Objection submission COM/2019/81 - Haulage Route (Additional information)

Please find below further information that I think should be considered re this development Application:

Haulage route -100m Separation Distance

The submitted document 'Traffic Impact Assessment' second version submitted (still version 1) dated 28th November 2020 (after public submission period was closed) has, I believe, significant omissions and errors. I have listed my findings below:

Lack of Intersection Analysis

Firstly this Traffic Impact Assessment fails to identify and analyse every intersection between the quarry and the major road access as per Department of Transport and Main Roads (TMR) guidelines (Please see Attachment A & B) as is required for:

i). Where development traffic is greater than 5%.

ii). Development will generate heavy vehicles.

Both of these are applicable in this case (See Attachment C). Only one intersection report is included and this is severely lacking in the aspects required.

No Road Safety Analysis

I have been unable to ascertain any road safety considerations in the 'Traffic Impact Assessment' report submitted despite this should have been considered for every intersection between the Quarry and the Pacific Motorway Junction 57 (as used for 85% of the haulage vehicles) - See Attachment D.

The same safety considerations have not been included for the 5% of Haulage trucks going West via the Tamborine Oxenford Road.

Also, the 5% of vehicles travelling East via the Gaven Arterial Road.

Further, the 5% of vehicles travelling South via the Oxenford - Coomera George Road (now the Maudsland Road).

From the TMR Guidelines this safety analysis should have included the following aspects: Walking, Cycling, Bus routes / Public transport, School Buses, Active transport, parking, pavements, proposed access and parking.

Also, the site access should have been fully analysed (especially with respect to right turns leaving the site). This is a clear breach of the TMR guidelines for such a development, where potential accidents are a very important criteria in the analysis that should have been provided.

Had this analysis been correctly performed, the severe limitations of the available haulage routes would have have become plainly obvious.

To start with there are no walkways on many stretches of the proposed haulage routes. There are no cycleway or room for cyclists along the single carriageway that makes up all the four routes highlighted as their haulage routes (Attachment C). Note only the last 800m of the 4km route to the motorway is dual carriageway; all other routes to and from the quarry are single lane, and completely inadequate for the haulage rate discussed (825,000 tonnes last year possibly 1,000,000 tonnes next year). This gives a haulage vehicle rate of a haulage truck every 1.92 minutes derived as follows:

171 loaded trucks depart per day (see Attachment E),

Thus 342 truck movements in and out from 7am - 6pm (opening hours), 11 hours per day

This gives 32 trucks per hour approx

Which equates to one truck every 1.92 minutes average throughout the eleven hour operating period per day. Significantly more at morning peak times (corresponding to school bus pickups).

How can truck movements of this colossal scale, through residential neighbourhoods not warrant a safety analysis?

Pictures from the main Haulage route (Quarry to the motorway):

Competing with School Buses

It should also be noted that these haulage routes not only compete with Public transport routes but also many school bus routes and require school children waiting at the side of the road for their buses (see Attachment F for affected school bus routes 3016, 3021, 3027 & 3055). The fine road dust analysis objection dated 28/12/2019 is pertinent in this respect along with the diesel fumes from the haulage vehicles also. This is discussed later.

100m separation distance

Moving on from the lack of safety analysis in the submitted document we should look carefully at the haulage routes used.

As outlined by the State Planning Policy for 'Mining and extractive industries' (see attachment O) it is necessary to maintain a separation distance from people from undesirable levels of noise, dust and ground vibration produced as residual impacts from the transportation of extractive material. This distance is measured 100m from the centreline of the transport route for a KRA to a major road.

I have discussed below each of the defined haulage routes used, as defined in Attachment C, highlighting where this 100m separation distance has lapsed significantly:

Main Haulage route East to the Motorway (85% of haulage vehicles)

Firstly, the main haulage route (East Bound to Pacific Highway) is non-conforming with respect to the 100m corridor on either side that should have been maintained for safety (As shown in representation maps of the haulage corridor broken down into 3 sections as shown in attachments G, H, & I).

This haulage route is within the 100m required separation distance for the following establishments:

Health establishments:

South Coast Radiology, 2 Leo Graham Way, Oxenford QLD 4210

KALWUN Health Service, GP Superclinic Level 1, 2 Leo Graham Way, Oxenford QLD 4210

Gold Coast Super Clinic (Our Medical Home), 2 Leo Graham Way, Oxenford QLD 4210

Super Clinic Pharmacy, 1/2 Leo Graham Way, Oxenford QLD 4210

Food establishments:

Oxenford Tavern, 179 Old Pacific Highway, Oxenford QLD 4210

Hungry Jacks, 160 Old Pacific Hwy, Gold Coast QLD 4210

Domino's Pizza, 2/170 Old Pacific Highway, Oxenford QLD 4210

Subway 1/170 Old Pacific Highway, Oxenford QLD 4210

Noodle Box, 170 Old Pacific Highway, Oxenford QLD 4210

Jacks Keebabs, 170 Old Pacific Highway, Oxenford QLD 4210

Bunnings Café, Global Plaza, Oxenford QLD 4210

Deep South Chicken, 160 Old Pacific Highway, Oxenford QLD 4210

Fuel stations:

7 Eleven Petrol, 170 Old Pacific Hwy, Oxenford QLD 4210

Community Centres:

Oxenford/Coomera Community & Youth Centre, 25 Leo Graham Way

North Gold Coast Pigeon Club, 25 Leo Graham Way

Childrens areas

Bonny Babies Christian Child Care Centre, 1 Ruth Terrace, Oxenford

Children's open air Play park, 25 Leo Graham Way

Outdoor Skate Park, 25 Leo Graham Way

Outdoor Volleyball Courts, 25 Leo Graham Way

Park lands

Oxenford Estate Park, Riversdale Road

Russell Hinze Park, 183 Tamborine Oxenford Rd

Georgina Street Reserve,

Coomera River Causeway Parkland,

Church

Holy Rood Church (Built 1930's), 192 Tamborine Oxenford Road

Shops/retail outlets:

Nutrition Warehouse, 160 Old Pacific Highway, Oxenford QLD 4210

Ifeelgood 24/7 express Heath Club, 9/160 Old Pacific Highway, Oxenford QLD 4210

Salvation Army (Salvos), 160 Old Pacific Highway, Oxenford QLD 4210

Supacheap, 4/170 Old Pacific Highway, Oxenford QLD 4210

Cheapa auto parts, 169 Old Pacific Highway, Oxenford QLD 4210

Bunnings, Global Plaza, Oxenford QLD 4210

K-Mart, Global Plaza, Oxenford QLD 4210

Bridges

John Muntz bridge, Tamborine Oxenford Road (See separate section below)

Residential Houses:

Over 200 houses (listed in Attachment J).

School Bus Routes

School bus routes: 3016, 3021, 3027, 3055 (eight buses per day)

Bus Routes

Route 723 - Six times a day

Route 727 - ten times a day

Summary of Main Haulage route (Eastern to Pacific Highway):

This is ridiculous to even consider using this route for the next 100 years (Duration verified in Attachment K). This route encompasses four health facilities, two community centres, a childcare centre, three outdoor play areas, four separate parklands, a vulnerable bridge, a fuel station, eight restaurants, a church, seven shops, two hundred houses and has sixteen regular buses and a further eight school buses.

All of the above is happening within the 100m sensitive corridor around the main Haulage route used by approximately two hundred and ninety large haulage trucks per day (85% of the total 342 trucks daily that use this Eastern route).

Summary of Haulage route South and East (Gaven arterial road and Maudsland route routes)

The South and East routes (See attachment L) carries a declared 10% of the heavy haulage traffic approximately 34 vehicles per day.

Between the quarry and the first major junction (approx. 1.5km) this single lane highway haulage route is compromised by the following suburban aspects all within the 100m corridor that reflects its non-conformity to the TMR requirements:

Medical Centres

Maudsland Dental Centre, 2/148 Maudsland Rd

Maudsland Medical Centre, 9/141 Maudsland Rd

Maudsland Pharmacy, 148 Maudsland Rd

Maudsland Veterinary centre, 10/141 Maudsland Rd

School/Childcare

Munchkin Child care centre, 1/148 Maudsland Rd, Oxenford QLD 4210

Community Centres etc

QCWA Memorial Hall (& Maudsland Community Centre), 161 Maudsland Road

Sanctuary Early Learning Adventure, 182 Maudsland Road

Pilates Social, 2/141 Maudsland Rd

Body Base Physiotherapy, 3/148 Maudsland Rd

Coomera River

Restaurants/Food establishments

Coomera Lodge Tavern, 160 Maudsland Rd

Lemongrass Thai Restaurant, 6/141 Maudsland Rd

Ginger Indian Gourmet Restaurant, 7/141 Maudsland Rd

George's Pizzeria, 5/148 Maudsland Rd

Maudsland Supermarket, 2-4/148 Maudsland Rd

Terrarium Restaurant, 1/141 Maudsland Rd

Fuel Stations

7/11 Fuel station, 141 Maudsland Rd

Shops and Businesses

Queen of Hearts Hair salon, 4/141 Maudsland Rd

Happy Dogz Pet Grooming, 1/148 Maudsland Rd

Liquorland, 160 Maudsland Rd

Sheerview Window Furnishings, 5/141 Maudsland Rd, Oxenford QLD 4210

Maudsland Realty, 4/148 Maudsland Road

Laundromat, 148 Maudsland Rd

President Accounting, 1b/148 Maudsland Rd

ESE Design, 1c/148 Maudsland Rd

Mr Richard J Hinz Tax Practitioners, 1a/148 Maudsland Rd

Homes

There are approx 90 homes on the first 1.5km route South & East bound haulage routes.

All of the above list are inside the 100m buffer that should have been maintained for a conforming haulage route.

It should also be noted that the only bus servicing the Gold Coast Wake Park and Aqua Park (entrance opposite Nucrush entrance) stops at the junction of Cobb and Co Drive and Appollo Place. This necessitates visitors, without their own transport (children mainly) walking the 1km to the park via the Maudsland Road (the Gaven Arterial and Gorge road haulage routes). These visitors are often struggling with rugsacks, picnics, wake boards and boots also. Here is the road they have to negotiate:

As can be clearly seen there is no walkway/cycleway whatsoever. The Quarry is to the right of these pictures and there is a sheer drop over the barriers on the left. Pedestrians and Cyclists have problems along this route from the only bus stop servicing the wake park and also anyone living/travelling from Maudsland to the Water Centre. Clearly highly unsuitable for a Haulage route.

Summary of West bound Haulage route (Tamborine Oxenford Road heading west)

The Westbound route (See attachment M) traverses the John Muntz bridge, passes the Cenotaph war memorial, a fuel station (new), Cubby Care Early Learning Centre, an aged care facility (22 units), a veterinary surgery, a restaurant and a complete shopping centre (supermarkets, restaurants, etc) where the Tamborine Oxenford Road and Reserve Road meet, Charles Crossing Park, Baker Creek Park and over 100 homes within the first 3km of this route.

Summary of Haulage route between Nucrush Quarry and Nucrush Batching Facility in Hart Street, Upper Coomera

Although, this 3km route is not mentioned in the development application we have witnessed a large number of haulage vehicles travelling along this route on a daily basis so have included it as it seems a vital omission, especially bearing in mind it cuts right through the height of suburbia in Upper Coomera. It is shown in Attachment N.

This route encompasses the following suburban encroachments within the 100m separation distance that has not been maintained:

School/Childcare

Highland Reserve State School, 570 Reserve Rd, Upper Coomera

C & K Highland Reserve Community Kindergarten, 580 Reserve Rd, Upper Coomera

Child care facility (opening 2020), 396 Tamborine Oxenford Rd

Community, Care etc

Age Care facility (Baldwin Living Sequana, 22 units), 2 Cater St, Upper Coomera

Coomera Veterinary Surgery, 379 Tamborine Oxenford Rd, Upper Coomera

Coomera School of Arts, 1 Gawler Place, Upper Coomera

Coomera Valley Rural Fire Brigade, 639 Reserve Rd, Upper Coomera

Oxenford Fishing & Social Club, 639 Reserve Rd, Upper Coomera

Park lands

John Siganto Park, Reserve Rd, Upper Coomera

Heritage Gardens, 1 Stephens St, Upper Coomera

Stephens Street Reserve, Moran Drive, Upper Coomera

Cenotaph War Memorial, Charles Crossing Road North

Little Charles Crossing Park, Charles Crossing Road North

Charles Crossing Park, Charles Crossing Road North

Coomera River

Shops / Restaurants etc

All the shopping centre at junction of Tamborine Oxenford Road and Reserve Road (Approx 20 shops)

Charm Thai, 1/388 Tamborine Oxenford Rd

Fuel Station

7/11 Petrol station and shops (opening 2020), 396 Tamborine Oxenford Rd

Homes

Approximately 200 homes.

John Muntz Bridge (Destroyed three times in ten years)

Not only is this bridge well within the 1000m separation buffer that needs to be maintained from blasting quarries (it is approximately 130 metres from the extractive boundary), but it is also compromised by being well within the 100m corridor for the Eastbound haulage route (290 vehicles per day) and is further traversed by the haulage vehicles who travel westbound via the Tamborine Oxenford road and/or to the Nucrush Hart Street batching facility,

Bearing in mind these important statistics I find it unbelievable that no safety analysis of this bridge have been included in the development application despite being imperative according to the TMR guidelines.

It is particularly important bearing in mind the unfortunate history of this bridge. It has been destroyed three times over the last ten years at enormous cost to the state and/or council and inconvenience to residents and tourists alike. Each subsequent replacement built to withstand any stresses it was subjected to. However three times now it has failed during levels of high rainfall.

Quarry output has risen during this time from approximately 425,000 tonnes in 2011 and has virtually doubled to 825,000 tonnes last year (development application figures, see attachment P). It surely cannot be discounted that the continual routine blasting and quarrying activities so close to the bridge and a further 300 heavy haulage vehicles passing and/or traversing the bridge compromising the 100m haulage corridor (all haulage vehicles to the Motorway travel within 42m of the bridge, west bound cross it) did not, and is not, undermining the foundations and weakening each bridge before its early demise.

Both the separation distance for blasting quarries and the 100 metres necessary haulage route are compromised by this development application. It is therefore unbelievable that they do not include it as part of its very necessary safety analysis, as per TMR guidelines.

John Muntz bridge rebuild:

John Muntz location with respect to the quarry:

Conclusion of the Haulage Routes

It can be clearly seen that the only haulage roads available for the Nucrush Quarry are extremely non-conforming with respect to the necessary 100m separation distance that should be maintained for safety and public health.

The safety aspects that should be considered are the large number of junctions required for a large number of heavy haulage vehicles to traverse to get to a major road, this combined with public bus routes, school bus routes, local commuters, tourist routes (to the Hinterland and Tamborine Mountain from the Gold Coast). This combined with every haulage route involves negotiating tight narrow single lane roads with no cycle ways or walkways in many places must surely be completely unacceptable in this day and age. And, to consider extending this for a further 50 to 100 years is shear madness. More houses and businesses are currently being built and will continue to be built in this area, more people will be using these residential routes. The safety aspects that should be considered are immense. It should also be remembered that every single possible route exiting the quarry involves passing a fuel station. The safety aspect here also needs to be considered.

Further, the public health has not been mentioned in the development application with respect to haulage routes. The fine Dust particles released from quarries and associated vehicles from a quarry of this magnitude really need to be considered. Haulage vehicles will generate fine dust (especially if the load is not transported wet, as is advised, but which increases weight, thus decreases load capacity, thus is minimised - who polices this?). This fine dust will be transmitted

along the haulage route (one of the reasons the 100m buffer corridor is required). Fine dust on the road will be disturbed by vehicles and re-suspended into the air around the haulage route whenever it is driven over. The health implications with Fine Road dust are immense and described in another objection 'Road dust PM10 levels' (dated 28th Dec 2019) that should be referenced, but summarised as follows:

(Extract from: Fine Road Dust contamination in a mining area presents a likely air pollution hotspot and threat to human health - from Environment International 129 (2019) 201-209):

3. Results and discussion

3.1. Metal pollution in fine road dust

The fine road dust was seriously polluted by the mine and tailings as seven elements above Ag all showed high levels of pollution (EFs > 20)

Almost all the highly polluted elements in RD10 showed a decreasing trend from industrial areas to residential areas, suggesting that the mine and tailings should be the leading contributors of pollution.

traffic emission was a less distinctive contributor compared with the overwhelming effects of the mine and tailings.

3.3.1. The estimation of RD10 exposure

As shown in Table 2, the concentrations of RD10 at road side were up to 239.15 ± 74.39 μg/m^3 (for children in GI), much higher than those at a distance (17.97 ± 5.61 μg/m^3 in the same region). Near the road, children were exposed approximately 10% higher concentrations of RD10 than adults due to their lower heights.

Since road dust resuspension is likely one of the main contributors of PM_{10}—especially at the roadside

3.5. Efficiency evaluation of mitigation measured by case studies

... Moreover, the lack of road sweeping due to low urbanization levels also aggravated the situation. To ease the condition, two methods can be considered. One is managing the ore hauling trucks and the other is sweeping the road. The former one could be more favoured as it has been shown that road cleaning activities may not be very effective to reduce road dust resuspension (Amato et al., 2014).

4. Conclusion

The study has affirmed the role played by road dust in mining and tailing areas in the processes of undergirding the pollution of mineral dust in air and posing exposure risk to residents.

Picture taken (4th Feb 2020) on the Tambourine Oxenford Road, outside the Nucrush Quarry, showing fine road dust dissipated by heavy haulage truck:

Over and above the fine road dust mentioned above, it should also be considered the raised pollution level of the carcinogenic, nitrogen oxides, diesel fumes generated by so many trucks each day are compromising the safety of the hundreds of homes, businesses, childcare centres, play parks, youth centres, bus stops etc. along their route well within the necessary safety 100m corridor required.

It is obviously very worrying that the development application is even being considered with so many health and safety aspects as briefly touched upon above. I hope common sense will prevail and the incompatible needs of the quarry will be outweighed by the vast sprawl of suburbia that has taken place over the intervening 27 years since the quarry was first initiated.

It should be remembered that this quarry has had an agreed duration of 25 years as per their initial agreement, it was then granted an additional 5 years. This allowed it to successfully quarry its agreed defined area, in the allotted time (plus an extra five years). Now, it wishes to extend this area into additional lots, and extend the time frame immensely, it is also quarrying at far greater capacity than originally. These demands are completely inappropriate and incompatible with the area it is located.

Thank you for considering my objection,

Attachment A - TMR Overview:

Part A – Context and purpose

4 Introduction

4.1 Context

Queensland's economic growth and liveability of communities depends on a system of road transport infrastructure that is safe, accessible, and reliable and provides efficient connections between people, places, goods and services. People use the road network every day to access employment, education, commercial, social and recreational opportunities. The road network is also used to transport the goods and services that underpin economic growth in Queensland and which many people depend on to support their way of life.

All development generates traffic movement that has the potential to impact on the surrounding road network. Developments may create movement of people and goods to, from and within a development. Assessing the impacts of traffic generation on the surrounding road network is an important consideration for the Department of Transport and Main Roads as well as for local governments.

As the custodian of Queensland's state-controlled road (SCR) network, Transport and Main Roads is responsible for maintaining the safety and efficiency of the SCR network in accordance with its legislative powers under the *Transport Infrastructure Act 1994*. The SCR network includes roads or parts of roads declared under Section 24 of the *Transport Infrastructure Act 1994*, as well as other transport infrastructure located within the SCR road reserve (including bus stops, cycling infrastructure and/or footpaths).

The state has a general responsibility to provide a SCR network that caters for existing and planned development, consistent with the department's objective of creating an integrated transport network accessible to everyone. The state has a defined budget for providing and maintaining SCRs, which means transport planning and infrastructure projects must be prioritised across the state according to community need and development pressures.

While Transport and Main Roads endeavours to plan and fund transport infrastructure to cater for development and growth on its road network, it is unable to fund the works needed to mitigate the impact of all development at the time that those impacts are generated. Traffic generated by a development during the development's operational stages can have an impact on the safety and functioning of a current or future SCR. Any adverse traffic impacts need to be properly assessed and addressed in order to maintain the safety, efficiency and infrastructure condition of the SCR network.

Attachment B - TMR Impact assessment:

Table 6.4 – Impact assessment area by impact type

Impact type	Impact assessment area
Road safety	All intersections where the development traffic exceeds 5% of the base traffic for any movement in the design peak periods[3] in the year of opening of each stage All road links where the development traffic exceeds 5% of the base traffic in either direction on the link in the design peak periods[3] in the year of opening of each stage
Access and frontage	The SCR corridor for the extent of the geometric frontage of the site, includes works on both the frontage side and potentially on the opposite side of the road
Intersection delay	All intersections where the development traffic exceeds 5% of the base traffic for any movement in the design peak periods[3] in the year of opening of each stage
Road link capacity	All road links where the development traffic exceeds 5% of the base traffic in either direction on the link's annual average daily traffic (AADT) in the year of opening of each stage
Pavement	All road links where the development standard axle repetitions (SARs) exceeds 5% of the base traffic in either direction on the link's SARs in the year of opening of each stage; the method for calculation of SARs is outlined in Section 13.3
Transport infrastructure	All road links where the development traffic exceeds 5% of the base traffic in either direction on the link's AADT in the year of opening of each stage, or where Transport and Main Roads identifies prevailing structural integrity issues of transport infrastructure (for example, bridges or culverts)

In addition, it is noted that, owing to the existing state of the network, there may be exceptional circumstances where an intersection or road link with development traffic less than 5% of base traffic would warrant inclusion within the impact assessment area. Examples of where an exception may be appropriate include:

- an existing or potential safety or traffic issue that will be exacerbated
- where generated traffic applies to one turning movement
- developments that will generate a different type of traffic that may require geometric improvements (for example, heavy vehicles, road trains).

[3]Guidance on the selection of the design peak periods is provided in Part D.

Attachment C - Submitted Traffic Impact assessment showing of 5% of vehicles is exceeded:

rytenskild Traffic Engineering

5.5 Extent of Impact (> 5%)

The percentage impact of development generated SARs upon the surrounding State controlled road network is shown in the '% EXIST' column of the 'Marginal Cost for sealed' page of the pavement impact spreadsheet. This is shown as Appendix D.

The analysis indicates that 5% SARs is exceeded for the following road sections :

- Oxenford – Coomera Gorge Road (northbound) only, between the site access and the Tamborine – Oxenford Road intersection.
- Tamborine – Oxenford Road (eastbound only), between the Oxenford – Coomera Gorge Road intersection and the Pacific Motorway interchange.

The unloaded trucks do not have a significant impact upon any section of the State controlled road network.

Attachment D - Haulage truck routes:

Note Coomera Gorge Road no longer exists it is now the Maudsland Road

5.4 Network Assignment

The distribution of heavy vehicle traffic varies depending on market demand. Heavy vehicles only travel between the site and local areas to the south and west if there are projects in those areas which require material to be delivered. Otherwise, heavy vehicles travel to the Pacific Motorway via the Tamborine – Oxenford Road.

The following heavy vehicle trip distribution is considered to be a reasonable estimate of typical travel patterns and has been adopted for this assessment :

- To and from the Pacific Motorway via the Tamborine – Oxenford Road - 85%
- To and from the west via the Tamborine – Oxenford Road - 5%
- To and from the east via the Gaven Arterial Road - 5%
- To and from the south via the Oxenford – Coomera Gorge Road - 5%

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rytenskild Traffic Engineering

Attachment E - Haulage trucks per day:

rytenskild
Traffic Engineering

4.0 DEVELOPMENT TRAFFIC ESTIMATES

Nucrush has provided heavy vehicle traffic generation data for the period between 1 June 2017 and 30 April 2018 (11 months). This data provided as Appendix C indicates the following heavy vehicle composition :

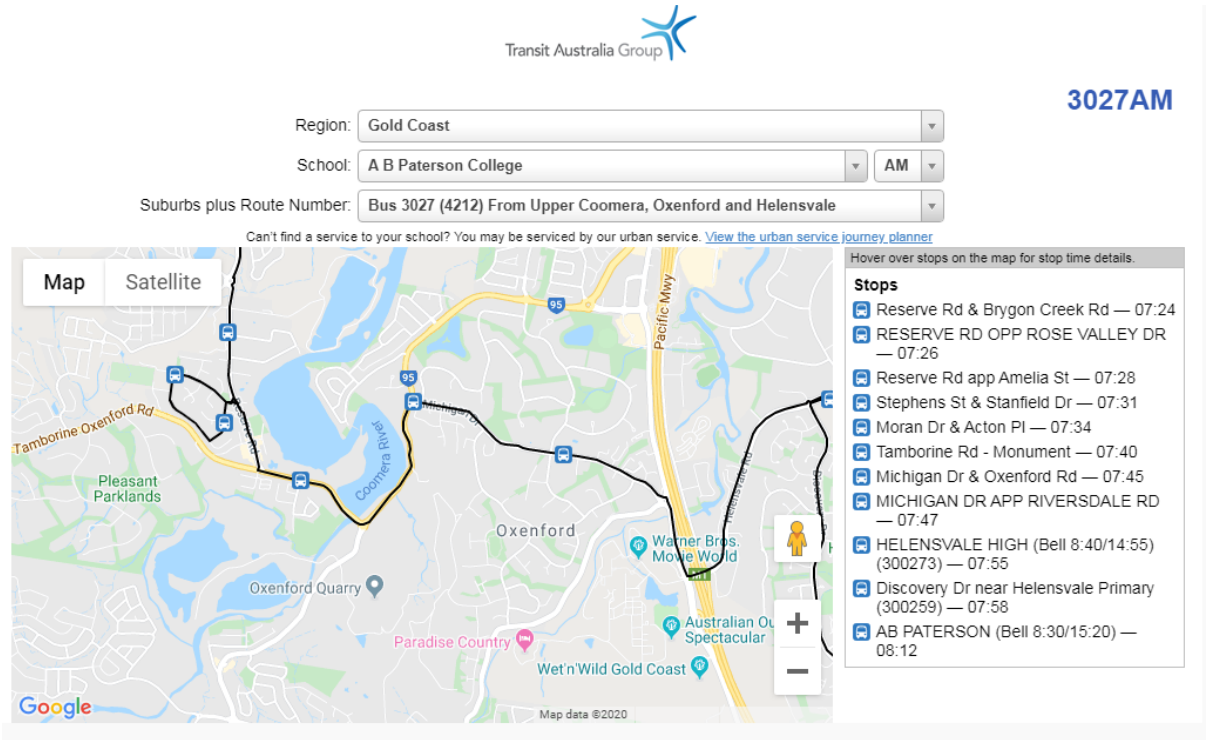
- Class 4 - Heavy Rigid - 61.3%
- Class 5 – Heavy Rigid - 7.8%
- Class 9 Heavy Rigid + trailer - 23%
- Class 8 – Semi - 7.9%.

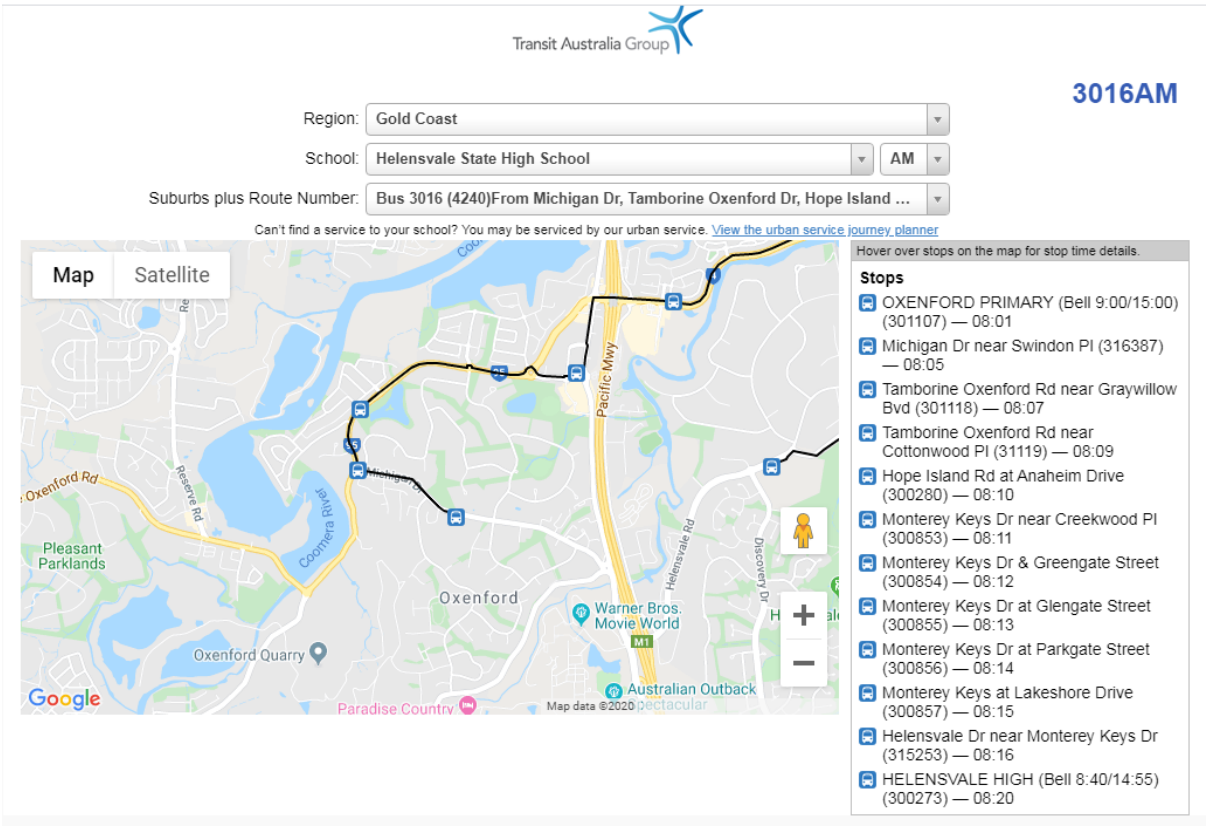
The average heavy vehicle generation was 141 loaded vehicles per day (281 days per year), which equates to an average annual daily traffic generation of 109 loaded vehicles, for a ten hour day.

The total amount of material hauled from the site during the 11 month period was approximately 755,000 tonnes, which equates to approximately 825,000 tonnes for a year. Therefore, the heavy vehicle trip generation for the proposed upper extraction rate of one million tonnes per annum would be 171 loaded trucks per day, as follows :

141 loaded trucks x (1,000,000 / 825,000) = 171 loaded trucks per day

Attachment F - School Bus routes (3027, 3016, 3055, 3021) competing with the haulage routes:





Transit Australia Group

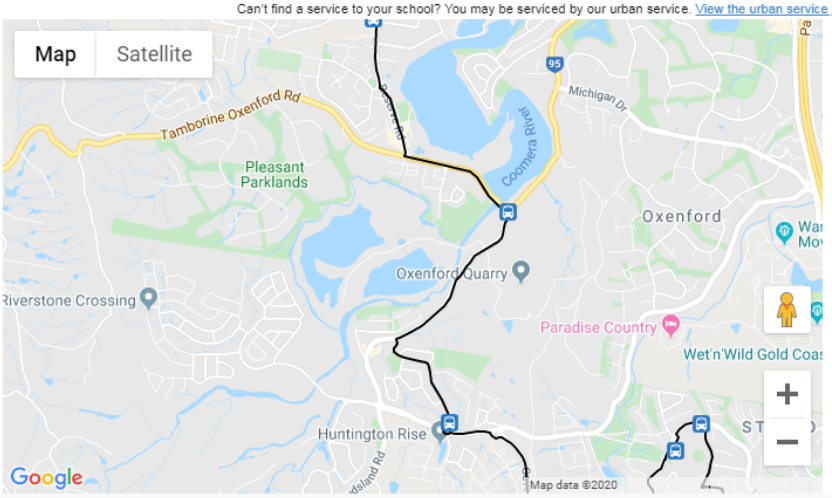
3055AM

Region: Gold Coast

School: Highland Reserve State School — AM

Suburbs plus Route Number: Bus 3055 (4222) From Pacific Pines

Can't find a service to your school? You may be serviced by our urban service. View the urban service journey planner



Hover over stops on the map for stop time details.

Stops

- PACIFIC PINES HIGH (Bell 8:45/14:45) (316420) — 08:06
- Pacific Pines Bvld & Santa Isobel Bvld — 08:08
- Salvado Dr & Hillary Cct — 08:10
- Universal St near Pinevale Dr (301121) — 08:15
- GAVEN STATE (Bell 8:50/15:00) — 08:17
- Gaven Arterial & Cobb & Co — 08:22
- Maudsland Rd & Tamborine - Oxenford Rd — 08:30
- HIGHLAND RESERVE PRIMARY (Bell 8:50/15:00) — 08:35

Transit Australia Group

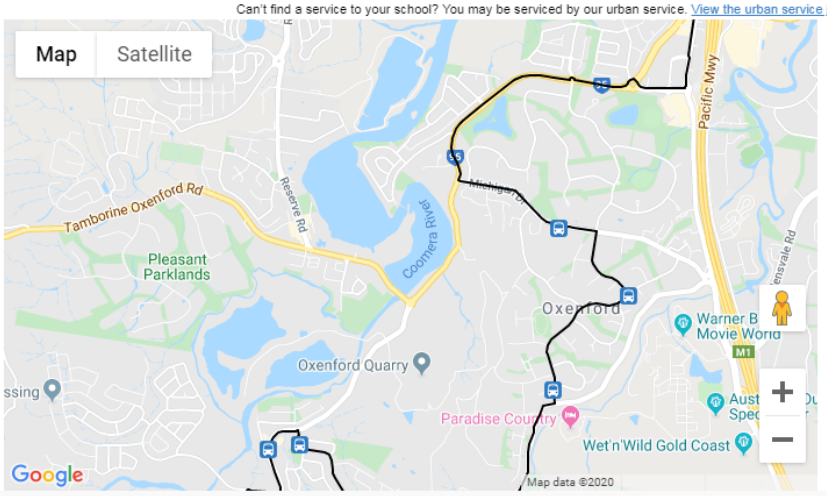
3021AM

Region: Gold Coast

School: Oxenford State School — AM

Suburbs plus Route Number: Bus 3021 (4205) From Clagiraba & Maudsland

Can't find a service to your school? You may be serviced by our urban service. View the urban service journey planner

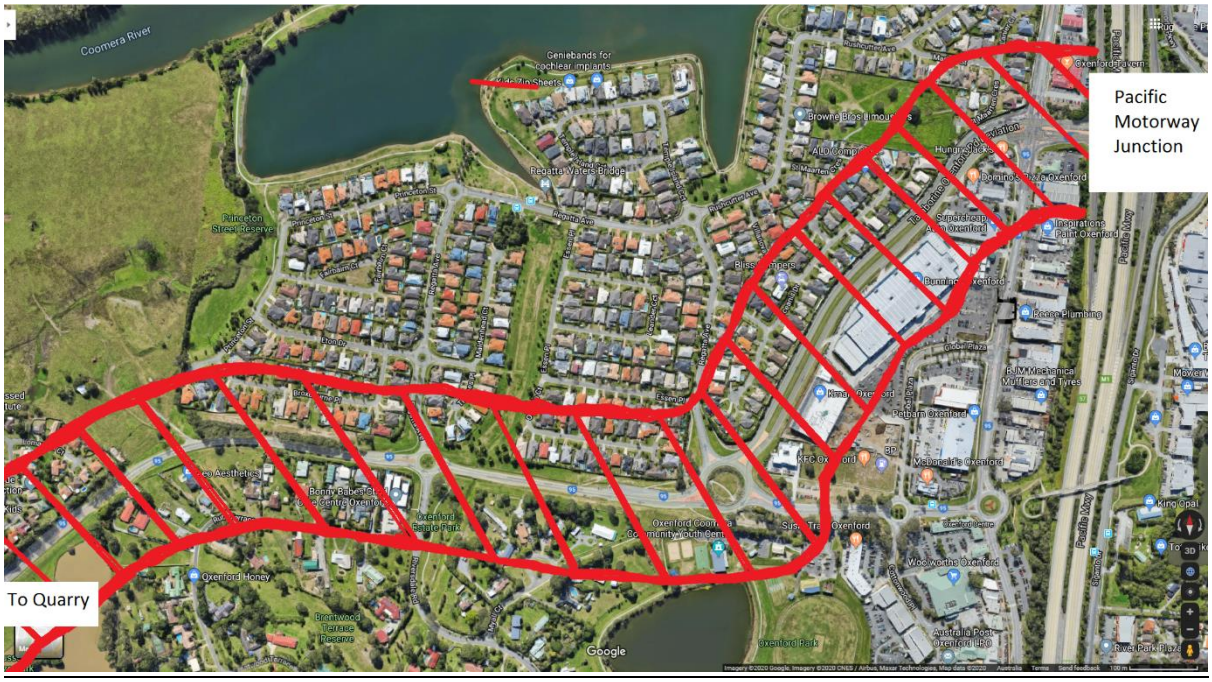


Hover over stops on the map for stop time details.

Stops

- Beaudesert - Nerang & Arunta — 07:13
- Clagiraba Rd & Baroo — 07:18
- Beaudesert - Nerang & Henri Roberts — 07:22
- The Oval U-Turn — 07:28
- Maudsland & Holyrood — 07:35
- Lagoon Park & Summer Hill — 07:40
- Maudsland Rd app Killarney Court (VS) — 07:45
- Cobb & Co Dr near Appollo Pl (301100) — 07:47
- Gaven Arterial & Cobb & Co — 07:49
- OXENFORD California Dr — 07:53
- California Dr & Riversdale Dr — 07:55
- OXENFORD PRIMARY (Bell 9:00/15:00) (301107) — 07:58

Attachment H - Haulage route 100m corridor from Quarry to Pacific Motorway (Motorway end):



Attachment H - Haulage route 100m corridor from Quarry to Pacific Motorway (mid section):

Attachment I - Haulage route 100m corridor from Quarry to Pacific Motorway (Quarry end):

Attachment J - Residential Houses:

The following Houses are within the 100m haulage corridor that should have been maintained:

St Maarten Crescent 17, 19, 14, 12, 10

Lamier Court 8

Marlow Street 2, 4, 6

Oceanis Drive: 20, 22, 24, 26, 28, 30, 32, 34, 36, 51, 49, 47, 45, 43, 41, 39, 37, 35, 33, 31, 29, 27, 25, 23, 21, 19, 17, 15, 13, 11, 9, 7, 5, 3, 1, 2, 4, 6, 8, 10, 12

Xavier Place 3, 4, 5, 6

Ontario Court 1,3 4, 5, 6,7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26

Myall Court 5, 6, 7, 8, 9

Thames Place 6, 8, 10, 12, 1, 3, 5, 7

Broxbourne Place 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 28, 30, 32, 34, 44, 46, 46A

Ruth Terrace 3, 5, 7, 9, 11, 13, 15, 17, 189, 67, 69, 71, 75

Tambourine Oxenford Road 133

Lomandra Court 3, 5, 7, 9, 6, 8, 10, 12, 14

Blueash Crescent 17, 15, 13, 11, 9, 7, 5, 3, 1, 12, 10, 8, 6, 4

Greywilllow Boulevard 3, 5, 4, 6

Roseapple Circuit 2, 4, 6, 8, 10, 22, 24

Tandanus Court 2, 3,4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 18, 20, 22

Georgina Street 2, 4 , 6

Winslow Court 140, 142, 32, 30, 28, 26, 24, 22, 20, 18, 13, 15

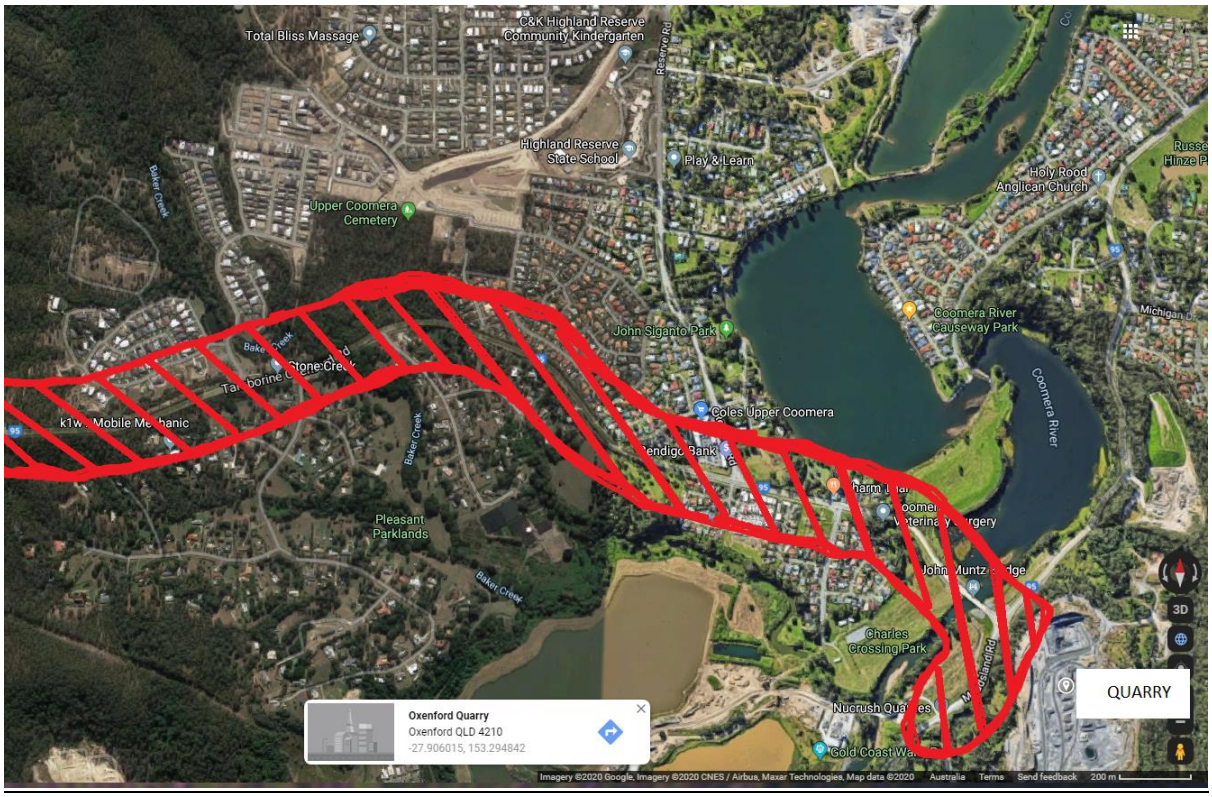
Attachment K - 100 year plan as shown in extract from the development application:

The extraction will be staged over the life of the quarry operation, which is likely to continue for approximately 100 years. The staging sequence for pit development and, hence, subsequent rehabilitation, will be dependent on resource demand and cannot be forecast accurately for the life of the quarry. Estimated (subject to change) stage timing for the development of the pit is as follows:

- Stage 1 - Year 0 to 19 (including development of the five eastern highwall benches from Year 0 to 7.2).
- Stage 2 - Year 19 to 25.
- Stage 3 - Year 25 to 30.
- Stage 4 - Year 30 to 34.
- Stage 5 - Year 34 to 37.
- Stage 6 - Year 37 to 40.
- Stage 7 - Year 40 to 96.
- Stage 8 - Year 96 to 100+.
- Stage 9 - Year 100+.
- Stage 10 – Rehabilitated.

Attachment L - Haulage route 100m corridor from Quarry heading west/South:

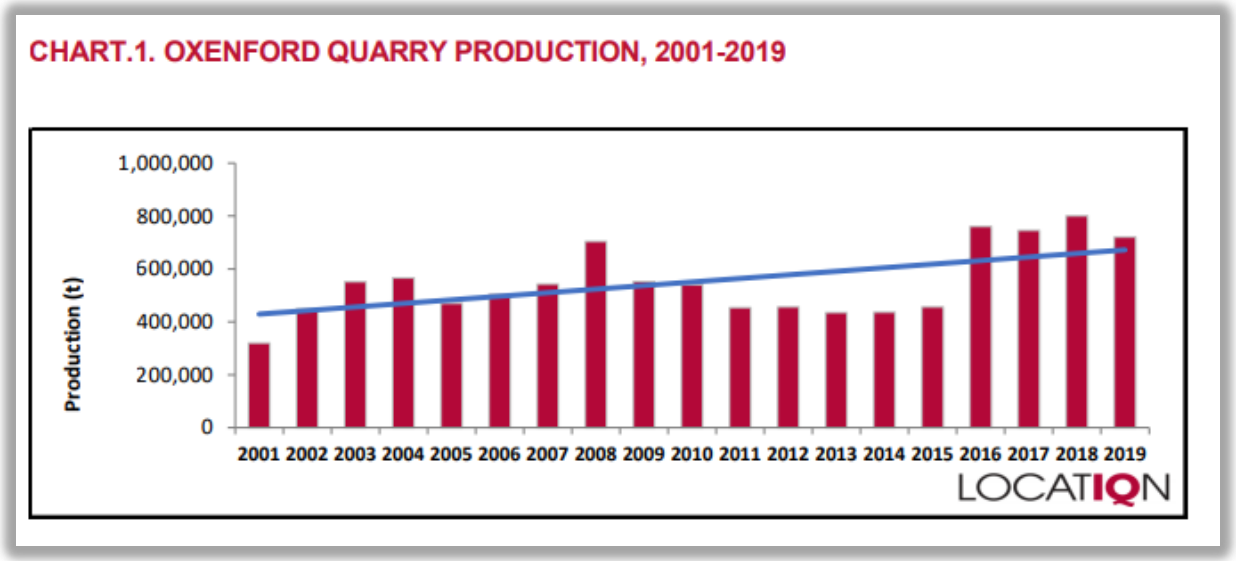
Attachment M - Haulage route 100m corridor from Quarry heading West:



Attachment N - Haulage route 100m corridor from Quarry to Nucrush Batching Facility:

Attachment P - Quarry output levels (from development application):

(Note last years declared output of 825,000 tonnes is unfortunately not shown)



Attachment O - Separation distance:

As extracted from: State Planning Policy - Mining and extractive resources

(spp-guidance-mining-and -extractive-resources-july-2017.pdf)

Table 2: KRA components

Component	Detail
Resource/ processing area	The extent of the extractive resource and any operational areas associated with the extraction and processing of the resource. The boundary of the area is defined by the potential for extractive industry activities, and includes the resource area where blasting and other primary extraction would take place. The area can include adjacent areas where other extractive activities (such as crushing, screening and stockpiling) may occur.
Separation area	The separation area is the area surrounding the resource/processing area required to maintain separation from people who may be affected by residual impacts such as noise, dust and ground vibrations of existing or future extractive operations in the resource/processing area. The minimum distance is 200 metres for resources that do not require blasting or crushing to extract (sand, gravel and clay) and 1,000 metres for hard rock resources where blasting and crushing of material is required. An extractive resource might extend beyond the boundary of the resource/processing area and, where this occurs, an extractive industry could take place in the separation area, provided that the function of the separation area is not compromised. In some cases the separation area may be less than the minimum distances in consideration of local features such as topography or existing development commitments for incompatible land uses.
Transport route	The shortest practical route used to transport extracted resources to market. The transport route is a road or a rail link from the boundary of the resource/processing area to a major road or railway.
Transport route separation area	The area surrounding the transport route needed to maintain separation of people from undesirable levels of noise, dust and ground vibration produced as residual impacts from the transportation of extractive material. The distance is measured 100m from the centre line of the indicated transport route for a KRA.

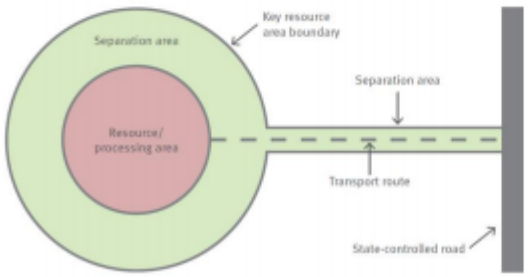


Figure 2: Components of KRAs

Part 1

Understanding the state interest