road connects to a road at the same level in the hierarchy, or directly above or below its place in the hierarchy	No road network additions are included as part of the proposed activity.	N/A

16.4.2.3	To maintain the effectiveness of the road hierarchy, when a site has two road frontages, vehicle access and egress must be from the lesser road type	The site has one frontage to a local road.	Complies
Vehicle Access to Sites in All Zones			
16.4.2.4	Every site shall be provided with vehicle access to a formed road that is constructed to a permanent standard. The vehicle access shall be designed to accommodate the demands of all traffic from the activity on that site, taking into account the form and function of the road.	Site access is provided to a formed road. The access has been designed to accommodate the expected demands.	Complies
Vehicle Entrance Separation from Intersections and Other Vehicle Entrances			
16.4.2.5	The minimum distance of a vehicle entrance (accessway) from an intersection or other entrance shall be as follows. Values K, M and N are 200m, 65m, and 200m respectively for the site as the frontage road speed limit is 100km/h	The site meets the separation requirements from intersections (K and M) but does not have 200m to adjacent accesses.	Does not comply. Further commentary provided below.
Vehicle Entrance Separation from Railway Level Crossings			
16.4.2.6	New vehicle access ways shall be located a minimum of 30m from a railway level crossing.	No level crossings are near the site.	Complies
Minimum Sight Distance Requirements for a Railway Level Crossing			
16.4.2.7	Any buildings, structure or land use shall be located to comply with the minimum rail level crossing sightline requirements within Appendix T2.	No level crossings are near the site.	Complies
Vehicle Access to Compact Housing Development			
16.4.2.8	Compact housing development must only have one access point to a strategic road	Development does not include compact housing	N/A
Vehicle Access to Sites in the Industrial Zone			
16.4.2.12	Where a site has a frontage greater than 50m to a road which is not a State Highway or a major arterial road, two vehicle crossings will be allowed from that road, subject to the requirements of Rule 16.4.2.5.	Two crossings are permitted, one is proposed.	Complies

Parking, Loading and Manoeuvring Area			
16.4.2.13	All activities that involve the erection, construction or substantial reconstruction, alteration or addition to a building on any site, or changes the use of any land or building, shall provide loading/unloading for vehicles on the site as set out in Appendix T1.	The most relevant activity in Appendix T1 is 'Industrial Activity', which is required to provide one HGV bay per site. The site will provide loading/unloading for at least this number.	Complies
16.4.2.14	Vehicle parking (if provided), loading/unloading, and manoeuvring areas shall: (a) Not encroach on any setback, outdoor living area, or bicycle parking spaces; and loading/unloading areas and manoeuvring areas shall not encroach over vehicle parking spaces; and (b) Be designed, formed, and constructed in accordance with Appendix T2 and ensure that the surface of the required area provides a dust free environment; and (c) Provide for the safe and efficient disposal of surface stormwater clear of any adjoining access or road surface in a way that does not result in ponding or scouring; and (d) Be constructed to accommodate the anticipated use of the area by all traffic likely to access the site in the zone in which it is located, including construction traffic taking into account pavement, surfacing, demarcation of spaces, aisles and circulation roads; and (e) Be provided on the site on which the building, activity or proposal is located, except where the provisions of Rules 16.4.2.15 and 16.4.2.16 apply.	Other than the first 50m of the access which is to be sealed, the on-site parking, loading and access areas are proposed to be unsealed. The management of these areas and their potential off-site effects (such as dust and tracking of material) will be managed through the SMP.	Does not comply but this is appropriate for the nature of the activity.
Car Park Landscaping and Lighting			
16.4.2.20	Other than in the St Peters School Zone, all car parks must: (a) Provide at least one tree	No permanent parking areas are to be established, only unsealed areas for private use for the	N/A

	planted for every 5 car parking spaces at a grade of no less than PB95. For avoidance of doubt, PB95 is equivalent to a tree that is at least 1.5m tall at the time of planting; and (b) Ensure lighting is designed to avoid shading areas or isolating areas of public use.	duration of the quarrying activity.	
Provision of Bicycle Parking Facilities			
16.4.2.21	In areas other than the Rural Zone and Pedestrian Frontages, activities employing more than ten people must provide bicycle parking facilities at a rate of one bicycle park for every ten people employed	Site is in the Rural Zone	N/A
Provision of an Integrated Transportation Assessment			
16.4.2.22	A Simple or Broad Integrated Transport Assessment (ITA) shall be prepared for activities as required by this rule. A Simple ITA is required for a development generating more than 250 'car equivalents' onto a Collector Road	Applying the relevant factors ³ , the site is expected to generate an average of 412 ecm/day. It is on a local road so a Simple ITA is required.	Satisfied by this Report.

8.1.2 The proposed activity has two areas of non-compliance with the ODP. The existing site access is directly opposite the access to another rural property and is also approximately 100m from the next access to the south, on the same side of the road. These accesses serve rural-residential houses and farms.

8.1.3 This existing arrangement does not comply with the ODP standard however it is established and there are no reported safety issues with its operation. The site opposite the proposed sand quarry is also owned by the Applicant. As can be seen on Figure 4 and Figure 12, Oreipunga Road rises away from the site to the north. The site access is well placed in terms of sight distance and geometry, relative to this crest curve and the vertical curve to the south (shown on Figure 13).

³ One HCV is taken as 10 car equivalents

- 8.1.4 Moving the site access further north to achieve compliance with the separation requirements would not be recommended as the access would be in an inferior position for sight distance, to the north in particular.
- 8.1.5 The users of the surrounding accesses will be regular users who will be familiar with the road layout and will become familiar with the proposed activity. For these reasons, and because of the low overall volumes on the road, on the site access, and from these rural-residential and farm accesses, the non-compliance with separation standards is not considered likely to generate adverse effects.
- 8.1.6 The second non-compliance relates to the formation of on-site parking, loading and manoeuvring areas to a permanent standard. The activity has a fixed lifespan (due to the finite nature of the sand resource), and it is therefore appropriate that its on-site infrastructure is formed to a temporary standard and remediated once the activity is complete. The exception is the first 50m of the access which will be sealed to assist with minimising transfer of material onto the road. This non-compliance is assessed as having no adverse effects.

9.0 Conclusions

- 9.1.1 This ITA has been prepared to assess the effects of a sand quarry at 599 Oreipunga Road, south of Maungatautari. The site has an estimated resource of 900,000m³ of sand that is expected to be extracted over a period of around 9-10 years. Consents without expiry are being sought to enable some flexibility if required.
- 9.1.2 The site has an established access on Oreipunga Road which will be upgraded to rural heavy commercial standard to accommodate the activity. The access can provide appropriate sight distance in both directions.
- 9.1.3 Extraction from the site will be capped by consent conditions to 95,000m³ in any 12-month period. Heavy vehicle movements will be limited to a maximum of 60 HCV/day and an average of 40 HCV/day, over any one-month period.

9.1.4 Traffic volumes on the surrounding road network are light and the generated volumes, including an expected 12 vpd associated with staff, can be accommodated without adverse safety and efficiency effects.

9.1.5 Pavement effects on the local road network have been assessed on the basis that the site will predominantly supply the market in Cambridge but could also see some demand from Te Awamutu. A financial contribution of \$0.25 per tonne (excluding the Waka Kotahi 51% subsidy) is proposed to be payable to WDC.

9.1.6 The following conditions are recommended in relation to transport matters:

- Setting the maximum volume of sand to be removed from the site as 95,000m³ in any 12-month period;
- Limiting heavy vehicle movements at the site to a maximum of 60 HCV/day (30 in, 30 out) and an average of 40 HCV/day (20 in, 20 out), averaged over a one-month period.
- Recording and reporting of daily truck volumes and extraction volumes to WDC (at intervals detailed in the draft conditions);
- A financial contribution of \$0.25/tonne to WDC for every tonne of material transported on public roads.
- Formation of a heavy vehicle entrance in accordance with RITS Diagram D3.3.4 (Heavy Commercial Rural Entranceway).
- Formation of an internal access road that is sealed to 4.5m wide for the first 50m from the edge of Oreipunga Road, and unsealed to a width of 3m with passing bays every 100m, for the rest of its length into the site.
- A Site Management Plan (SMP) that (in relation to transportation) includes:
 - On-site speed limits;
 - Maintenance of the access to avoid tracking of material onto Oreipunga Road;
 - Layout of on-site parking for staff and visitors;

9.1.7 With these conditions in place, it is concluded that there are no traffic or transportation reasons why resource consent cannot be granted.

CKL

Appendix A – HVIF Calculations

Northern Route

Pavement Levy Calculation		Existing Traffic										Proposed Traffic										\$350,000			
Road Section	Current Volume (vpd)	% HCV	Base HCV	Length	Direction Factor	Life	HVs in each lane	ESAs/HVAG	NHVAG	ESA/veh	DESA	HCV/day	%Using Route	HCV/day	Direction Factor	Duration (Years)	HVs lane	ESAs/HVAG	NHVAG	ESA/vehicle	DESA	Cost per km	Financial Cont.		
			HCV/day	(km)		(yrs)	HCV/lane/yr										HCV/lane/yr								
Oreipunga Road	350	10.00%	35	4.1	0.5	40	6,388	0.6	2.4	1.44	367,920	40	80%	32	0.5	9	5,840	0.5	3.10	1.55	81,468	\$1,435,000	\$260,146		
Plantation Road	425	10.00%	43	1.7	0.5	40	7,756	0.6	2.4	1.44	446,760	40	80%	32	0.5	9	5,840	0.5	3.10	1.55	81,468	\$595,000	\$91,766		
Maungatautari Road	600	10.00%	60	4.3	0.5	40	10,950	0.6	2.4	1.44	630,720	40	80%	32	0.5	9	5,840	0.5	3.10	1.55	81,468	\$1,505,000	\$172,159		
				10.1																			\$524,071		
																								FAR 51%	
																								Council share (49%) \$256,795	
																								Levy per cube \$0.29	
	1,585,980																							Levy per tonne \$0.16	
											1818590														
											1032000														\$267,276
Notes																									
1	1,585,980	tonnes																							
	28	average load size (tonnes)					-165000																		
	1762.2	kg/m3 approx density of sand					73000																		
	900,000	cubic metres																							
	15.89	average load size (cubic metres)																							
	56,639	total loads																							
	113,279	total vehicle movements																							
	9.0	years																							
	365	days per year																							
	34	heavy vehicle movements per day (over a full 365 day year)																							
	40	heavy vehicle movements over the operating days (250 full days plus 50 half days)					314																		
Check	900000																								

