REVIEW OF A TRAFFIC IMPACT ASSESSMENT REPORT

MEPPEM QUARRY

REVIEW OF A TRAFFIC IMPACT ASSESSMENT REPORT PREPARED BY SMK CONSULTANTS – OCTOBER 2020

PREPARED FOR:

MOREE PLAINS SHIRE COUNCIL

DECEMBER 2020

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The preparation of this report has been in accordance with the project brief provided by the client and has relied upon the information, data and results provided or collected from the sources and under the conditions outlined in the report.

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1.0 INTRODUCTION

1.1 BACKGROUND

Premise Australia Pty Ltd has been engaged by Moree Plains Shire Council to carry out a peer review of a Traffic Impact Assessment prepared by SMK Consultants Pty Ltd for the development of a 490,000 tonne hard rock quarry on Lot 10 in DP751753 and Lot 110 in DP257328.

The subject lots adjoin Lot 7309 in DP1160820.

Certificates of Title for the subject lots are included in **Appendix A**.

Lot 10 and Lot 110 are in the ownership of Mr John Shane Meppem.

The quarry will be known as the Meppem Quarry and will be operated by Regional Quarries Australia on behalf of the land owner and proponent, Mr John Meppem.

SMK Consultants had prepared a Traffic Impact Assessment for the Meppem Quarry in 2019 with the Report addressing the Secretary's Environmental Assessment Requirements (SEARs) dated 24 August 2018. The 2019 SMK report assessed a gravel haul route utilising a road located within the local government area of Narrabri Shire Council.

Due to concerns raised by Narrabri Council, an alternative haul route has been identified to transport gravel from the Meppem Quarry to sites associated with the construction of the Inland Rail.

The SMK Consultants Traffic Impact Assessment Report 20-317 dated October 2020 provides details and assessment of the revised gravel haulage route.

The SMK Consultants Report 20-317 is attached in **Appendix B**.

1.2 QUARRY LOCATION

The proposed Meppem Quarry is located on Lot 10 in DP751753 and is accessed off Manamoi Road via Boo Boo Road, Gurley Creek Road and the Newell Highway.

The proposed quarry is to be developed on area of approximately 7.85ha located within Lot 10. The development site and the access roads to be used for the haulage of gravel are located wholly within the Moree Plains Shire Council local government area.

It is understood that the quarry is to be developed in three (3) stages for the supply of a range of quarry products primarily for the construction of the Inland Rail. The proposed gravel haul roads link to the Newell Highway at Gurley.

1.3 SCOPE OF THE REPORT

The scope of this Report is to provide an adequacy review of the SMK Consultants Traffic Impact Assessment Report to determine if the Report has appropriately considered the potential impacts on the road network following the development of the Meppem Quarry.

The methodology for the determination of the adequacy of the submitted Traffic Impact Assessment includes:

(a) Carry out a detailed review of the Traffic Impact Assessment prepared by SMK Consultants in support of the Meppem Quarry development.

(b) Liaise with Council to determine traffic related concerns raised by the public exhibition submissions and any issues identified by Council staff.

(c) Carry out an assessment of the proposed quarry, haulage routes and potential traffic impacts in accordance with the requirements outlined by Council including:

1. Review the robustness of the traffic assessment prepared by SMK Consultants

- Review the existing traffic generation in the SMK Report on all roads affected by the development including:
  - Daily traffic (VPD) for Heavy Vehicles and Light Vehicles
  - Peak hour traffic generation (VPH) for Heavy Vehicles and Light Vehicles
  - Need for indexation to bring to the design year for operation
- Review the traffic generation of development in the SMK Report including:
  - Daily traffic (VPD) for Heavy Vehicles and Light Vehicles
  - Peak hour traffic generation (VPH) for Heavy Vehicles and Light Vehicles
- Review the Impacts of Development in the SMK Report including:
  - Impact on capacity of all roads
  - Suitability of existing design (geometric and pavement) of all roads.
  - Required upgrades of the roads to make suitable for the operation of the quarry
  - Assess the need for the upgrade of intersections (in accordance with the AUSTROADS warrants) including property access

2. Review and make suggestions on design improvements for the above items.

It should be noted that a site inspection of the quarry location and the road network to be used for the gravel haulage routes has not been carried and reliance has been made on the information provided within the submitted Traffic Assessment Report as being a true representation of the current road conditions.

2.0 SMK CONSULTANTS TRAFFIC IMPACT ASSESSMENT

SMK Consultants Pty Ltd of 39 Frome Street, Moree has prepared the Meppem Quarry Traffic Impact Assessment dated October 2020 with a Project Reference 20-317.

The Document Control section of the Report states:

Proponent:	John Meppem "Blackridge" Gurley NSW 2398
Prepared for:	Regional Quarries Australia 20L Sheraton Road Dubbo NSW 2830
Version Number:	1 October 2020 Amended for new proponent

The SMK Consulting Report has the following broad heading in its Table of Contents:

1. Introduction
2. Existing Conditions
3. Traffic Generation and Distribution
4. Assessment of Proposed Haulage Route
5. Traffic Management
6. Impact on Road Network
7. Cumulative Impacts with Neighbouring Developments
8. Calculation of Expected Development Contribution Rate
9. Consultation with Government Agencies and Community
10. Conclusion and Recommendation

Applicable Sections of the SMK Consulting Traffic Impact Assessment Report will be addressed in the following Sections of this Report.

3.0 QUARRY HAULAGE ROUTE

The haulage route between the Meppem Quarry and the road connection to the Newell Highway at Gurley includes the following roads:

- A private internal property road between the quarry site and Manamoi Road;
- Manamoi Road between the Meppem Quarry access and Boo Boo Road;
- Boo Boo Road between Manamoi Road and Gurley Creek Road;
- Gurley Creek Road between Boo Boo Road and the Newell Highway; and
- The Newell Highway.

A section of Manamoi Road adjacent to Lot 7309 in DP1160820 is unformed and the road within the southern section of the Manamoi Road road reserve will require construction to provide a connection to the private property road to access the quarry site.

4.0 EXISTING ROADWAY CONDITIONS

The SMK Consulting Traffic Impact Assessment Report provides the following details on the conditions of the existing roads to be used as the haulage route for the supply of gravel from the proposed Meppem quarry.

4.1 MANAMOI ROAD

Council has advised that the section of Manamoi Road (SR190) that is constructed is a Local B-road servicing one property and is a single lane natural surface road (sparse gravel in places) …..

At present, the constructed section of Manamoi Road is considered as a black soil road with minimal gravel present. The road in its present form would not support truck traffic for an extended period after rain.

4.2 BOO BOO ROAD

Moree Plains Shire Council has advised that Boo Boo Road (SR139) is classified as a Local A-road, meaning that it has through traffic and services several properties. The road has minimal continuous gravel remaining and is therefore deformed in sections as a result of local traffic during and after rainfall events. Gravel depth in some sections is estimated to be in the order of 150mm. In other sections, there is no gravel. The gravel that is present is a white rock (claystone) material which is suitable for local traffic but wears under heavier harvest traffic and dry conditions as the material powderises and blows away.

There is approximately 11.5km of Boo Boo Road between Manamoi Road and Gurley Creek Road which remains as a gravel road.

The northern 4.1km of Boo Boo Road is bitumen sealed. Pavement width along this section at present is between 7m and 7.1m with a shoulder width of approximately 1m. The depth of gravel beneath the pavement is minimal. The gravel subgrade extends for a width of between 0.5m and 1m on either side of the road but the depth is variable. Some natural soil has mixed with this shoulder area.

4.3 GURLEY CREEK ROAD

Gurley Creek Road (SR109) is defined as a Collector Road by Moree Plains Shire Council. The road has been bitumen sealed between the Newell Highway and approximately 3.6km to the east of Gurley Creek. The bitumen seal has been in place for an extended period and in parts has been resheeted.

4.4 NEWELL HIGHWAY

The Newell Highway is the primary haul route for all regional and interstate traffic. The Highway will service the primary project to utilise the proposed Meppem quarry, being the Inland Rail construction work. Various Newell Highway upgrades may also be serviced by quarry material from this site.

The Newell Highway consists of a dual lane bitumen sealed road supporting more than 2,000 vehicle movements per day. Highway upgrades include the development of various passing lane areas and subsequent improvement of intersections onto the Highway.

The haulage route will utilise an existing access road (Gurley Creek Road) onto the highway. This is located within a section through Gurley village with a speed limit of 60km/hr. This is considered ideal for safety in relation to trucks entering or exiting Gurley Creek Road. The 60km/hr section extends for a distance of approximately 400m either side of the centre of Gurley.

4.5 GURLEY CREEK ROAD AND THE NEWELL HIGHWAY INTERSECTION

Gurley Creek Road intersects with the Newell Highway within Gurley. A distance of approximately 50m is available between the rail crossing and highway edge (give-way sign). A stop sign is present for the rail crossing. This section of road is an approved road train area. A single road train can stop between the rail line and the highway with appropriate separation distance between the rail track and the highway.

All vehicles will need to stop at the rial crossing. In the case of a truck waiting between the rail and the highway, any following vehicle will need to stop before proceeding across the rail line.

The geometry of the intersection onto the Newell Highway is considered sufficient in radius to exceed AustRoads Standards for a road train to turn left or right from Gurley Creek Road onto the highway. The curve width is in excess of 16m which is considered suitable for this standard of intersection.

The highway has no right or left turn lanes onto Gurley Creek Road. This highway is outside the jurisdiction of Moree Plains Shire Council and subject to Transport for NSW management.

5.0 SMK CONSULTING TRAFFIC GENERATION

The SMK Consulting Traffic Impact Assessment Report states in parts:

The proposal involves the development of a hard rock quarry with a maximum production capacity of 490,000 tonnes per year. The lifespan of the quarry at an annual extraction rate of up to 490,000 tonnes per year will depend on whether other major infrastructure projects occur after the Inland Rail project is completed.

To establish the impact of the development on the adjacent road network and assess the need for improvements to accommodate traffic generated based on the proposed Meppem Quarry, traffic generation and trip generation have been estimated.

The components of traffic generation for the proposed development are:

- *Staff trips*
- *Visitor trips*
- *Haulage of equipment*
- *Haulage of quarry materials*

The SMK Report provides calculations for the various vehicle types as summarised below:

Light Vehicle Movements

SMK estimates that 2 light vehicles per day will be used to transport staff and service operators to and from the site each day.

The contribution of the light vehicle movements to impacts on the road network will be minimal.

Heavy Vehicle Movements

SMK makes the following assumptions for the calculation of heavy vehicle movements generated by the operation of the Meppem Quarry:

- *490,000 tonne/year of material will be hauled using the road network.*

- *Haulage vehicles will typically be truck & dog configurations although B-doubles and PBS road trains may also be used.*
- *The General Mass Limit (GML) is 55.95 tonnes for truck & dog configurations.*
- *A 38 tonne haulage capacity per trip has been assumed.*
- *Hours of operation for haulage of material are 6.00am to 6.00pm Monday to Friday and 6.00am to 1.00pm on Saturdays.*
- *Daily peak truck traffic would occur between 7.00am and 10.00am.*
- *300 working days per year (6 working days/week and 50 working weeks/year).*
- *Movement is one-way (ie. a entering and leaving is considered two movements).*
- *The movement of trucks to and from the site would be controlled by management through a Driver Code of Conduct and GPS locators and truck monitoring system.*

The SMK Report sets out in Table 1 the calculated heavy vehicle movements for the Meppem Quarry and has determined the following truck movements for the average operation of the quarry:

25,790 truck movements/year

516 truck movements/week

94 truck movements/day

The SMK Report states that the average calculations set out in Table 1 is most likely to be exceeded as *quarries do not work on an average basis and must meet demand which fluctuates outside of the control of the quarry operator.*

With regards to the peak operation of heavy vehicles hauling gravel, the SMK Report states:

The delivery program of the Inland Rail project has not been confirmed. It is expected that the demand for construction materials will fluctuate throughout the project. Regional Quarries Australia has advised that demand for construction materials might reach up to 5,000 tonnes per day. Therefore, during peak demand periods it is possible that up to 132 laden trucks per day or an average of 12 trucks per hour may exit the quarry. This is equivalent to approximately 5 minutes between trucks at the peak times. The frequency of trucks leaving the quarry would be dependent on the time taken to load a truck. The time to load a truck would range between 5 and 20 minutes.

Whilst the SMK Report states that up to 132 laden trucks per day or an average of 12 trucks per hour may exit the quarry, it neglects to include the return empty truck movements in its peak operation calculations. Therefore, the peak operation truck movements would be:

264 truck movements/day

24 truck movements/hour

The peak operation of the Meppem Quarry generates significant numbers of heavy vehicle movements onto the surrounding road network comprising the haulage route from the quarry to the Newell Highway.

6.0 TRAFFIC VOLUME IMPACTS

The SMK Consultants Traffic Impact Assessment Report has made some estimates of the increases in traffic volumes on the haul road network following the operation of the Meppem Quarry.

6.1 MANAMOI ROAD

It is noted in the SMK Report that Manamoi Road services a single landowner and as noted previously is a single lane gravelled surface road. As stated in the SMK Report *The potential impact of between 47 and 132 two-way truck movements is significant.*

The stated two-way truck movements in the Report actually represent between 94 and 264 heavy vehicle trips on Manamoi Road per day.

6.2 BOO BOO ROAD

The SMK Report determines that up to 8 properties use Boo Boo Road and with an estimate of 4 trips per day per property (8 vehicle movements per day) and the estimated daily traffic on Boo Boo Road is 64 trips per day.

The SMK Report states:

As a minimum, the daily operations of quarry vehicles would result in a 67% increase in traffic on Boo Boo Road.

It is assumed that "as a minimum" refers to the average heavy vehicles per day of 47 trucks, though this number does not calculate as the stated percentage increase outlined in the SMK Report.

In any case, the use of the 47 trucks is incorrect as each loaded truck has to arrive at the quarry empty and as outlined in Table 1 of the SMK Report, the average truck movements each way are 94 per day.

Applying the average of 94 truck movements per day to the estimated existing traffic volume on Boo Boo Road results in an increase of 147%.

If the peak daily truck movements of 264 trucks per day is applied, the percentage increase in traffic volume on Boo Boo Road is 412%.

Whilst the percentage increases appear large, the percentage increases are being applied to relatively low traffic volume on the subject road. However, the discrete numbers of truck movements generated by the quarry ranging from 94 truck movements to 264 truck movements per day are significant and would warrant a review of the proposed upgrade of Boo Boo Road to cater for the vehicle type and volume using the existing gravelled road.

6.3 NEWELL HIGHWAY

The SMK Report provides traffic data for the Newell Highway in Table 3 of the Report and indicates that approximately 1,065 heavy vehicles per day use the highway at a recording station (91022) located 120m north of Brigalow Lane in Gurley.

The SMK Report states in part:

The addition of between 47 and 132 truck trips on the Newell Highway will result in between 4% and 12% increase in heavy vehicle movements per day.

The 4 % increase for average traffic movements will have minimal impact on existing traffic volumes.

The potential peak delivery period that may generate a 12% increase in heavy vehicle traffic would be considered as noticeable. However, the quarry operator has identified this potential peak to potentially occur over a short period of possibly a few days only and therefore this is considered as a short period of impact on the Highway.

As outlined for Boo Boo Road, the actual heavy vehicle movements using the highway (delivery from and return to the quarry) are 94 truck movements per day for average operation and 264 truck movements per day for the peak quarry operation.

On the basis of the existing 1,065 heavy vehicles per day using the Newell Highway, the actual percentage increases in heavy vehicle movements due to the quarry operations are 9.1% for the average operation and 24.8% for the peak operation at the quarry.

The percentage increases in the heavy vehicle movements on the Newell Highway generated by the operation of the Meppem Quarry are significant.

7.0 PROPOSED HAULAGE ROAD UPGRADE WORKS

The proposed haulage road upgrade works as determined in the SMK Consultants Traffic Impact Assessment Report are summarised in the following Sections of this Report.

7.1 MEPPEM QUARRY ACCESS ROAD

For the upgrade of the quarry access road, the SMK Report states:

Access between the Quarry and Boo Boo Road will involve construction of an internal farm road between the quarry site and the southern unformed section of Manamoi Road which adjoins Lot 7309 in DP1160820. This section of Manamoi Road is owned by Moree Plains Shire Council but has never been formed. A new section of road is to be constructed by the developer to link the quarry to the southern end of the existing road to link to Boo Boo Road. This will be undertaken at the developers cost. The road will consist of a two-lane gravel road constructed of material obtained from the quarry.

It is noted that the proponent intends to construct a two-lane gravel road as the internal farm road access to the quarry. Presumably, the construction of a two-lane gravel road is to allow unimpeded operation of entering and exiting heavy vehicles during quarry operations.

7.2 MANAMOI ROAD

For the upgrade of Manamoi Road, the SMK Report states:

The request from Moree Plains Shire Council for use of this road would involve:

- *Complete rebuilding to Council standards (modify for the low volume of traffic).*
- *Construction of a single lane road with 3 or 4 "whale belly" pull over areas that will be managed through a traffic management plan – favouring the local farmer.*

Moree Plains Shire Council has considered that this road can be single lane based on the frequency of truck traffic if pull over areas are established. Unloaded trucks returning to the quarry can therefore pull off the single road to allow loaded trucks, including am local farm traffic to continue toward Boo Boo Road.

As noted in **Section 7.1**, the proponent intends to construct a two-lane gravel road as the internal farm road access to the quarry, however, only intends to upgrade Manamoi Road to a single road with pull over areas for trucks to pass.

Under the average quarry operation generating 94 tuck movements per day, there would be a reasonable probability that loaded and empty returning trucks would meet along the roadway and not always adjacent to a pull over area. The reversing of trucks to return to a pull over area is not practical.

Moree Plains Shire Council should reconsider the requirements for upgrading Manamoi Road to reconstruct the road to a two-lane road.

7.3 BOO BOO ROAD

For the upgrade of Boo Boo Road, the SMK Report states:

There is approximately 11.5km of Boo Boo Road between Manamoi Road and Gurley Creek Road which remains as a gravel road. Council has indicated that if this road is to be used as a haul road, the following works will be required:

- *A minimum of 100mm of compacted gravel to be constructed as a road surface.*
- *Gravel is to be a selected material and Council approved.*
- *Minimum width of formation to be 7m.*
- *The southern 8.5km to be widened to an 8m formation.*
- *Table drains to be regraded as part of the formation.*
- *Widen the sealed section to a minimum of 7m width.*
- *Install a concrete causeway to replace the bitumen sealed floodway at approximately 3.8km south of Gurley Creek Road.*

The proposal from Moree Plains Shire Council would provide a suitable formation for standard trucks on a local road network.

7.4 GURLEY CREEK ROAD

For the upgrade of Gurley Creek Road, the SMK Report states:

Council has indicated an average seal width of 6.7m and requested that for a haul route, the seal width needs to be a minimum of 7.7m. This will require an additional 0.5m seal width on both sides of the road and regrading of the shoulder and table drain area. Total length of Gurley Creek Road to be resealed is approximately 5.49km between the intersection of Boo Boo Road and the Newell Highway.

7.5 NEWELL HIGHWAY INTERSECTION

For the upgrade of the Newell Highway and Gurley Creek Road intersection, the SMK Report states in parts:

For trucks turning left or right off the Newell Highway onto Gurley Creek Road, they may be required to stop on the highway, if a truck has stopped at the stop sign.

There is no formal right-hand turn lane to allow traffic following the stopped vehicle on the highway to move around the inside of the right turning vehicle. Informally, traffic may utilise the bitumen sealed

shoulder to pass the stopped vehicle on the left hand side. This is not considered as a safe solution to this intersection for right turning vehicles if there is a truck stopped at the rail crossing.

The presence of the Gurley-Millie Road on the western side of the highway complicates this intersection. This western road is also utilised by local truck traffic and the entrance cannot be impacted by traffic conflict for trucks turning into Gurley Creek Road. The issue is exacerbated by the traffic volume on the Newell Highway being >2,000 vehicles per day.

It is recommended that a detailed design is undertaken. A preliminary review of AustRoads design guidelines suggest that the intersection may require treatment as a "right-left staggered T-intersection" for a two-lane road.

The design process will need to consider several parameters, including:

- *Frequency of trucks turning left and right from the Highway into Gurley Creek Road*
- *Length of trucks to be used*
- *Speed limit within Gurley*
- *Traffic frequency on the Newell Highway*
- *Traffic frequency on the Gurley Creek and Gurley-Millie Roads*
- *Local traffic within Gurley including rest area*
- *Queuing of trucks along Newell Highway*

The intersection has been identified as a key issue that will require a design investigation to determine whether it meets the requirements of the quarry or whether a redesign and upgrade is required. Based on preliminary analysis, an upgrade is recommended. The minimum upgrade would involve installation of a right turn lane. Some remarking would be possible on the existing pavement for a left turn exit off the highway.

Whilst the commentary in the SMK Consultant's Report is contradictory in the ultimate upgrading requirements outlined in the AustRoads Road Design Guide compared to the minimum upgrade identified above, it is recommended that the detailed design be undertaken in accordance with the right-left staggered T-intersection.

The implementation of the channelised staggered T-intersection will make the intersection of the Newell Highway and Gurley Creek Road safer for all road users.

8.0 PUBLIC SUBMISSIONS

During the exhibition period for the Environmental Impact Statement for the proposed Meppem Quarry, Moree Plains Shire Council received five (5) submissions from surrounding landowners.

Whilst a number of submissions addressed a range of issues relating to the operation of the quarry, each raised concerns about potential traffic impacts of heavy vehicles using the local roads as the haulage route for transporting gravel from the quarry to sites along the Newel Highway.

The Public Submissions provided by Council are attached in **Appendix C**.

A summary of a number of the comments made in relation to traffic impacts is listed below:

- Trees and vegetation restrict the sight distance at the intersection of Manamoi Road and Boo Boo Road.

- Additional traffic enters Boo Boo Road from the Bee Bee stock reserve including farm implements and trucks/road trains turning north and south onto Boo Boo Road.
- Boo Boo Road has additional traffic than identified in the TIA particularly from the southern end by landowners from the Yatta/Berrigal area and for farm freight deliveries form the Moree direction.
- Increase in heavy vehicle traffic volumes on Boo Boo Road and concerns that the road will remain a gravel road.
- Wet weather affects on a gravel road on black soil and impact on general access to Moree and Gurley will be affected by the road condition.
- Dust from the haulage road is a concern with impacts reducing visibility and safety. Dust can also impact the quality of cotton produced due to contamination.
- Gravel trucks and farm machinery using Boo Boo Road with dust reducing visibility for oncoming vehicles to pass safely.
- Gravel trucks and the school buses on gravel roads with reduced visibility due to dust.
- The increase in traffic volume on Boo Boo Road for average quarry operations is 146% and for peak quarry operation is 412%.
- The community expects clearly defined and measured commitments regarding the allowance for heavy truck traffic increases of this scale.
- The traffic increases proposed are well above the capacity of the current local roads the developer requests access to. The EIS sets out a basic outline of proposed rudimentary and what is considered insufficient changes to the roads being used as haul roads. The SMK traffic assessment report has highlighted that the traffic increase on the listed road will be significant.

9.0 SUMMARY

9.1 INTRODUCTION

Premise Australia Pty Ltd has been engaged by Moree Plains Shire Council to carry out a peer review of a Traffic Impact Assessment prepared by SMK Consultants Pty Ltd for the development of a 490,000 tonne hard rock quarry on Lot 10 in DP751753 and Lot 110 in DP257328.

The scope of this Report is to provide an adequacy review of the SMK Consultants Traffic Impact Assessment Report to determine if the Report has appropriately considered the potential impacts on the road network following the development of the Meppem Quarry.

9.2 HAULAGE ROUTE

The haulage route between the Meppem Quarry and the road connection to the Newell Highway at Gurley includes the following roads:

- A private internal property road between the quarry site and Manamoi Road;
- Manamoi Road between the Meppem Quarry access and Boo Boo Road;
- Boo Boo Road between Manamoi Road and Gurley Creek Road;

- Gurley Creek Road between Boo Boo Road and the Newell Highway; and
- The Newell Highway.

9.3 HEAVY VEHICLE GENERATION

The SMK Report has calculated heavy vehicle movements for the Meppem Quarry and has determined the following truck movements for the average operation of the quarry:

25,790 truck movements/year

516 truck movements/week

94 truck movements/day

The SMK Report also estimated the truck movements for the peak operation of the quarry and states that up to 132 laden trucks per day or an average of 12 trucks per hour may exit the quarry. The Report neglected to include the return empty truck movements in its peak operation calculations. Therefore, the peak operation truck movements would be:

264 truck movements/day

24 truck movements/hour

The peak operation of the Meppem Quarry generates significant numbers of heavy vehicle movements onto the surrounding road network comprising the haulage route from the quarry to the Newell Highway.

9.4 HAULAGE ROUTE TRAFFIC VOLUMES

The SMK Report estimates that the daily operations of the quarry vehicles would result in an increase of 67% in traffic on Boo Boo Road. However, this calculated increase in traffic volume is incorrect as the average quarry operation truck movements per day are 94 trucks per day and the peak quarry operation truck movements are 264 truck per day.

Applying the average of 94 truck movements per day to the estimated existing traffic volume on Boo Boo Road results in an increase of 147%.

If the peak daily truck movements of 264 trucks per day is applied, the percentage increase in traffic volume on Boo Boo Road is 412%

The numbers of truck movements generated by the quarry ranging from 94 truck movements to 264 truck movements per day are significant and would warrant a review of the proposed upgrade of Boo Boo Road to cater for the vehicle type and volume using the existing gravelled road.

The SMK Report estimated that the increase in traffic volume on the Newell Highway due to "*between 47 and 132 truck trips on the Newel Highway will result in between 4% and 12% increase in heavy vehicle movements per day*".

As per the assessment for Boo Boo Road, the estimated truck trips are one way and should be 94 truck movements per day for average operation and 264 truck movements per day for the peak quarry operation.

On the basis of the existing 1,065 heavy vehicles per day using the Newell Highway, the actual percentage increases in heavy vehicle movements due to the quarry operations are 9.1% for the average operation and 24.8% for the peak operation at the quarry.

The percentage increases in the heavy vehicle movements on the Newell Highway generated by the operation of the Meppem Quarry are significant.

9.5 HAULAGE ROAD UPGRADE WORKS

The SMK Report has determined a range of haulage road upgrade works to be carried out to cater for the additional heavy vehicle truck movements generated by the operation of the Meppem Quarry. The haulage road upgrade works are summarised below:

Meppem Quarry Access Road

The proponent intends to construct a two-lane gravel road as the internal farm road access to the quarry. The construction of a two-lane gravel road is to allow unimpeded operation of entering and exiting heavy vehicles during quarry operations.

The upgrading of the Meppem Quarry access road to this standard is appropriate for the safe operation of the heavy vehicles.

Manamoi Road

Moree Plains Shire Council has considered that this road can be single lane based on the frequency of truck traffic if pull over areas are established. Unloaded trucks returning to the quarry can therefore pull off the single road to allow loaded trucks, including am local farm traffic to continue toward Boo Boo Road.

Moree Plains Shire Council should reconsider the requirements for upgrading Manamoi Road to reconstruct the road to a two-lane road. The upgrading of Manamoi Road to this standard is appropriate for the safe operation of the heavy vehicles.

Boo Boo Road

Whilst Moree Plains Shire Council has listed a number of conditions for the upgrading of Boo Boo Road to a widened gravel surfaced road, given the volume of heavy vehicles and existing vehicles using this road, Council should reconsider that Boo Boo Road should be further upgraded to a bitumen sealed road in accordance with Council's standards for a sealed rural road.

The upgrading of Boo Boo Road to this standard is appropriate for the safe operation of the heavy vehicles.

Gurley Creek Road

Moree Plains Shire Council has indicated that the bitumen seal on Gurley Creek Road is to be widened to a minimum width of 7.7m including improving the road shoulder and tabledrain area.

The upgrading of Gurley Creek Road to this standard is appropriate for the safe operation of the heavy vehicles.

Newell Highway Intersection

The SMK Report recommends that a detailed design is carried out for the upgrading of the intersection of the Newell Highway and Gurley Creek to provide a right-left staggered T-intersection with channelisation for right and left turning heavy vehicles turning from the Highway into Gurley Creek Road.

The implementation of the channelised staggered T-intersection will make the intersection of the Newell Highway and Gurley Creek Road safer for all road users.

9.6 PUBLIC SUBMISSIONS

The Public Submissions made by landowners surrounding the Meppem Quarry site have raised valid concerns about potential traffic impacts of heavy vehicles using the local roads as the haulage route for transporting gravel from the quarry to sites along the Newel Highway.

10.0 RECOMMENDATIONS

Following the adequacy review of the SMK Consultants Traffic Impact Assessment Report to determine if the Report has appropriately considered the potential impacts on the road network following the development of the Meppem Quarry, the following recommendations are made:

1. The Meppem Quarry access road should be constructed as a two-lane gravel road.
2. The Manamoi Road should be upgraded to a two-lane gravel road.
3. Boo Boo Road should be upgraded to a two-lane bitumen sealed road.
4. Gurley Creek Road should be upgraded to a widened two-lane bitumen sealed road.
5. The Newell Highway and Gurley Creek Road should be upgraded to a right-left staggered T-intersection with channelisation for right and left turning heavy vehicles turning from the Highway into Gurley Creek Road.

The upgrading of the roads along the haul route for the operation of heavy vehicles to and from the Meppem Quarry as outlined above is appropriate for the safe operation of the subject roads for the vehicles that currently and will be using the road network.

Appendix A

CERTIFICATES OF TITLE

Title Search

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 10/751753

SEARCH DATE	TIME	EDITION NO	DATE
21/12/2020	2:22 PM	5	15/9/2006

LAND

LOT 10 IN DEPOSITED PLAN 751753
LOCAL GOVERNMENT AREA MOREE PLAINS
PARISH OF BOO BOO COUNTY OF COURALLIE
(FORMERLY KNOWN AS PORTION 10)
TITLE DIAGRAM CROWN PLAN 2596.1880

FIRST SCHEDULE

JOHN SHANE MEPPEM (T AC600055)

SECOND SCHEDULE (1 NOTIFICATION)

1 LAND EXCLUDES MINERALS (S.171 CROWN LANDS ACT 1989)

NOTATIONS

UNREGISTERED DEALINGS: DP1270285.

*** END OF SEARCH ***

121123_CRH PRINTED ON 21/12/2020

Received: 21/12/2020 14:22:34

Title Search

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 110/257328

SEARCH DATE	TIME	EDITION NO	DATE
21/12/2020	2:22 PM	5	15/9/2006

LAND

LOT 110 IN DEPOSITED PLAN 257328
LOCAL GOVERNMENT AREA MOREE PLAINS
PARISH OF BOO BOO COUNTY OF COURALLIE
TITLE DIAGRAM DP257328

FIRST SCHEDULE

JOHN SHANE MEPPEM (T AC600055)

SECOND SCHEDULE (1 NOTIFICATION)

1 LAND EXCLUDES MINERALS (S.171 CROWN LANDS ACT 1989)

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

121123_CRH PRINTED ON 21/12/2020

Received: 21/12/2020 14:22:34

Title Search

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 7309/1160820

SEARCH DATE	TIME	EDITION NO	DATE
21/12/2020	2:22 PM	-	-

CERTIFICATE OF TITLE HAS NOT ISSUED

LAND

LOT 7309 IN DEPOSITED PLAN 1160820
AT BELLATA
LOCAL GOVERNMENT AREA MOREE PLAINS
PARISH OF BOO BOO COUNTY OF COURALLIE
TITLE DIAGRAM DP1160820

FIRST SCHEDULE

THE STATE OF NEW SOUTH WALES (CA157119)

SECOND SCHEDULE (2 NOTIFICATIONS)

* 1 THE LAND IS A RESERVE WITHIN THE MEANING OF PART 5 OF THE CROWN LANDS ACT 1989 AND THERE ARE RESTRICTIONS ON TRANSFER AND OTHER DEALINGS IN THE LAND UNDER THAT ACT, WHICH MAY REQUIRE CONSENT OF THE MINISTER.
* 2 LIMITED TITLE. LIMITATION PURSUANT TO SECTION 28T(4) OF THE REAL PROPERTY ACT, 1900. THE BOUNDARIES OF THE LAND COMPRISED HEREIN HAVE NOT BEEN INVESTIGATED BY THE REGISTRAR GENERAL.

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

121123_CRH PRINTED ON 21/12/2020

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Appendix B

SMK CONSULTANTS PTY LTD
TRAFFIC IMPACT ASSESSMENT
REPORT 20-317 OCTOBER 2020

SMK

CONSULTANTS

surveying – irrigation – environmental – planning

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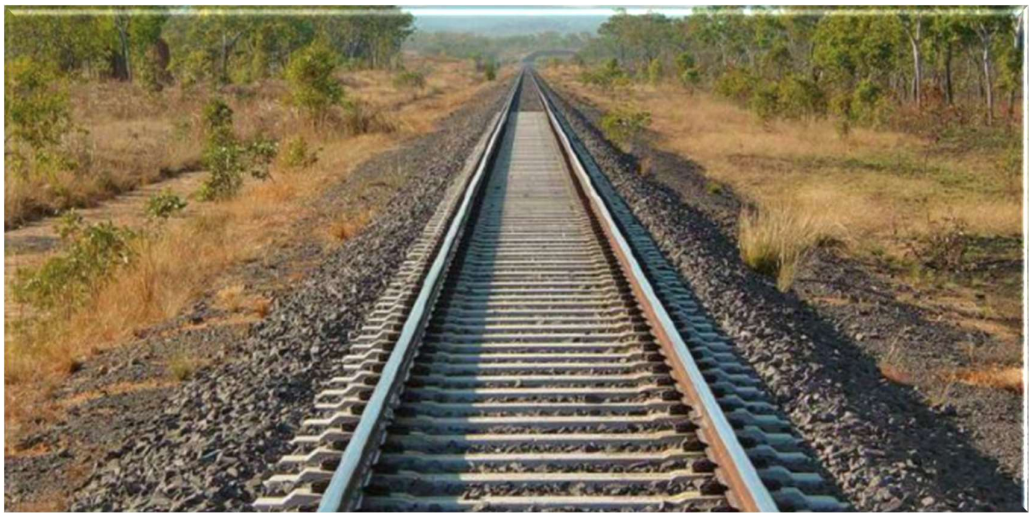

"Meppem" Quarry

Traffic Impact Assessment

John Meppem

"Blackridge", Gurley 2398

October 2020

SMK

CONSULTANTS

surveying – irrigation – environmental – planning

ABN 63 061 919 003

DOCUMENT CONTROL

Project Name	Traffic Impact Assessment
Proponent	John Meppem, "Blackridge" Gurley, NSW 2398
Project Reference	20-317
Report Number	20-317 Traffic Impact Assessment
Prepared for	Regional Quarries Australia 20L Sheraton Road Dubbo, NSW 2380 Contact: Scott Lancaster
Prepared by	SMK Consultants PO Box 774 39 Frome Street Moree NSW 2400
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Company	SMK Consultants

Revision History			
Version Number	Date	Authority	Details
0	October 2019	Peter Taylor	Initial Issue
1	October 2020	Peter Taylor	Amended for new proponent

TABLE OF CONTENTS

1 Introduction

SMK Consultants have been engaged by Regional Quarries Australia to provide a Traffic Impact Assessment for the proposed development of a 490,000-tonne hard rock quarry on Lot 10 in Deposited Plan 751753 and Lot 110 in Deposited Plan 257328. Regional Quarries Australia propose to operate the quarry for the land owners and proponent, John Meppem.

A 2019 Traffic Impact Assessment had been prepared in accordance with the Secretary's Environmental Assessment Requirements (SEARs) dated the 24th August 2018 and was lodged with Moree Plains Shire Council as part of the development application submissions. Narrabri Council were consulted in the process as the original proposal involved utilising a haul route within Narrabri Shire to Bellata. Narrabri Shire raised concern with the use of Berrigal Road and therefore an alternative haul route was identified for the haulage of quarry product from the Meppem Quarry to Inland Rail construction sites. The alternate haul route was identified in conjunction with Moree Plains Shire Council.

This amended Traffic Impact Statement provides details of the revised haul route.

The assessment complies with requirements under the *Environmental Planning and Assessment Act 1979* to consider the environmental impact of a development proposal. In this instance, the environment considered is the road network servicing the proposed development.

1.1 Aims and Objectives

This assessment aims to identify the likely impact of the proposed heavy vehicle traffic upon the wider road network of the region. Impacts considered include impacts to the road network itself (road condition), the functionality of the road network (road safety and traffic volumes) and amenity impacts of changes to the road network (traffic noise). The assessment also outlines traffic considerations with regards to the design of the proposed quarry (adequacy of on-site parking provision, internal traffic circulation and site access to the public road network).

Plans of intersection and/or road upgrades are not included in this assessment but may be required as a part of operational works or negotiated through conditions of approval.

The proposed objectives for the Meppem Quarry are to:

- Minimise adverse impacts upon the public road network; and
- Ensure the practicality and safety of traffic management measures on site.

1.2 Scope of Works

The scope of works includes preparation of Traffic Impact Assessment (TIA). The TIA will include the following:

- Determination of the key haulage routes with special considerations for any school zones, school bus routes, residential areas or potential risk locations;
- Assessment of the surrounding environment, existing conditions and road safety;
- Assessment of existing private property driveways and farm access points;
- Liaison with Moree Plains Shire Council and Narrabri Shire Council in relation to existing road traffic numbers;
- Assessment of likely impacts associated with road haulage;
- Any mitigation measures required to minimise road impacts, e.g. dust and noise suppression;
- Recommendations for any accesses to the quarry site;
- Calculation of expected contribution rate; and
- Inclusion of Traffic Management Plan and Truck Driver Code of Practice as prepared by Groundwork Plus.

2 Existing Conditions

2.1 Development Site

The development site is approximately 7.85 hectares on Lot 10 in DP751753. The site is located within the Moree Plains Shire Council (MPSC) local government area. The quarry is to be developed in three stages for supply of a range of quarry products to mainly the Inland Rail project and other local projects including reconstruction of sections of the Newell Highway.

The haul route is fully contained with the Moree Plains Shire. The development of this quarry site has been presented to MPSC and an agreement has been reached for use of the haul route through to Gurley which is across MPSC roads. This agreement includes upgrades of the haul road as presented in the following sections of this report.

The proposal involves haulage of quarry product to link with the Newell Highway at Gurley. The haul route will include:

- Gurley Creek Road between the Newell Highway and Boo Boo Road
- Boo Boo Road between Gurley Creek Road and Manamoi Road
- Manamoi Road between Boo Boo Road and the Meppem Quarry site
- An internal property road between Manamoi Road and the quarry site

The locality of the proposed development site is shown in Figure 1, which includes the identified haulage route.

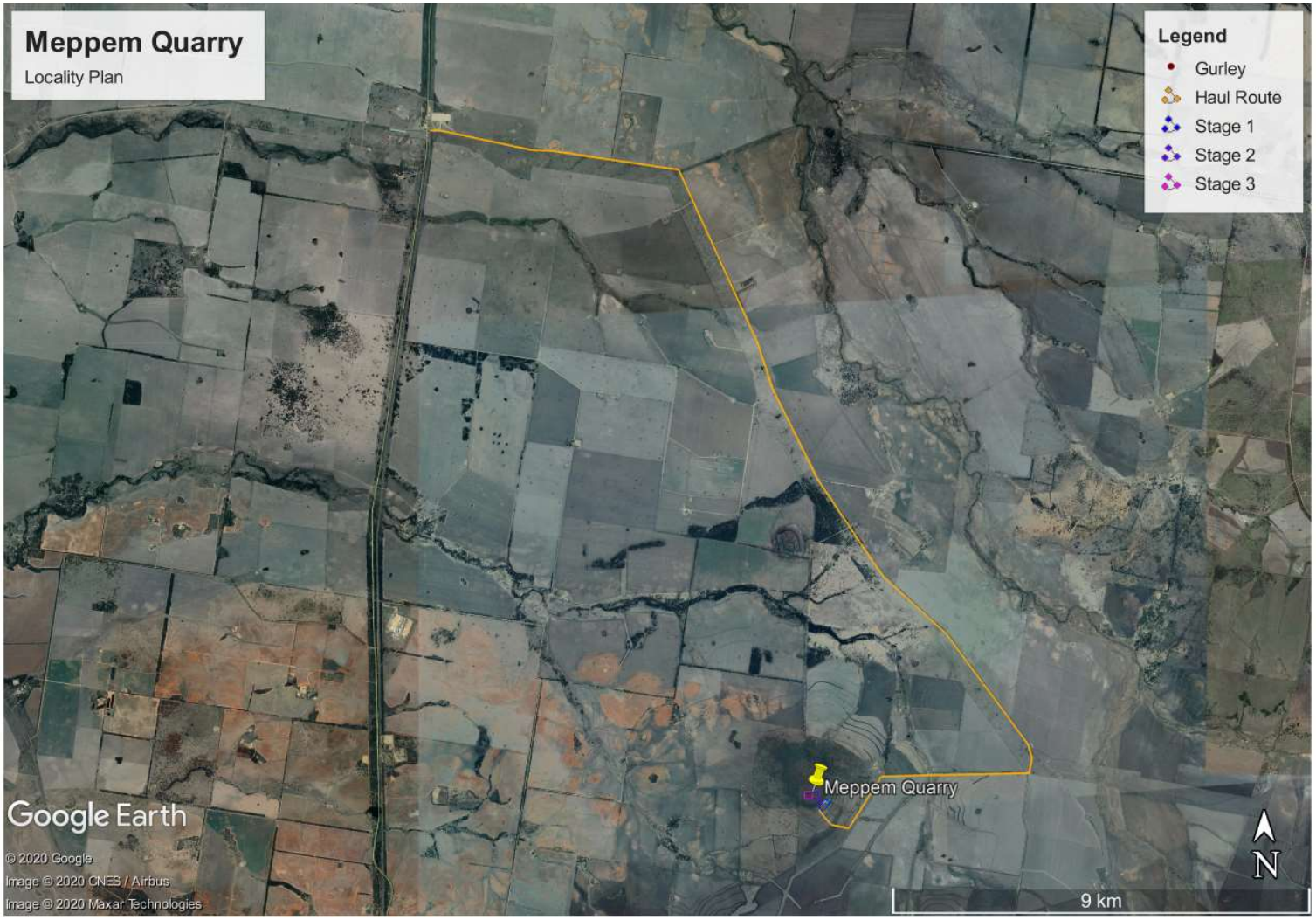
The layout of the proposed development site is presented in a site plan included as Appendix 1.

2.2 Access Suitability

2.2.1 Access from Meppem Quarry to Boo Boo Road

Access between the Quarry and Boo Boo Road will involve construction of an internal farm road between the quarry site and the southern unformed section of Manamoi Road which adjoins Lot 7309 DP1160820. This section of Manamoi Road is owned by MPSC but has never been formed. A new section of road is to be constructed by the developer to link the quarry to the southern end of the existing road to link with Boo Boo Road. This will be undertaken at the developer's cost. The road will consist of a two-lane gravel road constructed of material obtained from the quarry .

Figure 1: Locality Plan showing Meppem Quarry and Haul Route



2.2.2 Manamoi Road to Boo Boo Road

Council has advised that the section of Manamoi Road (SR190) that is constructed, "*is a Local B-road servicing one property and is a single lane natural surface road (sparse gravel in places).*" The request from MPSC for use of this road will involve:

- Complete rebuilding to Council standards (modify for the low volume of traffic).
- Construction of a single lane road with 3 or 4 "Whale belly" pull over areas that will be managed through a traffic management plan – favouring the local farmer.

MPSC has considered that this road can be single lane based on the frequency of truck traffic if pull-over areas are established. Unloaded trucks returning to the quarry can therefore pull off the single lane road to allow loaded trucks, including any local farm traffic, to continue toward Boo Boo Road.

At present, the constructed section of Manamoi Road is considered as a black soil road with minimal gravel present. The road in its present form would not support truck traffic for an extended period after rain. The proposal will therefore require the construction of a minimum of 100mm of high-quality wearing gravel to avoid deformation of the road surface when trucks recommence operation after rain. It should be noted that the quarry may cease operations in the event of a rainfall event of 10mm or more as the quarry material would have an uncontrolled moisture content and the delivery of gravel to most projects would not be possible after rainfall due to the black soil on the delivery sites. The road to be constructed will be all-weather which will provide the option of continuing work in the event of rain.

2.2.3 Boo Boo Road

MPSC has advised that Boo Boo Road (SR139) is classified as a Local A road, meaning that it has through traffic and services several properties. The road has minimal continuous gravel remaining and is therefore deformed is sections as a result of local traffic during and after rainfall events. Gravel depth in some sections is estimated to be in the order of 150mm. In other sections, there is no gravel. The gravel that is present is a white rock (claystone) material which is suitable for local traffic but wears under heavier harvest traffic and dry conditions as the material powderises and blows away.

There is approximately 11.5 km of Boo Boo Road between Manamoi Road and Gurley Creek road which remains as a gravel road. Council has indicated that if this road is to be used as a haul road, the following works will be required:

- A minimum of 100mm of compacted gravel to be constructed as a road surface
- Gravel is to be a selected material and Council approved
- Minimum width of formation to be 7m
- The southern 8.5 km to be widened to an 8m formation
- Table drains to be regraded as part of the formation
- Widen the sealed section to a minimum of 7m width
- Install a concrete causeway to replace the bitumen sealed floodway at approximately 3.8 km south of Gurley Creel Road

The proposal from MPSC would provide a suitable formation for standard trucks on a local road. Work would also involve upgrade of any culverts present. The road currently supports

mainly causeway type crossings for local water as the road does not cross any significant watercourses. Local runoff would occur for a short period after a rain event.

The northern 4.1 km of Boo Boo Road is bitumen sealed. Pavement width along this section at present is between 7m and 7.1m with a shoulder width of approximately 1m. The depth of gravel beneath the pavement is minimal. The gravel sub-grade extends for a width of between 0.5m and 1m on either side of the road but the depth is variable. Some natural soil has mixed with this shoulder area. Council has identified that they will require this bitumen section to be widened to 7m and this will involve an additional 0.5m of bitumen on either side of the road.

The geometry of this road is defined by long straight sections with no significant bends. Sight distance along this road is significant.

2.2.4 Gurley Creek Road

Gurley Creek Road (SR109) is defined as a Collector Road by MPSC. The road has been bitumen sealed between the Newell Highway and approximately 3.6 km to the east of Gurley Creek. The bitumen seal has been in place for an extended period and in parts has been re-sheeted.

Council has indicated an average seal width of 6.7m and requested that for a haul route, the seal width needs to be a minimum of 7.7m. This will require an additional 0.5m seal width on both sides of the road and regrading of the shoulder and table drain area. Total length of Gurley Creek Road to be resealed is approximately 5.49 km between the intersection of Boo Boo Road and the Newell Highway.

2.2.5 Gurley Creek Intersection onto Newell Highway

Gurley Creek Road intersects with the Newell Highway within Gurley. A distance of approximately 50m is available between the rail crossing and the highway edge (give-way sign). A stop sign is present for the rail crossing. This section of road is an approved road train area. A single road train can stop between the rail line and the highway with appropriate separation distance between the rail track and the highway.

All vehicles will need to stop at the rail crossing. In the case of a truck waiting between the rail and the highway, any following vehicle will need to stop before proceeding across the rail line.

The geometry of the intersection onto the Newell Highway is considered sufficient in radius to exceed AustRoads Standards for a road train to turn left or right from Gurley Creek Road onto the highway. The curve width is in excess of 16m which is considered suitable for this standard of intersection.

The highway has not right or left turn lanes onto Gurley Creek Road. This highway is outside of the jurisdiction of MPSC and subject to Transport NSW management. This intersection is discussed in more detail in the following sections of this report.

2.2.6 Newell Highway

The Newell Highway is the primary haul route for all regional and interstate traffic. The Highway will service the primary project to utilise the proposed Meppem quarry, being the Inland Rail construction work. Various Newell Highway upgrades may also be serviced by quarry material from this site.

The Newell Highway consists of a duel lane bitumen sealed road supporting more than 2,000 vehicle movements per day. Highway upgrades include the development of various passing lane areas and subsequent improvement of intersections onto the Highway.

The haulage route will utilise an existing access road (Gurley Creek Road) onto the highway. This is located within a section through Gurley village with a speed limit of 60 km/h. This is considered ideal for safety in relation to trucks entering or exiting Gurley Creek Road. The 60 km/h section extends for a distance of approximately 400m either side of the centre of Gurley.

3 Traffic Generation and Distribution

The proposal involves the development of a hard rock quarry with a maximum production capacity of 490,000 tonnes/year. The lifespan of the quarry at an annual extraction rate of up to 490,000 tonnes per year will depend on whether other major infrastructure projects occur after the Inland Rail project is completed. The Inland Rail project between Narrabri and Moree may extend over 2-years or more before works move closer to other regionally significant quarries that would supply gravel to the project at a more economic rate due to shorter transport distances.

To establish the impact of the development on the adjacent road network and assess the need for improvements to accommodate traffic generated based on the proposed Meppem Quarry, traffic generation and trip distribution to the proposed development have been estimated. The traffic generated by the development will include heavy-vehicle traffic carrying materials, and light vehicles transporting employees, visitors and service personnel.

The components of traffic generation for the proposed development are:

- Staff trips
- Visitor trips
- Haulage of equipment
- Haulage of quarry materials

It is noted that construction traffic will be minimal consisting of delivery of plant and heavy equipment to site.

3.1 Light Vehicle Movements

Light vehicles would be required for staff and service operators attending the quarry site. Due to its remoteness, very few visitors are expected to the site and therefore visitor numbers are assumed to be an average one per week.

The site will have 5-6 full time equivalent (FTE) staff and will therefore utilise 2 light vehicles per day. It is expected that staff would travel from their place of residence or accommodation in either Moree or Narrabri. The staff travel distances will be limited under standard Work

Health & Safety policy. A travel distance of less than three quarters of an hour is not considered to present issues of fatigue.

3.2 Heavy Vehicle Movements

Road traffic would be considered to travel along internal roads before entering Manamoi Road to the north. Traffic would then travel east onto Boo Boo Road before turning left onto Gurley creek Road toward the Newell Highway. Once on the Newell Highway, traffic would travel north or south to various project sites. The movement of light vehicles would be along the same route.

The Highway runs parallel to the proposed Inland Railway alignment. The quarry expects to provide quarry materials to the section of new rail between Moree and Narrabri.

The current projected start date for construction of the Narrabri to North Star section of the Inland Railway Project is in March 2020.

Truck size and therefore load capacity may vary during the project. The truck size will generally be defined by access at unloading points. The primary configuration to be used to date for supply of gravel to Inland Rail consists of a truck and dog trailer with a standard load capacity of 38-tonnes. Other truck units including side tipping road trains and B-triple units will be considered as they provide greater haulage efficiency, however the manoeuvring ability of such units is limited on the delivery sites. The following calculations are therefore based on a truck and dog trailer as the standard unit. This may over-estimate the total truck movements as the larger truck units can carry up to 63-tonnes of material or approximately 1.66 times the load capacity.

Normal Heavy Vehicle Movements

The following assumptions have been made in regard to traffic calculations:

- 490,000 tonne/year of material will be hauled utilising the road network.
- Haulage vehicles will typically be truck & dog configurations although B-doubles and PBS road trains may also be used where approved routes are available.
- The General Mass Limit (GML) is 55.95 tonnes for truck & dog configurations.
- A 38-tonne haulage capacity per trip has been assumed.
- Hours of operation for haulage of material are 6.00am to 6.00pm Monday to Friday and 6:00am to 1:00pm on Saturdays.
- Daily peak truck traffic would occur between 7am and 10am.
- 300 working days per year (6 working days/week and 50 working weeks/year).
- Movement is one-way (i.e. a truck entering and leaving is considered two movements).
- The movement of trucks to and from the site would be controlled by management through a Driver Code of Conduct and GPS locators and truck monitoring system.

- If external water for dust suppression is required, up to 4-additional truck trips would be generated but these would occur from within the property of Meppem or from the north of the property and therefore not utilise Berrigal Road
- Quarry operations can occur via all-weather roads and therefore provide the potential for continuing operations in wet weather.

Table 1: Calculated Average Heavy Vehicle Movements from the Meppem Quarry

Traffic Calculations	
Tonnes Processed	490,000 tonnes/year
	9,800 tonnes/week
	1,630 tonnes/day
Trucks	12,895 trucks/year
	258 trucks/week
	47 trucks/day
Truck Movements – Each way	25,790 truck movements/year
	516 truck movements/week
	94 truck movements/day

Note: These figures have been rounded up to the nearest whole number. These calculations do not include the use of Road Trains – Prime Mover Hauling Unit's. These vehicles may be used on occasion and would reduce the number of truck movements calculated above.

Assuming demand is evenly spread across each day and week in a year this could equate to an average of 9,800 tonnes of material moved per week by an average of 47 laden trucks per day exiting the quarry or an average of 4 laden trucks per hour exiting the quarry. However, quarries do not work on an average basis and must meet demand which fluctuates outside of the control of the quarry operator. This is specifically the case where a quarry may supply large infrastructure projects such as the Inland Rail project.

The delivery program of the Inland Rail project has not been confirmed. It is expected that the demand for construction materials will fluctuate throughout the project. Regional Quarries Australia has advised that demand for construction materials might reach up to 5,000 tonnes per day. Therefore, during peak demand periods it is possible that up to 132 laden trucks per day or an average of 12 trucks per hour may exit the quarry. This is equivalent to approximately 5 minutes between trucks at the peak times. The frequency of trucks leaving the quarry would be dependent on the time taken to load a truck. The time to load a truck would range between 5 and 20-minutes.

Regional Quarries Australia have advised that the peak demand periods are unlikely to occur on a prolonged basis, but flexibility is required in operating conditions so that the

requirements of the Inland Rail project during peak demand periods can be met. The peak periods will be offset by wet weather days and lower demand periods which would generate less deliveries.

Regional Quarries Australia has identified that a 5-minute gap between trucks leaving the site will be a minimum gap for loaded trucks. At this spacing, the expectation of potential queuing at the Newell Highway intersection, is predicted to be minimal. The existing traffic frequency along the haul route is relatively minimal other than during grain harvest periods.

Gravel trucks will irregularly be required to stop at the Newell Highway intersection unless a stop sign is installed. Trucks will stop on either side of the rail line. For the Newell Highway, some traffic peaks will occur as a result of local issues and highway issues. A gap of 5-minutes between trucks should decrease potential queuing at this intersection quite significantly.

A Driver Code of conduct will have the potential to limit the distance between trucks to a minimum of 100m. This is to include radio contact between drivers and GPS tracking of vehicles.

3.3 Operating Hours

The proposed operating hours are included in Table 1. The loading of trucks to haul product would occur between 6.00am and 6.00pm Monday to Friday and 6:00am to 1:00pm on Saturdays with no haulage to occur on Sundays or public holidays.

Table 2: Hours of Operation

Activity	Monday to Friday	Saturday	Sunday and Public Holidays
Loading of trucks to haul product.	6.00am to 6.00pm	6:00am to 1:00pm	Nil
Light vehicle traffic associated with employees, or light service vehicles entering or leaving the site.	24 hours a day		
Maintenance of plant and equipment including repairs/alterations to processing equipment and unloaded test runs.	6.00am to 6.00pm	6:00am to 1:00pm	Nil
Drilling	6.00am to 6.00pm	6:00am to 1:00pm	Nil
Blasting	9.00am to 5.00pm	Nil	Nil
Operation of associated equipment within the confines of the excavated quarry area.	6.00am to 6.00pm	6:00am To 1:00pm	Nil
Operation of loaders, excavators, trucks, screening & crushing equipment within the property.	6.00am to 6.00pm	6:00am to 1:00pm	Nil
Exceptional circumstances – all crushing, loading and product haulage activities within the site to enable manufacture and delivery of high priority ARTC projects only.	24 hours with written notification and approval from Moree Plains Shire Council and the Environment Protection Authority.		

4 Assessment of Proposed Haulage Route

The primary purpose of this Quarry is to supply material to the Inland Railway Project, which is scheduled to commence in early 2020 and continue for approximately 3 years.

The designated haulage route from the development site is described in the above sections. This will be the only haul route utilised for trucks to move quarry product from this site. Alternative routes for haulage of product are not available.

4.1 Manamoi Road

Manamoi Road is an MPSC maintained road but services one farm residence. No new gravel has been placed on this road for an extended period. MPSC grade the road on an as-needed basis, mainly in preparation for grain harvest periods or when significant damage occurs following a wet weather period.

The road in its current condition is not suitable as a heavy haulage route. This has been recognized by the developer and MPSC. Use of this road will therefore require an upgrade as outlined in section 2.2.1.

4.2 Boo Boo Road

Boo Boo Road has been subject to MPSC current policy of gravel maintenance only and no new gravel. Recent photographs of this road are presented in appendix 2. The road is mostly raised above the surrounding natural surface level. It was once a gravel road but due to cost, MPSC has reduced work on this road to maintenance only.

The road is generally utilised by local traffic only. This is estimated to generate between 40 and 64 vehicle movements per day (based on the number of properties being serviced). Additional truck movements occur during a harvest and planting period. Truck traffic is generated as a result of haulage of grain to either Gurley or Bellata grain storage facilities, including the facilities at Penny's Lane.

As a result of limited traffic flow, a large part of the southern end of this road is utilised as a single lane road and therefore road shoulders have subsided. Sections of potholes have created wider sections where local traffic drives around the potholes. The potholes have resulted from minor water ponding on the road due to a lack of slope from the road centre to the shoulders. Road width is therefore an average of 6m.

The central section of this road on either side of the Gurley Station entrance, extends in width to approximately 7m but is variable. Some depth of gravel has been maintained in parts. This central section is not suited to a heavy haulage road at present.

The northern end of this road is bitumen sealed. Council has indicated that the average seal width is 5.9m. The road needs to be a minim of 7.1m for road train use. The road at present is not considered suitable for a heavy haulage route as a higher frequency of trucks would potentially impact road shoulders and therefore deformation of both sides of the road. The required works to resolve this as identified by Council are presented in section 2.2.3 of this report. The proposed works will be required to upgrade the road to the necessary standard.

4.3 Gurley Creek Road

Gurley Creek Road is a relatively straight section of road which services an extended region to the east of Gurley. Gurley village has a large grain storage facility which generates extensive truck movements during harvest periods. To date, the road has supported the current traffic load with regular maintenance works being undertaken. This includes pothole repairs and scheduled resealing works.

A large proportion of the grain stored in Gurley is moved by rail and therefore existing truck movements are concentrated during October through to December.

Council has indicated that this road will require widening of the sealed surface before it is suitable for a heavy vehicle haulage route for quarry operations. The works required are identified in section 2.2.4 of this report.

Gurley Creek Road has one formal property entrance between Boo Boo Road and Gurley. Several informal truck access points have been made for trucks to haul grain from adjoining paddocks.

4.4 Newell Highway Intersection

Gurley Creek Road crosses the rail line in Gurley. This crossing has been identified as a crossing to be upgraded as part of the Inland Rail project. As a minimum, this will include installation of gates across the rail line and flashing lights. It is highly likely that gravel for this upgrade will be obtained from the Meppem quarry site.

The rail crossing has a stop sign on both sides of the track. This is considered appropriate for safety if trains are operating. It should be noted that once the Inland Rail project commences, rail activity is expected to cease for a period of approximately 18-months while the section of rail between Narrabri and Moree is being built. The rail crossing may therefore be reduced to a give-way sign during this period.

For trucks moving west onto the Newell Highway, only one truck can queue between the rail and the edge of the highway. If other vehicles arrive, they would be required to form a queue on the eastern side of the rail line at the stop sign. This would avoid the issue of queuing across the rail line as the distance between the rail line and the highway is limited to approximately 50m. This would be suitable for one truck to queue.

For trucks turning left or right off the Newell Highway onto Gurley Creek Road, they may be required to stop on the highway, if a truck has stopped at the stop sign. The following photo shows the perspective of a truck turning right into Gurley Creek Road from the highway. There is no formal right-hand turn lane to allow traffic following the stopped vehicle on the highway to move around the inside of the right turning vehicle. Informally, traffic may utilise the bitumen sealed road shoulder to pass the stopped vehicle on the left-hand side. This is not considered as a safe solution to this intersection for right turning vehicles if there is a truck stopped at the rail crossing.

Figure 2: Google image of Newell Highway intersection with Gurley Creek Road

The presence of the Gurley-Millie road on the western side of the highway complicates this intersection. This western road is also utilised by local truck traffic and the entrance cannot be impacted by traffic conflict for trucks turning into Gurley Creek Road. The issue is exacerbated by the traffic volume on the Newell Highway being >2,000 vehicles per day.

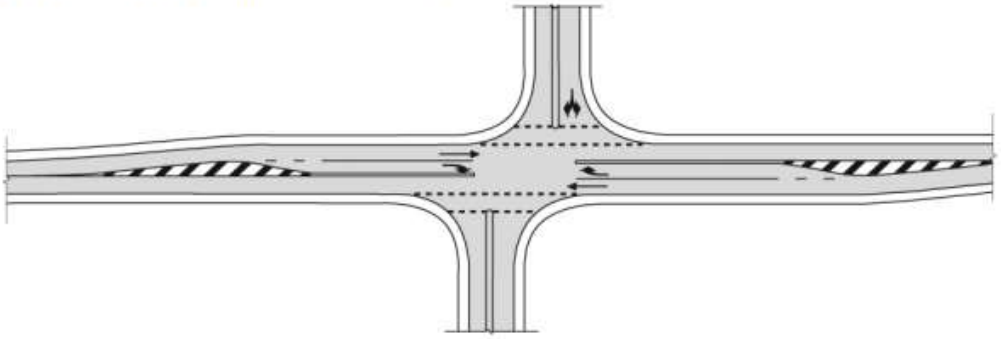
It is recommended that a detailed design is undertaken. A preliminary review of AustRoads design guidelines suggest that the intersection may require treatment as a “right-left staggered T-intersection” for a two-lane road. The following sketch plan is an excerpt from AustRoads Road Design Guide. This provides a sketch of the lanes that may need to be developed. The design process will need to consider several parameters, including:

- Frequency of trucks turning left and right from the Highway into Gurley Creek Road
- Length of trucks to be used
- Speed limit within Gurley
- Traffic frequency on the Newell Highway
- Traffic frequency on Gurley Creek and Gurley-Mille Roads
- Local traffic within Gurley including rest area
- Queuing of trucks along Newell Highway

Figure 3: AustRoads typical section for treatment of a right-left staggered T-intersection

Guide to Road Design Part 4: Intersections and Crossings – General

Figure A 17: Right-left staggered T-intersections



(a) Two-lane two-way road

It is noted that the existing infrastructure on the western side of the Highway may be restrictive in lane width as per following image. This includes a power pole and street signs.

Figure 4: Google image showing infrastructure on west side of highway which will need to be considered if an intersection upgrade is required.

Peak traffic frequency to be generated by the quarry may be in the order of one truck every 5-minutes. This should allow a truck to exit the highway, stop and move over the rail line before the next truck arrives and wishes to turn right off the highway. This process could be proactively managed by truck movement management, until other highway traffic interrupts the flow of trucks moving back to the quarry.

This intersection has been identified as a key issue that will require a design investigation to determine whether it meets the requirements of the quarry or whether a redesign and upgrade is required. Based on preliminary analysis, an upgrade is recommended. The minimum upgrade would involve installation of a right turn lane. Some remarking would be possible on the existing pavement for a left turn exit off the highway. Consideration would

need to be given to the extent of the rest area on the eastern side of this section of highway and the movement of trucks and other vehicles in and out of this rest area.

This intersection should have been subject to investigation as part of the Inland Rail corridor assessment. This should have included the involvement of Inland Rail and Transport NSW. At present, trains along this section of rail are infrequent. Development of the Inland Rail would significantly increase rail traffic. The length of the proposed trains to use the upgrade rail will be in the order of between 1500m to 1800m. This would further exacerbate issues and queuing of vehicles on the highway while waiting for a train to pass. It is recommended that a design proposal is obtained from Inland Rail that resolves this existing issue of highway safety if the Inland Rail is developed.

4.4.1 Key Local Intersections

There are two key intersection involved along the proposed haul route between the quarry and Gurley. These are the Manamoi-Boo Boo and Boo Boo-Gurley Creek intersection. Neither intersection has sign posting for either a give-way or stop requirements. This is assumed to be based on the low level of traffic volume and extensive sight distances.

Whilst not typically signposted the local rural roads have a speed limit of 100 km/h subject to road conditions. Light vehicle traffic is able to traverse the bitumen roads at this speed. Truck and other heavy vehicles generally adopt a voluntary reduced speed due to some bumps and sections where road width is considered older style (6m) as against newer road width (>7m). Local gravel roads are traversed at a much slower speed by most vehicles.

The Safe Intersection Sight Distance (SISD) for the two intersections has been calculated as:

$$\text{SISD} = \frac{\text{D}_\text{T} \times \text{V}}{3.6} + \frac{V^2}{254 \times (d + [0.01 \times a])}$$

Where:

- SISD = Safe Intersection Sight Distance
- D_T = Decision Time (s) = Observation Time (s) + Reaction Time (s) = 5.0s
- V = Operating (85%ile) speed (Km/h) = 100km/h
- d = Coefficient of deceleration = 0.22
- a = Longitudinal grade (% + uphill - downhill) = 0.0%

$$\text{SISD} = \frac{5.0 \times 100}{3.6} + \frac{100^2}{254 \times (0.22 + [0.01 \times 0])}$$

$$\textbf{SISD} = \textbf{318m}$$

The available SISD at each of the intersections exceeds the required 318m.

The intersection between Gurley Creek and the Newell Highway occurs within an area with a sign-posted speed limit of 60km/h. The Safe Intersection Sight Distance (SISD) for the Newell Highway intersection has been calculated as:

$$\text{SISD} = \frac{\text{D}_\text{T} \times \text{V}}{3.6} + \frac{V^2}{254 \times (d + [0.01 \times a])}$$

Where:

- SISD = Safe Intersection Sight Distance
- D_T = Decision Time (s) = Observation Time (s) + Reaction Time (s) = 5.0s
- V = Operating (85%ile) speed (Km/h) = 60km/h
- d = Coefficient of deceleration = 0.22
- a = Longitudinal grade (% + uphill, - downhill) = 0.0%

$$\text{SISD} = \frac{5.0 \times 60}{3.6} + \frac{60^2}{254 \times (0.22 + [0.01 \times 0])}$$

$$\mathbf{SISD = 147.75m}$$

The available SISD at the intersection exceeds the required 147.75 m.

Key intersections along the proposed haulage route are deemed satisfactory in terms of Safe Intersection Sight Distance.

4.5 Safety and Efficiency of Access

The local roads do not have a sign posted speed limit. All road users would be expected to drive to the road conditions. Based on the condition of the road at the time of inspection it is expected that travel speeds would be restricted to 80 km/h. The proposal to improve the road conditions with additional gravel sections and widening of the bitumen sealed sections may change this slightly, however, the presence of wildlife such as Kangaroos tends to limit the speed of vehicles.

Intersection performance is dependent upon adequate horizontal and vertical sight distance for all entering traffic (Department of Main Roads Chapter 13 Road Planning and Design Manual Intersections at Grade, 2006). It is therefore necessary to undertake a check of the available sight distance to assess whether or not it can operate under safe parameters. The types of sight distance that must be provided in the design of all intersections include:

- Approach Sight Distance (ASD)
- Safe Intersection Sight Distance (SISD)
- Minimum Gap Sight Distance (MGSD)

Intersections should be designed to provide the more conservative value of SISD or MGSD for all vehicle movements that may be required to give way to other vehicles at the intersection. Details regarding how the sight distances are applied are provided in the following sections.

Approach Site Distances (ASD)

Provision of ASD for cars:

- The minimum level of sight distance which must be available on the minor road approaches to all intersections to ensure that drivers are aware of the presence of an intersection;
- For major road approaches where practical, drivers should see the pavement markings within the intersection and should be achieved where practicable. However, the provision of ASD on the major road may have implications (e.g. costs, impact on adjacent land and features) in which case Stopping Site Distance (SSD) is the minimum sight distance that should be achieved on the major road approaches to the intersection and within the intersection;
- Numerically equal to normal car SSD – which is defined as the distance travelled by a vehicle between the time the driver receives a stimulus signifying a need to stop, and the time at which the vehicle comes to rest; and
- Varying the SSD may include the object height used in its calculation. ASD is measured from a driver's eye height (1.1m) to 0.0m, which ensures that a driver is able to see any line marking and kerbing at the intersection whereas SSD is measured from 1.1m to 0.2m (a nominal object height).

Provision of ASD for trucks: ASD for trucks should be provided at intersections to ensure that trucks approaching the intersection, at the 85th percentile operating speed of trucks, are able to stop safely. ASD for trucks on the intersection approaches should be measured from the truck driver eye height (2.4m) to the pavement level at the stop or holding line (0.0m).

Approach sight distance for trucks are numerically the same as the SSD values for trucks provided in the Austroads Document Guide to Road Design – Part 3: Geometric Design. ASD is applied as shown in Figure 3.

$$\mathrm{ASD} = \frac{\mathrm{R_T} \times \mathrm{V}}{3.6} + \frac{V^2}{254 \times (d + [0.01 \times a])}$$

Where:

- ASD = Application Sight Distance
- R_T = Reaction Time (s) = 2.0s
- V = Operating (85%ile) speed (Km/h) = 60km/h
- d = Coefficient of deceleration = 0.22
- a = Longitudinal grade (% + uphill, - downhill) = 0.0%

$$\text{ASD} = \frac{2.0 \times 60}{3.6} + \frac{60^2}{254 \times (0.22 + [0.01 \times 0])}$$

ASD = 97.75m

The available ASD for all intersections along the proposed haul route is in excess of the required ASD (97.75m).

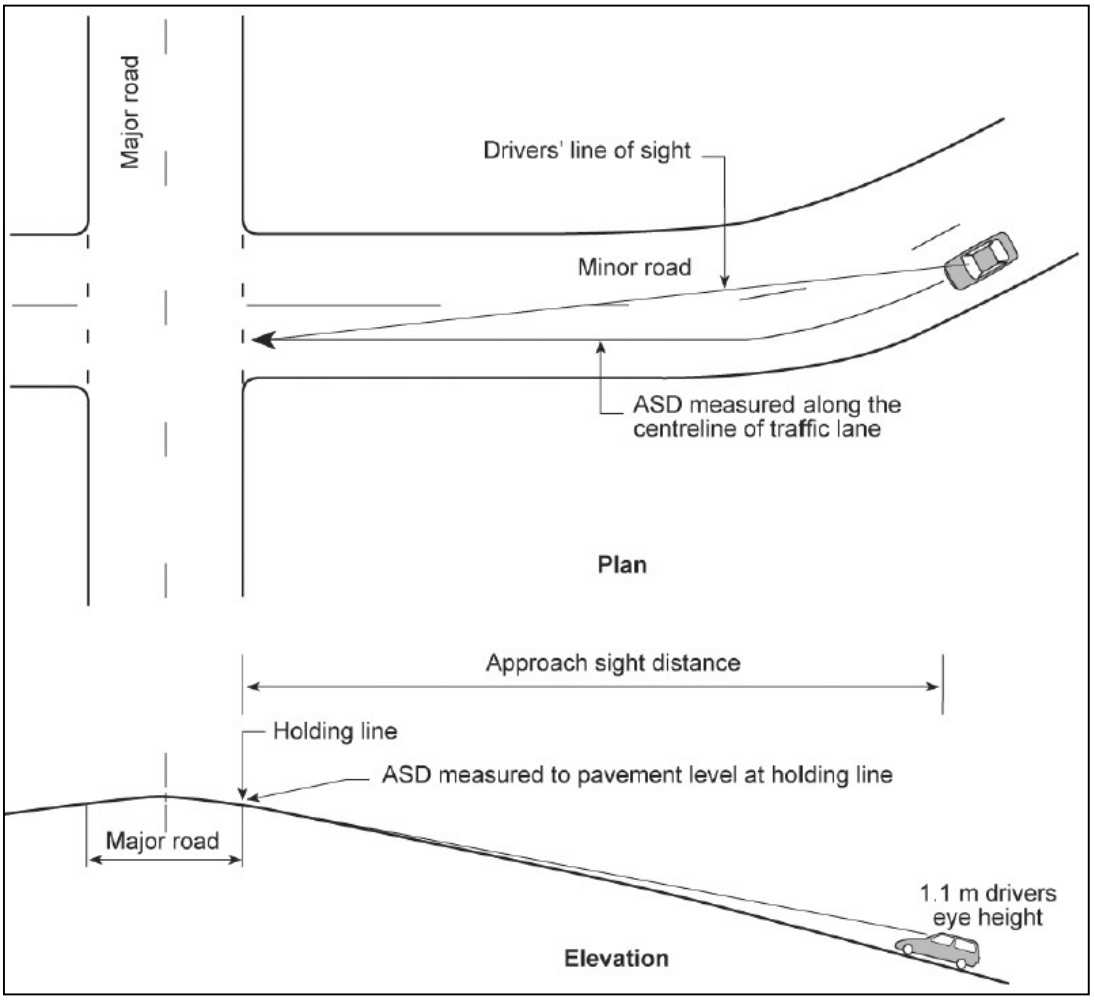


Figure 5: Application of ASD (Source Figure 3.1. AGRD04A/09).

Safe Intersection Sight Distance (SISD)

SISD refers to the distance required for the driver of a vehicle, on the non-terminating road, to observe a vehicle entering from a minor road, decelerate and stop prior to a point of collision. In this context, it is the minimum sight distance which should be provided on the major road of the intersection. SISD:

- Is viewed between two points to provide inter-visibility between drivers and vehicles on the major road and minor road approaches. It is measured from a driver eye height

of 1.1 m above the road to points 1.25 m above the road which represents drivers seeing the upper part of cars. Figure 4 illustrates the longitudinal section for the two cases representing inter-visibility; one for drivers on the major road and the second for a driver waiting in the minor road for an opportunity to enter the major road;

- Assumes that the driver on the minor road is situated at a distance of 5.0 m (minimum of 3.0 m) from the lip of the channel or edge line projection of the major road. SISD allows for a 3 second observation time for a driver on the priority legs of the intersection to detect the problem ahead, (e.g. car from minor road stalling in through lane) plus the SSD;
- Provides sufficient distance for a vehicle to cross the non-terminating movement on two-lane two-way roads, or undertake two-stage crossings of dual carriageways, including those with design speeds of 80 km/h or more;
- Should also be provided for drivers of vehicles stored in the centre of the road when undertaking a crossing or right-turning movement;
- Enables approaching drivers to see an articulated vehicle, which has properly commenced a manoeuvre from a leg without priority, but its length creates an obstruction; and
- Is measured along the carriageway from the approaching vehicle to the conflict point, the line of sight having to be clear to a point 5.0 m (3.0 m minimum) back from the holding line or stop line on the side road.

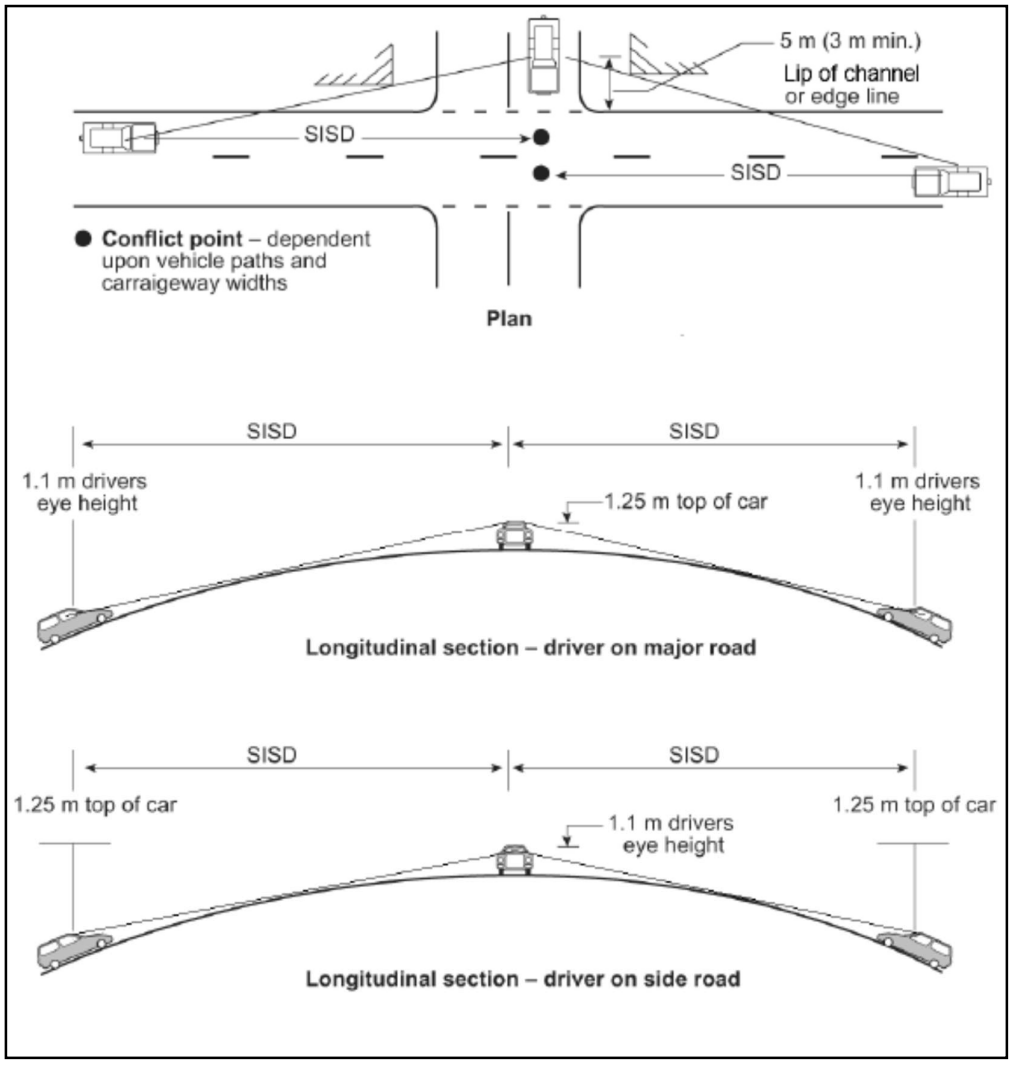


Figure 6: Application of SISD (Source Figure 3.1. AGRD04A/09)

The Safe Intersection Sight Distance (SISD) for the access intersection has been calculated as:

$$\text{SISD} = \frac{\text{D}_\text{T} \times \text{V}}{3.6} + \frac{V^2}{254 \times (d + [0.01 \times a])}$$

Where:

- SISD = Safe Intersection Sight Distance
- D_T = Decision Time (s) = Observation Time (s) + Reaction Time (s) = 5.0s
- V = Operating (85%ile) speed (Km/h) = 60km/h
- d = Coefficient of deceleration = 0.22
- a = Longitudinal grade (% + uphill, - downhill) = 0.0%

$$\text{SISD} = \frac{5.0 \times 60}{3.6} + \frac{60^2}{254 \times (0.22 + [0.01 \times 0])}$$

$\text{SISD} = 147.75\text{m}$

The available SISD exceeds this minimum requirement at all intersections. The only limitation may relate to an extended height of grass and shrubs at the Boo Boo-Gurley Creek Road intersection. This is currently managed by MPSC and shown in the following photograph.

Figure 7: Boo Boo-Gurley Creek Road intersection looking east with mown grass along the road verge that is managed by Council

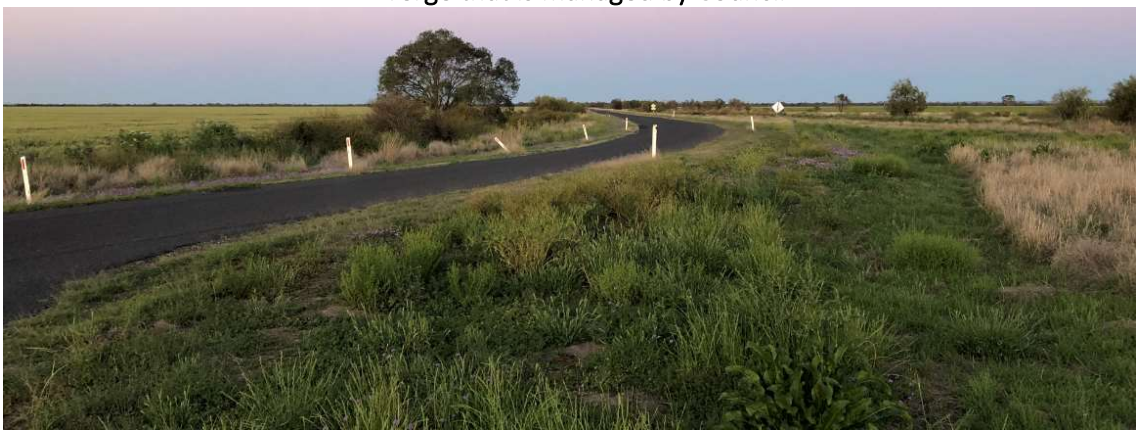


Figure 8: Sight distance along the Newell Highway intersection exceeds the minimum requirements

4.6 Internal Traffic Circulation

All traffic would enter and exit the site from Manamoi Road. Internal roads should be gravelled to provide all-weather access to the Quarry site. It is recommended that the internal road widths be constructed to a minimum width of 8 metres.

The quarry operator intends to place an internal traffic speed of 20 km/h for all vehicles. This intention is to maximise traffic safety in addition to minimising dust.

4.7 Parking Supply

The development site will be a site that is fenced and controlled by the operator. No public access will be available. Access for site visitors other than employees or contractors will be by appointment only.

For industries, it is recommended that parking spaces be provided in accordance with the following rate:

- 1 parking space per 2 staff employed.

Parking will be available adjacent to the site office. Final parking arrangements will be subject to WH&S compliance. It is expected that as a minimum, up to 10-carparks would be available for light vehicles used by staff and visitors. Truck parking areas would vary according to loading and stockpiling arrangements within the quarry site. Trucks would potentially queue in line along the stockpile area to wait for loading at peak periods. All truck parking would be contained within the quarry area which would not impact external roads. The intent is that if trucks are required to park overnight on this site, they would utilise the haul road to wait to be loaded the following morning.

The quarry operator has advised that up to 3 hectares of land will be available for truck and machinery parking if required.

4.8 Existing Traffic Volumes and Impact

Current traffic from the proposed development site along Manamoi Road is considered as highly infrequent as the road is only used by the landowner on occasions for access to the property. The road consists of a single lane road. Use by one landowner may involve one or two trips per day with an increase in truck traffic during harvest periods. The potential impact of between 47 and 132 two-way truck movements along this road is significant. Council requirements for “Whale Bellies” and management of this traffic, including contact with the local landowner, is considered essential if this road is to be used for quarry activity.

Boo Boo Road carries traffic from approximately eight properties. Additional properties use the southern end of this road which is not included as a haul route. Traffic generated from these 8-properties is estimated to be in the order of 4-trips per day and therefore each property would generate approximately 8-total movements per day. Daily average traffic is therefore estimated to be in the order of 64-vehicles per day. This may increase in harvest periods when grain is being hauled to various grain receival facilities. This includes on-farm facilities for these 8-properties. Once grain is stored on-farm, the truck movements are spread-out over an extended period outside of the harvest peak period.

As a minimum, the daily operations of quarry vehicles would result in a 67-percent increase in traffic on Boo Boo Road. The ensure road safety, it will be essential to adopt the MPSC upgrades to this road to ensure that road width is suitable and road condition is maintained with good quality gravel.

Publicly available traffic data is limited to the Newell Highway. The following table presents this data.

Table 3: Available Traffic Data for Key Haulage Roads

Road	Date of Observation	Average Daily Traffic (ADT)	Heavy Vehicles
Newell Highway Site: 92220 960m South of Tarlee Road, Edgeroi	2006	1,579	N/A
Newell Highway Site: 91022 120m North of Brigalow Lane, Gurley	2008	2,421	1,065.24 (44%)
Newell Highway Site: BGBSTC 670m South of Marshall Street, Boggabilla	2009	3,859	1,157.70 (30%)
	2010	3,683	1,141.73 (31%)
	2011	3,650	1,168.00 (32%)
	2012	3,674	1,138.94 (31%)
	2015	3,847	1,231.04 (32%)
	2017	4,051	1,296.32 (32%)
	2018	3,847	1,269.51 (33%)

The closest traffic count data for the Newell Highway is located 120 metres north of Brigalow Lane, south of Gurley. Annual Average Daily Traffic (AADT) is available for the site (91022). The counter recorded 2,421 AADT in 2008. This included approximately 1,065 heavy vehicles. This information is presented in Figure 9.

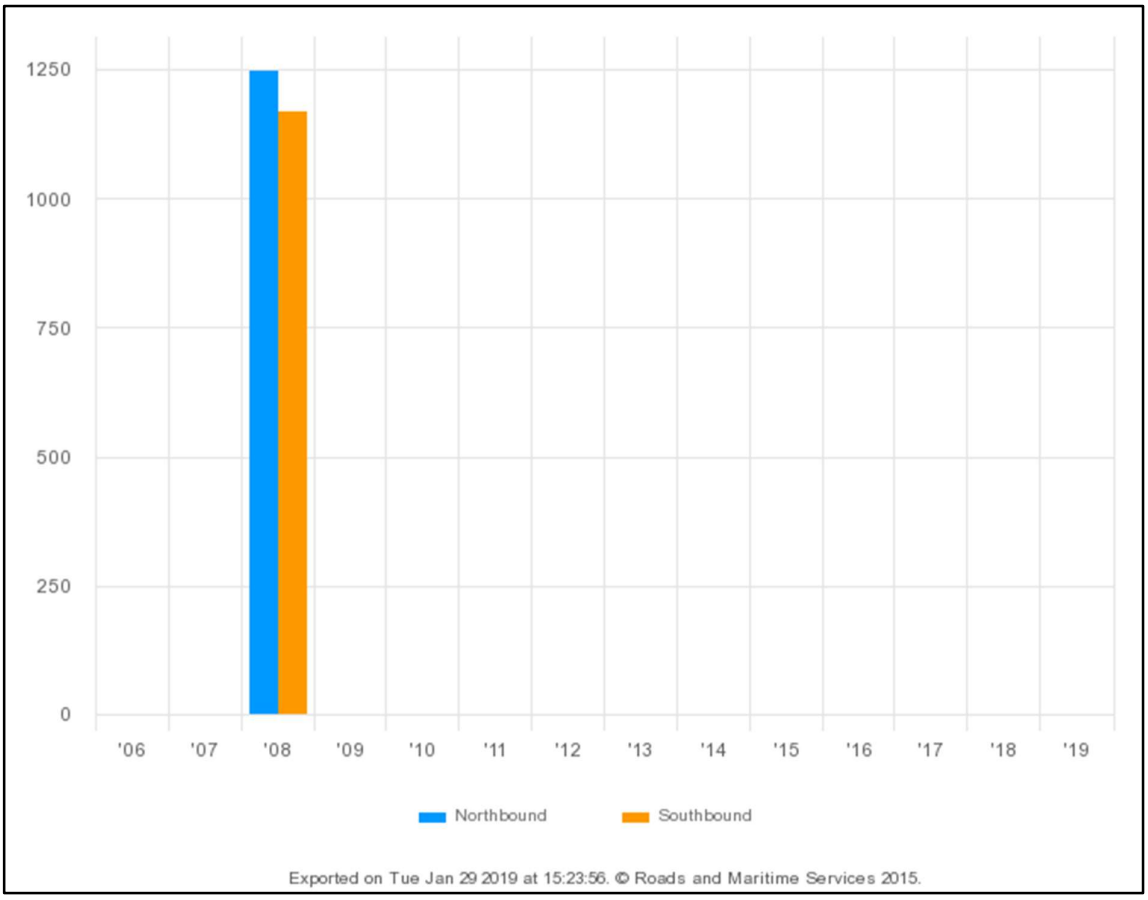


Figure 9: 2008 Annual Average Daily Traffic Distribution of the Newell Highway, Gurley
Source: RMS Traffic Volume Viewer (Site: 91022)

Hourly traffic flow data is also available for the Newell Highway (Site: 91022) as shown in Figure 10. The data shows that the traffic distribution is even throughout the daytime period and reduces at night.

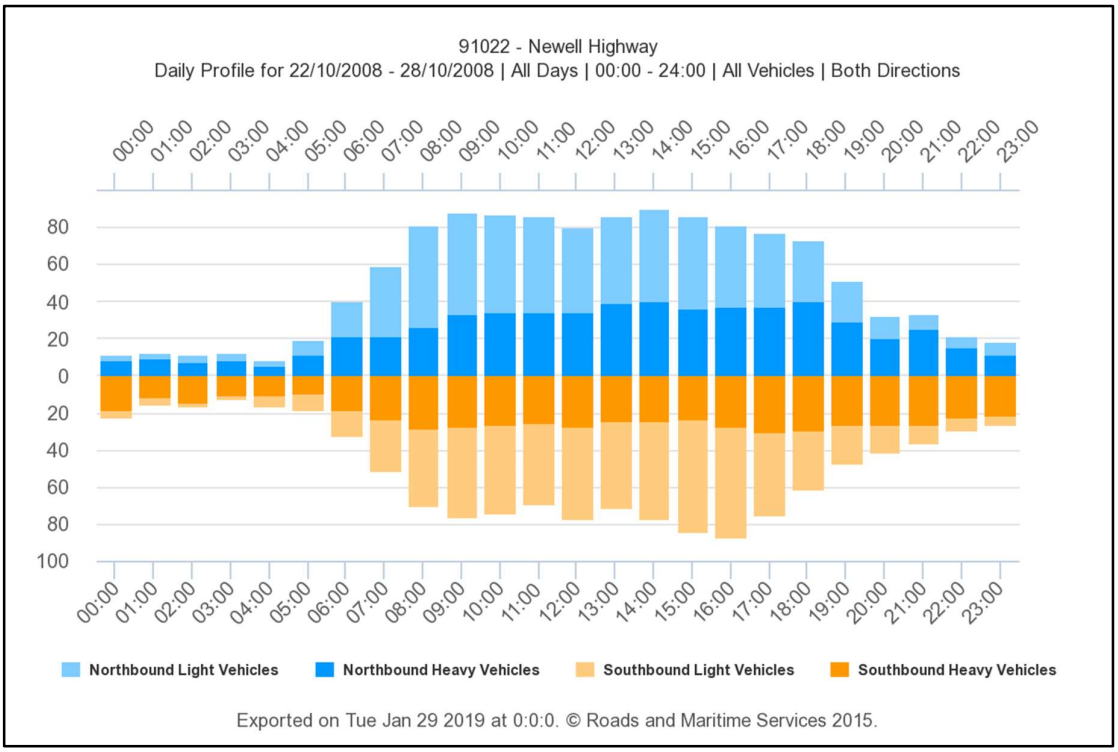


Figure 10: 2008 Hourly Average Traffic Distribution of the Newell Highway, 120m North of Brigalow Lane, Gurley. Source: RMS Traffic Volume Viewer

The addition of between 47 and 132 trucks trips on the Newell Highway will result in between 4-percent and 12-percent increase in heavy vehicle movements per day. The quarry trucks will operate on the highway between 6am and 6pm during the week and reduced hours on the weekend. This conforms to the busiest periods of vehicle movements.

The 4-percent increase for average traffic movements will have minimal impact on existing traffic volumes. It should be noted that development of the Inland Rail will generate a large amount of other traffic along the same sections of highway as the quarry trucks. The extent of traffic generated by Inland Rail construction is not well identified.

The potential peak delivery period that may generate a 12-percent increase in heavy vehicle traffic would be considered as noticeable. However, the quarry operator has identified this potential peak to potentially occur over a short period of possibly a few days only and therefore this is considered as a short period of impact on the Highway. The potential impact on the highway maintenance requirements is considered minor for such short campaigns.

4.9 Traffic Safety

The NSW Centre for Road Safety provides crash statistics for all reportable accidents to occur within both the Moree Plains Shire and Narrabri Shire areas from 2013-2017. Mapping of reportable accidents is presented in Figure 11. Figure 11 indicates that a low number of traffic incidents occur on rural roads in the vicinity of the development site. This is likely to be a result of low traffic density of these roads. By contrast, roads with higher traffic densities (such as the Newell Highway) experienced a greater number of collisions during this time period.

From 2013 to 2017, no reportable incidents occurred on Manamoi Road. One (1) serious incident occurred on Berrigal Road approximately seven (7) kilometres to the east of the proposed Meppem Quarry. No other reportable incidents occurred on any rural roads in close proximity to the development site. Given the lack of traffic incidents within the region, it is unlikely that any particular section of roads in the vicinity of Meppem Quarry presents a traffic hazard.

The following Figure presents a map of reportable crash statistics for the Bellata to Gurley area generated from Transport NSW. The statistics show there are reported crashes along the Newell Highway but none on the local roads to be used as a haul route. Gurley is not as the "brown circle" on this map.

Figure 11: Reportable Crash Statistics, 2013-2017

4.10 Proposed Developments in the Vicinity

The Moree Plains Shire Council and Narrabri Shire Council were contacted with a request for any proposed traffic generating developments within the vicinity of the Quarry. Both Councils responded that there are no other known traffic generating development proposals in the vicinity of the proposed Meppem Quarry. The heavy vehicle traffic associated with any existing developments is considered to have been included within the existing traffic data.

5 Traffic Management

5.1 GPS Monitoring System

Regional Quarries Australia recognises the need for safe, responsible and efficient transport of quarry materials in the interest of public benefit and safety. To ensure the quarry is managed in accordance with best practices all staff and drivers must adhere to the Traffic Management Plan prepared by Groundwork Plus (January 2019) and Drivers Code of Conduct, provided as Appendix 2.

One of the primary management tools to be implemented at the Meppem Quarry is the installation of GPS monitoring devices on haulage trucks engaged by the quarry operator. A GPS monitoring unit is to be installed on each truck. A GPS 'fob' or 'key' is assigned to an individual driver as per the Driver Induction Procedure. The driver logs on to the GPS monitoring unit on the truck prior to commencing each shift. The GPS monitoring unit tracks the vehicle location, speed, exceedance of speed limits and harsh vehicle movement and braking as well as mapping the location of any potential incident or infringement to assist in future investigations. In the event of an incident or infringement (e.g. exceedance of speed limit) alerts are sent immediately by email and 'phone app' to the Quarry Manager, Operations Manager, Transport Manager and General Manager. All alerts provide detailed information including, date, time, nature of the infringement, driver name, truck registration and type and the location of the event.

The key safety benefits as a result of the GPS monitoring system include the ability to:

- Track the location of individual trucks;
- Monitor speed;
- Manage fatigue of the driver;
- Link the driver to the truck on any given day;

Truck queuing will be avoided by appropriate separation distances between trucks leaving the quarry site. There are no intersections between Bellata and the quarry site which would result in trucks moving to the site having the queue. The intention is to provide a minimum of 5-minutes between trucks. To achieve this would involve rapid truck loading which may not be possible. Assessment of existing traffic frequencies indicate that a separation distance of much greater than 5-minutes between local traffic between Manamoi Road and the Newell Highway and therefore a 5-minute gap would avoid queuing along this road, including local traffic entering from side roads.

The only issue of potential queuing would occur at the Gurley Creek Road-Newell Highway intersection. This intersection is impacted by general Newell Highway traffic and the rail crossing. Queuing may occur on occasions when one or more trucks encounter a long line of traffic on the Highway or a train.

The 5-minute minimum distance between quarry related trucks entering on to the Newell Highway is expected to avoid queuing at this intersection for the majority of the day. The potential exists for road works with traffic lights on the Newell Highway may generate longer lines of traffic that may take more than 5-minutes to pass through Bellata. In such an event, two trucks may need to wait for longer than 5-minutes before sufficient distance is available to enter onto the Newell Highway. Sufficient space is available for queuing of trucks on the eastern side of the rail crossing.

5.2 Public Transport

5.2.1 School Bus Routes and Bus Stop Locations

There is no school in Gurley. The closest schools are in Moree and Bellata. At present, the school bus collects and drops off school children at Gurley Station on Boo Boo Road and then turns around. The bus would generally operate between 7am and 8am in the morning and between 3.45pm and 4.30 pm of an afternoon. It is noted that there are fewer children utilising public school buses in the local area.

The truck drivers will need to identify the presence of the school bus and undertake appropriate precautions when it is present. The bus and trucks will travel at similar speeds. As there appears to be only one bus stop along the haul route, the risk of conflict between the bus and haulage trucks is considered manageable.

5.3 Pedestrian Network

The proposed haul route will not cross any areas that are used by pedestrians or have pedestrian crossings. The haul route is based in a rural area where no pedestrian traffic is expected.

The only potential pedestrian area would be considered within Gurley. A rest area has been established on the eastern side of the highway within Gurley. This extends from Gurley Creek to the north. It does not extend across Gurley Creek Road and therefore no conflict is predicted.

6 Impact on Road Network

6.1 Impact on Traffic Volumes

The data available to assess traffic impact on traffic volumes is limited to the data available for the Newell Highway. This impact has been discussed in section 4.8 of this report.

6.2 Impacts on Road Condition

The proposed haulage route includes sealed and unsealed roads considered to range between poor to good condition with minor pavement damage. Existing road conditions would limit traffic along approximately half of the proposed haul route to dry weather only. As identified in previous sections of this report, the current road conditions along MPSC managed roads are not suitable for the heavy traffic to be generated from this quarry operation.

The proposed haulage route includes roads controlled and maintained by the MPSC and are therefore subject to the MPSC "Section 94 Development Contribution Plan – Traffic Generating Development" (April 2016). Contributions made under this policy are designed to cover the costs of maintenance, repair and reconstruction of roads as a result of damage caused by heavy vehicles generated by the development.

An agreement has been reached with MPSC for the developer to pay upfront costs for gravelling and widening of the MPSC controlled roads. Once this capital expenditure occurs and the roads are upgraded to the required standard, the developer will pay a road maintenance contribution under the Council contribution plan. Any money paid to Council will be placed in trust for use on the haul road only. It has been agreed that the contribution will be based on a per tonne rate. Council will set this figure based on agreed road maintenance costs and the money will be used by Council to maintain the haul road once the initial capital works are completed.

Use of the Newell Highway as a haul route to various projects, including Inland Rail gravel stockpiles, is subject to review by Transport NSW. Maintenance costs for the highway are generally covered by vehicle registration costs and from other State and Federal grants. The identified increase in traffic is considered to have a minor impact on road maintenance requirements. The pavement on the highway is generally designed for a life-span of greater than 5-years. The peak production of this project will be completed within 3-years and after that, any major project to be supplied from this quarry would generally consist of upgrade works to the Newell Highway. Such works would be undertaken by Transport NSW.

The exception to this is if capital works are required prior to operation of the development. In this case, the intersection of Gurley Creek Road and the Newell Highway has been identified to have some limiting factors for high levels of truck traffic turning off the highway. The road

condition at this section of the highway is relatively poor as the bitumen seal on the highway is reasonable with some deformation and wear along the shoulders. This is possibly the result of softer edge areas after rainfall events as the area has poor drainage. In the circumstances of a truck turning left or right off the highway onto Gurley Creek Road, the pavement in the turning path is considered suitable to support the vehicle. If the left turning vehicles moves to the road shoulder and enters Gurley Creek Road, it will potentially travel on an unsealed section of the highway. If a vehicle following a right turning vehicle continues around on the inside of the turning vehicle, it will travel off the edge of the highway on gravel. This occurs as the road shoulder is impacted by wheel marks.

Subject to further investigation of this Newell Highway intersection, the developer will need to provide an appropriate intersection solution that can support the turning truck traffic and meet appropriate safety and geometrical standards as set by AustRoads.

6.3 Impact on Traffic Safety

The proposed site access and local road intersections have appropriate sight distances suitable for all heavy vehicle traffic.

The purpose of the development is to provide materials for the proposed Inland Rail, a project aimed at reducing heavy vehicle traffic and improving the safety and efficiency of existing road infrastructure.

The quarry operator has included a “Driver Code of Conduct” as part of the development. The Code has been reviewed and considered appropriate to manage risks associated with traffic safety once operations commence. The Code includes “Always drive in a manner that is in accordance with road conditions”. This condition specifically refers to weather conditions where visibility is reduced and road condition in the case of a section of road being less trafficable. Management will need to ensure that this conduct is adopted, including cessation of haulage when visibility is significantly impaired by events such as fog.

MPSC has addressed this issue in pre-development agreements through a process of improving road conditions.

6.4 Impact on Traffic Noise and Dust Production

The proposed development will result in significant increases in local traffic volumes on the MPSC road network. Therefore, the potential for noise and dust impacts throughout the local road network related to the development has been considered as part of Noise and Dust impacts presented in separate reports to this Traffic Impact Assessment.

Regional Quarries Australia will contact the residences adjoining the local roads along the MPSC managed haul routes prior to operation to discuss acceptable mitigation measures and

resolve concerns related to potential noise and dust impacts. Regional Quarries Australia has advised that they will also implement dust and noise mitigation measures in accordance with the Environmental Management Plan.

Dust management measures in all trafficable areas on site will include:

- Enforce a maximum speed of 40 km/h on internal roads.
- Keep trafficable areas as clean as possible.
- Maintain road surfaces in good condition.
- Use water sprays on trafficable areas (approx. rate 2 L/m^2/hr).

When transporting materials, the following dust management measures will be implemented:

- Ensure loads are appropriately contained and covered prior to leaving the site.
- Clear spillages from side rails, tailgates and draw bars of trucks (following loading and tipping).
- Securely fix tailgates of all material transport vehicles prior to loading to prevent material.

Dust is therefore not considered to be an issue on the proposed haulage route.

When transporting materials, the quarry operator has advised that the following noise management measures will be implemented:

- Heavy vehicle traffic being limited to the hours of 6am-6pm Monday to Friday and 6am-1pm on Saturdays in accordance with the conditions of consent.
- Enforce a maximum speed of 40 km/h on internal roads.
- Operate well-maintained plant, vehicles and equipment, and ensure all plant, vehicles and equipment are serviced in accordance with, or more frequently than, manufacturers' specifications.
- Avoid unnecessary revving of engines.
- Ensure that any extraneous noises are rectified.
- Avoid the use of compression braking on product delivery trucks in residential areas.
- The Quarry operator is able to monitor truck driver behaviour through the GPS monitoring system.

Provided the Operator manages dust and noise effectively and addresses the concerns of sensitive rural receptors, including ongoing discussion during operations, the potential for heavy vehicle traffic to adversely impact the amenity of rural areas within the vicinity of the freight routes to be utilised by the Meppem Quarry is considered manageable.

7 Cumulative Impacts with Neighbouring Developments

Potential cumulative impacts are those which are generated by the combined impacts on the local environment as a consequence of the project, together with other developments of a similar nature (both existing and proposed). For the purposes of this report, the assessment of cumulative impacts considers the impacts of existing and proposed extractive industry development in the local area. It is not appropriate, when considering the methodology for determining cumulative impacts to consider other land uses.

7.1 Other Quarry Proposals

There are several other quarry operations and proposals situated within the Gurley-Bellata region that may cause a cumulative impact in relation to traffic along the Berrigal Creek Road. At present, none of these local quarries that are generally on-farm type quarries utilised by local landowners and Council, are subject to application or have obtained approvals for more than 30,000 tonnes of production per year. None are located along the proposed local road haul route.

Other larger quarries are aiming to supply quarry material to Inland Rail. These other large quarries will utilise the Newell Highway as a haul route. The total volume of quarry material is yet to be determined but this it will be a fixed amount. On this basis, the number of quarry trucks generated for this rail project will be the same, regardless of quarry location. The rate of delivery if several quarries are utilised may allow be increased. This would be a logistical matter for the Inland Rail contractors. Total tonnage for this project will be limited.

7.2 Construction Phase

The construction phase for Meppem Quarry will involve the delivery of site offices, plant and machinery to the development site. It is estimated that the delivery would involve approximately 10 low-loaders. It is considered unlikely that the delivery periods would occur at the same. The presence of oversized vehicles on the local roads would be subject to permit approvals by MPSC, but the presence of such in a rural area would not be considered out of place when large farm machinery is being moved about. If permits are required, appropriate applications would be submitted with the aim of obtaining the permits prior to use of the roads.

Once established onsite and quarry operations commence, the second stage of construction would involve the upgrades of the local road network as identified by MPSC.

7.3 Operation Phase

The Meppem Quarry intends to deliver materials primarily to the Narrabri - Moree section of the Inland Railway and associated road upgrade projects in the region. This is expected to commence in early 2020 and continue for approximately 3-years for Inland Rail and up to 10 years for irregular works on the Newell Highway with a range of campaign type delivery

schedules. No detail is available at present to determine quantities, locations for deliveries or scheduled delivery rates.

Trucks from the Meppem Quarry are not required to travel south along Manamoi Road intersection onto Boo Boo Road and as such will not impact of Narrabri Shire roads.

8 Calculation of Expected Development Contribution Rate

The method of calculating contribution rates is based on the reconstruction costs, average road maintenance costs and the length of road likely to be used by vehicles associated with the development. The impact is calculated on the Equivalent Standard Axle (ESA) loading on the road per vehicle as a proportion of the total loadings on the road. This is then converted to a total cost per tonne (1,000 kilograms) per kilometre. The designated haulage route will form the length of road upon which the contribution will be levied. Where the designated haulage route involves the use of more than one road then each road will be treated separately in terms of the road maintenance contribution. Therefore, the total contribution payable for the development will be the sum of all the calculated contribution rates for all the individual roads on the designated haulage route/s.

For the Meppem quarry, additional calculations would need to be considered. As part of the initial agreement with Council, the operator has agreed to approximately 27 km of road upgrades as an upfront payment to enable quarry operations to commence.

For gravel road sections, it is assumed that the quarry operator will be able to provide gravel for maintenance works as an in-kind donation being part of self-help provisions available within Council policy.

9 Consultation with Government Agencies and Community

Regional Quarries Australia have met with MPSC on more than one occasion to discuss the option of utilising MPSC roads as a haul road for quarry products from the Meppem quarry site. Meetings remain ongoing, however an agreement in principle was reached with MPSC in August 2020.

The adjoining Narrabri Shire Council were contacted at a similar time and advised that use of Narrabri Shire roads was not an option.

10 Conclusion and Recommendations

SMK Consultants were commissioned by Regional Quarries Australia to prepare a Traffic Impact Assessment in support of a development application for a 490,000 tonne Quarry on Lot 10 in Deposited Plan 751753 and Lot 110 in Deposited Plan 257328. This Traffic Impact Assessment has considered the potential impacts of the proposed Meppem Quarry upon traffic on site and within the wider region.

The proposed site access and internal roads within the Quarry footprint should be constructed to be suitable for road trains to support the construction and operational traffic associated with the proposed development. Roads to be constructed in association with the proposed development should be constructed in accordance with relevant standards to ensure that the site will be operated and maintained at a high standard.

An agreement had been reached with MPSC prior to finalisation of this Traffic Impact Assessment. The agreement included the standard of upgrades to be undertaken if the quarry were to haul material over the designated haul route through MPSC controlled roads. This agreement has been reviewed as part of this assessment. The agreement is considered necessary on the basis that if this work were not undertaken, the roads available along the haul route would be characterised as not suitable for use by the quarry.

It has been concluded that the proposed development would result in a large increase in traffic generation on the local roads between the quarry site and Gurley. Based on the proposed traffic management plan to be adopted by the quarry operator, this traffic impact upon road safety, traffic density, road utility or general amenity within the region is considered manageable. A factor in this conclusions is that road condition of designated routes to be utilised by the Operator will be maintained through road user development contributions made under Section 94 Development Contributions Plan. The contribution rate is yet to be finalised, but this is based on existing Council road maintenance and reconstruction costs. The method of adopting this road contribution may vary from a straight contribution rate per tonne but may also include self-help type upgrades of the existing road and contribution of gravel during the quarry's lifespan.

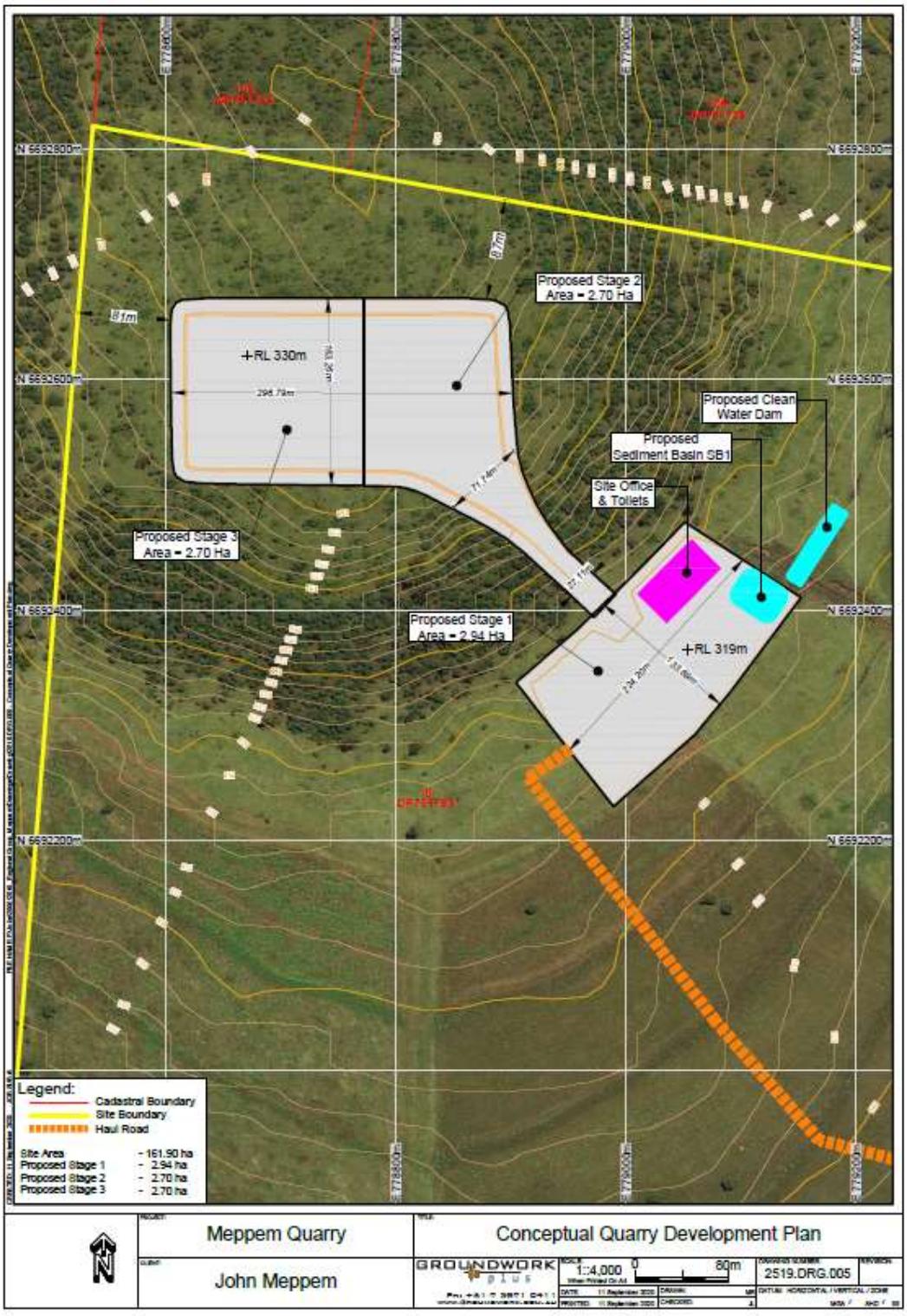
This traffic impact assessment has identified one main issue with the proposed haul route that is outside of the agreement reached with MPSC. This matter is the intersection of Gurley Creek Road onto the Newell Highway. This is an existing traffic safety issue that is exacerbated by the presence of a rail line at 50m off the highway. The use of longer trains and more frequent use of the rail as intended after the Inland Rail project is completed, will further exacerbate this issue, with or without the proposed quarry.

The potential frequency of trucks turning off the highway is considered an issue when the distance between the Newell Highway and the railway line is considered. This is a complex

matter that needs to be subject of a detailed design process including consultation with ARTC, Inland Rail, Transport NSW and potentially MPSC. It is recommended that a detailed design study will be required once full consultation is undertaken. It is noted that this intersection has already been subject to an upgrade proposal as part of the Inland Rail project and therefore such an upgrade may already be designed by Inland Rail. The issue identified is the queuing of trucks on the Newell Highway while waiting for a truck to move through the stop sign or waiting for a train to pass. This historical issue that would have been clearly identified by Transport NSW as this same activity of trucks turning off the highway would have been occurring ever since the grain receival facility in Gurley has been operating. No additional road treatments have been undertaken to date for grain truck movements, however, this is identified as a safety risk for Newell Highway and quarry related traffic.

Overall, the impact of the proposed development upon the road network is considered to be manageable once the proposed roadwork identified by MPSC is completed.

Appendix 1 – Site Plans



Appendix 2 – Haulage Route Photos

Figure 12: Boo Boo Road near Manamoi Road showing deformation due to lack of gravel

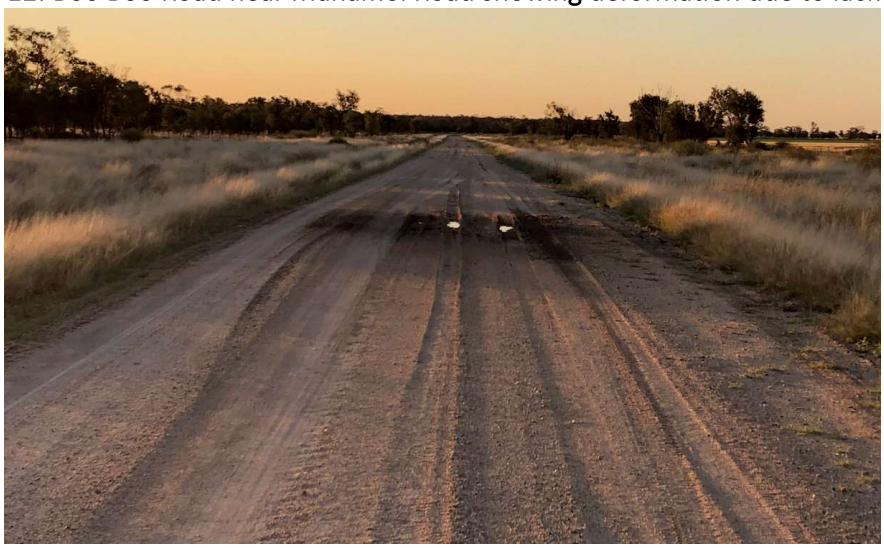


Figure 13: Boo Boo Road at Gurley Station entrance – new gravel section to south

Figure 14: Boo Boo Road north of Gurley Station entrance -deformation due to lack of gravel and widened road as vehicles avoid centre of road

Figure 15: Boo Boo Road bitumen section looking north

Figure 16: Intersection of Boo Boo Road and Gurley Creek Road with widened should for left turning vehicles from Boo Boo Road

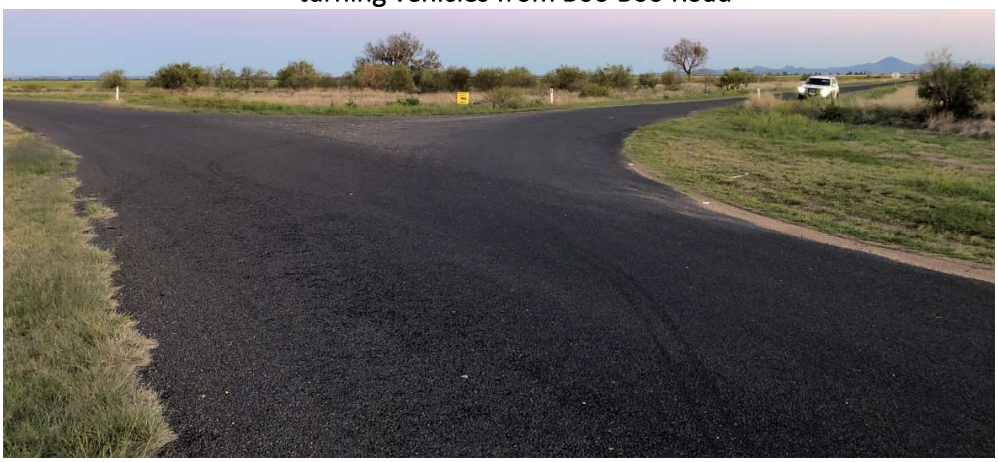


Figure 17: Minor road deformation over culvert at Boo Boo-Gurley Creek road intersection

GROUNDWORK plus

Meppem Quarry

Traffic Management Plan

Prepared for:

Regional Quarries Australia Pty Ltd

Date:
October 2020

File Ref:
2519 DA1 003

Document Control

Project/ Report Details

Document Title:	Meppem Quarry Traffic Management Plan
Principal Author:	Jim Lawler
Client:	Regional Quarries Australia Pty Ltd
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Document Status

Issue	*Description*	*Date*	*Author*	*Reviewer*
1	Traffic Management Plan	October 2020	Jim Lawler	Jim Lawler

Distribution Record

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Table of Contents

1.0 INTRODUCTION

The Meppem Quarry is located at Manamoi Road, Bellata being described as Lot 10 DP751753 and Lot 110 DP257328.

This Traffic Management Plan (TMP) outlines the management measures proposed to be utilised for the quarry. The TMP supports and forms part of the development application for the quarry. The TMP will be updated in response to future conditions of development consent.

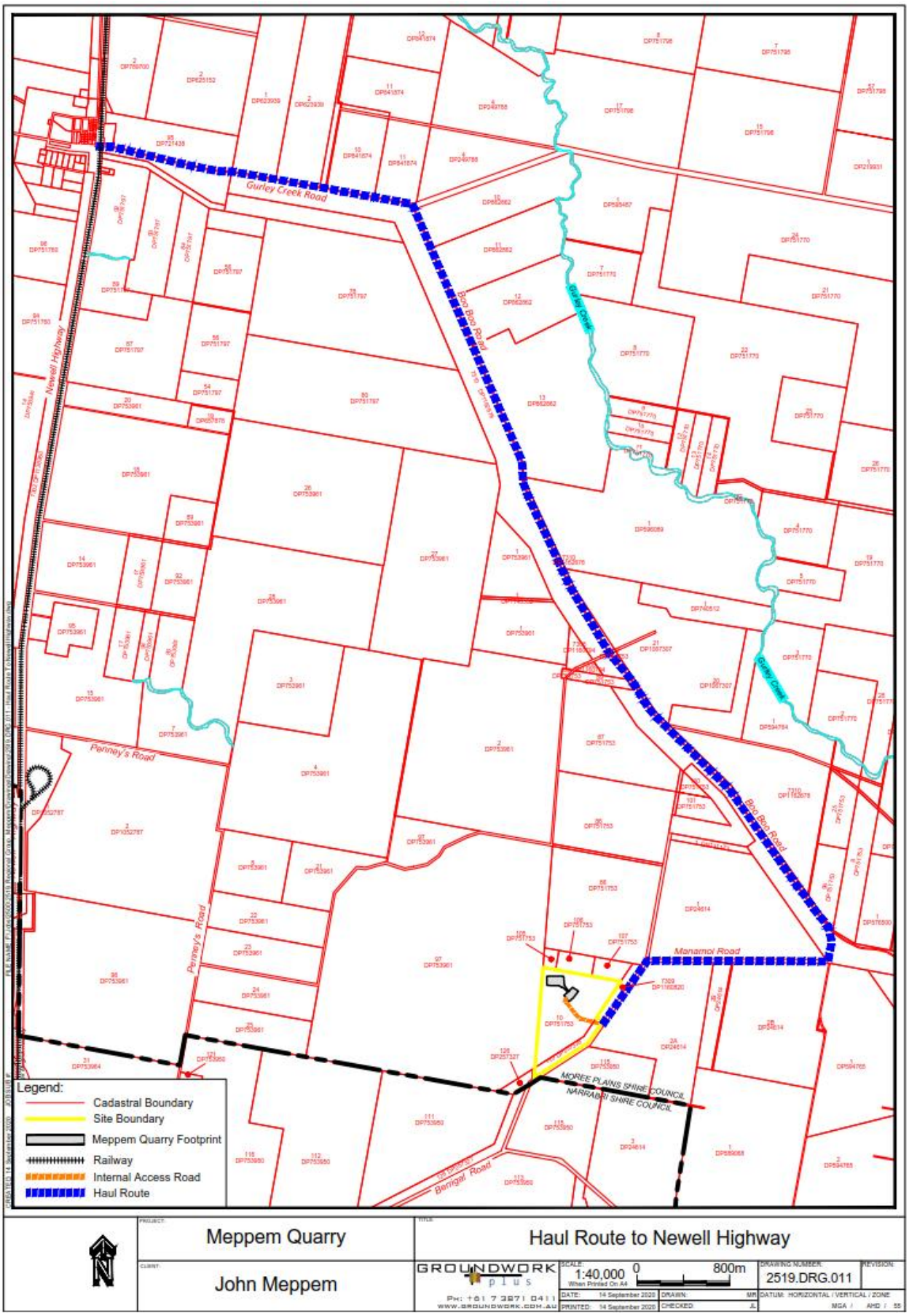
2.0 SITE DESCRIPTION

The real property description of the land is Lot 10 on DP751753 and lot 110 DP257328. The site is located within the Local Government Area of Moree Plains Shire Council and is approximately 160 hectares in size. The land is currently zoned `RU1 'Primary Production' under the Moree Plains Local Environmental Plan 2011.

The site is located on Manamoi Road, Bellata, approximately 9 kilometres east of the Inland Rail Project. The site is approximately 50 kilometres North of Narrabri, 44 kilometres south of Moree and 9 kilometres north-east of Bellata, in north-east New South Wales. The site is predominantly used for agricultural purposes.

The adjoining properties are all zoned RU1 'Primary Production' and have historically been used for dryland farming. Bellata is a small town with a population of approximately 200 people, located 9.5 kilometres south-west of the subject site. Bellata is a rich agricultural region known for its natural minerals such as petrified and opalised wood and agate, and its farming productivity.

An internal access road will connect the proposed quarry to Manamoi Road. Manamoi Road is an unsealed road maintained by the Moree Plains Shire Council and connects to Boo Boo Road and Gurley Creek Road to reach the Newell Highway and the construction alignment of the Inland Rail Project. The haulage route is shown below.


Gurley Creek Road
Boo Boo Road
Newell Highway
Penney's Road
Penney's Road
Boo Boo Road
Manamoi Road
Gurley Creek
Gurley Creek
Gurley Creek
Bengal Road
MOREE PLAINS SHIRE COUNCIL
NARRABRI SHIRE COUNCIL
Legend:
Cadastral Boundary
Site Boundary
Meppem Quarry Footprint
Railway
Internal Access Road
Haul Route
Meppem Quarry
John Meppem
Haul Route to Newell Highway
GROUNDWORK plus
1:40,000
When Printed On A4
0
800m
2519.DRG.011

3.0 TRAFFIC MANAGEMENT MEASURES

The following traffic management measures will be implemented for on-site haulage:

1. An incident/complaints register will be maintained.
2. All drivers will be required to comply with the legislated road rules, including driver fatigue requirements and separation distances. Accurate records will be kept of the amount of quarry materials transported by each vehicle. The weighbridge management software will be configured in a manner which will not issue a 'docket' to a driver if the vehicle weight exceeds the limits prescribed by the Heavy Vehicle (Mass, Dimension and Loading) National Regulation 2013. Haulage of quarry materials from the site will be limited to the approved hours of operation under the development consent. The weighbridge management software will be configured in a manner which will not issue a 'docket' to a driver outside of the approved hours of operation.
3. All drivers will be required to sign on to the Electronic Daily Prestart Management System at the weighbridge each morning or on first entry into the site.
4. All laden trucks operating on, entering and leaving the site are to have their loads covered and be cleaned of materials that may fall on the road. During peak time trucks are to be distributed with a 6 min gaps to ensure queuing is minimised. When hauling on public roads a minimum separation distance of 100m from other trucks will apply.
5. Implement a Driver Induction Procedure, which is summarised as follows:

   Prior to commencing work a Driver will be subject to the Driver Induction. The Quarry Manager will be responsible for the site induction and will inform the Driver of the following details:
   - *The approved transport route for the quarry (if applicable)*
   - *The approved hours of operation of the quarry*
   - *The Community Engagement, Complaints and Incidents Procedure*
   - *The procedures for interaction with school buses and the GPS monitoring system*
   - *The terms of the Driver Code of Conduct*
   - *The Driver Code of Conduct will be enforced through random inspections prior to issuing a 'docket' from the weighbridge or through review in response to a complaint; and*
   - *Occupational, Health and Safety briefing information for the site*

6. Implement and enforce compliance with a Driver Code of Conduct. Compliance with the Driver Code of Conduct will be administered by the Quarry Manager.
7. Installation of GPS monitoring devices on haulage trucks managed by the quarry. Each GPS monitoring unit is installed on the truck. A GPS 'fob' or 'key' is assigned to an individual driver as per the Driver Induction Procedure. The driver logs on to the GPS monitoring unit on the truck prior to commencing each shift. The GPS monitoring unit tracks the vehicle location, speed, exceedance of speed limits and harsh vehicle movement and braking as well as mapping the location of any potential incident or infringement to assist in future investigations. In the event of an incident or infringement (e.g. exceedance of speed limit) alerts are sent immediately by email and 'phone app' to the Quarry Manager and other nominated persons. All alerts provide detailed information including, date, time, nature of the infringement, driver name, truck registration and type and the location of the event.

4.0 TRUCK NOISE MANAGEMENT MEASURES

The following truck noise management measures will be implemented and enforced through the Driver Code of Conduct:

1. Require drivers to comply with the approved hours of operation stated in the development consent.
2. Require drivers to appropriately cover/secure loads.
3. Require drivers to comply with posted speed limits on all roads.
4. Require drivers to only use horn when appropriate do to so.
5. Require drivers to limit engine brake noise in residential areas.
6. Require drivers to reduce truck speed in residential areas, at road works and when passing stationary vehicles.
7. Preference to rely upon modern trucks with Euro 5 and Euro 6 compliant engines
8. Preference to rely upon modern trucks with airbag suspension

5.0 COMMUNITY ENGAGEMENT AND COMPLIANTS PROCEDURE

The community engagement, complaints and incident procedure which applies to all aspects of the quarry will be outlined in the Meppem Quarry Environmental Management Plan (EMP).

6.0 CORRECTIVE ACTION

The Quarry Manager shall take appropriate action to rectify problems or any identified deficiencies in accordance with the requirements of the Meppem Quarry EMP.

7.0 CONTINGENCY PLAN

In the event of unpredicted impacts, the Quarry Manager shall investigate the potential cause in accordance with the Meppem Quarry EMP. The Quarry Manager shall undertake appropriate action to rectify any identified deficiencies in the management measures immediately. The Quarry Manager may request the services of a specialist consultant to investigate and to give advice to assist in resolving the unpredicted impacts.

8.0 AUDITING AND REVIEW

The Quarry Manager shall review this management plan and its management measures to confirm their effectiveness and investigate ways to improve environment performance over time plan at least once every year at the time of completing the Annual Review as required by the development consent.

9.0 SUMMARY

The need for safe, responsible and efficient transport of quarry materials is in the interest of public benefit and safety. The implementation of the measures outlined in this TMP will manage impacts to the community from haulage of quarry materials from the Meppem Quarry.

Appendix C

PUBLIC SUBMISSIONS ON THE EIS

16 November 2020

The General Manager
Moree Plains Shire Council
PO Box 420
Moree NSW 2400

Dear Mr Rodgers,

RE: MOREE PLAINS SHIRE COUNCIL INTEGRATED AND DESIGNATED DEVELOPMENT APPLICATION DA 2019/37
LOT 10 DP 751753, LOT 110 DP 257328

Dear Mr Rodgers,

We refer to the above and hereby object to the abovementioned DA that was lodged with the Moree Plains Shire Council ('MPSC') on or about 27 October 2020.

From the outset, we confirm that our objection to this DA is based on the following grounds:

1. Land use conflict
2. Increased risk of bush fire hazard
3. Traffic impacts
4. The impact on water resources
5. Environmental impacts from quarry operations and associated blasting
6. Unexplained inconsistencies contained within the Environmental Impact Statement
7. Inadequate appeal rights

BACKGROUND

On 27 October 2020 MPSC received an amended Environmental Impact Statement (EIS) from Mr JS Meppem for an extractive industry, namely a 49,000 tonne/year hard rock quarry on Lots 10 DP 751753 and Lot 110 on DP 257328 (see figure 1). The intention of the applicant is to supply the ARTC's Inland Rail Project (SSI7474) (IRP). The amended EIS now includes a proposed haulage route along Manamoi Road, Boo Boo Road and Gurley Creek Road through to Gurley.

It is our understanding that as the DA is an integrated development approval is required from the EPA under s.48 of the *POEO ACT.*

We are the owners of the adjoining land at 207 Wilgaroi Road, Bellata NSW 2397, more formally described as Lot 97/ DP753961. We wish to lodge a submission, drawing your attention to the significant impact that the above-mentioned development application will have on adjoining landowners as well as on the community. As such, this submission is considered properly made to Council, affording us the right to a merit appeal.

Figure 1: Location of subject site (Source: NSW Planning Portal, 2019)

Typically, a project of this size would be considered a 'State Significant Development (**SSD**)'. Notwithstanding, the applicant has confirmed that project is not classified as a State Significant Development (SSD), pursuant to the *State Environmental Planning Policy (State and Regional Development) 2011*, as the extraction volume is 490,000 tonnes per annum, the total available resources is less than 5 million tonnes and extraction will not occur from an environmentally sensitive area of State significance.

On this basis, we have undertaken a thorough review of the proposed development against the relevant benchmarks of the State Environment Planning Policies (**SEPPs**), the Moree Plains Local Environmental Plan 2011 (**LEP**) the Moree Plains Development Control Plan 2013 (**DCP**). We have identified a number of areas of non-compliances that require additional consideration by Council in their assessment of the proposed development, particularly given the significant impact on adjoining properties. We have also undertaken a review of the amended EIS and DA prepared by Groundwork Plus and have a number of concerns with the technical documents submitted.

It should be noted that the applicant initially submitted an EIS to the Moree Plains Shire Council in 2019 (Council reference: DA2019/37). Many aspects of the 2019 submission are again repeated and represented in this revised application. As adjoining landholders, our original objections to the 2019 submission were never resolved, and as a result are still current and are reiterated below. The following objections are now based on our assessment of the recently submitted amended EIS.

In our respectful submission the application should be rejected.

Our grounds of objection are as follows:

1. **Conflict of land use**

The subject site is located within the RU1 - Primary Production zone. The objectives of the RU1 – Primary Production zone are outlined below:

- *To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.*

- *To encourage diversity in primary industry enterprises and systems appropriate for the area.*
- *To minimise the fragmentation and alienation of resource lands.*
- *To minimise conflict between land uses within this zone and land uses within adjoining zones.*
- *To permit development for certain purposes if it can be demonstrated that suitable land or premises are not available elsewhere.*
- *To protect significant agricultural resources in recognition of their value to the longer term economic sustainability of Moree Plains.*
- *To maintain the rural character of the land*

The proposed development is in conflict with the objectives of the Primary Production zone. The site should be utilised for agricultural purposes which maintains and enhances the natural resource base. Should the use of the proposed quarry cease, the land cannot be adequately rehabilitated for future agricultural uses. Furthermore, the proposed quarry fragments the surrounding agricultural properties.

It is noted that many of the contributors who provided input into the EIS in question contacted a number of outside stakeholders including Local Land Councils and the Aboriginal Land Councils to determine if they would be interested in participating in the due diligence field survey. None of the surrounding land owners were afforded the same courtesy. In fact, the submitted EIS states that '*adjoining properties have not been consulted as the homestead is over 3.3km from the proposed quarry'*. This is objectionable, as the adjoining landowner have legitimate concerns about the proposed development built in close proximity to the common boundary. It is therefore considered that the consultation has not been appropriately carried out and all adjoining properties should have been consulted.

2. Bushfire hazard area

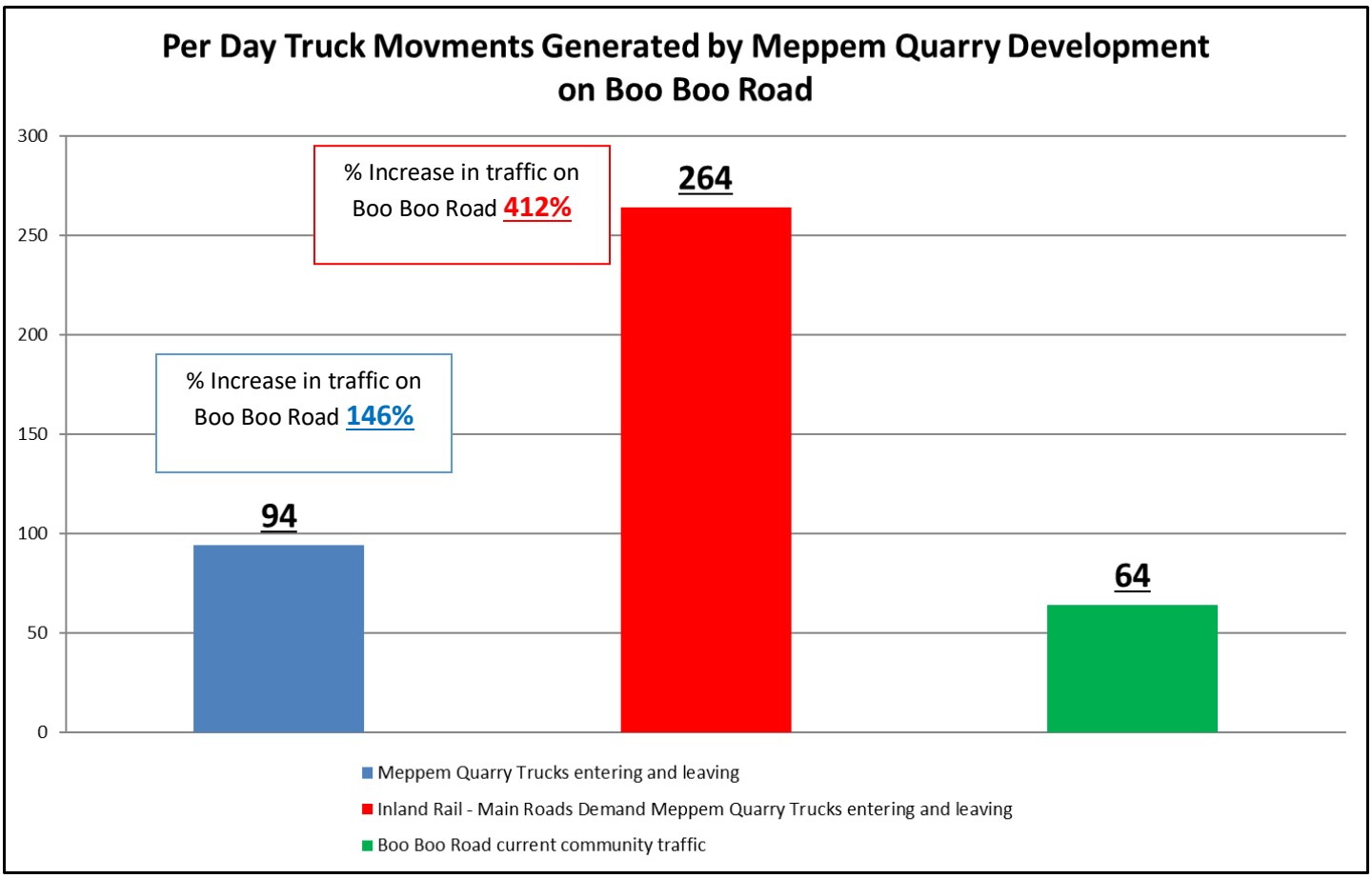
The subject site is located within the Bushfire hazard area (Vegetation Category 3). The proposed development will increase the number of people at risk of bushfire events, which is not consistent with the Moree Plains Shire Development Control Plan. The increase in machinery operation, traffic and industrial activity all lead to a significant increase in the possibility of bush fires. The applicant has not adequately demonstrated that the bushfire hazard has been minimised.

3. Traffic Impacts

As per the Traffic Assessment Report listed within the Meppem Quarry EIS, the demand on the road network is to be up to an additional 264 heavy vehicle movements per quarry working day, (**Figure 2**), this increase is not appropriate or suitable for a rural thoroughfare, noting that the quarry will operate 6 days a week.

It is noted that Regional Quarries Australia have met with MPSC on more than one occasion to discuss the option of utilising MPSC local shire roads as a key haul roads for the transport of quarry products from Meppem quarry. These discussions included an agreement that was reached with MPSC in August 2020.

Considering the enormous increases to traffic as listed below, the community expects clearly defined and measured commitments regarding any type of allowance for heavy truck traffic increases of this scale, we don't consider this has been made clear within the Environmental Impact Statement (EIS) / development application (DA) or Traffic Assessment Report.



Note: The table above considers accurately 2 way movements from trucks entering and exiting Meppem Quarry

Figure 2: Traffic movement's entry and exit from Quarry (Data Source: SMK Traffic Impact Assessment, 2020)

The traffic increases proposed are well above the capacity of the current local roads the development requests access to. The EIS sets out a basic outline of proposed rudimentary and what is considered insufficient changes to the roads being used as haul roads. The SKM traffic assessment report has highlighted that the traffic increase on the listed road will be significant. The EIS upgrade plan is outlined below:

Manamoi Road to Boo Boo Road:

- This road will remain a 1 lane Road;
- With pull-over areas established. The addition of gravel as road base (Currently Black Soil).

Boo Boo Road (11.5 km of Boo Boo Road between Gurley Creek road)

- 2 lane Gravel (not sealed);
- Minimum width of formation to be 7m;
- Install a concrete causeway to replace the bitumen sealed floodway at approximately 3.8 km south of Gurley Creek Road.

Boo Boo Road (Northern 4.1 km of Boo Boo Road is bitumen sealed)

- 2 lane sealed;
- Widened to 7m and this will involve an additional 0.5m of bitumen on either side of the road.

The Newell Highway intersection with Gurley Creek road

- The developer is still to provide an appropriate intersection solution that can support the turning truck traffic and meet appropriate safety and geometrical standards as set by AustRoads;
- The SKM report has indicated that due to train traffic, delays at the Newell intersection will be considerable, impacting said haul road and local use.

It is important to note that Boo Boo and Gurley Creek roads are an essential link for locals to connect to the Newell highway, for Schools and access to essential supplies. At present, the Bellata school bus collects and drops off children along the Boo Boo Road.

It is noted that the EIS states that an undisclosed agreement has been reached between MPSC and the developer. However it is still very much unknown how or when the planned road upgrades will take place or what the maintenance contribution under the Council contribution plan will include. Any undisclosed agreement between a Local Government Authority and an applicant gives rise to serious concerns about transparency and procedural fairness. If there has been an undisclosed agreement reached between MPSC and the applicant then MPSC is obligated to provide complete disclosure of any such agreement.

Within the 2019 Meppem quarry DA, Berrigal Road was proposed as the major portion of the haul road to the rail corridor. Discussions between the developer and Narrabri Shire regarding the required upgrade works which would be required on Berrigal Road took place. Narrabri Shire stipulated and outlined the upgrades and investment required, not only to carry out the initial upgrades but to maintain the upgrades prior to the quarry being operational. An agreement was not reached here as the developer would not commit to the fundamental required road upgrades to support the increase in traffic the development would create.

We see no evidence that MPSC is stipulating the same requirements to bring the current proposed haul road up to the appropriate AustRoads standards or equivalent level required to safely carry the amount of heavy traffic the proposed development will generate. The community expectation is that upgrades well beyond what is currently suggested are resubmitted to minimise delays while providing a safe thoroughfare to local community members and MPSC rate payers who use this route every day.

Is it pertinent to note that the proposed Contribution Commitment listed in the 2019 Meppem Quarry development application was 53c per tonne. This was completely out of step with other quarries in the area, such as Wave Hill Road, Narrabri who paid contribution of $1.12 per tonne, and committed to substantial road upgrades, with a much lower traffic movement rate.

It is requested that MPSC be transparent with the community and clearly outline what was agreed, in terms of contribution development and road upgrade commitments from the developer prior to quarry operations commencing, as costs to implement these upgrades should not be worn by the MPSC rate payer. Without this critical detail it would seem overly presumptive for MPSC to agree to the use of said roads by the developer in question without feedback from impacted locals. Therefore, the increases in traffic and the suggested upgrade proposal to the listed roads are not supported whatsoever.

4. Water use & Water Balance Assessment Concerns

A comparison of the Water balance assessment in the 2019 and 2020 Environmental Impact Statements are listed below:

MEPPEM QUARRY 2289.DA1.310.001 - Submitted April 2019				
Inputs	Overland Flow into Sediment Basin	30.7	30,700,000.00	Values are in ML/year
	Overland Flow into Clean Water Dam	28.2	28,200,000.00	
Total Water inputs		58.9	58,900,000.00	
Output's	Evaporation from Dams	4.1	4,100,000.00	
	Total Water required for processing *(Includes dust suppression operations)*	**91.5**	**91,500,000.00**	
Total Water outputs		95.6	95,600,000.00	
Estimated Water Shortfall		36.7	36,700,000.00	
MEPPEM QUARRY 2519 DA1 001 - Submitted October 2020				
Inputs	Overland Flow into Sediment Basin	30.7	30,700,000.00	Values are in ML/year
	Overland Flow into Clean Water Dam	28.2	28,200,000.00	
Total Water inputs		58.9	58,900,000.00	
Output's	Evaporation from Dams	4.1	4,100,000.00	
	Total Water required for processing *(Includes dust suppression operations)*	**56.4**	**56,400,000.00**	
Total Water outputs		60.5	60,500,000.00	
Estimated Water Shortfall		1.6	1,600,000.00	

Figure 3: Water Balance of both the 2019 and 2020 EIS submissions

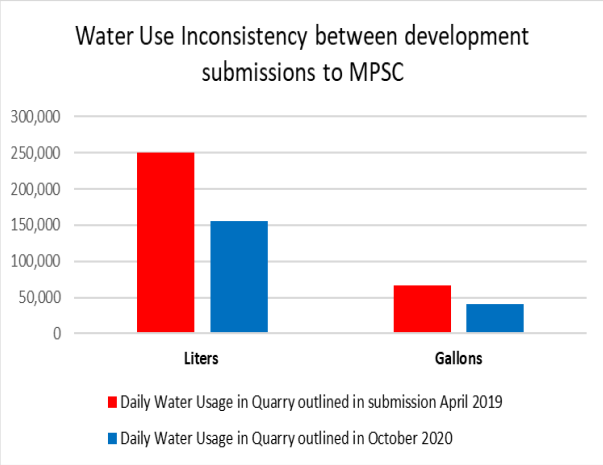
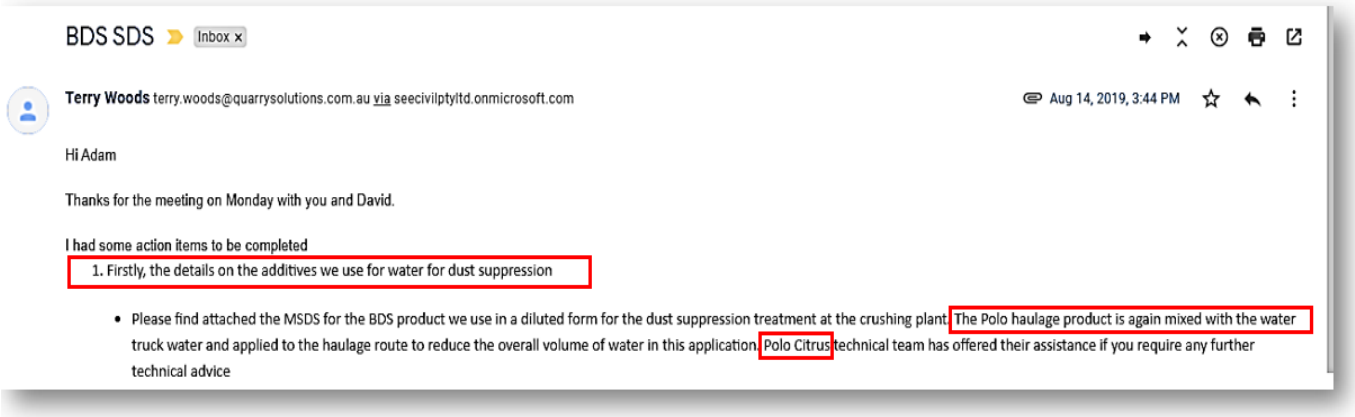


Figure 4: Water usage comparison of both the 2019 and 2020 submissions

Catchment Hydrology and rainfall data used for both the 2019 and 2020 EIS **has not changed**. The amount of material processed over the described amount of workdays **remains unchanged from the 2019 submission**. However please note the substantial differences in the Balance Assessments and water requirements.

Industry statistics states that much smaller quarry operations use at least 100,000 litres of water per day. Therefore, it would seem that a quarry of the size proposed would use at least the original amount of water which was highlighted in the 2019 submission. Especially as the use of water trucks will be required to spray down trafficable areas including **60%** of the proposed haul road which will remain unsealed roads.

It is claimed that the use of Polo Citrus would vastly reduce water usage, as listed above. It is important to highlight that Quarry Solutions were intending to use Polo Citrus also, this was clarified via a direct email to David's Wall Son Adam (see **Figure 5**), regarding their 2019 EIS submission again implemented to minimise water use. The use of Polo Citrus in this development is not new and again based on industry feedback will not realistically ensure the reductions in water use claimed in the 2020 EIS.


BDS SDS Inbox ×

Terry Woods terry.woods@quarrysolutions.com.au via seecivilptyltd.onmicrosoft.com Aug 14, 2019, 3:44 PM

Hi Adam

Thanks for the meeting on Monday with you and David.

I had some action items to be completed

1. Firstly, the details on the additives we use for water for dust suppression

- Please find attached the MSDS for the BDS product we use in a diluted form for the dust suppression treatment at the crushing plant. The Polo haulage product is again mixed with the water truck water and applied to the haulage route to reduce the overall volume of water in this application. Polo Citrus technical team has offered their assistance if you require any further technical advice

Figure 5: Email from Terry Woods regarding the use of Polo Citrus in 2019

The proposal has made it clear at several points throughout the body of the Environmental Impact Statement (EIS) / development application (DA) that the development will not intercept groundwater, nor will the proposal use groundwater for dust suppression water.

The proposal also outlines that In the event that the proposal is not self-sufficient for water in a dryer than average year, the proposal will source water for dust suppression from Moree Plains Shire Council or other appropriately licenced water suppliers **rather than groundwater bores as originally proposed.**

However, this commitment has already been contradicted as at least 2 landholders along Boo Boo Road have been contacted as recently as the 26th October by the developer enquiring about accessing their respective groundwater access points.

Again, it is important for all affected parties to be familiar with the water demand for the proposed Quarry is significantly greater than the amount of water used by any other agricultural operation and the entire township of Bellata (**Figure 3**). Given the nature of the current environment, pressures and based on the amount of water required for dry year quarry operations, this is going to place significant strain on existing ground water sources, including the adjoining land holder, which is critical to the sustainability of farming and grazing operations, which is the only agricultural revenue income for the adjoining property.

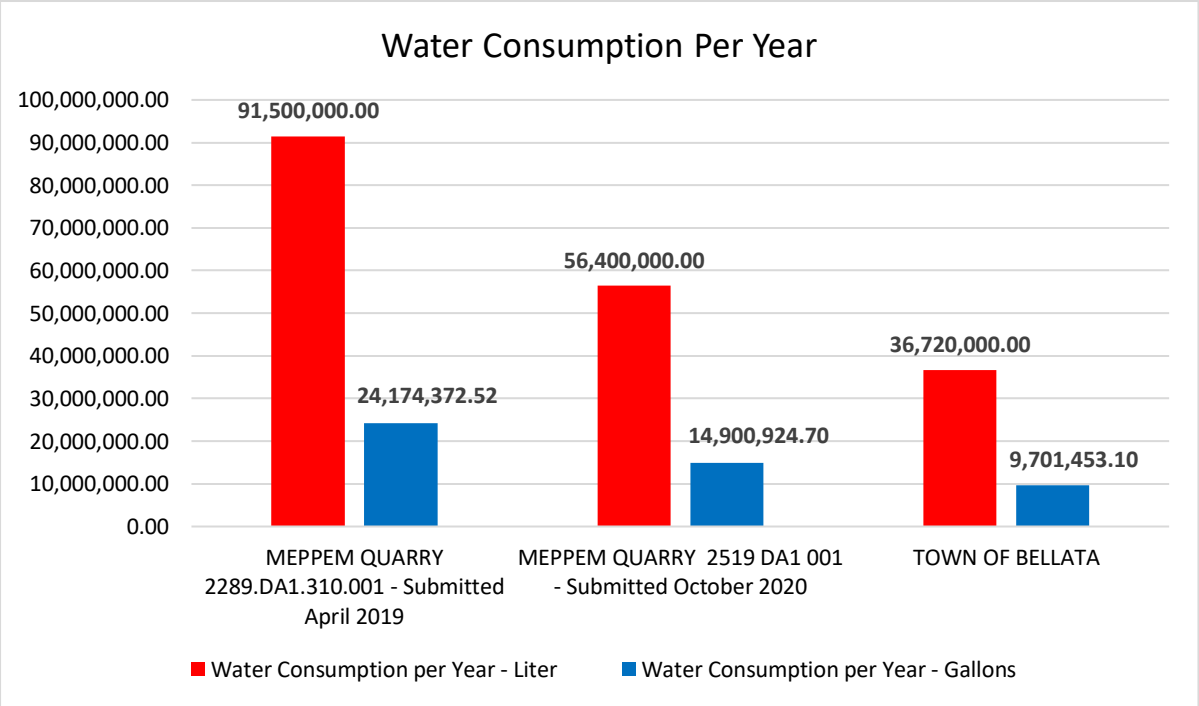


Figure 6: Water usage comparison of Quarry vs Township of Bellata ***Working Days*** (Source: census data_abs – rwcc/average water use)

Considering the very high risk for real water shortfalls, we are extremely concerned that due to distance and cost carting water from MPSC or equivalent suppliers is not sustainable leaving shortfalls to be unofficially filled by local ground water access points. Again this places at risk ground water yields for Stock and Domestic uses. It has also again been highlighted that aquifers exist in close proximity to the site as these may be more susceptible to impacts from site operations.

Any risk to water is not acceptable nor are we convinced that Regional Group can claim the reductions in water usage using data that remains unchanged from the 2019 EIS/DA. From a review of the submitted amended EIS, the impacts of the proposed development on sourcing the required water and ensuring no impacts on quality or yields on surface water and ground water sources has not been adequately addressed.

5. Blasting & Quarry Operations Impacts

The EIS specifies recommended minimum buffer distances for a number of sensitive receptors. Notwithstanding, five (5) of the receptors have not been nominated and include a notation for 'site specific determination'. The adjoining property at 207 Wilgaroi Road has a designated cattle grazing and breeding paddock adjoining the proposed quarry (refer to **Figure 7**). The submitted EIS has not adequately demonstrated that the quarry and extractive industry is suitably separated from sensitive land uses. Specifically, the quarry is not considered to be an appropriate distance from the designated livestock cattle grazing and breeding paddock area, nor from the water bore, which is located only 1km to the west.

The proposed blasting will have a significant impact on the adjoining property in terms of environment nuisance, being vibration, dust, noise and odour. Furthermore, the quarry and associated blasting will likely damage the critical water source at the water bore for the adjoining property.

Additionally, the blasting from the quarry will have a substantial impact on the cattle grazing and breeding paddocks directly to the west of the quarry site. The Blasting Management Plan nominates a limit of 120dB at any time. It is noted that cattle may tolerate low levels of noise, however the proposed 120dB will have an impact on the breeding stock herd. It is expected that a significant portion of the grazing paddocks will become redundant as cattle locate to quieter areas, reducing the adjoining landholder's carrying capacity. It is also of significant concern that calving rates will be reduced due to these issues. Both of those substantial impacts will reduce the landholder's vital livestock incomes streams.

Therefore, it is recommended that the quarry is relocated to achieve an appropriate separation from the adjoining property.

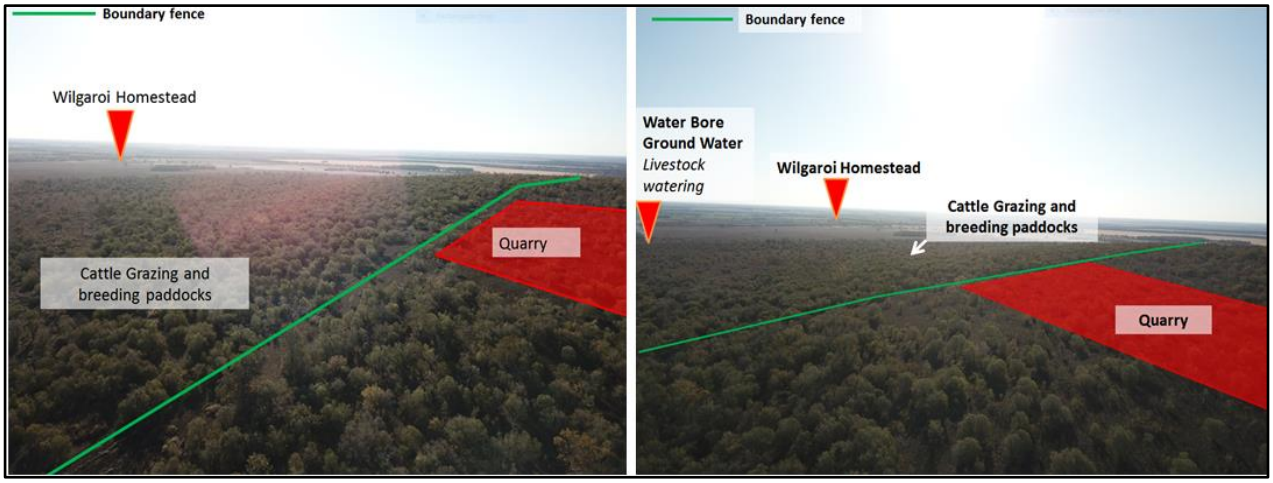


Figure 7: Location of mine into relation to site at 207 Wilgaroi Road, Bellata NSW 2397 (Source: Applicant, 2019)

6. Secretary Environmental Assessment Requirements (SEAR's)

Is it confusing that contained within the 2020 2519 DA1 001 EIS the SEAR's requests list Redden Quarry, 1210 Dappo Road, Narromine. The Redden Quarry is listed under numerous SEAR requests. However in the 2019 2289.DA1.310.001 EIS it lists Lot 10 DP751753 and Lot 110 DP257328, Manamoi Road, Bellata and Meppem Quarry.

As an adjoining landholder the inconsistency creates a procedural unfairness in that any objector is unable to properly review or understand the SEAR's that are associated with this application.

7. Appeal Rights

The proposal involves more than 30,000 cubic metres of extractive material per year and is therefore a 'Designated Development' in accordance with Schedule 3 of the Environmental Planning and Assessment Regulation 2000.
In accordance with the Act, a Designated Development:

- must be accompanied by an environmental impact statement;
- will require public notification for at least 28 days; and
- can be the subject of a merits appeal to the Land and Environment Court by objectors.

Under Schedule 1 of the Act:

- The minimum submission period for Designated Development is 28 days.
- Submissions with respect to a plan, application or other matter may be made during the minimum period of its public exhibition under this Part. However, if the plan, application or other matter is placed on public exhibition for a specified longer period, submissions may be made during that specified longer period.

Whilst being accompanied by an EIS, the applicant has not undertaken public notification for impacted Narrabri Shire Council residents, thereby not affording submitters in this region sufficient time to review and object to the development.

The application should as a matter of fairness, be re-notified to ensure that these residents can adequately review the submitted documentation and raise any potential objections. Additionally, the criteria for compatibility of proposed mine, petroleum production or extractive industry with other land uses which is relevant to the adjoining land uses includes:

> *Before determining an application for consent for development for the purposes of mining, petroleum production or extractive industry, the consent authority must:*
>
> *(a) consider:*
>
> *(i) the existing uses and approved uses of land in the vicinity of the development, and*
>
> *(ii) whether or not the development is likely to have a significant impact on the uses that, in the opinion of the consent authority having regard to land use trends, are likely to be the preferred uses of land in the vicinity of the development, and*
>
> *(iii) any ways in which the development may be incompatible with any of those existing, approved or likely preferred uses, and*
>
> *(b) evaluate and compare the respective public benefits of the development and the land uses referred to in paragraph (a) (i) and (ii), and*
>
> *(c) evaluate any measures proposed by the applicant to avoid or minimise any incompatibility, as referred to in paragraph (a) (iii).*

We have raised the above issues for further consideration by the consent authority, particularly given the adjoining landholders prerogatives and existing land uses including agricultural uses have not been considered. The development application does not adequately address relevant provisions of the SEPPs, LEP or DCP, particularly in regard to traffic, water usage and blasting. Specifically, the development application and supporting information does not provide sufficient or suitable information regarding the impacts on properties and how they will be mitigated or managed. The proposed development has not been fully and accurately characterised in a way that is consistent with the submitted plans.

Conclusion

Whilst we have no objection to the inland rail, the combination of the above-mentioned conflicts and the lack of technical and planning information provided, results in a negative development outcome for the local area. The issues covered in this submission individually place a real and significant risk to the adjoining landholders farming and grazing operation and will have a cumulative impact on the overall financial sustainability of the said agricultural operations and the inherent agricultural land values of "Wilgaroi".

It is therefore recommended that the application is scrutinised carefully to address the above concerns. It would also be expected that consultation would occur with affected and interested parties in the surrounding locality, with a view to achieving a satisfactory and equitable outcome for all concerned. We trust you will take into consideration the grounds raised throughout this submission when determining this application.

Should you have any questions in relation to the matters raised in this letter, please do not hesitate to contact me on mobile – 0428 181 835.

Regards,

David & Maria Wall
207 Wilgaroi Road, Bellata NSW 2397
wilgaroi.bellata@bigpond.com

Mr CT Smith

"Baringa"

1215 Berrigal Creek Road

Bellata NSW 2397

24/11/2020

The General Manager

Moree Plains Shire Council

PO Box 420

Moree NSW 2400

Att: Murray Amos

Team Leader Planning

Planning and Community Development

RE: Submission against a development application for Extractive Industry – Quarry

Application Number: DA2019/37

Address: Manamoi Road Bellata LOT: 10 DP: 751753, LOT: 110 DP: 257328

Dear Mr Amos

I am writing in regard to the development application **DA2019/37** and would like to comment on my concerns with the Environmental Impact Statement lodged by Mr J S Meppem with council.

As a resident of "Baringa" 1215 Berrigal Creek Road Bellata 2397, I am concerned with the proposed quarry and how it will impact my business, home living and road access due to the close proximity of my dwelling, which is 3.2km from the mine. I would like to note the absence of my dwelling on page 42, File Ref:2519 DA1 001, 5.4.1 Surrounding Land Uses, Figure 20- Sensitive Receptors.

Possible impacts on underground water: At "Baringa" there is already a fragile water supply. I have many concerns about the proposed use of "surface water" and page 60 of the EIS states "quarry only moderately sufficient in groundwater". If there is a period of very little rain in years to come, like the drought we have just experienced, does this mean that no dust will be suppressed due to lack of water? Or will the plan change to relying on bore water thus directly impacting my already small water supply.

Dust and Air Quality: The collection of vast amounts of rock from the quarry along with the increase in large trucks on the proposed haulage route along the Manamoi Road and the Gurley Boo Boo road will result in a large amount of dust on adjoining properties and around my home. This can affect the growth of my commodities such as wheat and cotton. The settling of dust on these crops could impact the photosynthetic rate of the plant therefore result in a direct reduction of yield. This reduction of yield is therefore mirrored in the result of a reduction of income.

Noise and Vibration: As my house is only 3.2kms from the quarry and facing the south western knoll development site, there is a very high chance I will be able to hear blasts and the large amounts of heavy machinery used daily. Due to me sometimes working night shift during planting, harvest and spraying, my own sleep could be impacted along with that of my future family (the quarry is proposed to be active for ten years). I am concerned about the noise pollution the quarry with create.

Road: The Gurley Boo Boo Road is a very common transport route to gain access to Gurley and Moree. With the increases in traffic on the road I fear that the dust will make this road a very unsafe road to be on. I also have a big concern (as it is an agricultural area) the use of wide loads and heavy machinery that are driven down that road will make it unsafe to pass safely, especially on a gravel road. Trucks on the road will create with a trail of dust left behind resulting in near zero vision will render the road unsafe as well. I do not consider the proposed road adequate for the amount of trucks required to haul rock from the quarry.

I hope the council takes into consideration the concerns I have.

Yours sincerely

Charlie Smith

Mr BJ & AM Smith

"Girrawheen"

244 Dixie Road

Bellata NSW 2397

24/11/2020

The General Manager

Moree Plains Shire Council

PO Box 420

Moree NSW 2400

Att: Murray Amos

Team Leader Planning

Planning and Community Development

RE: Submission against a development application for Extractive Industry – Quarry

Application Number: DA2019/37

Address: Manamoi Road Bellata LOT: 10 DP: 751753, LOT: 110 DP: 257328

Dear Mr Amos

We are writing in regard to the development application **DA2019/37** and would like to comment on our concerns with the Environmental Impact Statement lodged by Mr J S Meppem with council. The letter was sent on 27th October with submissions to be received by 24th November. We are adjoining local landowners to the proposed quarry and proposed haulage route (LOT 3 DP24614 & LOT 1 DP256933, LOT 2B DP24614) and would like to make you aware that the last month has been a very busy harvest for local landowners and the reading and responding to a 694 document has not been an easy task. The proposed haulage route is our access to Moree and Gurley and during harvest we occasionally deliver to Gurley silo.

Error in EIS

Please refer page 42, **File Ref**: 2519 DA1 001, 5.4.1 Surrounding Land Uses, Figure 20 – Sensitive Receptors. We would like to make council aware that rural dwelling "Baringa" 1215 Berrigal Creek Road Bellata NSW 2397, LOT 3 DP24614 & LOT 1 DP256933 is occupied by our son Charlie Smith. Charlie moved to "Baringa" on completion of his university studies over twelve months ago and is involved with our farming enterprise. It is a concern that the occupied "Baringa" dwelling has been

omitted from the map and table 8 (page 42). 'Baringa" is located within clear view of the proposed south east knoll development and would be subject to a change in visual amenity, decreased air quality, noise and vibrations from blasting and increased traffic and potential impacts on ground water. "Baringa" being occupied is noted in attachment 10 Noise Impact Assessment.

Ground Water

Shallow aquifers supply land owners with excellent water for stock, domestic and agricultural use in this area. We are extremely concerned that blasting could affect our precious water supply and interfere with the flow and quality of our bores. Page 60 of the EIS says "quarry only moderately sufficient in groundwater". Will extra water needed be extracted from precious aquifers? The EIS states on page 64 that "The proposal will not use groundwater for dust suppression water". If this water is to be outsourced, we assume it is from a dam?

Increased Traffic and Condition of Boo Boo Road

We are very concerned that the proposed haulage route along the Boo Boo road will remain gravel. With a minimum 67% increase of traffic along the gravel road and the majority of the increase being either truck and dog, B Triples, B Doubles or Road trains (page 85), there will be a huge increase of heavy traffic on a gravel road on black soil. Wet weather affects our gravel roads and makes them impassable during heavy downpours. The regular use of heavy laden trucks during wet weather will affect our gravel road and access to Moree and Gurley. We do not consider the proposed gravel road adequate for the proposed heavy vehicle traffic of the proposed quarry.

The dust from the haulage route is another concern. We have just experienced a very busy harvest with increased traffic and the dust was implausible. Trucks on the Boo Boo Road will be six days a week with the proposed quarry making the road very unsafe with decreased visibility. Page 638 states "dust is not considered to be an issue on proposed haulage route". Obviously, whoever noted this was not travelling on the Boo Boo Road in the last month. Are the quarry developers going to water the length of the Boo Boo road for dust suppression?

Our property "Dungarvan" LOT 2B DP24614 neighbours the proposed haulage route. We are dryland cotton growers and grow cotton on a neighbouring property on the proposed haulage route. Please note in the Australian Cotton Production Manual (published by the Australian Government Cotton Research & Development Corporation, that "High dust levels in cotton fibre affect open end spinning efficiency and product quality". High dust levels in our cotton sample affect our cotton quality causing downgrade which reduces the price we receive. The proposal could lead to reduced income. Contamination of cotton with foreign substances lowers the value of the product and often causes problems and increased costs for those processing the cotton at both the gin and the spinning mill. Australian cotton is recognised as one of the least contaminated cottons in the world and receives a premium. Any contaminants lower the value of the final product and can potentially damage Australia's reputation as a supplier of quality cotton. This standard must be maintained and the responsibility for keeping Australian cotton clean and contamination free rests with everyone involved in growing the crop.

We would like to stress again the unfortunate timing of this letter as we feel we have not had the time to read the whole EIS and research further points of concern. The protecting of our precious groundwater, increased traffic on the haulage route in a rural area and inadequate gravel road

proposal for the increase of heavy trucks are our main concerns. We hope the council takes into consideration the points we make.

Yours sincerely

Brenden and Angie Smith

22nd November 2020

The General Manager
Moree Plains Shire Council
PO Box 420
MOREE NSW 2400

Email: council@mpsc.nsw.gov.au

Attention: Mr Murray Amos
Team Leader Planning

Re: DA2019/37 Extractive Industry – Quarry

SUBMISSION of concerns in relation to the above development application for an Extractive Industry – Quarry, Manamoi Road BELLATA, LOT: 10 DP: 751753, LOT: 110 DP: 257328

We write in relation to the above mentioned Development Application, with the amended Environmental Impact Statement (EIS) being lodged with Council. As residents of Boo Boo road & regular users of the haulage route we would like to bring to Council's attention areas of concern.

Traffic Concerns

The EIS states the haulage route will be Manamoi Rd to Boo Boo Rd to Gurley Creek Rd to the Newell Highway.

We note that the EIS states SMK Consultants were engaged to undertake a Traffic Impact Assessment (TIA) of the proposal. We question some of their findings.

The TIA 4.4.1 (Page 20) states there are two key intersections along the proposed haul route. These are Manamoi-Boo Boo & Boo Boo-Gurley Creek intersections. It states ' the Safe Intersection Sight Distance (SISD) exceeds the minimum requirement at all intersections. The only limitation may relate to an extended height in grass & shrubs at the Boo Boo-Gurley Creek Rd intersection.'

- We would like to bring to your attention that currently trees & vegetative growth pose a bigger site restriction on the Manamoi-Boo Boo Rd intersection.

- We also make mention that trucks & light traffic enter onto the Boo Boo Rd from the Bee Bee Stock Reserve opposite the Manamoi Rd & approximately 0.5 kms north of the Manamoi Rd. These are often farm implements, trucks/road trains turning north & south onto Boo Boo Rd at the beginning of a bend in the road leading to the Manamoi Rd intersection.

The TIA states that Boo Boo Rd is generally used by local traffic only & only acknowledges traffic generated from 8 properties along the Boo Boo Rd (page 27).

- Although the southern end of the road is not included as a haul route, there are traffic impacts on the southern end of the road which must be taken into consideration.

- The Boo Boo Rd is used by many landholders from the Yatta/Berrigal area as their main route to Moree. Boo Boo Rd is regularly used for farm freight coming onto farm from the Moree direction & being delivered to landholders along & south of the Boo Boo Rd.

- It is inevitable that as the 'haul route' is upgraded there is every potential for more traffic, light & heavy, to utilize the Boo Boo Rd as an alternative route to & from Moree instead of the longer route via Bellata & up the Newell.

- The safety & upkeep of the southern section of Boo Boo Rd from Manamoi Rd to Berrigal Rd cannot be ignored by Council.

At present this section of the road is clearly dangerous due to lack of visibility caused by overgrowth of trees. This has come about by the lack of maintenance to the table drains which in earlier times were slashed &/or graded.

- With increased traffic use as a result of Boo Boo Rd upgrades, this section of road will become an accident waiting to happen.

Water Concerns

We note that water may need to be supplied from offsite for dust suppression in drier years. Would Council please clarify that this will not be supplied from domestic or stock bores?

Attachment 1.

We note that Attachment 1 relates to Secretaries Environmental Assessment Requirements (SEARS) for Redden Quarry at Narromine. Is this simply as a guide of what is required under SEARS & location is not relevant?

Submission time limits

It is noted that the application acknowledges harvest peak periods. To request submissions on the proposal to be in to Council by 24th November 2020 is questionable. Council & the applicant would be well aware that most interested parties are only just finishing harvest & would not have had the necessary time to study the application in detail.

In summary – this is not a submission of objection against the quarry DA, but a submission of concerns that need to be addressed. Each of our concerns can be addressed with road upgrade & maintenance for safety of all users.

Yours faithfully

Mark A.K. Manchee & Wendy Manchee
"Yarrabindi"
1733 Boo Boo Road
BELLATA NSW 2397

Email: mmanchee2@bigpond.com

To whom it May Concern

As a Land owner across the road from Black Ridge I am in favour of the Quarry. I hope the added industry in the area and the benefits of the inland rail will boost the economic viability of our area and also the surrounding infrastructure. The Boo Boo Rd will carry many more trucks along the road which adds to the danger of the road, particularly when the school bus comes along the road and into Gurley station. (It is the dust stirred up along the road that causes this danger)
This could be negated by Sealing the road with Tar up to at least Gurley Station (5km) or even further along this road to Blackridge. (7km).
Besides the school bus, there are quite a few people who travel along this road which has become impassable in wet Weather without 4wd. We have a 14000 tonne shed at Gurley station which we are trying to lease for commercial use and or setting up a grain marketing depot. The major obstacle to this is the gravel road for the last 5 km to Gurley Station. A continued bitumen road would continue the economic development of this area far into the future and ensure the safety of the road.
I would even be in favour of the council participating in a shared funding of this road to help it across the line.
This request is not a selfish request to make our lives easier , but more a request to continue to modernize our community to allow the people who live out here to continue to do so into the future. If we do not use opportunities like this to build infrastructure and keep pushing to modernize our area then we will ultimately loose our ability to convince people to live in these parts of the country.

Yours Sincerely

Bill Crawford
0428273488