24th February 2021

For the attention:
**Phillip Zappala**
Supervising Planner – Major Assessment
City Development Branch
Council of City of Gold Coast

Dear **Phillip Zappala,**

Objection submission COM/2019/81 - Traffic Impact Assessment(s) highly flawed

Please accept this objection as it highlights that all the submitted traffic impact assessment(s) are all highly flawed and seriously deficient and lack any form of safety analysis that is required of an acceptable traffic impact assessment (as per TMR guidelines require).

Traffic Impact Assessments submitted

There are three separate Traffic Impact assessments submitted so far for this development application.

There is the main Traffic Impact Assessment dated 17th May 2019, Version 2.

There are also two additional versions which are titled Traffic Impact Assessment (State Controlled Road [SCR] Pavement Impact assessment) dated 21st Oct 2019 (Version 1) and 28th Nov 2019 (Version 1 again!) which originate from the SARA referral response.

It is the actual Traffic Impact Assessment dated 17th May 2019 which will be scrutinised with respect to public awareness at the time of 'Public Notification'.

The Purpose of the Traffic Impact Assessment

In accordance with section 13 of the Department of Transport and Main Roads (DMTR) Guide to Traffic Impact Assessment (GTIA) the Key principles for a Traffic Impact Assessment are (Attachment A1): "Key Principles for the assessment of traffic impacts of development

- Principle 1: Development must not compromise safety on the SCR network.
- Principle 2: Development should seek to achieve no worsening to safety or infrastructure condition and no net worsening to efficiency across the impact assessment area".

It is therefore unfortunate that the submitted Traffic Impact Assessments fails to consider the safety of the SCR network in any way whatsoever. As the GTIA states: "Safety is paramount in the road environment"

The TMR guide to Traffic Impact Assessment also states: "Traffic generated by a development during the developments 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 to maintain the safety, efficiency and infrastructure condition of the SCR network" and "A traffic impact assessment is the process of compiling, analysing information on, and documenting the effect that a development is likely to have on the operation of the road network, and demonstrating how these impacts can be avoided, reduced, managed or mitigated. A traffic impact assessment assesses safety and efficiency impacts on users, as well as impacts on the condition of transport infrastructure." (Attachment A2).

With this in mind it is shocking to realise, that this development application has submitted traffic impact assessment(s), proposing 342 heavy haulage vehicle truck movements per day, mostly to the Pacific motorway a full 4km away, traversing a busy, highly populated local suburb, has no mention whatsoever of "Safety" despite the TMR guide being quite specific that a safety analysis is very important. It is even more significant that the traffic impact analysis originally negligently claimed: "Given that the proposal will not result in any increased traffic demands on the surrounding network, compared to the existing operation, an assessment of impacts beyond the access intersection is not considered to be warranted" (Attachment B1). But, in later versions, acknowledging there was an increase in traffic, removed this statement altogether but still failed to provide any more than an assessment of impacts for the access intersection (still lacking any form of safety analysis).

<u>Is an assessment of impacts beyond the access intersection warranted?</u>

In the submitted Traffic Impact Assessment, dated 17th May 2019, 'Section 6.0 Summary of Conclusions and Recommendations' it is stated: "Given that the proposal will not result in any increased traffic demands on the surrounding network, compared to the existing operation, an assessment of impacts beyond the access intersection is not considered to be warranted" (Attachment B1).

However, in the later Traffic Impact Assessment (SCR Pavement Impact Assessment), dated 28th November 2019, 'Section 6.0 Summary of Conclusions and Recommendations' it states: "The Average annual production rates is approximately 600,000 tonnes per annum" and "Records indicate that the proposal generates in the order of 141 loaded truck movements per day, at an extraction rate of approximately 825,000 tonnes per year. This equates to 171 loaded trucks for an extraction rate of 1 million tonnes per year" (Attachment B2).

As can be clearly seen the average was 600,000 tonnes, recently it was 825,000 tonnes and the proposal is 1,000,000 tonnes. Cleary there is an increased traffic demand on the State Controlled Road. But, it is noted that the statement in the earlier version: "Given that the proposal will not result in any increased traffic demands on the surrounding network, compared to the existing operation, an assessment of impacts beyond the access intersection is not considered to be warranted" was omitted from the latter version as now it is clearly apparent that analysis of just the access intersection is clearly insufficient.

This is clearly shown in the 28th November Traffic Impact Assessment, Section 4.0, Development Traffic Estimates where it shows a current haulage vehicle rate of 141 loaded vehicles (282 movements) will be increasing to an estimated 171 loaded vehicles (342 movements) per day (Attachment B3).

The submitted Traffic Impact Assessment(s) have not provided an assessment of impacts beyond the access intersection. Thus, they are clearly inadequate for this development application requirements.

Please note the most widely used transport route by the quarry (for 85% of journeys) traverses through a busy local suburb for 4km to the Pacific motorway. The remaining 15% travel south from the site or west to the sister Nucrush site at Hart Street, Upper Coomera or to the hinterland beyond. All of this quarries 'transport route' is mainly a single lane (in each direction) without pedestrian path ways or cycle ways (despite also being the 'Principle Cycle Network, see attachment B4).

The submitted analysis of what just seems to be the traffic quantity at the access of the quarry on to the Maudsland road is clearly seriously lacking in any form of safety analysis throughout the transport route that a realistic traffic impact assessment for a development application of this magnitude would require. Thus, all the submitted traffic impact assessment(s) are seriously and negligently flawed.

Traffic Impact Assessment - Intersection analysis

The TMR traffic impact assessment guide shows how it is necessary to provide an impact assessment for Road safety for: "All intersections where the development traffic exceeds 5% of the base traffic for any movement in the design peak periods 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 in the year of opening each stage" and "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 with 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 and developments that will generate a different type of traffic that may require geometric improvements (for example, heavy vehicles, road trains)" (Attachment C1). Thus, all intersections for the transport route between the quarry and the Pacific Motorway and the quarry and its Hart Street sister site and travelling south from the site should have a traffic impact assessment.

Traffic Impact Assessment - Year on year analysis

The TMR Traffic impact assessment guide shows how each stage of the development requires various impact analysis to be performed. Road Safety being one of them. Attachment D1 shows how the Road safety implications should be considered throughout the developments lifecycle of one hundred plus years.

However, unfortunately the Traffic impact assessment submitted, dated 19th May 2019, only covers one year, year 2030 (a mere nine years away) despite the development application requiring a lifecycle over one hundred years or beyond year 2122 and this only covers the single access of the quarry to the Maudsland Road with no safety analysis whatsoever (Attachment D2).

Traffic Impact Assessment, State Code 1 Development in a state -controlled road environment

In all the traffic impact assessments submitted, "Appendix G" shows the applicants response to requirements of State Code 1, Development in a state -controlled road environment.

Performance Outcome PO11: "Filling and excavation does not cause wind-blown dust nuisance in a state -controlled road" has the applicant response of "REFER TO PLANIT REPORT" (Attachment E1). Unfortunately there is no reference to the Planit report required. And, I have not come across these aspects being addressed about state controlled roads in any PlanIt report I have read. Thus, we can only assume the Acceptable Outcome has not been met.

Similarly, Performance Outcome PO12: "Development does not result in an actionable nuisance, or worsening of stormwater, flooding or drainage impacts in a state controlled road" has the applicant response of "REFER TO PLANIT REPORT" (Attachment E1). Unfortunately, again, there is no reference to the Planit report required. And I have not come across these aspects being addressed about state controlled roads in any PlanIt report I have read. Thus, we can only assume the Acceptable Outcome has not been met again.

Also, Performance Outcome PO13: "Run-off from the development site is not unlawfully discharged to a state controlled road" has the applicant response of "REFER TO PLANIT REPORT" (Attachment E1). Unfortunately, again, there is no reference to the Planit report required. And I have not come across these aspects being addressed about state controlled roads in any PlanIt report I have read. Thus, we can only assume the Acceptable Outcome has not been met again.

Performance Outcome PO14: "Run-off from the development site … does not cause situation of stormwater infrastructure affecting a state controlled road" has the applicant response of "REFER TO PLANIT REPORT" (Attachment E1). Unfortunately, again, there is no reference to the Planit report required. And, I have not come across these aspects being addressed about state controlled roads in any PlanIt report I have read. Thus, we can only assume the Acceptable Outcome has not been met again.

Performance Outcome PO18: "The location and design of vehicular access to a local road within 100 metres of an intersection with a state controlled road does not create a safety hazard for users of a state controlled road" has the applicant response of "N/A" (Attachment E2). This I believe to be a negligent reply completely failing to address any potential safety issues of sharing the narrow single lanes in each direction of an increasing number of haulage vehicles sharing the "Principle Cycle Network" (Attachment B4) with cyclists, pedestrians, local buses, commuters and school children. This typifies how all the Traffic Impact Assessments submitted have negligently failed to address any safety concerns whatsoever.

Performance Outcome PO20: "Development does not result in a worsening of operating conditions on the state-controlled network. Note: To demonstrate compliance with this performance outcome it is recommended that an RPEQ certified traffic impact assessment is provided, prepared in accordance with the Guide to Traffic Impact Assessment, Department of Transport and Main Roads, 2017" the applicant response is to leave this blank (Attachment E3). Bearing in mind the increasing haulage traffic this DA proposes it is clear to say there will be "a worsening of operating conditions on the state controlled network". Is this why the response has not been entered due to there being no Acceptable outcome for the applicant? It is clear the submitted RPEQ certified "Traffic Impact assessment" fails to address this performance outcome.

Performance Outcome PO21: "Development does not impose traffic loadings on a state-controlled road which could be accommodated on the local road network" and the Acceptable outcome AO21.1 is "The layout and design of the development directs traffic generated by the development to the local road network". To this the applicants response is "N/A" (Attachment E3). Bearing in mind the increasing haulage traffic this DA proposes on both the state roads and local roads surrounding the quarry I do not believe "N/A" is an appropriate response. it is clear to say there will be "a worsening of operating conditions on the state controlled network". It is clear the submitted RPEQ certified "Traffic Impact assessment" fails to address this performance outcome.

Performance Outcome PO22: "Upgrade works on, or associated with a state-controlled road are built in accordance with Queensland road design standards". The applicants response is "NO UPGRADE WORKS ARE TRIGGERED BY THE PROPOSAL, AS THERE WILL NOT BE ANY CHANGE IN IMPACT" (Attachment E3). However, bearing in mind the increasing haulage traffic this DA proposes on state controlled (and local) roads surrounding the quarry (that this Traffic Impact Assessment is denying) I do not believe the response is adequate. At the very least it is clearly incorrect in its response of: "THERE WILL NOT BE ANY CHANGE IN IMPACT". Will the additional haulage vehicles, brought about by this development application, on the state controlled (and local) roads require upgrade works? It would seem the response is highly inadequate in not even discussing whether an upgrade is required with adequate reasoning provided as part of the Traffic Impact Assessment. It is clear the submitted RPEQ certified "Traffic Impact assessment" is deficient in failing to address this performance outcome also.

Road Safety

The TMR Guide to Traffic Impact Assessment Section 6.2.1 states: "undertaking a road safety audit and pavement investigation survey at the design stage to identify avoidable issues" (Attachment F1). Unfortunately no such road safety audit has been submitted despite the inherent dangers of 342 large haulage vehicles, traversing through a busy and popular local suburb, which is part of the Principle Cycle Network, via a single lane in either direction with no cycle ways or pathways through much of the route (Attachment F2 and F3).

It should be remembered opposite this site access is the Gold Coast Wake Park and the Water Park encouraging children and adults from far and wide to attend. There is no bus stop near the park and pedestrian have to walk along the narrow single carriageway (in each direction) Maudsland Road, taking their life into their hands (Attachment F3). It is truly unbelievable that the traffic impact assessments submitted fails to consider everyday safety implications such as these.

The road safety implications of so many haulage vehicles, throughout the area, traversing thorough local suburbs has major road safety implications. For the traffic Impact Assessment to simply ignore these, I believe, is culpably negligent.

Car Parking

The council information request dated 28th June 2019 highlighted requirements with respect to 'Car Parking supply' as follows (reproduced in Attachment G1):

"Car Parking Supply - Extractive Industry is not listed in Table 9.4.13-3 of the Transport code and therefore falls under 'Any other land use or land operation', which requires a Car Parking Assessment to be submitted to Council. Aerial imagery of the subject site shows a significant demand for car parking, in excess of 45 vehicles. The area of the site where car parking demand is currently being accommodated is not acknowledged on the existing Site Layout Plan. The staged expansion of the extraction area shows this existing car parking area being repurposed as quarry pit. Furthermore, the later stages of the development show little or no area on the site where car parking can be accommodated. In order to address Performance outcome PO1/Acceptable Outcome AO1 of the Transport code, the following is requested:

- Submit a car parking assessment that identifies the existing peak car parking demand on the site;
- Submit amended drawings to show a suitable area to accommodate this car parking demand for every stage of development; and
- Submit amended drawings that show a suitable roadway to connect the car parking area to the Maudsland Road site access for every stage of development"

The applicant has failed to provide a car parking assessment as required. The latest submission attempts to demonstrate car parking for each stage as is required. However, Stage 6 onwards it is awkwardly squeezed in between the extractive footprint and the proposed Plant area. In fact the newly define car parking/truck parking impinges on the plant area. Also, the concrete production /batching area does not have adequate room to operate and the entry and exit to the facility will also impinge on the plant area and proposed parking area. Entry and exiting this facility will also clash with the plant area front end loaders, the haulage trucks and the general quarry operation. Clearly there is not enough room given the extractive footprint proposed for the operations required.

It is noted the applicant has presented amended drawings with "Parking access road" (e.g. "Quarry development Plan Stage 9, Car Parking Arrangement"). However, it fails to mention this is the haul road and concrete trucks entry and exit too.

The applicant has failed to: "Submit a car parking assessment that identifies the existing peak car parking demand on the site" as required, and the submitted drawings are, I believe, inadequate for the task in hand.

The visualisations submitted by the applicant also clearly show that the haulage traffic, employees and visitors entering the site from the Maudsland Road will enter and leave the site via the top edge of the quarry pit which will be within approximately 75 metres of the entrance (Attachment G4). There is no alternative route. The safety implications of this are immense and it is unbelievable the Traffic Impact Assessment fails to discuss this. There is no turning circle, there is nowhere for vehicles to queue within the site as required. There is also no pedestrian access, no disability access considerations, no cycle route identified. These are all clear requirements in the Gold Coast City Plan for a development application to be approved. And it certainly calls into question the statement: "The existing access arrangements are therefore considered to be appropriate for the operation of the subject site and retain two-way circulation between the site and Maudsland Road at all times" (Attachment G2), as from stage 2 onwards, there will be apparently no two-way circulation with haulage traffic entering the site potentially queued up beyond the access intersection, back onto the Maudsland Road as the extractive footprint will be within a mere 75 metres of the entrance before doing a hard left to avoid tumbling into the depths of the quarry (Attachment G4). Meanwhile exiting haulage vehicles, employees, visitors, etc. will be doing the reverse manoeuvre at the precipice of the quarry footprint also.

It should also be remembered just opposite the site entrance is the entrance to the wake park and the aqua park. Therefore, within 75 metres of the unguarded entrance (a small token gate currently bars entry for vehicles, easily traversed by pedestrians, Attachment G5), it will be possible for children, maybe using the facilities opposite, to access the site and the 15m bench drop within metres of the entrance. It is truly unbelievable that the dangers and implications of this have not been addressed and/or resolved as part of this development application.

Finally, where are the required wheel wash facilities (that are required before haulage vehicles leave the site) to be located? There appears to be no provision for this.

It is disappointing to note that the Council Information requests have not highlighted any serious safety concerns such as these.

Haulage Route / Transport Route and Council Information Request dated 28th June 2019

The council information request, dated 28th June 2019, highlighted requirements with respect to 'Haulage Route' as shown in Attachment H1. Summarised as follows:

"The applicant is requested to confirm:

- Whether haulage vehicles travel to/from the south from the subject site;
- If haulage vehicles do travel to/from the south, whether the use Council's road network (e.g. Gaven Arterial Road/Binstead Way) to access the Pacific Motorway;
- The number of haulage vehicles that use this route on a daily basis"

The applicant's response (Attachment H2) is: "All heavy vehicles generated by the site use the Tamborine-Oxenford Road route to and from the Pacific Motorway. This is the most efficient route between the site and the Pacific Motorway. Any use of local roads such as the Gaven Arterial Road and Reserve Road would only be for deliveries to projects in the local area that those roads provide access to".

However, this fails to actually answer the Councils questions. But, section 5.3 of the Pavement Impact Assessment (Attachment H3) reveals 10% of the haulage traffic travel south to and from the site every day which includes five percent using the local 'Gaven Arterial Road'. It also indicated five percent travels west via the Tamborine Oxenford Road (over the John Muntz Bridge) and presumably the vast majority is heading for the Nucrush sister plant in Hart Street , Upper Coomera facility via the local 'Reserve Road'. This makes up ten percent of the proposed three hundred and forty two haulage movements per day will be traversing these local roads. Which is a significant number bearing in mind the single lane (in each direction) no pathway or cycle way along the majority of these routes.

The Traffic Impact assessments failure to mention that 'Reserve Road', a local Road of Regional Significance, is the gateway to the Nucrush, Hart Street, Upper Coomera sister site (See Attachment H4) and therefore the statement: "…. Reserve Road would only be for deliveries to projects in the local area" is a gross understatement and misdirection of the true usage of this route.

Given the facts above it is hard to accept the applicants information response of: "Any use of local roads such as the Gaven Arterial Road and Reserve Road would only be for deliveries to projects in the local area that those roads provide access to" as it is blatantly clear a highly significant number of the haulage movements will traverse local roads. I therefore find this lack of relevant information a culpable misdirection in response to the Councils clear Information Request.

Development Traffic Estimates are culpably incorrect

The Surveyed Traffic Volumes (attachment I1) states: "Traffic Counts carried out by Austraffic at the Maudsland Road / Nucrush site access intersection (in 2014) are provided as Attachment B (and discussed further in Section 4)". However, these surveyed traffic estimates are woefully inadequate and truly shameful. They are based on just two hours of traffic counts back on 2nd December 2014, one being 8:00am to 9:00 am (Attachment I2 ) and the other being 3:15pm to 4:15pm (Attachment I3). That is the total surveyed traffic volumes which is not even the peak operating times for the quarry. A mere two hours of data!

It is also culpably negligent in using a selected single day in the year that represents the lowest production in the last twenty years since production started (assumed to be 2001) at approx. 430,000 tonnes (as shown in attachment I4), well below the claimed average of 600,000 tonnes and a shadow of last years claimed 825,000 tonnes (Attachment I5).

Section 4.0 Development Traffic Estimates goes on to state: "As discussed previously, the proposal will result in an extension of the life of the quarry and not an intensification of current operations. The proposal will simply allow the current level of traffic generation to continue for the foreseeable future" and "On this basis, the surveyed traffic volumes shown in Attachment B (and summarised below) include traffic generated by the quarry and such will not change as a consequence of the proposed increase in area to be extracted" (Attachment I6).

Not only is this development application basing their future "Development Traffic Estimates" on just a two hour survey, seven years ago, it is also basing it on an output production of approximately half of last year's output (430k as opposed to 825k) and it must be remembered this development applications proposal is to increase this to 1,000,000 tonnes per annum. Therefore, the "Development Traffic Estimates" are approximately forty three percent of the development traffic this development application is proposing. Or, to put it another way, the development traffic that is claimed as a result of this development application will be nearly two and a half times what this traffic impact assessment is claiming.

Thus, the statement "On this basis, the surveyed traffic volumes shown in Attachment B … include traffic generated by the quarry and such will not change as a consequence of the proposed increase in area to be extracted" is an utterly contemptible negligent statement. As proven above, this is accounting for a mere fraction of the proposed quarry haulage traffic.

It is also particularly worrying that the Traffic Impact Assessment also states: "Given that the quarry has been in operation for many years, the traffic generation of the quarry has been subtracted from surveyed volumes" (Attachment H3). This is stating that the surveyed volumes of traffic in 'Appendix B - Surveyed Traffic Volumes at Site Access Intersection' (reproduced in Attachment I2 and Attachment I3) do not even contain the quarry traffic. This is very worrying and would suggest to the reader of the Traffic Impact Assessment that there is far less traffic in the vicinity then there actually is (or was for an hour in the morning and an hour in the afternoon, way back on Tuesday 2nd December 2014!). How can the submitted survey of traffic volumes simply ignore quarry traffic? And be based on a mere two hour survey some seven years ago?

Local Council's 'Transport Assessment' Information Request is lacking safety analysis

The Car Parking Supply and the Haulage Route were the only two items referred to in the Council Information request dated 28th June 2019 under the 'Transport Assessment' section (both, in my opinion, not answered by the applicant satisfactorily).

However, it is disappointing to note the Council failed to address the clear lack of any form of safety analysis, that is clearly missing from the Traffic Impact Assessment(s), as is required, for both the local council roads and the state roads used as 'Transport route' in the area.

With the clear lack of suitability for this amount of heavy haulage in this suburban area (given the single lane (in each direction) and limited pathways and cycle ways in the area, combined with the school bus routes, shopping centres, petrol station, old aged care facilities, kindergartens, church, community facilities, health care facilities, community parks, hundreds of residential homes, etc. throughout the transport route (and all within the 100m transport corridor required) this would seem a major oversight especially considering the applicant has negligently failed to address these fundamental requirements of safety in their submitted Traffic Impact Assessment(s).

John Muntz Bridge

The John Muntz bridge is an important link for the Nucrush quarry to its sister site in Hart Street Upper Coomera as part of their 'Transport Route' heading west. It is also a highly important aspect of the 'Transport Route' heading north (as it is within the 100m corridor that needs to be considered). It is also within 125 metres of the blast area making up the extractive footprint of the proposed quarry. The John Muntz bridge has spectacularly failed three times in the last ten years.

With all these factors in mind, how has the Traffic Impact Assessment been permitted to ignore this highly important aspect of the safety concerns for this proposed development application? Why has neither the TMR assessment nor the Council Transport assessment noticed the absence of this clear safety requirement?

This is yet another clear oversight in this development application.

Transport Route Safety Concerns from local Member of Parliament

The local Member for Parliament for the area Mark Boothman has raised serious concerns in the Queensland government with the Transport route where it meets the Pacific Motorway at Junction 57, in May 2020 (See Attachment J1).

The local Member for Parliament for the area Mark Boothman has also raised serious concerns in the Queensland government with where the Transport route meets Michigan Drive, in June 2020 (See Attachment J2).

How is it that a 'Traffic Impact Assessment', for a large expansion and extension for a quarry development application, resulting in an additional twenty one percent of haulage vehicles, can omit analysis of a transport route with already serious safety concerns?

How is it that the TMR referral and the Council Information Request also failed to highlight the complete lack of safety analysis for this transport route?

Traffic Impact Assessment has failed to consider cumulative effect of transport

The Traffic Impact assessment shows the site access in Figure 2.3 (attachment K1). It culpably neglects, however, to reveal that the "Wave Park" entrance opposite at 34 Maudsland Road is also the entrance to the Bullrin (or JGI ) quarry, also at 34 Maudsland Road (Attachment K2) and also the Holcim Concrete production / batching plant also at 34 Maudsland Road (Attachment K3).

The physical locations of these plants are shown in map Attachment K4.

Under Section 5.0, Adequacy of Existing Access Intersection, the traffic Impact assessment says: "Through volumes from the TMR data have been adopted for a nominal allowance of 40 vehicles per hour assumed for the wave park" (Attachment K5). No allowance has been made for the heavy haulage vehicles from either the 'Bullrin Quarry' or the 'Holcim Concrete Production/Batching plant' using the same access intersection opposite. In fact there very existence has been negligently and culpably hidden by this Traffic Impact Assessment.

Thus, the statement: "it is expected that the existing site access intersection will function satisfactory under future (year 2030) traffic conditions. The existing intersection layout (turn treatments) are considered to be satisfactory", which is apparently based on SIDRA Software Modelling (Attachment K5), is completely inadequate given that the 'modelled data' submitted is completely ignoring the 'Bullrin Quarry' or the 'Holcim Concrete Production/Batching plant' that both use the same access intersection as the Nucrush quarry.

Traffic Impact Assessment has attempted to redefine the site access intersection incorrectly

In the Traffic Impact Assessment, the statement: "The performance of the Maudsland Road / Site access road intersection has been assessed using SIDRA software. The SIDRA modelling includes a **dedicated right turn lane** so that it accurately allows for **the existing passing lane** in each approach on Maudsland Road" (Attachment K5) is culpably incorrect.

There is no dedicated "right hand turn lane" neither is there an "existing passing lane". There is only a combined 'Deceleration lane' and an 'Acceleration Lane' on either side of the intersection, enabling exiting and merging on to the Maudsland road from the Nucrush and Bullrin quarries and the Holcim concrete batching plant and the Wake Park and the Aqua Park entrances safer and smoother (as shown in Attachment K6). The function of the 'Deceleration lane' and 'Acceleration Lane' is described in Chapter 15 of the Qld TMR Road Planning Design Manual and is reproduced in Attachment K7.

I find this attempted redefinition of the intersection, by the Traffic Impact Assessment, to be both divisive and negligent.

This attempted redefinition of the intersection means data supplied to the software model is incorrect. It should go without saying that if you provide incorrect data into the modelling software the results will be incorrect too.

Clearly the results specified in: 'Table 5-1 - SIDRA Results (Maudsland Road / Site Access Intersection)' (reproduced in attachment K5) of the Traffic Impact Assessment are unacceptable as they are based on incorrect data supplied to the modelling software.

Accident Map

If you view the accident map for the transport route heading north and west from the quarry it is clear to see there have been a number of accidents in the vicinity (Attachment L1).

Similarly, the transport route used by the quarry to the south has witnessed a number of accidents also (Attachment L2).

Thus, I find it unbelievable that the Traffic Impact Assessment has failed to include any safety analysis whatsoever for the Transport route used by the quarry. I also find it unbelievable that the TMR referral and the Council Information Request failed to highlight this glaring oversight.

Clearly the Traffic Impact Assessment is inadequate.

Blasting safety considerations, including flyrock

The Queensland 'Blast Exclusion Zone' is required to be 1 km diameter from the blast epicentre. However, given the suburban location of the Nucrush quarry this has not proved possible.

A distance of approximately 1km of the transport route is within 40 metres of the proposed extractive footprint (West side of quarry along Tamborine Oxenford Road and Maudsland Road) and therefore will be within 40m of the blast epicentre. A ridiculous shortfall to the requirements.

It is truly unbelievable that this ground shaking event and significant accompanying air blast overpressure, that can be within 40m of road users, including pedestrians and cyclists (all within a fraction of the distance they should safely be for an appropriate 'Blast Exclusion Zone') does not even get a mention in the Traffic Impact Assessment. This will have an almighty impact on the safety of road users. Yet it is ignored.

Also, the possibilities of flyrock within the 'Blast Exclusion Zone' cannot be ruled out. The Queensland explosives Inspectorate demonstrates that flyrock incidents at fourteen sites measured the flyrock travels between 290 metres and 1230 metres (Attachment M1). Clearly, the blasting within 40m of a busy road and part of the transport route should obviously warrant a Traffic Impact Assessment into this unique situation of a major quarry so close to a busy route especially considering the flyrock incidents witnessed in this state (Attachments M2 and M3). Yet, unbelievably, the traffic assessment does not even consider this.

The traffic assessment has yet again failed to address a serious safety concerns for this particular quarry application. Instead it has produced a generic Traffic Impact Assessment that does not consider the safety aspects of a quarry within a suburban environment and the problems this brings.

How can a Traffic Impact Assessment fail to highlight this aspect of the quarry operation when it clearly regularly affects the safety of the traffic; and therefore the quarry operation (over and above the haulage traffic) has a dramatic effect on traffic impact?

How can these serious, potentially fatal, safety aspects be simply ignored by this Traffic Impact Assessment?

Fume Management Zones and resulting Dust Cloud Safety Considerations

For each blast there will be a resultant fume or dust cloud.

Given the blast epicentre maybe within 40m of the adjacent road (Tamborine Oxenford Road and/or Maudsland Road a resultant dust cloud can easily engulf this whole area, as per the blast on 25th November 2019 (resultant dust cloud shown attachment N1), and cause serious traffic safety concerns e.g. road traffic accidents and/or health implications of ingesting large amounts of dust (including respirable crystalline silica) while traversing these roads. This could be cataclysmic for road users especially pedestrians and/or cyclists using the Principle Cycle Network that runs throughout this area.

The resultant dust cloud, depending on weather conditions, can also extend vast distances as shown in attachment N2.

Why has this Traffic Impact Assessment not even considered this point? It is a clear safety issue that has a significant impact on the traffic, be it cars, trucks, buses, pedestrians or cyclists that are in the vicinity. And, this will only get worse as the extractive footprint gets closer to the road. The Traffic Impact assessment is severely lacking in this aspect of safety analysis.

No increase in traffic movements?

The Traffic Impact Assessment claims there is "No increase in traffic movements" and "no increase in capacity of the plant or machinery operating on site" . However, it should be remembered that on the 15th February 2022 this site is due to close as this is the date their current approval ceases. Therefore, from this date onwards there should be approximately 282 less heavy truck movements for the Oxenford and local areas per day.

Thus, it is clear that this development application seeks to add a further 342 heavy trucks per day to the local suburb from this date onwards. Therefore the claims of "No increase in traffic movements" is completely incorrect.

However, even considering the existing haulage truck movements the traffic impact assessment claims: "The average annual production rate is approximately 600,000 tonnes per annum" and "Records indicate that the proposal generates in the order of 141 loaded truck movements per day, at an extraction rate of approximately 825,000 tonnes per year. This equates to 171 loaded trucks for an extraction rate of 1 million tonnes per year". Therefore it is abundantly clear that the claim of "No increase in traffic movements" is, in my opinion, negligently incorrect.

Transport Route

It is clear that the City Plan requirements are for a 100m wide corridor throughout the transport route as stated in the City Plan, Extractive resources overlay code, Table 8.2.7-1 Performance Outcome PO2: "Separation Area and 100m Transport route separation area. PO2: Development where located within the separation area and 100m Transport Route separation area: (a) does not compromise the current and/or future extraction, processing and transportation of resources; (c) ensures an appropriately sized buffer between sensitive land uses, the resource/processing area and the transportation route to the KRA" . There is no alternative acceptable outcome (Attachment O1).

Clearly, over the intervening years since the quarries inception the transport route corridor of 100m ether side of the road has been compromised by hundreds of lawfully built homes, parks, kindergartens, shops, etc.

It is now clear that when the existing approval ceases on the 15th February 2022 it will be impossible to approve a development application that has such a non-compliant transport route. Every development application has to be taken on its own merit. Clearly this development application does not have the necessary transport route and there is no alternative acceptable outcome.

The Gold Coast Council's acceptance and encouragement of building residential homes and all forms of suburbia within the required transport route over the intervening years have now made the quarry unviable.

It is interesting to note the judges' comments from the Appeals Land Court, Brisbane, when the Nerang Pastoral appealed against an unimproved valuation - Valuation of Land Act 1944 . Case Nerang Pastoral Co Pty Ltd v Chief Executive of Natural Resources (formerly Department of Lands) on 3rd July 1997 where the judge said: "encroaching development may bring about an early cessation of quarrying and processing activities where the quarry is located in the path of encroaching residential development. Dust, noise from trucks and machinery and the carrying out of explosions constitute substantial nuisances to residential areas nearby and generate concern and consequent pressure on the local authority to discontinue the quarry use when opportunity presents".

It is clear to see that the 'encroaching development' on the compromised transport route brings: "consequent pressure on the local authority to discontinue the quarry use when opportunity presents". Such an opportunity now exists and I believe there is no acceptable outcome to the compromised Transport route other than refusal of this development application.

Carcinogenic Diesel Fumes

This development application estimates three hundred and forty two heavy haulage truck movements per day will travel along the transport route from the quarry to major roads e.g. Pacific Motorway.

This equates to one haulage truck every two minutes throughout the working day passing through suburban areas, passing pedestrians, cyclists, schoolchildren at bus stops, kindergartens, community parks, community centres, health centres, shops, restaurants (all within the 100m transport corridor that should be void of any form of suburbia to be a compliant transport route).

The carcinogenic, nitrogen oxides, diesel fumes will add to the PM2.5 levels significantly in the area posing a serious danger to public health. This is a not an insignificant source of pollution, which is happening on a daily basis and throughout the day and throughout the area. However, the traffic impact assessment fails to even consider the safety risk of the PM2.5 particles released by such a large volume of heavy haulage vehicles operating within a residential area.

Again, the traffic impact assessment has failed to even consider another serious impact and safety considerations that this development application poses.

Fine Road Dust Particles

As per the carcinogenic diesel fumes, these heavy haulage vehicles will also generate a large amount of fine road dust (Attachment P1).

It is abundantly clear to see the fine road dust problem emanating from the quarry in the aerial photo in the 2017 in attachment P2. A similar scene can be seen in 2020 in attachment P3. This dust trailings problem is an ongoing problem for the area, as regular complaints to the DES will testify.

This fine road dust is composed of dust from multiple sources, including wind transported dust, uncovered truck leakage and wheel dust. Unfortunately without effective cleaning of haulage vehicles before entering the public roads this is a severe problem. And as can be seen from photos (Attachment P1, P2 and P3) the haulage vehicles, despite clear requirements in their Environmental Authority, it would seem most, if not all, are not washed down effectively and therefore generate large amounts of fine dust which is amplified by the number of heavy truck movements (estimated by applicant as three hundred and forty two per day).

Results have shown the inhalation of Potential Toxic Elements (PTEs) in RD10 of particle concentrations lead to health risks for both adults and children. The results suggest that fine road dust is a potential hotspot for mineral exposure in populations living around a mine or quarry and its trailing's (Attachment P4).

The effects and how it is a problem for local residents is shown in Attachment P5.

The effect of a large volume of traffic passing over the contaminated road surface results in a continuous cycle of resuspended road dust adding to the dust pollution within the local area.

It is also significant that children near the road are exposed to approximately ten percent higher concentrations of RD10 than adults purely because of their lower heights and being closer to the road surface (Ref: 'Fine road dust contamination presents a likely air pollution hotspot and threat to human health' from Environment International, 2019 by Shuhan Tian, Tao Liang, Kexin Li). This is particularly important when you observe the number of school children waiting at school bus stops along the transport route every day. The study also confirmed the role played by road dust and trailing's in exposing residents to the danger of pollution from dust.

How can the Traffic Impact Assessment fail to consider the impact of so much haulage traffic on the local road network, generating so much fine dust contamination?

Yet again the traffic impact assessment has failed to consider another serious impact and safety considerations that this development application poses.

RPEQ Certification of Traffic Impact Assessment Report

It is highly disappointing that an RPEQ Certified Traffic Impact Assessment such as this can be so, in my opinion, culpably negligent in presenting an honest assessment of the Traffic in and around the Nucrush quarry.

It has failed to model the access intersection correctly by redefining the intersection to the applicants advantage which has produced incorrect results.

It has failed to acknowledge the increased haulage traffic stating: "No increase in traffic movements" and "no increase in capacity of the plant or machinery operating on site" . However, later version of

the traffic impact assessment reported: "The average annual production rate is approximately 600,000 tonnes per annum" and "Records indicate that the proposal generates in the order of 141 loaded truck movements per day, at an extraction rate of approximately 825,000 tonnes per year. This equates to 171 loaded trucks for an extraction rate of 1 million tonnes per year".

It has thus claimed incorrectly: "Given that the proposal will not result in any increased traffic demands on the surrounding road network, compared to the existing operation, an assessment of impacts beyond the access intersection is not considered to be warranted". And even, for the only access intersection it has analysed, it has omitted to include the other two other heavy industry sites using the same intersection as the Nucrush quarry.

It has also failed to include any safety analysis whatsoever.

The submitted Traffic Impact Assessment is not, in my opinion, fit for purpose. Especially given the safety requirements and considerations that it has simply ignored.

New Visualisations showing car parking/ truck parking submitted 18th February 2021

It is noted new visualisations have been submitted to show car parking and truck parking on -site for each stage as requested. However, the applicant has failed erroneously to update the Traffic Impact Assessments to reflect this. Therefore, the traffic impact assessment is still deficient in this area. Also, the visualisations presented to not appear to allow sufficient room for vehicles to manoeuvre around the site and the car/truck park actually impinges into the plant area as well as being at the precipice of the quarry footprint. This would seem highly unsatisfactory. It would also seem to block the entrance and exit to the concrete production / batching facility too. Which will itself be compromised by the plant area and the front end loaders and haulage trucks using this area now that the car park impinges the area so much.

There is still no information on the entrance and exit road, however it is noted there appears to be no pedestrian/ cycle access/ disabled access as per Council requirements. There is also no information about safety for this route to and from the plant area and/or the parking areas shown. It would still appear that arrivals to the site will be met within 75 metres of entering the site the precipice of the quarry footprint. If they fail to turn immediately a 15m drop could spell disaster. No safety aspects have been submitted explaining how this aspect will be dealt with. Also, the access road from the entrance will run alongside the Maudsland Road and the full length of the Tamborine - Oxenford Road right up to the North section of the quarry site. What will prevent this being in viewable by the local traffic and/or public areas around the quarry? Unfortunately, no details are available.

It is also appears that the car/truck parking will be in full view of both the Tamborine - Oxenford Road and the Maudsland Road (additional parking area) due to the contours of the site at these points and the extractive footprint removing areas to reveal the inner workings of the quarry. This aspect has not been covered in the development application.

The truck parking on-site is also new information that has been withheld up until this juncture. Have the Council Planners considered this aspect? A lot of questions were asked by the Council Planners about car parking but nothing about truck parking requirements during the day and overnight. It would seem an oversight that the applicant failed to cover this in the original development application and therefore at the time of public notification the public where uninformed of this aspect as they were about car and truck parking likely to be viewable from beyond the quarry boundaries and in public areas.

## Conclusion

It is utterly beyond belief that the necessary traffic Impact assessment, given the scale of the proposed development, can culpably seek to convince TMR and the Council Planners and the Council that the development application does not seek to increase haulage traffic, and instead actually attempts to show it is approximately two and a half times less than it is actually proposing.

It is also beyond contempt that no inclusion of the quarries transport/haulage route that extends 4km north to the Pacific Motorway, 3km west to their Hart Street facility, 2.3km south to the Gaven Arterial road and beyond is included along with the required safety analysis.

It is also truly unbelievable that the Traffic Impact Assessment submitted attempts to deny the existence of the long established Bullrin Quarry and the Holcim Concrete batching facility that both share the same access intersection with the applicant. Despite these both being busy thriving industries with a large movement of haulage vehicles absolutely no allowance for these vehicles is made in the Traffic Impact assessment for this intersection (other than a "nominal allowance of 40 vehicles per hour assumed for the wave park [Wake park and Aqua Park]" ).

As per TMR requirements, it should provide analysis of every road junction along the 'transport routes' (i.e. North, west and south) between the quarry and the major road network e.g. Pacific Motorway. This is to ensure the suitability and safety of the proposed development application throughout its proposed life cycle (of one hundred plus years). However, it provides analysis for just the entrance intersection for just one year in the future (year 2030) and, even then, culpably fails to include other heavy industry in the immediate area that utilise the same intersection to enter and depart and also claims the road is completely different layout than it actually is (by inventing 'right hand turn' lanes and 'passing' lanes that do not exist) in an apparent attempt to fool the SARA referral agency and Council planners to its suitability for the proposed increase in haulage vehicles entering and leaving the site.

It is very clear to see that the Traffic Impact Assessment fail to address any safety concerns whatsoever and therefore is fundamentally flawed and not fit for the purpose of "Traffic Impact Assessment".

Without the very necessary safety analysis of how the quarry's large fleet of haulage vehicles can coexist with its neighbours and their haulage vehicles, and other road users such as local traffic, pedestrians and cyclists and users of the Principle Cycle Network, this submitted traffic impact assessment is fatally and negligently flawed.

This RPEQ certified Traffic Impact Assessment fails to provide the Council planners sufficient information to establish the safety of the road network. It appears to be merely a token gesture to tick a box for the development application with no safety considerations whatsoever. It is clearly culpably deficient in a number of key aspects.

It should be remembered that Principle 1 of the Qld Traffic Impact Assessment guidelines states: "Development must not compromise safety of the SCR network" and, Principle 2: "Development should seek to achieve no worsening to safety or infrastructure condition and no net worsening to efficiency across the impact assessment area". However, there are, I believe, a large number of highly significant safety aspects that the submitted traffic impact assessment has negligently failed to consider (as discussed above). Further, the submitted traffic impact assessment has failed to consider the 'impact assessment area' as being anything other than the access intersection and thereby

completely ignoring the transport route(s) and also the effect of the quarry operations (blasting, dust, etc) on SCR roads that are within 40m of the proposed extractive footprint.

To approve this development application with these highly flawed and serious deficiencies in the traffic impact assessment would be culpably negligent in my opinion.

Thank you in anticipation,

Kind regards

Tony Potter

Attachment A1 - Key principles for the assessment of Traffic Impacts



## Part B – Principles and framework for undertaking traffic impact assessments

### 6 Key principles for the assessment of traffic impacts of development

This section outlines the underlying principles that guide the assessment of development-related traffic impacts on the SCR network, and the preferred framework for addressing the impacts. In the event of any inconsistency between application of principles, an earlier principle is to take precedence over a latter principle (for example, Principle 1 will always take precedence over Principle 2).

#### *6.1 Key principles*

Principle 1: Development must not compromise safety on the SCR network.

Safety is paramount in the road environment. In accordance with the legislative obligations in the *Transport Infrastructure Act 1994*, the Department of Transport and Main Roads seeks to ensure adequate levels of safety for all users on the SCR network.

Accordingly, Transport and Main Roads would not permit any development outcome that would adversely impact road safety (for example, a development that increases the likelihood or severity of crashes with the potential to result in a fatality or serious injury) without commensurate mitigation works or road-use management strategies.

Principle 2: Development should seek to achieve no worsening to safety or infrastructure condition and no net worsening to efficiency across the impact assessment area.

Transport and Main Roads seeks to ensure that there is no worsening to safety or to the condition of transport infrastructure and no net worsening to efficiency to the impact assessment area as a result of development.

The principles of no worsening and no net worsening aim to ensure that the current and forecast characteristics of the transport network are not significantly worse than the current and forecast characteristics existing without the development.

Attachment A2 - TMR Guide to Traffic Impact Assessment



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.

A traffic impact assessment is the process of compiling, analysing information on, and documenting the effect that a development is likely to have on the operation of the road network, and demonstrating how these impacts can be avoided, reduced, managed or mitigated. A traffic impact assessment assesses safety and efficiency impacts on users, as well as any impacts on the condition of transport infrastructure. A traffic impact assessment can also identify how a site can be accessed by traffic and in an urban context public transport, cyclists and pedestrians, and what infrastructure is needed to facilitate this. Efficient and effective traffic impact assessment processes can ensure that development projects do not compromise the safety, efficiency and infrastructure condition of Queensland's SCRs for all users.

Attachment B1 - Traffic Impact Assessment (17th May 2019), Section 6.0 Summary of Conclusions and Recommendations

Traffic Impact Assessment - superceeded.pdf 14 / 39

## 6.0 SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

- The site is located on the eastern side of the Tamborine – Oxenford Road and Maudsland Road. Access is gained via a single point off Maudsland Road located approximately 315 metres south of the Tamborine – Oxenford Road intersection.
- The Average Annual production rates is approximately 600,000 tonnes per annum although the upper production threshold is 1,000,000 tonnes per annum for production and processing. The existing quarry operates between 7am and 6pm Monday – Friday, and between 8am and noon on Saturdays and public holidays (maintenance or cartage only).
- The proposal intends to increase the area of the site that can be used for material extraction which will result in an extension of the life of the quarry, not an increase in current operations. The proposal will simply allow the current level of traffic generation to continue for the foreseeable future.
- Traffic modelling indicates that the existing site access intersection with Maudsland Road will continue to perform satisfactorily under projected future (year 2030) traffic conditions.
- Given that the proposal will not result in any increased traffic demands on the surrounding road network, compared to the existing operation, an assessment of impacts beyond the access intersection is not considered to be warranted.

Attachment B2 - Traffic Impact Assessment (SCR Pavement Impact Assessment), dated 28th November 2019, Section 6.0 Summary of Conclusions and Recommendations

2019-11-28 Traffic Impact Assessment by Rytenskild - Version 1 again.pdf 17 / 49

## 6.0 SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

- The site is located on the eastern side of the Tamborine – Oxenford Road and Maudsland Road. Access is gained via a single point off Maudsland Road located approximately 315 metres south of the Tamborine – Oxenford Road intersection.
- The Average Annual production rates is approximately 600,000 tonnes per annum although the upper production threshold is 1,000,000 tonnes per annum for production and processing. The existing quarry operates between 7am and 6pm Monday – Friday, and between 8am and noon on Saturdays and public holidays (maintenance or cartage only).
- The proposal intends to increase the area of the site that can be used for material extraction which will result in an extension of the life of the quarry, not an increase in current operations. The proposal will simply allow the current level of traffic generation to continue for the foreseeable future.
- Records indicate that the proposal generates in the order of 141 loaded truck movements per day, at an extraction rate of approximately 825,000 tonnes per year. This equates to 171 loaded trucks for an extraction rate of 1 million tonnes per year.
- Applying the above trip generation and SAR data provided by TMR, the proposal has an impact upon the northbound section of the Oxenford – Coomera Gorge Road between the site access and the Tamborine – Oxenford Road intersection; and the eastbound section of the Tamborine – Oxenford Road between the Oxenford – Coomera Gorge Road intersection and the Pacific Motorway.
- Applying the above parameters and the Marginal Cost Values provided by TMR, the project contribution towards pavement impact equates to **$ 56,998 per year of operation** for an extraction rate of 1 million tonnes per annum. The charge should apply on a per tonne basis at a rate of 5.70 cents / tonne.

Attachment B3 - Traffic Impact Assessment (SCR Pavement Impact Assessment), dated 28th November 2019, Section 4.0 Development Traffic Estimates

2019-11-28 Traffic Impact Assessment by Rytenskild - Version 1 again.pdf 13 / 49

## 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 :

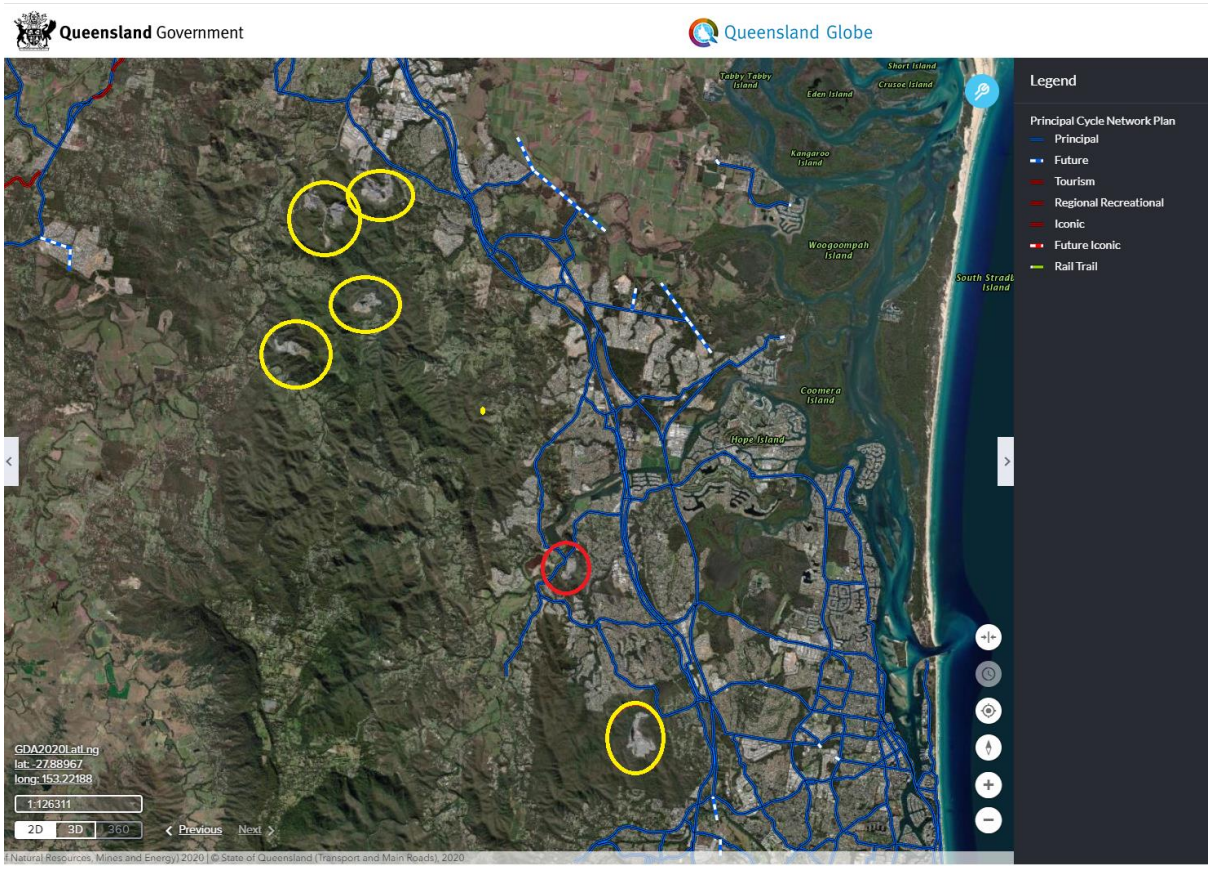
- Class 4 - Heavy Rigid - 61.3%
- Class 5 – Heavy Rigid - 7.8%
- Class 9 Heavy Rigid + trailer - 23%
- Class 8 – Semi - 7.9%.

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 B4 - State Principle Cycle Network and Nucrush quarry transport route converging throughout the area surrounding the quarry and transport route (Red circle)



Attachment C1 - TMR Guide to Traffic Impact Assessment - Impact assessment year by impact



***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<br>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).

Attachment D1 - TMR Guide to Traffic Impact Assessment - Impact assessment year by impact



***Table 6.5 – Impact assessment year by impact***

| Impact type | Impact assessment year(s) |
|---|---|
| Road safety | Year of opening of each stage including the final stage |
| Access and frontage | Year of opening of each stage including the final stage and 10 years after the year of opening of the final stage for access intersections (includes both new and amended accesses) |
| Intersection delay | Year of opening of each stage including the final stage |
| Road link capacity | Year of opening of each stage including the final stage |
| Pavement | Year of opening of each stage including the final stage<br>Note that mitigation of pavement impacts occurs for a period of 20 years after the opening of the final stage |
| Transport infrastructure | Year of opening of each stage including the final stage. |

Attachment D2 - Traffic Impact Assessment - Year 2030 only



## 5.0 ADEQUACY OF EXISTING ACCESS INTERSECTION

The performance of the Maudsland Road / Site access road intersection has been assessed using SIDRA software. The SIDRA modelling includes a dedicated right turn lane so that it accurately allows for the existing passing lane in each approach on Maudsland Road.

The results of the SIDRA modelling of the Site Access / Maudsland Road intersection are provided as Appendix E, and summarised in Table 5.1 below. The modelling has been carried out for the year 2030 period with a 2% per annum growth rate applied to through movements on Maudsland Road. Through volumes from the TMR data have been adopted with a nominal allowance of 40 vehicles per hour assumed for the wave park.

**Table 5.1 – SIDRA Results (Maudsland Road / Site Access Intersection)**

| Scenario | Degree Of Saturation | Total Average Delay (sec) | Queue Length (metres) * |
|---|---|---|---|
| 2030 AM Peak hour | 0.329 | 1.9 | 11.6 |
| 2030 PM Peak hour | 0.380 | 1.8 | 11.9 |

* Right turn from site

As shown above, it is expected that the existing site access intersection will function satisfactorily under future (year 2030) traffic conditions. The existing intersection layout (turn treatments) are considered to be satisfactory.

Attachment E1 - "Appendix G - State Code 1, Development in a state-controlled road environment" applicant responses (Performance Outcomes PO11 to PO14)



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APPENDIX G – RESPONSE TO STATE CODE 1

## State code 1: Development in a state-controlled road environment

Table 1.2.1: Development in a state-controlled road environment

| Performance outcomes | Acceptable outcomes | Response |
|---|---|---|
| PO11 Filling and excavation does not cause wind-blown dust nuisance in a state-controlled road. | AO11.1 Compaction of fill is carried out in accordance with the requirements of AS 1289.0 2000 – Methods of testing soils for engineering purposes.<br>AND | REFER TO PLANIT REPORT |
| | AO11.2 Dust suppression measures are used during filling and excavation activities such as wind breaks or barriers and dampening of ground surfaces. | REFER TO PLANIT REPORT |
| **Stormwater and drainage** | | |
| PO12 Development does not result in an actionable nuisance, or worsening of, stormwater, flooding or drainage impacts in a state-controlled road. | No acceptable outcome is prescribed. | REFER TO PLANIT REPORT |
| PO13 Run-off from the development site is not unlawfully discharged to a state-controlled road. | AO13.1 Development does not create any new points of discharge to a state-controlled road.<br>AND | REFER TO PLANIT REPORT |
| | AO13.2 Stormwater run-off is discharged to a lawful point of discharge.<br><br>Note: Section 3.4 of the Queensland Urban Drainage Manual, Department of Energy and Water Supply, 2013, provides further information on lawful points of discharge.<br>AND | REFER TO PLANIT REPORT |
| | AO13.3 Development does not worsen the condition of an existing lawful point of discharge to the state-controlled road. | REFER TO PLANIT REPORT |
| PO14 Run-off from the development site during construction does not cause siltation of stormwater infrastructure affecting a state-controlled road. | AO14.1 Run-off from the development site during construction is not discharged to stormwater infrastructure for a state-controlled road. | REFER TO PLANIT REPORT |

Attachment E2 - "Appendix G - State Code 1, Development in a state-controlled road environment" applicant responses (Performance Outcomes PO18)



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APPENDIX G – RESPONSE TO STATE CODE 1

## State code 1: Development in a state-controlled road environment

Table 1.2.1: Development in a state-controlled road environment

| Performance outcomes | Acceptable outcomes | Response |
|---|---|---|
| **Vehicular access to local roads within 100 metres of an intersection with a state-controlled road** | | |
| PO18 The location and design of vehicular access to a local road within 100 metres of an intersection with a state-controlled road does not create a safety hazard for users of a state-controlled road. | AO18.1 Vehicular access is located as far as possible from the state-controlled road intersection.<br>AND | N/A |
| | AO18.2 Vehicular access is in accordance with volume 3, parts, 3, 4 and 4A of the Road Planning And Design Manual, 2nd edition, Department of Transport and Main Roads, 2016.<br>AND | |
| | AO18.3 Onsite vehicle circulation is designed to give priority to entering vehicles at all times so vehicles do not queue in the intersection or on the state-controlled road. | |

Attachment E3 - "Appendix G - State Code 1, Development in a state-controlled road environment" applicant responses (Performance Outcomes PO20, PO21 and PO22)



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APPENDIX G – RESPONSE TO STATE CODE 1

## *State code 1: Development in a state-controlled road environment*

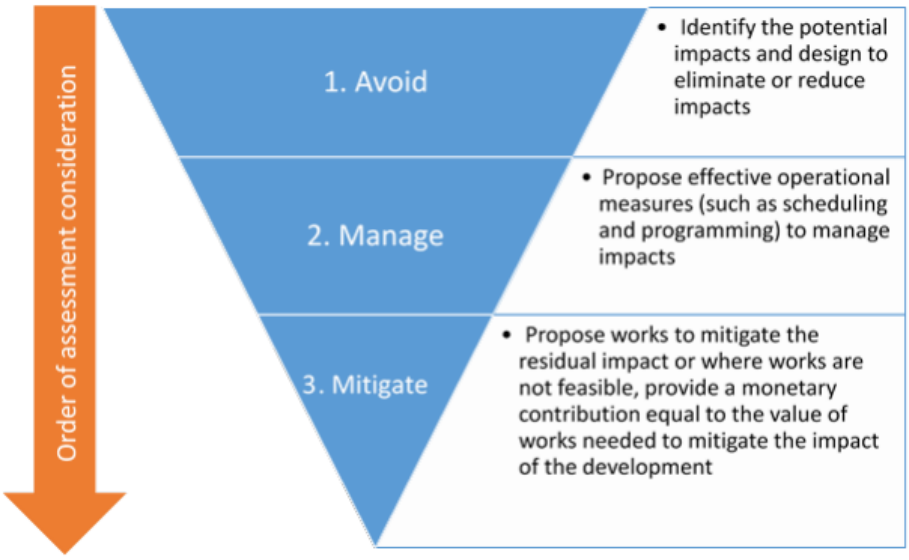
Table 1.2.1: Development in a state-controlled road environment

| Performance outcomes | Acceptable outcomes | Response |
|---|---|---|
| **Network impacts** | | |
| PO20 Development does not result in a worsening of operating conditions on the state-controlled road network.<br><br>Note: To demonstrate compliance with this performance outcome, it is recommended that an RPEQ certified traffic impact assessment is provided, prepared in accordance with the Guide to Traffic Impact Assessment, Department of Transport and Main Roads, 2017. | No acceptable outcome is prescribed. | |
| PO21 Development does not impose traffic loadings on a state-controlled road which could be accommodated on the local road network. | AO21.1 The layout and design of the development directs traffic generated by the development to the local road network. | **N/A** |
| PO22 Upgrade works on, or associated with, a state-controlled road are built in accordance with Queensland road design standards. | AO22.1 Upgrade works required as a result of the development are designed and constructed in accordance with the *Road planning and design manual*, 2nd edition, Department of Transport and Main Roads, 2016.<br><br>Note: Road works in a state-controlled road require approval under section 33 of the *Transport Infrastructure Act 1994* before the works commence. | **NO UPGRADE WORKS ARE TRIGGERED BY THE PROPOSAL, AS THERE WILL NOT BE ANY CHANGE IN IMPACT.** |

Attachment F1 - Road Safety analysis



***Figure 6.2 – Mitigation framework***




### 6.2.1 Avoid

The first step in the impact mitigation process is to identify ways to avoid or reduce negative impacts at the early stages of development planning and design. The potential to avoid or reduce impacts will depend on the nature of the development, its location, size and other factors. Some examples of impact avoidance and reduction measures include:

- undertaking a road safety audit and pavement investigation survey at the design stage to identify avoidable issues
- making development land use changes – for example, modifying the development's land uses to those with lower parking requirements to encourage fewer private car trips
- designing development which complements surrounding land uses such that the site traffic generation is reduced with higher walking and cycling usage
- providing a better mix of complementary uses in developments to encourage increased internal travel

Attachment F2 - The Tamborine Oxenford Road ‘transport route’ and ‘Principle Cycle Network’


Attachment F3 - The Maudsland Road ‘transport route’ and ‘Principle Cycle Network’

Attachment G1 - Council Information Request, Transport assessment, 28th June 2019 - 'Car Parking'





**Transport Assessment**

23 **Car parking supply**

Extractive industry is not listed in Table 9.4.13-3 of the Transport code and therefore falls under 'Any other land use or land use operation', which requires a Car Parking Assessment to be submitted to Council. Aerial imagery of the subject site shows a significant demand for car parking, in excess of 45 vehicles. The area of the site where car parking demand is currently being accommodated is not acknowledged on the existing Site Layout Plan. The staged expansion of the extraction area shows this existing car parking area being repurposed as quarry pit. Furthermore, the later stages of the development show little or no area on the site where car parking can be accommodated.

In order to address Performance outcome PO1/ Acceptable outcome AO1 of the Transport code, the following is requested:

- Submit a car parking assessment that identifies the existing peak car parking demand on the site;
- Submit amended drawings that show a suitable area to accommodate this car parking demand for every stage of development; and
- Submit amended drawings that show a suitable roadway to connect the car parking area to the Maudsland Road site access for every stage of development.

Attachment G2 - Council Information Response, Rytenskild letter dated 23rd October 2019 - 'Car Parking'



**Response:**

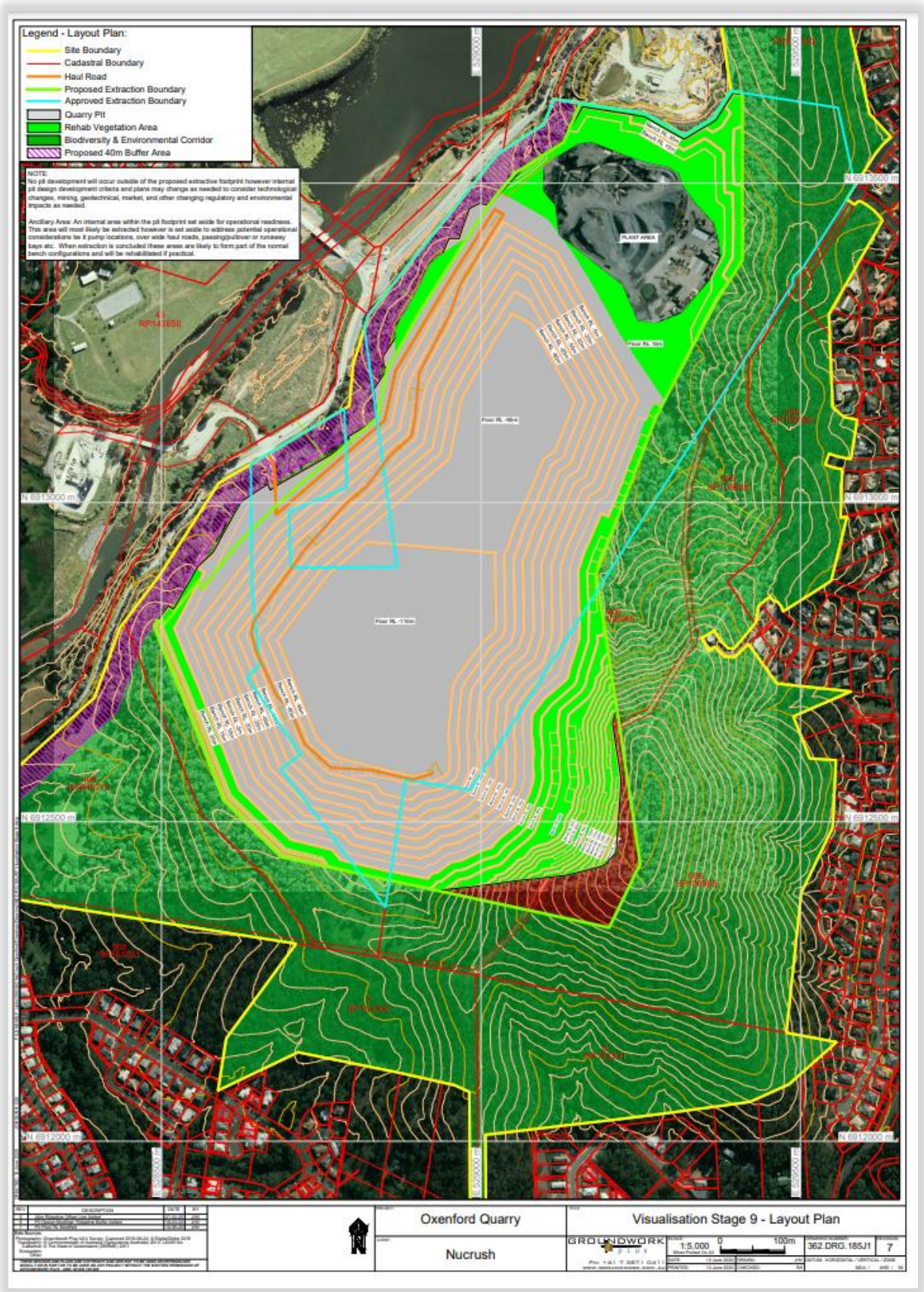
The applicant has advised that the existing Quarry operates up to a maximum of 83 staff (including drivers), and only a small number of visitors access the site on a typical day. As shown in Attachment A, it is proposed that formal parking be provided with a capacity of 88 spaces, allowing for five visitor spaces.

It is considered that these car parking provisions will comfortably accommodate staff and visitor demands associated with the first stage of operation.

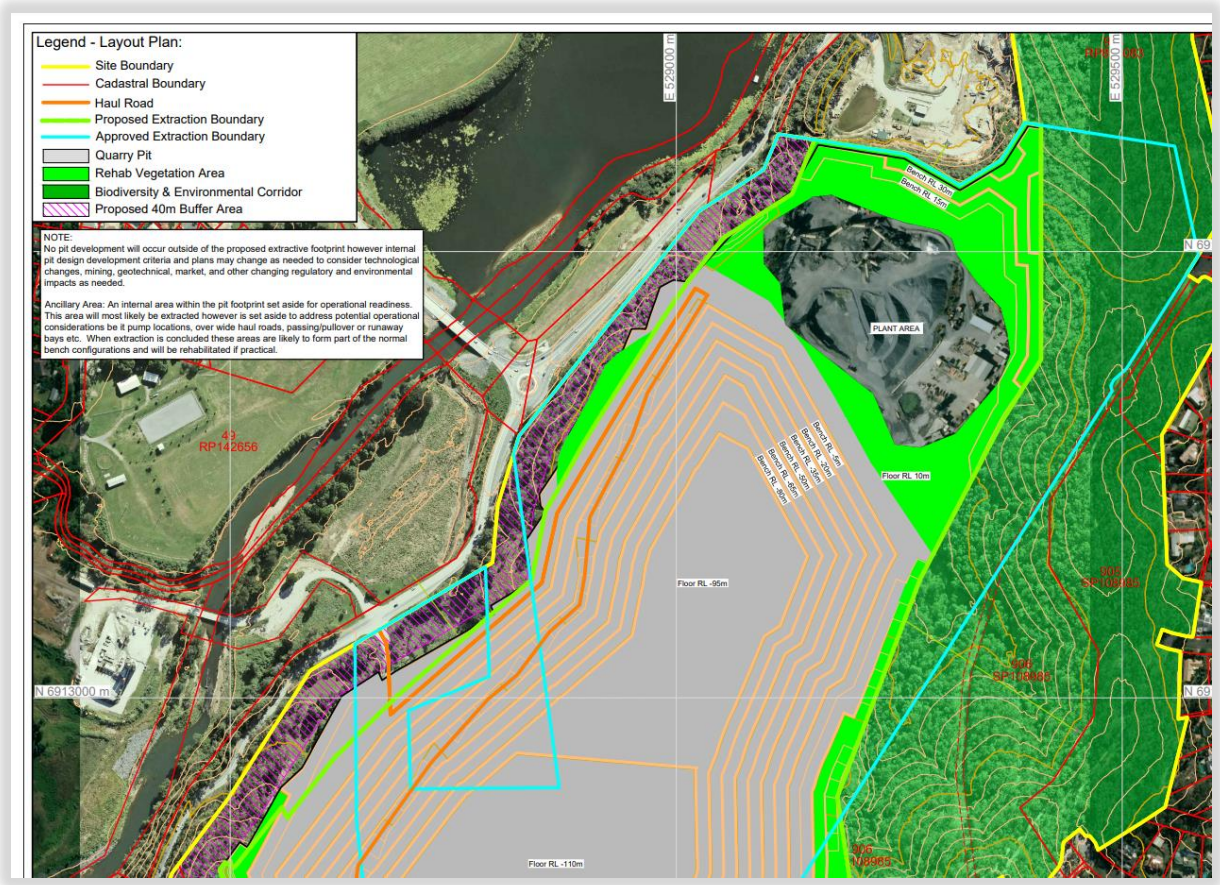
The appropriate location and amount of car parking for future stages will be determined in due course, with formal plans submitted to Council for approval at that time.

It is proposed that the existing access road between the site and Maudsland Road will be retained and will be used for access to the Stage 1 car parking area. As shown as Attachment B, the existing access road forms a four way intersection with Maudsland Road and the John Muntz Causeway. The existing access provides a 12 metre wide carriageway at the intersection and narrows to approximately 11 metres further into the site. As shown, the main car park is provided on the western side of the access road, approximately 180 metres into the site, and provides an aisle with of approximately 6.5 metres. The existing access arrangements are therefore considered to be appropriate for the operation of the subject site and retain two-way circulation between the site and Maudsland Road at all times.

Attachment G3 - Applicant site map with no space for car parking facility



Attachment G4 - Applicant site map with no space for car parking facility - Close up




Attachment G5 - Nucrush entrance is not secure

Attachment H1 - Council Info Request, Transport assessment, 28th June 2019 - 'Haulage Route'

**2019-06-28 Information Request** 10 / 11

**Information Request** **Page 10**
**Application No. COM/2019/81** **28 June 2019**

**Transport Assessment**

24 **Haulage route**

The applicant has not satisfactorily addressed Performance outcome PO7/ Acceptable outcome AO7 and Performance outcome PO20/ Acceptable outcome AO20 of the Transport code. The applicant is therefore requested to identify the route that haulage vehicles use to access the Pacific Motorway and the wider road network. Figure 4.1 of the Rytenskild Traffic Engineering Traffic Impact Assessment shows vehicles turning to and from the south on Maudsland Road, however the nature of these vehicles is unclear.

The applicant is requested to confirm:

- Whether haulage vehicles travel to/from the south from the subject site;
- If haulage vehicles do travel to/from the south, whether they use Council's road network (e.g. Gaven Arterial Road/Binstead Way) to access the Pacific Motorway; and
- The number of haulage vehicles that use this route on a daily basis.

*Should you have any queries relating to the above section, please do not hesitate to contact Chris Levers on telephone 07 5582 8397.*

Attachment H2 - Council Information Response, Rytenskild letter dated 23rd October 2019 - 'Haulage Route'

**2019-10-28 council Attachment no. 8 Traffic Engineering response to informat...** 3 / 9

**Response:**

All heavy vehicles generated by the site use the Tamborine– Oxenford Road route to and from the Pacific Motorway. This is the most efficient route between the site and the Pacific Motorway. Any use of local roads such as the Gaven Arterial Road and Reserve Road would only be for deliveries to projects in the local area that those roads provide access to.

Attachment H3 - Traffic Impact Assessment haulage vehicle routes



### 5.3 Calculated Pavement Impact

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%

The recorded vehicle types discussed in Section 4.1 have been adopted. The recorded generation of 141 loaded trips per day have been factored up to reflect an annual extraction of 1 million tonnes.

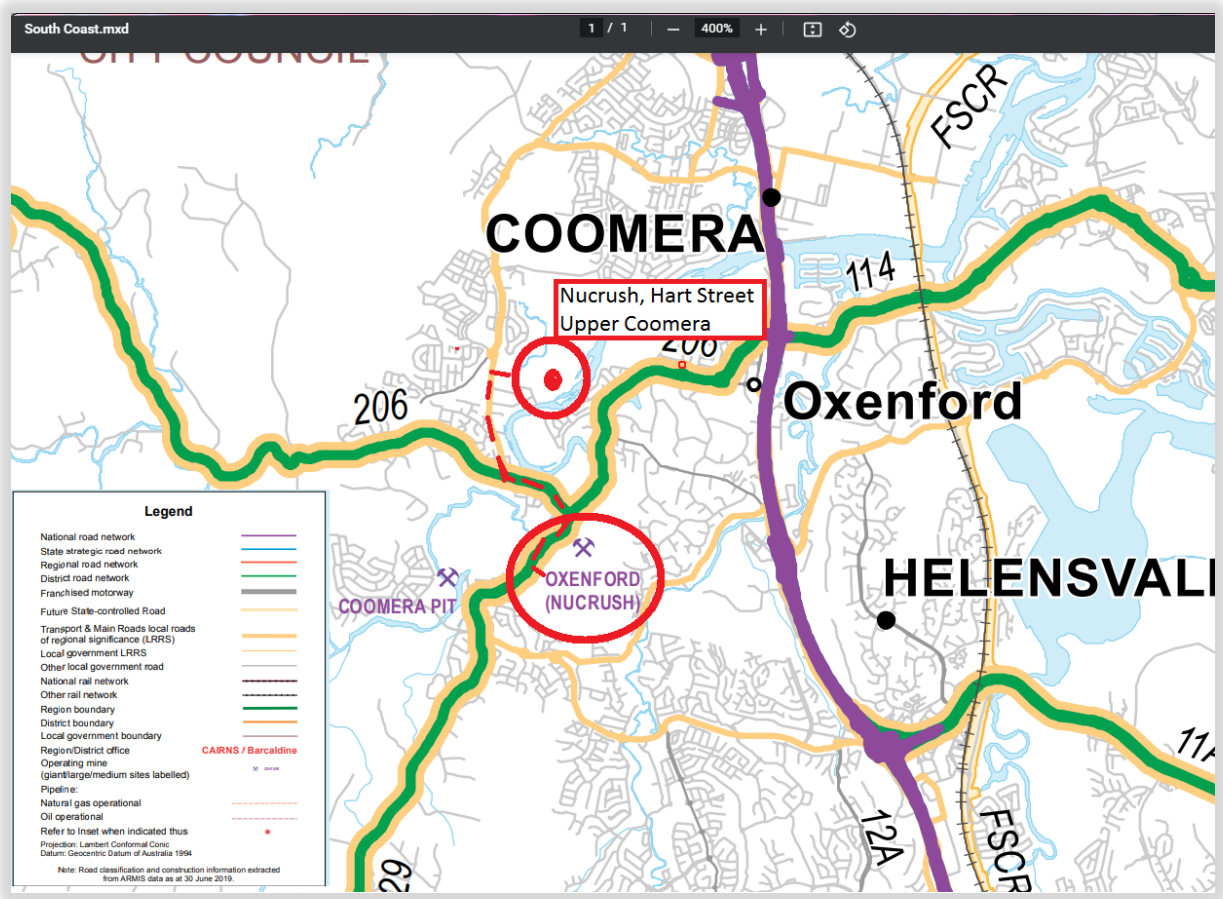
Given that the quarry has been in operation for many years, the traffic generation of the quarry has been subtracted from surveyed volumes. This adjusted base traffic volume has been used to determine the required scope of the assessment. That is, the extent to which Standard Axle Repetitions (SARs) generated by the proposal exceed 5% of base SARs.

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 H4 - State Controlled Roads and Local Council Controlled Roads



Attachment I1 - Traffic Impact Assessment, Section 2.3 Surveyed Traffic Volumes

**Traffic Impact Assessment - superceeded.pdf** 9 / 39

## 2.3 Surveyed Traffic Volumes

Traffic data provided by TMR indicates that Maudsland Road is currently carrying in the order of 11,000 vehicles per day adjacent to the site. Tamborine – Oxenford Road, to the north, currently carries in the order of 18,500 vehicles per day.

Traffic counts carried out by Austraffic at the Maudsland Road / Nucrush site access intersection (in 2014) are provided as Attachment B (and discussed further in Section 4).

Attachment I2 - Traffic Impact Assessment, Appendix B- Traffic Count Data (8 am to 9am results)

**Traffic Impact Assessment** 18 / 39

**AUSTRAFFIC VIDEO INTERSECTION COUNT**

rytenskild Traffic Engineering

austraffic

**Site No.:** 1 **Weather:** Fine

**Location:** Maudsland Road/Oxenford Quarries Access, Oxenford

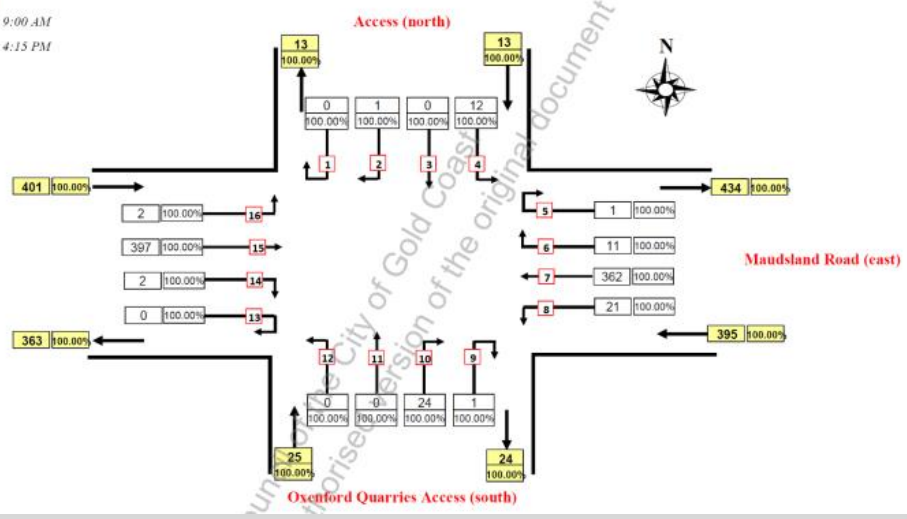
**Day/Date:** Tuesday, 2 December 2014

**Summary:** AM Peak : *Hour ending -* *9:00 AM*

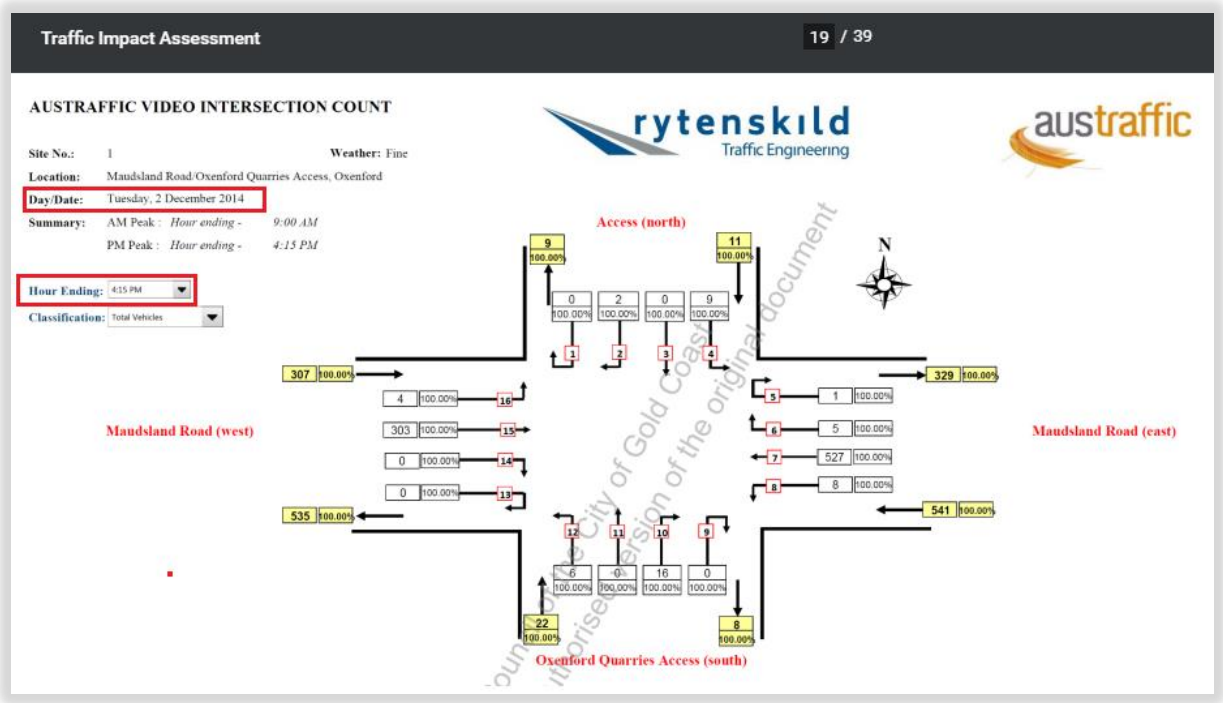
PM Peak : *Hour ending -* *4:15 PM*

**Hour Ending:** 9:00 AM

**Classification:** Total Vehicles



Attachment I3 - Traffic Impact Assessment, Appendix B- Traffic Count Data (3:15 to 4:15 results)




AUSTRAFFIC VIDEO INTERSECTION COUNT

rytenskild Traffic Engineering

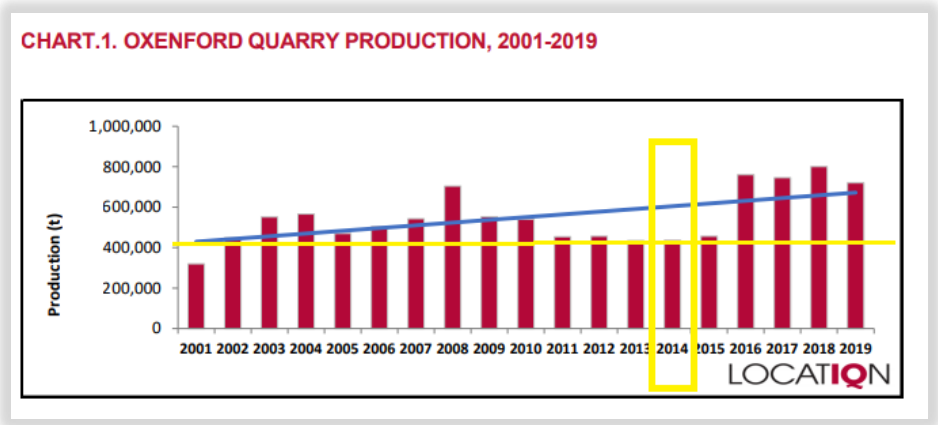
austraffic

Site No.: 1 Weather: Fine
Location: Maudsland Road/Oxenford Quarries Access, Oxenford
Day/Date: Tuesday, 2 December 2014
Summary: AM Peak : *Hour ending - 9:00 AM*
PM Peak : *Hour ending - 4:15 PM*

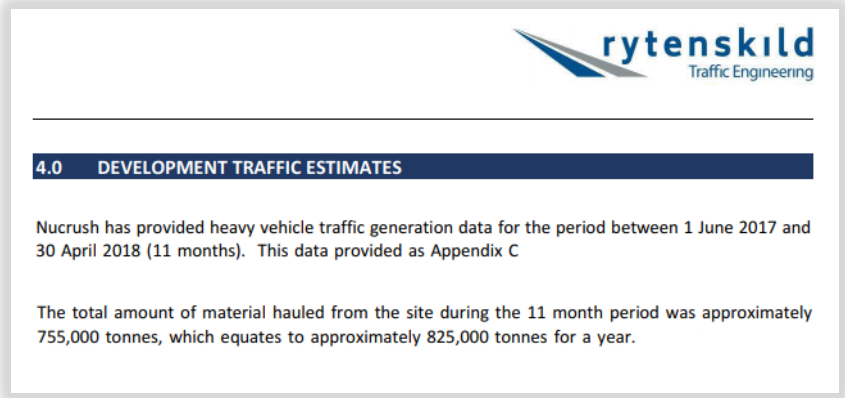
Hour Ending: 4:15 PM
Classification: Total Vehicles



Attachment I4 - DA Submitted Quarry production graph (2014 highlighted)




Attachment I5 - Total amount of material is 825,000 tonnes per year


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

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.

## 4.0 DEVELOPMENT TRAFFIC ESTIMATES

As discussed previously, the proposal will result in an extension of the life of the quarry and not an intensification of current operations. The proposal will simply allow the current level of traffic generation to continue for the foreseeable future. The extended life of the quarry depends upon market demand.

Given that the quarry has been in operation for many years, the surrounding road network has been upgraded, and the design of such works has accounted for the project. On this basis, the surveyed traffic volumes shown in Attachment B (and summarised below) include traffic generated by the quarry and such will not change as a consequence of the proposed increase in area to be extracted.

Approximately 20% of the vehicles shown below are light vehicles (cars, utes etc) with the balance typically being the following mix of heavy vehicles:

- Heavy rigid - 45%
- Semi trailer - 15%
- Truck and dog trailer - 40%

It is noted that the volumes below include traffic generated by the concrete plant, which is not part of this application.

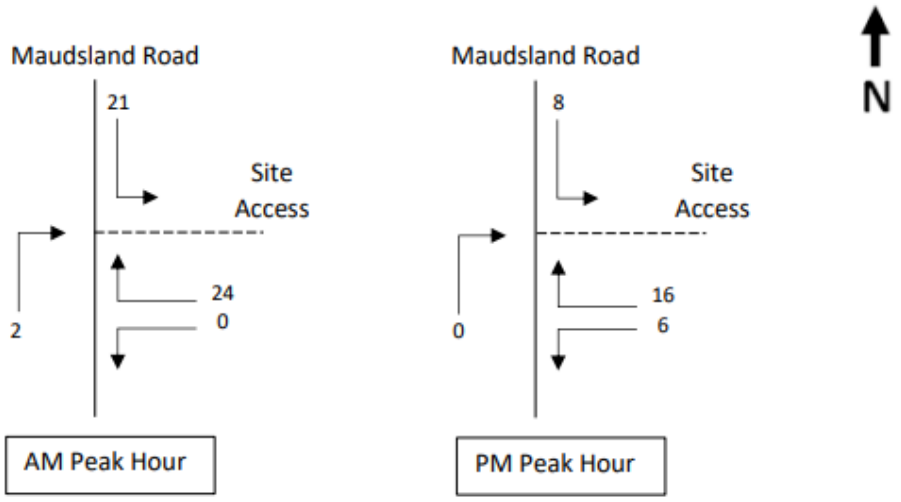



**FIGURE 4.1 – SURVEYED PEAK HOUR TRAFFIC VOLUMES AT THE MAUDSLAND ROAD / SITE ACCESS ROAD INTERSECTION (AUSTRAFFIC – 2014)**

Attachment J1 - MP Mark Boothman's safety concerns along the transport route (Junction 57)

Queensland Parliament Hansard Green

DATE: 20/05/2020
FILE: 20052020_000972_LEGISLATIVE ASSEMBLY_GREEN CHAMBER.DOCX
SUBJECT: Theodore Electorate, M1 Roadworks
MEMBER: Mr BOOTHMAN

**Theodore Electorate, M1 Roadworks**

**Mr BOOTHMAN** (Theodore—LNP) (7.23 pm): I rise to express the concerns of many of my residents when it comes to the current roadworks at exit 57 on the M1 and the flow-on effects that that has had on my local community. From day 1 residents have expressed their concerns about the proposed design of the new interchange and a lot of their predictions have come to fruition. Firstly, I bring to the attention of House that since the removal of the right turn from the old Pacific highway motorists are now using the Oxenford Tavern and Dan Murphy's car park as a U-turn facility. That is a safety concern for staff and patrons who frequent those businesses. Furthermore, the actions of those individuals are causing a high degree of frustration for motorists and are impeding traffic flows.

In addition, as predicted by locals, the removal of the right turn from the old Pacific highway has forced additional traffic along council controlled roads. Residents have reported an increase in congestion around Leo Graham Way and Global Plaza. The large increase in traffic coming out of Leo Graham Way and turning right is now causing delays along Tamborine Oxenford Road. Those roads were never designed to handle such volumes of traffic, which is resulting in lengthy peak-hour congestion periods. I also note that local small businesses now claim that the extra congestion is forcing customers away from their businesses.

Another concern is the right turn from Hope Island Road into Heathwood Drive. Often motorists will swap lanes as they traverse that intersection. For example, they will travel from the right lane and often swing wide, unwittingly entering into the left-hand lane. That is causing concerns for motorists who are turning left from Tamborine Oxenford Road into Heathwood Drive, as it is hard to judge which lane those vehicles are coming from.

The U-turn facility on Tamborine Oxenford Road is another point of contention. Residents have witnessed near misses when motorists have misjudged the distance of on-coming traffic using the facility. Only recently a truck with a trailer had to swerve into the left-hand lane from the right to miss a small sedan as it used that turn. It should be noted that we also have vehicles darting out from the 7/11 service station, crossing multiple lanes to use the facility.

Many residents have expressed their fear that it is only a matter of time before there is a serious accident. Residents are asking the department to take those concerns into serious consideration and implement a plan to alleviate those problems.

Attachment J2 - MP Mark Boothman's safety concerns along the transport route (Junction with Michigan Drive)

parliament.qld.gov.au/work-of-assembly/petitions/petition-details?id=3345&fbclid=IwAR0XsgulyHI-qW8U2bFCO6VZF

Queensland Parliament

Traffic signals at Tamborine Oxenford Road and Michigan Drive

Eligibility - Queensland residents

**Principal Petitioner:**

Martin Mankowski
13 Queens Park Circuit
OXENFORD QLD 4210

Total Signatures - 229

**Sponsoring Member:** Mr Mark Boothman MP

**Posting Date:** 4/06/2020

**Closing Date:** 1/08/2020

Share this E-Petition

Sign this E-Petition

**TO: The Honourable the Speaker and Members of the Legislative Assembly of Queensland**

Queensland residents draws to the attention of the House the need to upgrade the intersection at Tamborine Oxenford Road and Michigan Drive, Oxenford, to a traffic signal control intersection. Increased traffic using these arterial thoroughfares is making the intersection increasingly dangerous for motorists wishing to turn right from Michigan Drive onto Tamborine Oxenford Road. Additionally, road safety works need to be carried out to give motorists a safe right turn lane from Tamborine Oxenford Road into Georgina Street, Oxenford.

Your petitioners, therefore, request the House to direct the Department of Transport and Main Roads to prioritise and fund these safety upgrades to fix these dangerous intersections as a matter of urgency.

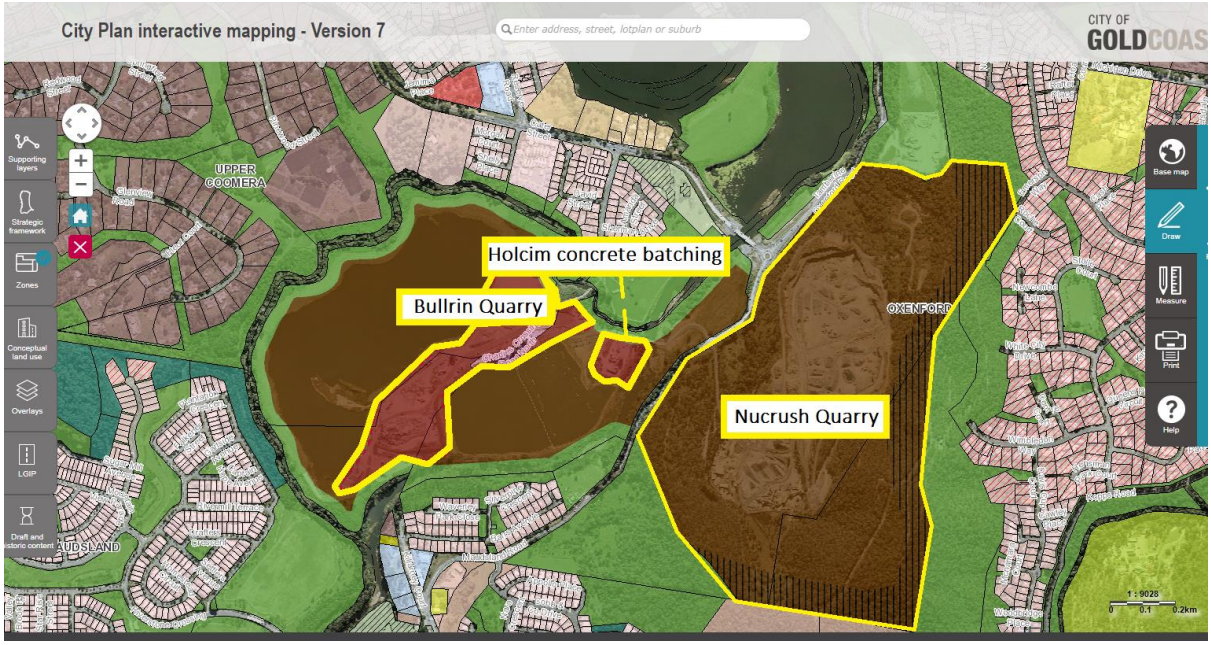
Attachment K1 - The quarry access as submitted in the Traffic Impact Assessment


Attachment K2 - Bullrin (or JGI) Quarry entrance 34 Maudsland Road

Attachment K3 - Holcim Concrete Batching Plant, 34 Maudsland Road


Attachment K4 - Map showing Holcim Concrete Batching Plant and Bullrin quarry at 34 Maudsland Road

Note 'Wave Park' referred to is located between the Holcim concrete batching facility and the Bullrin quarry.



Attachment K5 - Existing access does not consider 'Bulrin Quarry' or 'Holcim Concrete Batching Plant'

**Traffic Impact Assessment - superceeded.pdf**

rytenskild
Traffic Engineering

## 5.0 ADEQUACY OF EXISTING ACCESS INTERSECTION

The performance of the Maudsland Road / Site access road intersection has been assessed using SIDRA software. The SIDRA modelling includes a dedicated right turn lane so that it accurately allows for the existing passing lane in each approach on Maudsland Road.

The results of the SIDRA modelling of the Site Access / Maudsland Road intersection are provided as Appendix E, and summarised in Table 5.1 below. The modelling has been carried out for the year 2030 period with a 2% per annum growth rate applied to through movements on Maudsland Road. Through volumes from the TMR data have been adopted with a nominal allowance of 40 vehicles per hour assumed for the wave park.

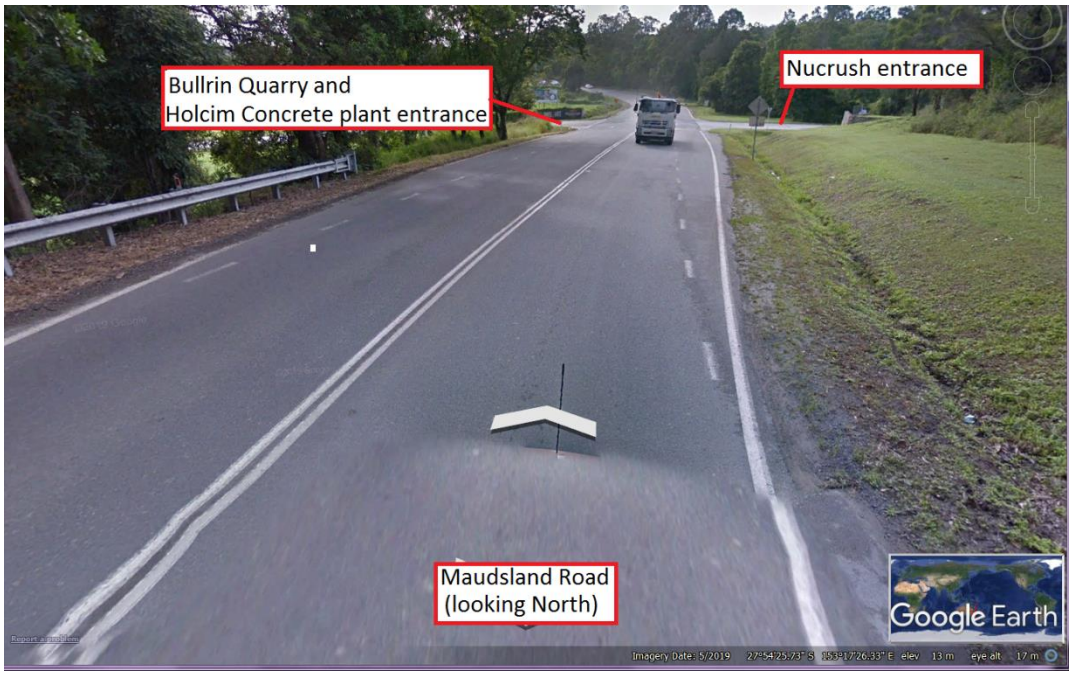
**Table 5.1 – SIDRA Results (Maudsland Road / Site Access Intersection)**

| Scenario | Degree Of Saturation | Total Average Delay (sec) | Queue Length (metres) * |
|---|---|---|---|
| 2030 AM Peak hour | 0.329 | 1.9 | 11.6 |
| 2030 PM Peak hour | 0.380 | 1.8 | 11.9 |

* Right turn from site

As shown above, it is expected that the existing site access intersection will function satisfactorily under future (year 2030) traffic conditions. The existing intersection layout (turn treatments) are considered to be satisfactory.

Attachment K6 - Road layout Maudsland road at Nucrush quarry, Bullrin quarry and Holcim entrances



Attachment K7 - Qld TMR - Deceleration and acceleration Lanes

RPDM_Chapter15 - TMR Deceleration lane.pdf



# Auxiliary Lanes

# Chapter 15

## 15.1 General

Auxiliary lanes are those added adjacent to the through lanes to enhance traffic flow and maintain the required level of service for the road in question. They are usually of relatively short length and can be referred to as speed change lanes, acceleration lanes, deceleration lanes, overtaking lanes, climbing lanes, descending lanes and passing bays. In addition, emergency escape ramps (runaway vehicle facilities) are included in this category. In this text, weaving lanes are not treated as auxiliary lanes but as part of the required cross section of a motorway where weaving conditions occur (see Chapter 4).

Auxiliary lanes are used to remove traffic that is causing disruption to the smooth flow of traffic in the through lanes to a separate lane to allow the through traffic to proceed relatively unhindered by the disruption. They are a means of separating the elements of the traffic stream on the basis of the speed difference between them, thereby improving the safety of the road as well as its capacity and the level of service provided.

## 15.2 Speed Change Lanes

### 15.2.1 Acceleration Lanes

Acceleration lanes are provided at intersections and interchanges to allow an entering vehicle to access the traffic stream at a speed approaching or equal to the 85th percentile speed of the through traffic. They are usually parallel to and contiguous with the through lane with appropriate tapers at the entering point. Acceleration lanes are almost always on the left-hand side of the through lanes although in certain circumstances, they can be on the right (seagull intersections, direct entry ramps at interchanges).

Details of the requirements for acceleration lanes are given in Chapter 13 Intersections, and Chapter 16 Interchanges.

### 15.2.2 Deceleration Lanes

Deceleration Lanes are provided at intersections and interchanges to allow an exiting vehicle to depart from the through lanes at the 85th percentile speed of the through lanes and decelerate to a stop, or the 85th percentile speed of the intersecting road, whichever is appropriate for the circumstances.

At intersections, the deceleration lane can be placed on either the right or the left of the through lanes, depending on the type of turn being effected. At interchanges, it is preferred that the exit be from the left side for most ramps and the deceleration lane will therefore be on the left in most cases.

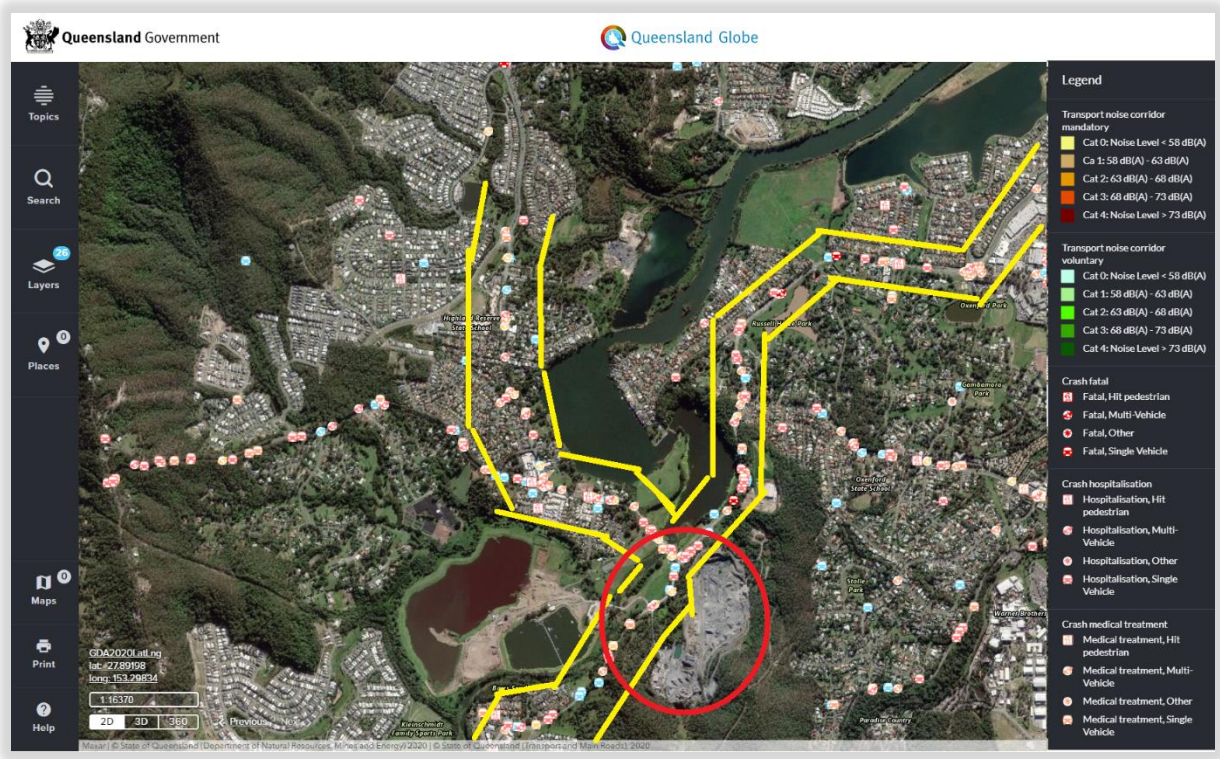
Details of the requirements for deceleration lanes are given in Chapter 13 Intersections and Chapter 16 Interchanges.

## 15.3 Overtaking Lanes

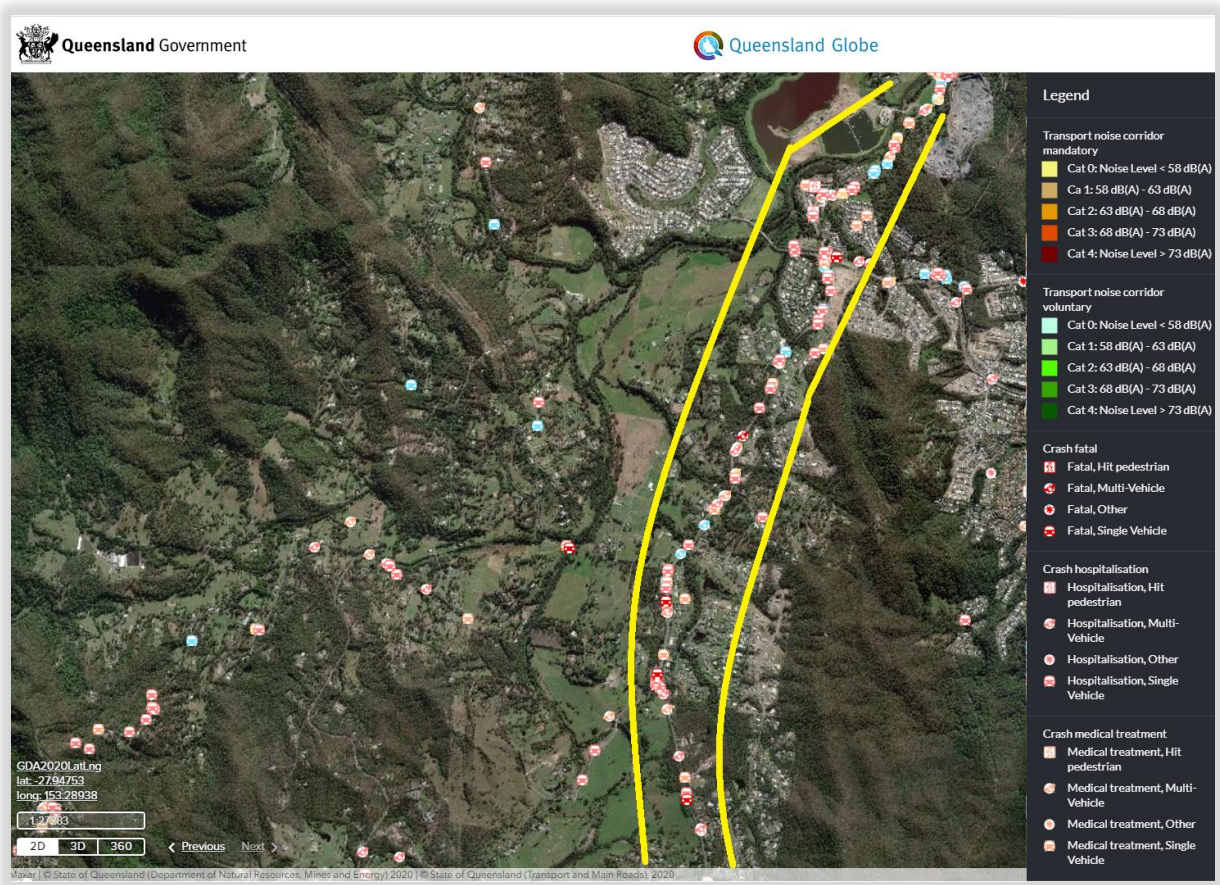
Two lane two-way roads can only operate satisfactorily in most practical circumstances if adequate opportunities for overtaking are provided. These opportunities may occur through the geometric design providing adequate sight distance but as traffic increases, these opportunities gradually disappear and increasingly long queues (bunches) occur.

Overtaking lanes are provided to break up bunches and improve traffic flow over a section of road. They provide a positive overtaking opportunity and are sometimes the only real chance for overtaking to occur.

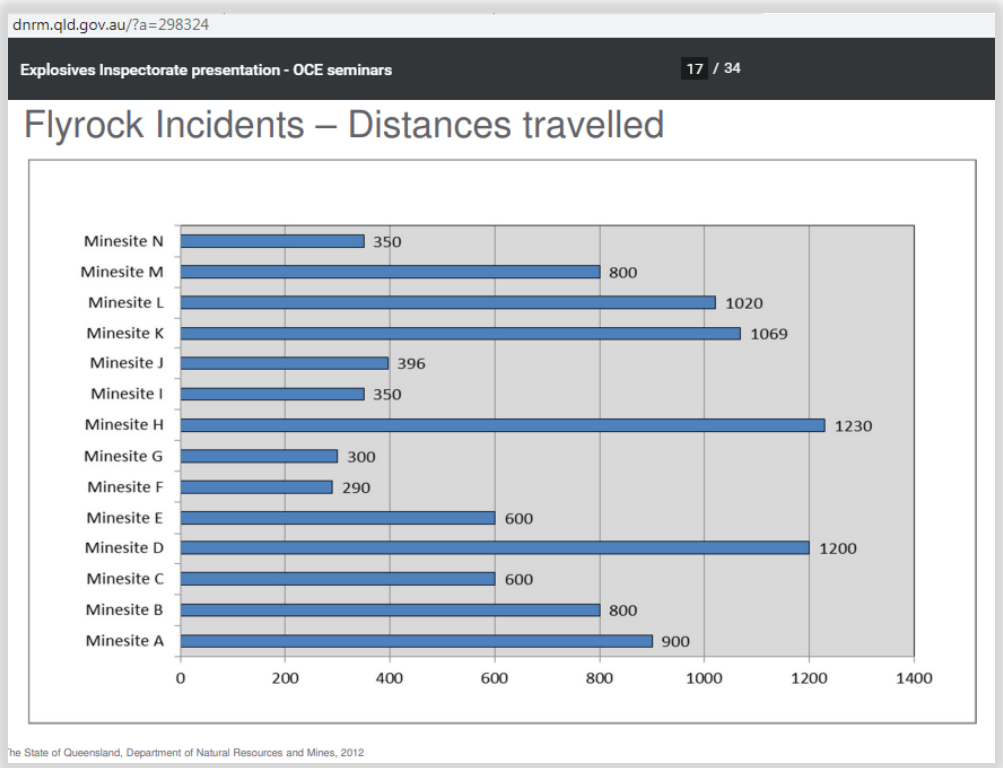
Attachment L1 - Accidents on the Transport route heading north and west from the quarry




Attachment L2 - Accidents on the Transport route heading south from the quarry



Attachment M1 - Flyrock incidents - Distances travelled




Attachment M2 - Blast Exclusion zones and Flyrock incident 1

Attachment M3 - Blast Exclusion zones and Flyrock incident 2

rshq.qld.gov.au/safety-notices/mines/blast-exclusion-zones

Explosives Inspectorate
**Resources Safety & Health**
Queensland

**ALERT | ALERT | ALERT | ALERT | ALERT**

**Mines safety alert no. 265 | 13 May 2011 | Version 1**

# Blast-exclusion zones

*Investigations are ongoing and further information may be published as it becomes available. The information in this publication is what is known at the time of writing.*

*We issue Safety Notices to draw attention to the occurrence of a serious incident, raise awareness of risks, and prompt assessment of your existing controls.*

## Mine type

All surface mines

## Incident

A car travelling on a public access road was struck by flyrock. Although no-one was injured, the car was damaged and the potential for harm was high.

## Equipment

No equipment or machinery was involved.

## Hazard

Flyrock

## Cause

Inadequate blast planning and exclusion-zone calculations

Attachment N1 - Resultant Fume (Dust Cloud) from blast on 25th November 2019

Attachment N2 - Fume Management

dnrm.qld.gov.au/?a=298324

Explosives Inspectorate presentation - OCE seminars 26 / 34

## Fume Management

- Fume Management Zones should take into account site geographical layouts (such as void corridors), which have the potential to funnel wind/ dust/ fume.
- Static fume monitors must be numbered and GPS locations taken when being located in preparation for a blast.
- Fume events in 2015 have breached Fume Management Zones by distances up to 4 km. With fume travelling up to 8 km.
- One incident even saw the Fume Management Zone in a position 180 degrees to the actual wind direction…!!
- What processes does your site have in place for unplanned evacuations in the event of a fume event breaching the fume management zone?

City Plan

CITY OF GOLDCOAST.

City Plan / Part 8 Overlays / 8.2 Overlay codes / 8.2.7 Extractive resources overlay code

## 8.2.7 Extractive resources overlay code

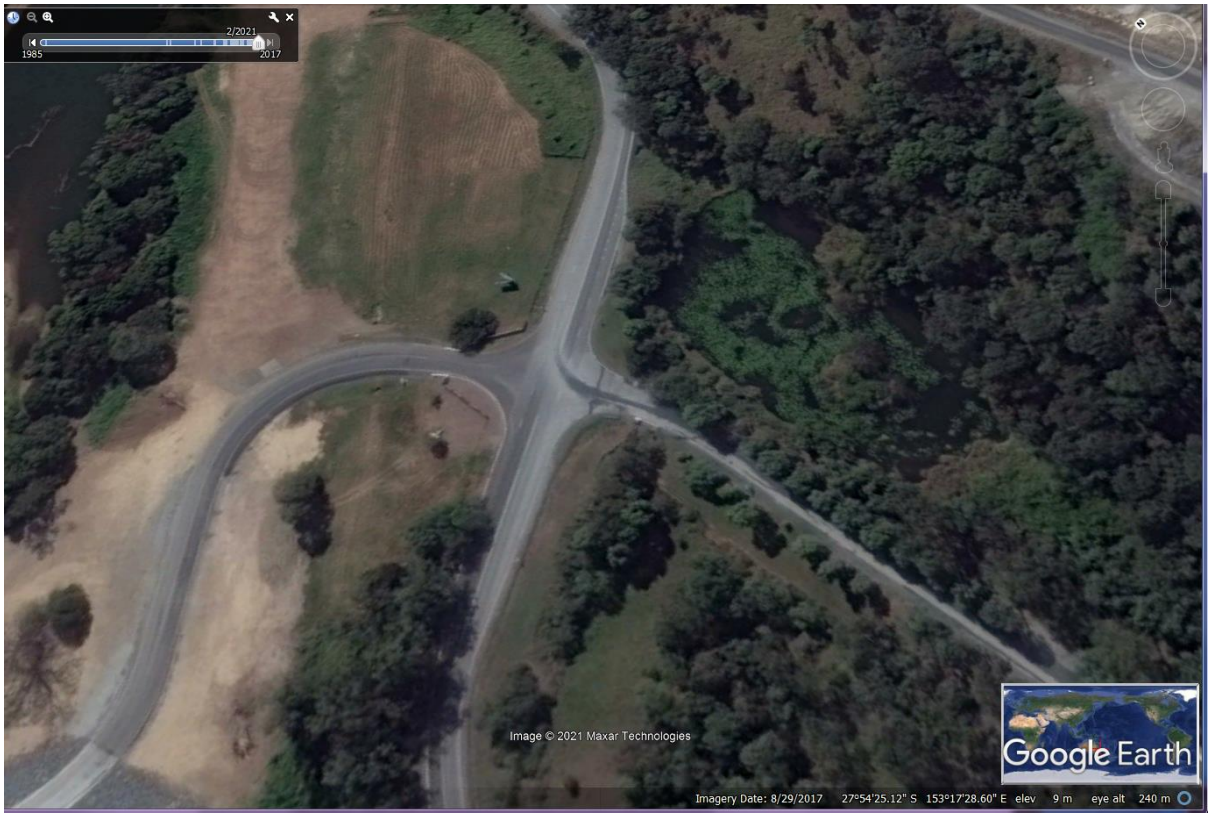
**Table 8.2.7-1: Extractive resources overlay code – for assessable development**

| Performance outcomes | Acceptable outcomes |
|---|---|
| **Resource Area/Processing Area** | |
| **PO1**<br>Development where located within the Resource Area/Processing Area does not:<br>(a) compromise the ability to extract the natural resource in a safe, efficient and sustainable manner; and<br>(b) does not introduce or increase uses that are sensitive to the impacts of Extractive industry. | **AO1**<br>No acceptable outcome provided. |
| **Separation Area and 100m Transport route separation Area** | |
| **PO2**<br>Development where located within the Separation Area and 100m Transport Route Separation Area:<br>(a) does not compromise the current and/or future extraction, processing and transportation of resources;<br>(b) is orientated away from a Resource Area/Processing Area to minimise views/limit visual impact of Extractive industry, and<br>(c) ensures an appropriately sized buffer between sensitive land uses, the resource/processing area and the transportation route of the KRA. | **AO2**<br>No acceptable outcome provided. |
| **PO3**<br>Development does not significantly impact on the amenity of existing sensitive land uses or residential zones within and external to the Separation Area. | **AO3**<br>No acceptable outcome provided. |
| **PO4**<br>Development:<br>(a) does not adversely impact on the efficient transportation of extractive material; and<br>(b) ensures safe access onto a designated transport route. | **AO4**<br>The number of properties with access points to the transport route is not increased.<br>**OR**<br>Access points are designed to avoid adversely affecting the safe and efficient operation of vehicles transporting extractive materials. |
| **PO5**<br>Development (excluding uses associated with the operation of KRA 66) does not gain direct access to Hymix Road. | **AO5**<br>No acceptable outcome provided. |

Attachment P1 - Fine Road dust witnessed on Tamborine Oxenford Road (adjacent to quarry)

Attachment P2 - Fine Road dust witnessed on Tamborine Oxenford Road (Quarry entrance/exit)

Note this is an aerial photo taken in 2017, looking North with quarry entrance/exit on right-hand side.



Attachment P3 - Fine Road dust witnessed on Tamborine Oxenford Road (Quarry entrance/exit)

Note this is an aerial photo taken in 2020, looking North with quarry entrance/exit on right-hand side.


Attachment P4 - Fine Road dust article

sciencedirect.com/science/article/pii/S0160412019303861

## Abstract

The road dust found in mining areas is composed of dust from multiple sources, including wind transported mineral dust from mines and tailings as well as uncovered trucks leakage. Collectively, these are then distributed via wind and traffic activity, becoming an important source of particulate matter (PM) and subsequently inhaled by pedestrians. A common practice in previous road dust risk assessments has regarded them as soil, which likely led to a significant underestimation of the actual inhaled amount. To more accurately understand the inhalation risk presented by road dust in mining areas, the study applied a detailed pollution analysis and dust dispersion model to assess the inhaled amount of road dust. Road dust samples located at different distances to the mine and tailings were collected and sieved to 10 μm (RD10). Enrichment factors (EFs) of Ce, As, Cd, and Mo exceeded 20 across most sampled sites, suggesting extreme pollution. Source analysis indicated that most of the collected RD10 had greater than half of its mass originating from the mine. To assess the risk presented by inhalation exposure to local populations, we built a method using Gaussian diffusion model and two exposure scenarios for both adults and children were considered. The level of simulated particle concentrations was comparable to that described in the literature; the inhalation of potential toxic elements (PTEs) in RD10 led to health risks for both adults and children (adult and child HI > 1, with adults CR in industrial areas $>10^{-4}$). Results also indicated that a ten-fold reduction of silt load resulted in a >4-fold decrease in risk. Collectively, the results suggest that fine road dust is a potential hotspot for mineral exposure in populations living around a mine and its tailings; moreover, that effective prevention measures like road cleaning and truck regulation are urgently needed.

Attachment P5 - Fine Road dust Graphic