Appendix G: Traffic Impact Assessment

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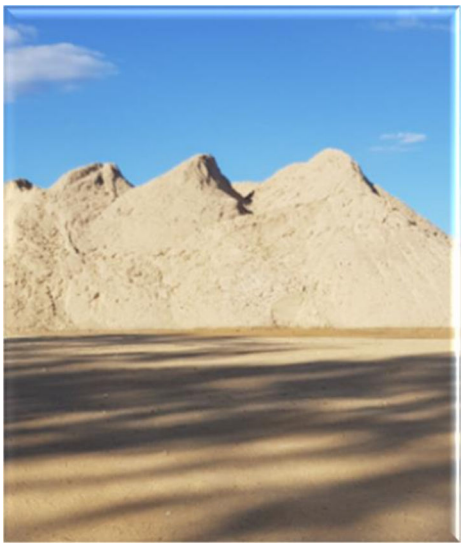

SPH Quarry

Traffic Impact Assessment

ATJs Earthworks Pty Ltd
472 Eddy Park Lane
Gum Flat NSW 2400

January 2025

SMK

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1 Introduction

SMK Consultants have been engaged by ATJs Earthworks Pty Ltd to prepare a Traffic Impact Assessment for operation of the SPH Quarry. The assessment has been prepared in accordance 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 SPH Quarry operation 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 regarding the design of the quarry (adequacy of on-site parking provision, internal traffic circulation and site access to the public road network).

The proposed objectives for SPH Quarry are to:

- Ensure the delivery of aggregate materials from the quarry can be achieved in an efficient and financially competitive manner;
- Minimise the impact on roads used as haul routes; and
- Minimise traffic conflict with other road users.

1.2 Assessment Scope

The scope of this Traffic Impact Assessment (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;
- Assess existing traffic levels and the impact of the additional sand trucks on this traffic;
- Analyse the types of vehicles likely to be used for transportation of quarry products;
- Describe the measures that would be implemented to maintain and/or improve the capacity, efficiency and safety of the road network (particularly the proposed transport routes) over the life of the site;
- Assessment of likely impacts associated with road haulage.

2 Existing Conditions

2.1 Quarry Site

SPH Quarry is an existing operation located on the property at 472 Eddy Park Lane, Gum Flat. The property is within the Local Government Area (LGA) of the Inverell Shire Council. It lies approximately 10 km west of Inverell and approximately 500 m north east of the village of Gum Flat (Figure 1).

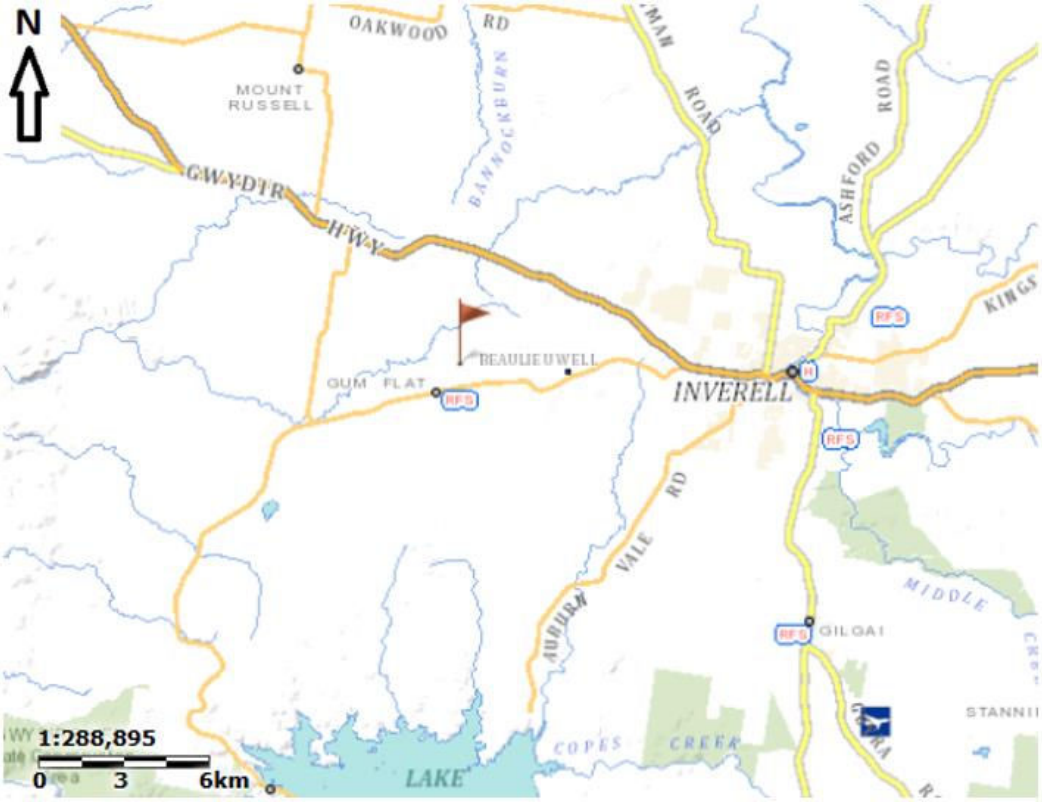
The quarry lies within a 38.5 Ha rural property described as Lot 106 in Deposited Plan 656030. The property is primarily used for grazing, includes a residence and is bordered by rural

farmland and patches of native woodland. Eddy Park Lane runs along the eastern boundary of the property and Copeton Dam Road lies to the south (Figure 2).

The Proposal involves approval of an existing extractive industry (gravel quarry), with a footprint of approximately 10 Ha with an annual extraction limit of up to 90,000 tonnes of quarry materials per annum. The proponent aims to supply the extracted gravel to buyers within wider Inverell region.

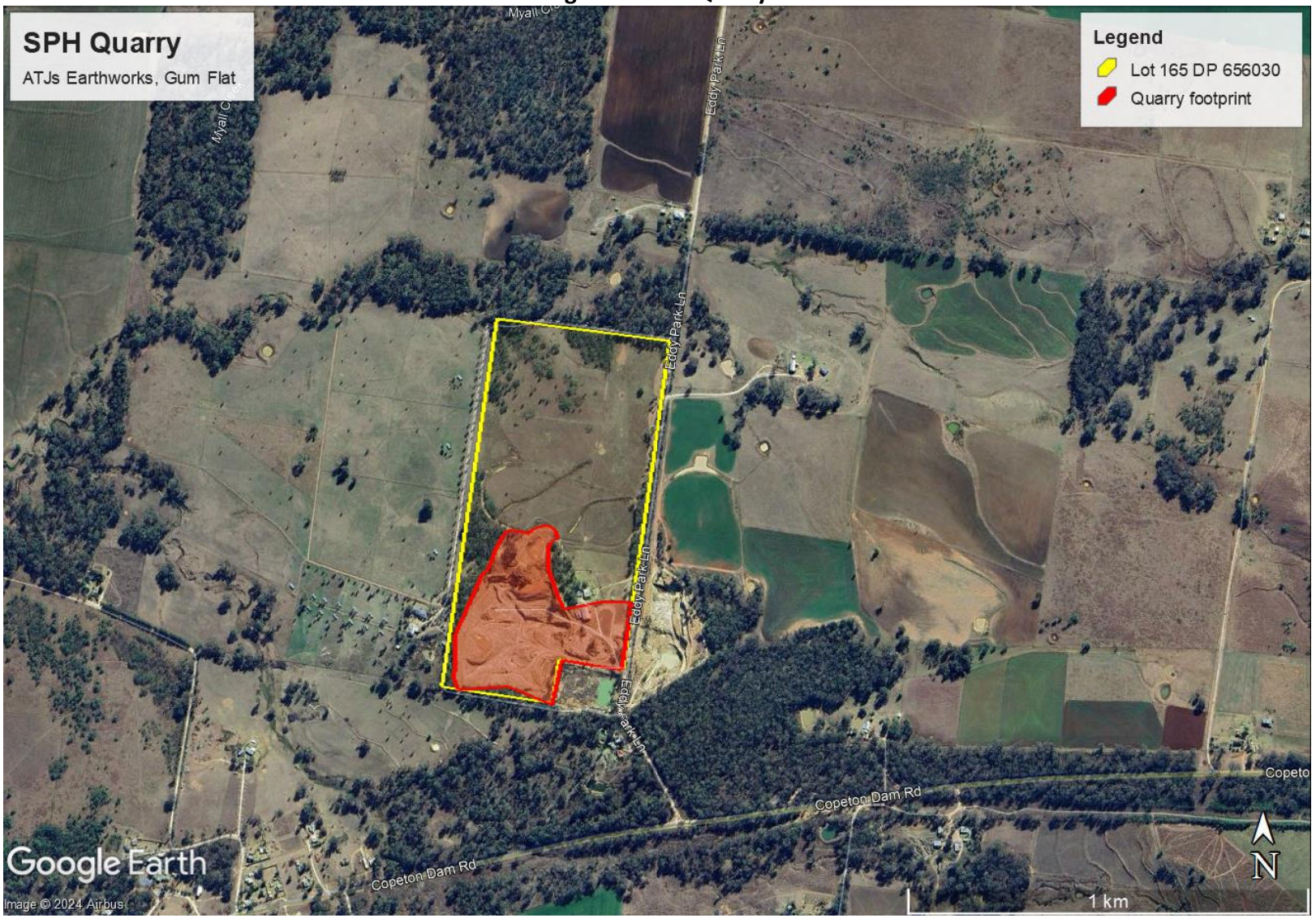
The following provides a locality plan of the SPH Quarry.

Figure 1: Locality Plan of the quarry site.



The following plan presents an aerial image of the site. It is located within an area of open woodland which is surrounded by mainly grazing land that is occasionally cultivated for pasture improvement purposes. The fixed structures forming part of the quarry operation include a workshop for housing of trucks and machinery, and the proponent's residence.

Figure 2: SPH Quarry



2.1.1 Site Operations and Access

The quarry is an extractive industry producing granite gravel. The extraction process involves excavation of material using a dozer, excavator and/or front end loader. No blasting or processing is required. Material is excavated and loaded onto trucks, then hauled from the site directly to customers across the region.

The predominant vehicle hauling from the site is a combination trailer (rigid tipper trucks and dog trailers). Other truck combinations may include semi-trailers and side tipping semi-trailers. The size of the truck will vary according to the load size required and the location of the delivery. Some deliveries may be restricted by road limitations on other Shire roads.

The quarry is accessible via Eddy Park Lane (Figure 3 and Figure 4), which is an all-weather gravel road, except for of extreme flood events where flooded causeways make the Lane impassable. Under such conditions, work ceases as it is normally stopped as the delivery worksite is wet and closed.

Figure 3: Quarry Entrance from Eddy Park Lane

Under normal circumstances, a typical return trip takes between 1 to 3 hours to load at the quarry, travel to the site, unload and return to the quarry.

Figure 4: Quarry Entrance from Eddy Park Lane

2.1.2 Light Vehicle Movements and Routes

Light traffic to the quarry site consists of staff and occasionally contractors, typically between 5-10 vehicle movements/day to and from the site. No increase in light vehicle traffic is anticipated for the proposed development.

2.1.3 Operating Hours

The intended operating hours of quarry in relation to traffic movements is presented in Table 1. The loading of trucks to haul product occurs within these hours; however trucks do not leave the site outside of these hours. Some trucks may enter the site prior to start of each morning, but the final load must leave before the end of operating hours.

Table 1: Hours of Operation

Activity	Hours of Operation	
	Current	Proposed
• **Transport (empty trucks in / loaded trucks out)** • **Quarry pit operations**	7.00 am to 3.30 pm Monday to Friday	7:00 am to 5:00 pm Monday to Friday
• **Light vehicle traffic**	7.00 am to 5:00 pm 7 days a week.	7:00 am to 5:00 pm 7 days a week.
• **Staff maintenance and servicing of plant and equipment**	As required	As required
• **Emergency***	As required	As required

2.1.4 Vehicle Parking

There are currently covered parking spaces for all heavy vehicles within the workshop. There is also a gravelled overflow parking area for additional heavy vehicles and machinery. Light vehicle parking spaces for staff and visitors have been set-aside around the workshop and adjoining internal road network adjacent to the workshop.

2.2 Haulage Routes

Access to and from the quarry is via Eddy Park Lane, which is an unsealed all-weather gravel road.

Vehicles transporting material from the quarry can travel either north on Eddy Park Lane to the Gwydir Highway or south to Copeton Dam Road. Both haulage route options are approved for combined higher mass limit vehicles with conditions (Figure 5). Both these haul route options are detailed below and presented in Figure 6.

2.2.1 South Route

The south route is the current haulage route used by the quarry to deliver gravel toward Inverell or Copeton Dam. This route extends along Eddy Park Lane to Copeton Dam Road. Copeton Dam Road to the east intersects with the Gwydir Highway.

This route uses 420 m of Eddy Park Lane and then uses Copeton Dam Road, predominantly hauling material east towards Inverell and intersecting the Gwydir Highway approximately 2 km west of Inverell. Travel speed along Copeton Dam Road is limited due to bends, inclines and unsealed verges.

This route passes one rural residence on Eddy Park Lane which is set back approximately 40 m from the lane. The residences along Copeton Dam Road are located further from the road due to crown land surrounding the road and the houses are more centralised on the properties.

2.2.2 North Route

The north route option provides a more direct route to the Gwydir Highway in preference to Copeton Dam Road. This is a gravel road servicing multiple farms that produce stock and grain. The Inverell Polo Club has their sporting grounds at the northern sector of this road.

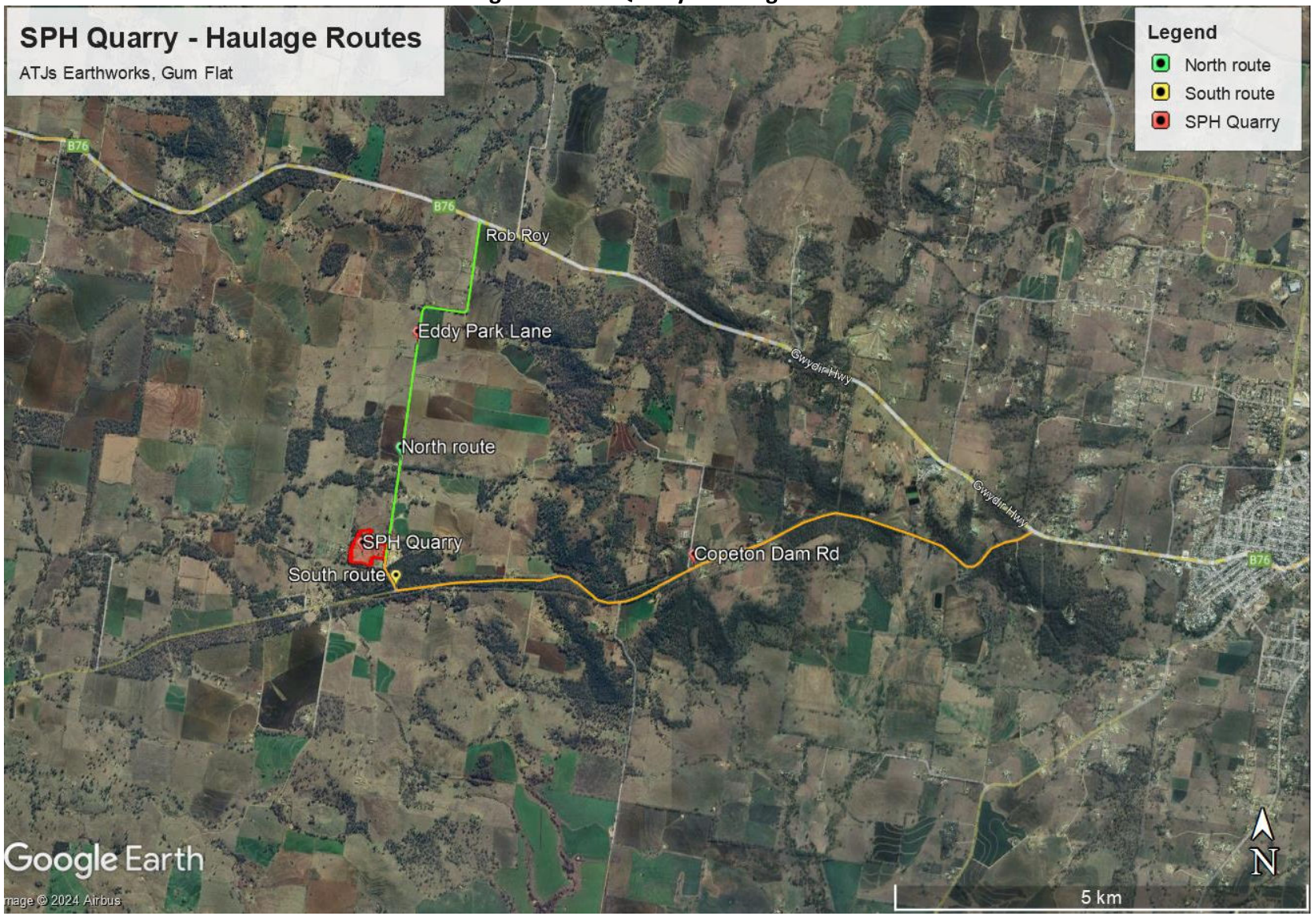
Eddy Park Lane includes three causeways and two right angle corners. This route passes four rural residences along Eddy Park Lane. One residence is set back 25 m from the Lane, while the other three have set back distances of 86 m, 140 m and 260 m respectively.

For trucks, Eddy Park Lane has a practical speed limit as the trucks must drive to conditions. The road varies in width from 10m but has narrow sections of 6m, mainly at causeways. Drivers from SPH Quarry are aware of these restrictions and have over the past 50-years, driven to conditions at appropriate speeds.

This northern route is mainly utilised for deliveries of gravel to the west of Inverell and into the Gwydir Shire.

Figure 5: NSW Combined Higher Class Limits and Restricted Access Vehicle Mapping

Figure 6: SPH Quarry - Haulage Routes



3 Road Condition Assessment

SMK Consultants conducted a visual pavement inspection of haul routes. The inspection was completed over a number of days in relatively dry weather conditions. The roads were driven in both directions. No geotechnical investigation of the existing pavement has been undertaken as part of this investigation. Pavement depths and road condition have been visually determined.

The preference for haulage routes from SPH Quarry is based on the delivery point and therefore the shortest distance is chosen for deliveries. The quarry has supplied gravel to a wide range of projects across the region and therefore no fixed route or regularly used route other than Eddy Park Lane is used.

3.1 Existing Road Network

3.1.1 Eddy Park Lane

Eddy Park Lane is classified by Inverell Shire Council as an access road carrying low to moderate volumes of local traffic. It is approximately 5 km long connecting Copeton Dam Road to the Gwydir Highway near the Gum Flat village. Eddy Park Lane is an unsealed gravel road with three causeways and two right angle bends. Its gravel surface is generally in good condition. Eddy Park Lane provides access to approximately 9 properties and the Inverell Polo Club. The road can become impassable during periods of heavy runoff.

Figure 7: Eddy Park Lane causeway north of the quarry

The northern section of Eddy Park Lane is typically 7-8 m wide. It contains two causeways and two right angle bends. Both right angle bends have a turning radius of approximately 40 m, requiring heavy vehicles to safely navigate these at speeds well below the speed limit. Both these bends maintain a width of 7-8 m and vision is very limited due to roadside vegetation.

Figure 8: Eddy Park Lane right angle bend

The southern end of Eddy Park Lane joins Copeton Dam Road on a straight section of road. Sight distance in both directions from Eddy Park Lane is unhindered by roadside vegetation for a distance in excess of 200m. This is considered suitable for trucks stopping or slowing when approaching the intersection. This section of Copeton Dam Road has a speed limit of 100 km/h. No traffic accidents have been reported at this intersection.

The gravel surface of Eddy Park Lane is in reasonable condition and is trafficable in wet weather, except for times of heavy storm water runoff when causeways may not be safe to traverse.

Figure 9: Intersection of Eddy Park Lane and Copeton Dam Road

Figure 10: Intersection of Eddy Park Lane and Copeton Dam Road

3.1.2 Copeton Dam Road

Copeton Dam Road is classified by Inverell Shire Council as a Rural Arterial road carrying high to moderate volumes of traffic and connecting local areas to regional roads or providing access from neighbouring Shires into Council's rural areas.

It is a bitumen sealed two-way road. The relevant section of road that is mainly used by the SPH Quarry vehicles is the 8.3 km section between Eddy Park Lane and the Gwydir Highway to the east. This provides the connection to the Gwydir Highway and access to the wider region.

The road is trafficable in all weather conditions. The bitumen is in reasonable condition; however road verges are generally not sealed and are susceptible to damage from traffic. The road verges are subject to some damage and loss of bitumen.

3.1.3 Gwydir Highway

The Gwydir Highway starts in the northern rivers of NSW at South Grafton, goes through Inverell and Moree, and extends west to 14 km north of Walgett. It intersects with:

- The New England Highway at Glen Innes;
- Fossickers Way at Warialda;
- The Newell Highway at Moree.

Traffic volumes along the Gwydir Highway show peaks in the major regional centres of Grafton, Glen Innes, Inverell and Moree and level off in rural areas and towns along the corridor.

3.2 Existing Traffic Volumes

Traffic data available from Transport for NSW for the Gwydir Highway is presented Table 2.

Table 2: Traffic Data for the Gwydir Highway

Road	Date of Observation	Average Daily Traffic (ADT)	Heavy Vehicles
Gwydir Highway	April 2015	1389	324 (23.3 %)
	April 2017	1,558	372 (23.8%)
	June 2019	1,360	344 (25.2%)
	July 2020	1,347	322 (23.9%)
	July 2021	1,285	339 (26.3%)
	June 2022	1,375	356 (25.9%)
	May 2023	1,382	376 (27.2%)
	April 2024	1,480	356 (24.0%)

Note: Heavy Vehicles = Class 4 and above.

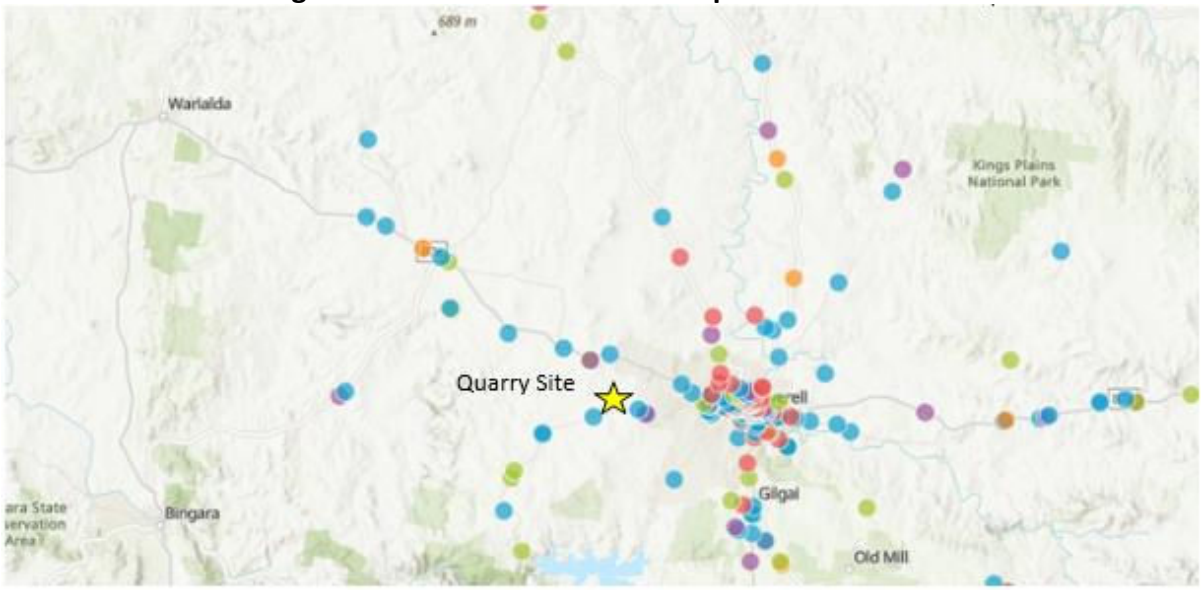
No heavy vehicle traffic data was available for Copeton Dam Road or Eddy Park Lane.

3.3 Traffic Safety

Transport for NSW provides crash statistics for all reportable accidents that have occurred within the Inverell Shire area from 2019-2023 (Figure 11). Mapping indicates that a low

number of traffic incidents occur on rural roads in the vicinity of the quarry or incidents are minor and go unreported. This is likely to be a result of low traffic density on these roads.

Figure 11: Inverell Shire Crash Map data from TfNSW



Degree of Casualty ● Fatal ● Serious Injury ● Moderate Injury ● Minor/Other Injury ● Non-casualty (towa...

Crashes

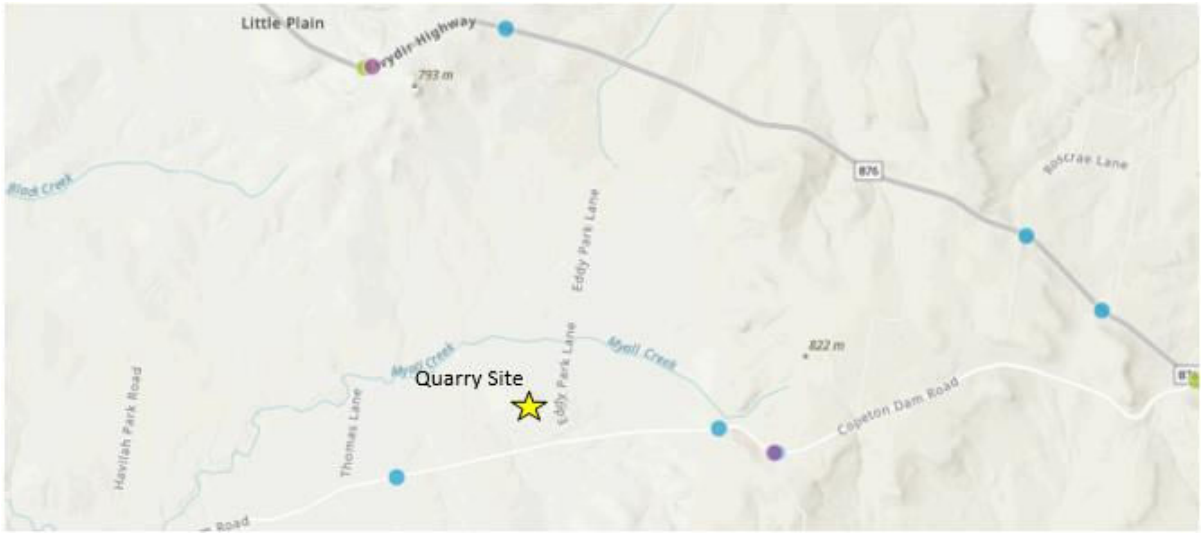
Degree of crash	2019	2020	2021	2022	2023	Total
⊟ **Fatal**		**3**	**3**	**1**	**4**	**11**
Fatal		3	3	1	4	**11**
⊟ **Injury**	**24**	**39**	**40**	**43**	**35**	**181**
Serious Injury	10	13	9	9	9	**50**
Moderate Injury	10	21	26	26	21	**104**
Minor/Other Injury	4	5	5	8	5	**27**
⊟ **Non-casualty (towaway)**	**7**	**13**	**9**	**12**	**14**	**55**
Non-casualty (towaway)	7	13	9	12	14	**55**
Total	**31**	**55**	**52**	**56**	**53**	**247**

Casualties

Degree of casualty	2019	2020	2021	2022	2023	Total
⊟ **Killed**		**3**	**3**	**1**	**4**	**11**
Killed		3	3	1	4	**11**
⊟ **Injured**	**36**	**53**	**48**	**50**	**48**	**235**
Seriously Injured	10	14	9	10	9	**52**
Moderately Injured	17	30	32	30	28	**137**
Minor/Other Injured	9	9	7	10	11	**46**
Total	**36**	**56**	**51**	**51**	**52**	**246**

Figure 12 show reported incidents in the local area of the quarry since 2019. Several minor incidents are recorded on Copeton Dam Road and the Gwydir Highway. One serious injury incident is recorded on a bend of the Gwydir Highway and one moderate injury on a bend of Copeton Dam Road.

Figure 12: Local Crash Map for the Eddy Park Lane area



4 Traffic Generation and Distribution

To establish the impact of the development on the local road network and assess the need for any changes to accommodate traffic generated from quarry operations, traffic generation and trip distribution to potential developments have been estimated by the proponent. This is based on extraction and haulage of the extraction limit for the quarry material.

The components of traffic generated by the quarry operations are:

- Staff trips - light vehicles;
- Visitor trips – light vehicles;
- Haulage of equipment – front end loader or excavator;
- Haulage of quarry materials –truck and trailer combinations (average 36 tonne payload).

4.1 Light Vehicle Movements

The quarry site aims to operate with up to five staff and will therefore generate up to five light vehicles per day between Monday and Friday. The light vehicle trips will generally arise from surrounding towns and villages via the Gwydir Highway, Copeton Dam Road and Eddy Park Lane to access the quarry. These trips would generally occur prior to 7am and after 5pm.

Additional light traffic will occur for visitors, contractors, service vehicles and repair vehicles.

4.2 Heavy Vehicle Movements

The quarry operates on week days from 7 am to 5 pm on a customer demand basis, with production varying based on demand. The number of truck and dog combination loads typically varies day to day.

The location of delivery points for the quarry material is highly variable. For planning purposes, it is predicted that it will take at least 1-hour each way for a truck to deliver a load

once loaded at the quarry. Based on this average, trucks leaving and returning to the site will involve a 2.5 hour average turn-around time.

The quarry can start dispatching trucks at 7am from Monday to Friday with the last truck to leave the site at 5pm. Table 10 outlines the predicted maximum average truck movements based on the following:

- Up to 90,000 tonne will be hauled from the site each year;
- A 36 tonne gravel capacity (3 axle truck and 3 axle dog trailer combination) per trip has been assumed;
- Hours of operation for loading of trucks to haul materials are 7:00 am to 5:00 pm;
- 50 working weeks/year;
- 5 working days/week;
- Movement is one-way (i.e. a truck entering and leaving is considered two movements).

Table 3: Proposed Maximum Annual truck movements from SPH Quarry

Traffic Calculations	
Tonnes Processed	90,000 tonnes/year
	1,800 tonnes/week
	360 tonnes/day
Truck Loads from the Quarry	2,500 trucks/year
	50 trucks/week
	10 trucks/day (for peak demand periods - daily truck loading capacity is up to 20 trucks)
2-Way Truck Movements (i.e. delivery & return)	5,000 trucks movements/year
	100 trucks movements/week
	20 trucks movements/day

Based on the maximum average annual extraction rate of 90,000 tonnes year, truck movements along Eddy Park Lane and other haul roads over the 10-hour working day will be 10 truck movements per day, or one truck every hour on average. The actual truck movements would commence at 7 am with loading of a truck. It is expected that the first truck would take 15-minutes to load and then the second truck would be loaded. If all trucks travelled at the same speed, the trucks would be separated by 15 minutes in the morning and this would gradually increase through the day.

While the potential maximum extraction approval sought is 90,000 tonnes/year, the actual forecast average annual extraction is 50,000 tonnes per year. Based on this rate, the Average Annual Daily Traffic (AADT) would be five truck movements per day (or 10 trucks movements per day including return journeys).

For peak demand operations, it is possible that the frequency of trucks would increase to an average of 2 trucks trips per hour along Eddy Park Lane and beyond. Noting that the peak

loading capacity of the quarry is approximately 900 tonnes/day of material, which limits the number of loads to a maximum of 25 per day, assuming multiple trucks are available. On rare occasions, site activity may approach maximum loading for large demands. The requirement for more intensive operations would be intermittent and short term, requiring up to three trucks operating simultaneously.

The frequency of trucks is highly dependent on destination and delivery times. Delivery may take several hours for extended journeys and trucks may be delivering to a range of destinations in any one day.

5 Traffic Management

There is a requirement for safe, responsible, and efficient transport of quarry materials in the interest of public benefit and safety. To ensure that quarries are managed in accordance with best practice, all staff and drivers must adhere to a Traffic Management Plan and Driver Code of Conduct. The Proponent will require that all truck drivers must undertake a full induction to traffic management plans and a driver's code of conduct prior to being approved for work at the quarry. The traffic management plan includes daily induction/site inductions to update drivers on site conditions, haul route matters and operational procedures.

The key components in the Drivers Code of Conduct and Induction procedures include the following:

- Speed limits – Speed limits are to be adhered to;
- Approved haulage routes – Use only approved haulage routes;
- Abide by Drug and Alcohol Policy;
- Adhere to site operation conditions for traffic management of noise and dust emissions;
- Adhere to approved operating hours;
- Report all incidents and complaints to Quarry management;
- Ensure there is no loading over registered mass;
- Appropriately cover and secure loads before leaving the quarry and check for loose material on trailers before leaving a site;
- Always drive in a manner in accordance with road conditions;
- Reduce engine brake noise to respect community amenity;
- In the event of an environmental incident, make sure every endeavour is taken to contain and minimise environmental harm;
- Adhere to professional and appropriate use of two-ways and maintain communication with other road users via two-way radio;
- Acknowledge courteous acts by others.

A draft Drivers Code of Conduct is attached in Appendix 1.

5.1 Public Transport and Pedestrians

5.1.1 School Bus Routes and Bus Stop Locations

A school bus route operates along Copeton Dam Road to and from Inverell on school days. There is a scheduled stop at the intersection of Eddy Park Lane and Copeton Dam Road. School buses are on the road shortly before and after school hours, Monday to Friday during the school term.

The designated routes and operating times for school buses forms part of all operator inductions when engaged by the quarry. Any change to school bus routes will be presented at the morning induction procedure. Such changes may occur after a rainfall event or during school holidays.

5.1.2 Public Transport

There is no public transport within the haulage routes of the quarry.

5.1.3 Pedestrians and Cyclists

It is possible to encounter pedestrians or cyclists along Copeton Dam Road, particularly near Gum Flat village. Villages have speed limits of 50 km/h in addition to school zones of 40 km/h to control traffic speed. These speed limits are considered appropriate to manage vehicle interactions where the presence of pedestrians or cyclists may occur.

6 Impact on Road Network

6.1 Designated Haul Routes

The forecast traffic volumes for the current haul route south into Eddy Park Lane and along Copeton Dam Road are not predicted to have a significant impact on traffic flow or the local road network.

6.2 Impact on Traffic Volumes

The SPH Quarry is located in a rural region where high traffic volumes and traffic congestion are not significant issues.

For the Gum Flat area, daily peak traffic periods along Eddy Park Lane can be associated with the movement of people to and from Inverell in the morning from 8 am and returning in the evening around 5 pm.

Heavy vehicle traffic from the quarry will commence at about 7:00 am. Light vehicle traffic will arrive onsite before 7:00 am. By 8:00 am, heavy vehicle traffic will have separated with a minimum of 30 minutes between trucks. This would continue through the day until 5:00 pm.

Quarry traffic would generally peak earlier than traffic moving to and from Inverell of a morning and evening. This would be beneficial in that it would lower any potential traffic conflicts between the quarry trucks moving slower when fully laden and light vehicles travelling in a hurry to or from Inverell.

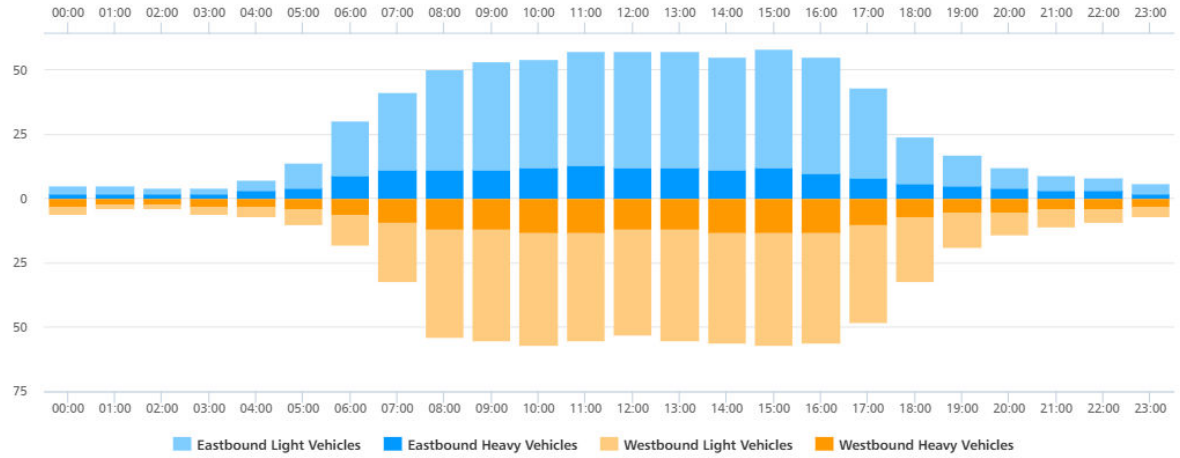
Quarry generated traffic is considered to not have a significant impact on traffic volumes along the designated haul routes.

6.3 Traffic Data and Gum Flat Quarry

Traffic data is not available for the Eddy Park Lane or Copeton Dam Road .

For the Gwydir Highway, a permanent traffic monitoring station #T6133 is located approximately 4 km east of Inverell, with traffic volume records from 2015 to 2024.

Chart 1: Average daily profile of traffic on the Gwydir Highway in and out of Inverell



The data shows an average peak hourly traffic flow of between 40 to 50 light vehicles in each direction between 8am and 4pm. During this period, the average peak hourly heavy vehicle movements in each direction range between 10 and 15 trucks. This declines to between 2 and 3 light vehicles and 2 to 3 heavy vehicles in each direction at 3am.

Assuming a similar volume of traffic along the Gwydir Highway to the west of Inverell, the existing trucks generated from Gum Flat quarry would contribute between 10 and 20 percent of daily truck movements. (Based on 2-trucks per hour from the quarry and 10 to 15 heavy vehicles movements on the Gwydir Highway.)

At the peak movement in the early morning if four trucks left the quarry and travelled along the Gwydir Highway, they would represent 8-percent of existing overall traffic on the Gwydir Highway (4-truck trips each way per hour, total of 100-vehicle movements along the Highway).

The quarry extractions are not expanding and therefore no increase in traffic volume is predicted. Trucks from the quarry are considered existing traffic.

6.4 Impacts on Road Condition

Potential haulage routes include both sealed and unsealed roads. The sealed roads include Copeton Dam Road and the Gwydir Highway.

Eddy Park Lane is a gravel road. Use of this road for the southern haul route will involve use of 420 m to the south of the quarry. Use of the northern haul route will involve 4.5 km of gravel road to reach the Gwydir Highway.

The Gwydir Highway is a major east/west link route inland northern NSW and the coast. The potential impact on this road is negligible as it is subject to extensive heavy traffic including AB-triples.

Copeton Dam Road is relatively narrow in some sections and may require trucks to place their passenger side wheels onto the road shoulder when passing another vehicle. This may lead to road damage as the road verges are often not sealed.

Eddy Park Lane has an average width of 7-8 m and is consistent with a two-lane rural road. Gravel depth is variable in sections and the road shoulders consist of gravel or clay soil. The road is considered passable in wet weather, but not in times of excessive storm water runoff as the causeways on the road may be unsafe to traverse. The dominant form of gravel on this road is the same gravel extracted from the SPH quarry operation.

Gravel trucks will not operate during or for a period after wet weather and therefore not use this section of gravel road when it would be prone to damage by heavy vehicles as a result of rain and soaking of the gravel pavement. This would result in a weather enforced wet weather policy of no trucks on saturated roads until the road dries sufficiently to allow suitable access for trucks. This policy is generally adopted as a result of the delivery site being closed down in the event of wet weather. The trucks do not generally deliver gravel to a wet work site as the site would be closed.

Factors impacting bitumen sealed roads and heavy vehicle damage include gravel depth, drainage, and bitumen seal width. Local knowledge suggests that the depth of gravel beneath many of the local bitumen sealed roads is limited to between 150mm and 300mm over the black soil areas. Design depth of gravel would normally be in the order of 600mm for a longer-life road. On design principles, the local bitumen sealed roads require regular patching and replacement.

The majority of the haul roads are 7m in width or wider. The standard lane width according to current guidelines (Austroads) is 3.5m. The largest truck currently permitted on these local roads (other than the Gwydir Highway) is a Type 1 Road Train – Class 2 – A-Double being a standard road train. The lane width of 3.5m is considered suitable for such vehicles.

The use of road trains within the Inverell Shire has restrictions. The SPH quarry currently utilises rigid truck and trailer combinations on all haul roads listed above. This practice will continue.

6.5 Impact on Traffic Safety

Inspections were conducted of intersections to be used by trucks from the quarry and general road geometry, including speed and any sharp corners on the local road network. This commenced at the SPH Quarry entrance to Eddy Park Lane and the intersection with Copeton Dam Road.

The property entrance is located on a straight section of Eddy Park Lane. There is a bend in this road at a distance of 120m south of the quarry entrance and a causeway approximately 220m past the bend. No traffic conflict or risk was noted at this intersection. Visibility is extensive in both directions. For trucks entering or leaving the quarry site, their speed will be low and this will improve safety by providing more extensive driver reaction time to other road users.

The quarry entrance onto Eddy Park Lane is approximately 20 m wide. The internal haul road approaching the entrance is 10 m wide. The entrance has a gravel pavement consistent with the gravel on Eddy Park Lane. The intersection geometry conforms with a standard rural intersection as the left and right radius is in excess of 13m. This is considered suitable based on the low level of traffic for the Lane and the quarry when operating.

Figure 13: Aerial Image of SPH Quarry Entrance onto Eddy Park Lane

The intersection of Eddy Park Lane and Copeton Dam Road is 90 m south of the causeway on Eddy Park Lane. Mature trees are present for this section of Eddy Park Lane to Copeton Dam Road. Several trees are present in the road shoulder thus impacting the overall road width. No table drain is present where these trees have grown in the table drain.

The presence of these larger trees close to the road edge causes a minor reduction in visibility. Undulation of this section of Lane is also a factor contributing to visibility through the trees that are close to the road edge when approaching Copeton Dam Road intersection. As a result of these road conditions, the quarry trucks travel slowly as they

approach the intersection from the north as the trucks will generally be loaded when travelling in this direction and take longer to slow or stop at the intersection.

There is no right or left turn treatment at the Copeton Dam intersection. The road shoulder for a left hand turn into Eddy Park Lane has a widened gravel section. It is noted that the signs for Eddy Park Lane, and distances to Copeton Dam and Inverell are installed on the edge of the road shoulder. This prevents vehicles from passing around the inside of a vehicle turning right into Eddy Park Lane. This is considered a positive outcome for safety at the intersection.

Figure 14: Sign posting opposite Eddy Park Lane entrance on Copeton Dam Road.

The speed limit on Copeton Dam Road at this intersection is 100 km/h but this is controlled by road condition and features. Light vehicles will generally travel at or close to this speed. Heavy vehicles will be travelling slower due to the undulating topography of the local area.

The intersection of the Copeton Dam Road and the Gwydir Highway occurs 1.4 km west of the 50 km speed zone of the Inverell urban centre. The Gwydir Highway intersection is within an 80 km/h speed zone. Copeton Dam Road traffic must give way to traffic on the Gwydir Highway. The Gwydir Highway has a left passing lane for traffic moving east through this intersection and turning lanes for traffic turning into Copeton Dam Road. For trucks from the quarry to turn left onto the Gwydir Highway and travel west, the turn radius available is approximately 20 m. This is considered suitable for the gravel trucks at a speed of less the 20 km/h.

The intersection of Eddy Park Lane and the Gwydir highway is located approximately 4.5 km north of the SPH Quarry. This is a 100 km/h zone along the Gwydir Highway. This is a straight section of the Highway but in a double line (no passing) section of the highway due to the road undulations. Sight distance to the west from Eddy Park Lane is extensive. Sight distance to the east is approximately 250m from a truck cabin when exiting Eddy Park Lane. This is due to a downward slope to the east which will block lower vehicles such as cars. The intersection is on the crest of a hill.

If quarry trucks are using this northern haul route, they will generally turn west or be coming from the west. Trucks turning in to Eddy Park Lane have a 250m or more view along the highway in an easterly direction when making the decision to turn in or stop and wait for a vehicle approaching from the east. This is considered sufficient distance for reactions times for the truck driver.

The intersection has a 20m turning radius. This is considered sufficient.

These are the two major intersections used by quarry generated traffic.

6.6 Impact on Traffic Noise and Dust Emissions

Two residences are relatively close to the quarry which therefore have a potential impact from noise and dust from traffic movement to and from the site. The nearest receptor is 85 m from the quarry's western boundary and 500 m from the quarry entrance on the eastern boundary. A second receptor is approximately 200 m south of the quarry entrance and 40 m set back from Eddy Park Lane.

Truck speed within the quarry is low and therefore minimal dust is generated. The Proponent has an internal road watering policy and this will be upgraded as part of the actions to be included in an OEMP for the site.

Eddy Park Lane is a potential source of dust during vehicle movements. The frequency of trucks moving to and from the quarry site is low and therefore dust dissipates between truck movements. Dust dissipation is also enhanced by the road side vegetation.

There is a farm house on the central section of Eddy Park Lane that is potentially exposed to dust from traffic. This house adjoins the road and is approximately 22m from the road verge. The residence has vegetation in front of the house which will reduce dust flow toward the house. No complaints have been received by the Proponent to date. However, the presence of this house should be identified by the Proponent to all truck drivers and advice provided to slow down and reduce dust emissions when passing the house.

The Village of Gum Flat is located approximately 500 m south west of the quarry. This 500m buffer includes open woodland which will assist in the dissipation of road dust from the gravel section of Eddy Park Lane. This buffer will also allow extensive noise attenuation to occur from trucks movements.

Trucks from the quarry rarely travel through the Gum Flat village as most deliveries are in other directions.

6.7 Cumulative Impacts with Neighbouring Developments

A second quarry is immediately opposite the SPH Quarry, located at 470 Eddy Park Lane. The quarry is operated intermittently. The volume of truck movements is unknown; however, like the SPH Quarry, this adjoining quarry would operate in campaigns based on winning various supply projects. Based on a limited investigation of the quarry, it operates with two to three trucks when in operation. Allowed for a 1-hour turn-around time (assuming deliveries made

to the east into Inverell), this quarry may generate between three to six one way truck movements per hour.

A third quarry is located west of Gum Flat Village on Copeton Dam Road. No detail is available for this quarry and its operation. When operating, it would generate traffic along Copeton Dam Road. The amount of traffic is unknown but would be expected to be similar to the quarry operations adjacent to the SPH Quarry.

Overall, there is a potential for the three quarries to be operating at the same time. If all three quarries are operating at the same time, there is a potential for some 10-trucks operating at the same time. If short deliveries into Inverell are occurring, this may generate 20-truck movements per hour travelling east and then west along Copeton Dam Road. This remains a relatively low number. As Copeton Dam Road is undulating, truck speed would be lower than the permissible 100 km/h limit thus resulting in some minor congestion and overall slowing of traffic on this road. This would be beneficial in regard to road safety. Passing sections on this road are limited due to the undulations and road alignment.

Copeton Dam Road is the main access to Copeton Dam. The dam is a recreational area and regularly used by Inverell residents. This mainly occurs on weekends when the quarry is not working. During holiday periods, the dam would be used by an extensive number of day trippers and therefore traffic numbers along Copeton Dam Road would increase. This would include caravans and boats.

No other new traffic generating development has been identified in the local area which will have a cumulative impact on trucks generated from SPH Quarry.

7 Measures to Improve Road Use

The following measures are proposed to be implemented as part of ongoing quarry operations once the quarry receives an approval. The purpose of these measures are to maintain and improve the use of local roads by traffic generated from the SPH Quarry operation:

- Appropriate driver code of conduct to form part of site induction policy. Matters to be included in the code are outlined in this report and considered as standard practice for a traffic generating development;
- In accordance with Section 7.11 of the Environmental Planning and Assessment Act 1979 (previously Section 94), the Proponent will be obligated to provide monetary contributions to Inverell Shire Council, to assist in the maintenance costs of the haul routes to be utilised by the development. The contribution are to be used by Council for road maintenance and no other purposes;
- Maintain the SPH Quarry intersection onto Eddy Park Lane to ensure the turning radius is maintained and sight distances to the north and south for trucks exiting the quarry are maintained;

- Notify Council of any specific concerns relating to road condition and safety along the more regularly used haul roads.

8 Conclusion

This assessment has determined that the quarry generates a small number of light vehicles for staff trips and between 8 and a maximum of 24 two-way truck movements per day during the proposed operating hours of Monday to Friday. The amount of light traffic generated is considered as a minor impact on roads.

Eddy Park Lane is the main haul route with truck traffic expected to move both north and south. The intersections of Eddy Park Lane onto Copeton Dam Road and the Gwydir Highway are considered suitable for the size of the trucks used by the quarry; however, neither of these intersections have left turn or right turn treatments in accordance with Austroad Guidelines.

No traffic safety issues were identified in relation to intersections and sight distances available at these intersections.

Eddy Park Lane is a gravel road. It has some mature trees close to the road shoulder at its southern end but the remainder of the road is considered safe for truck travel.

Copeton Dam Road is a bitumen sealed road which currently requires some patching, but is generally considered in good condition and suitable for heavy vehicles from the quarry.

The quarry has operated for a period of 50-years and the traffic generated from the quarry is existing traffic. No increase in traffic is predicted as a result of the quarry obtaining development consent. Traffic volumes and interactions with other road users will remain unchanged.

This proposal is not considered to create significant impact on traffic in the region in terms of either volume, noise, safety, or road condition. No specific road safety issues were identified that need immediate action.

Appendix 1 – Draft Driver Code of Conduct

SPH Quarry recognises the need for safe, responsible and efficient transport of quarry materials in the best interest of public safety. Any truck driver who enters or leaves the quarry site is expected to respect the community in which they drive and adopt the following code of conduct.

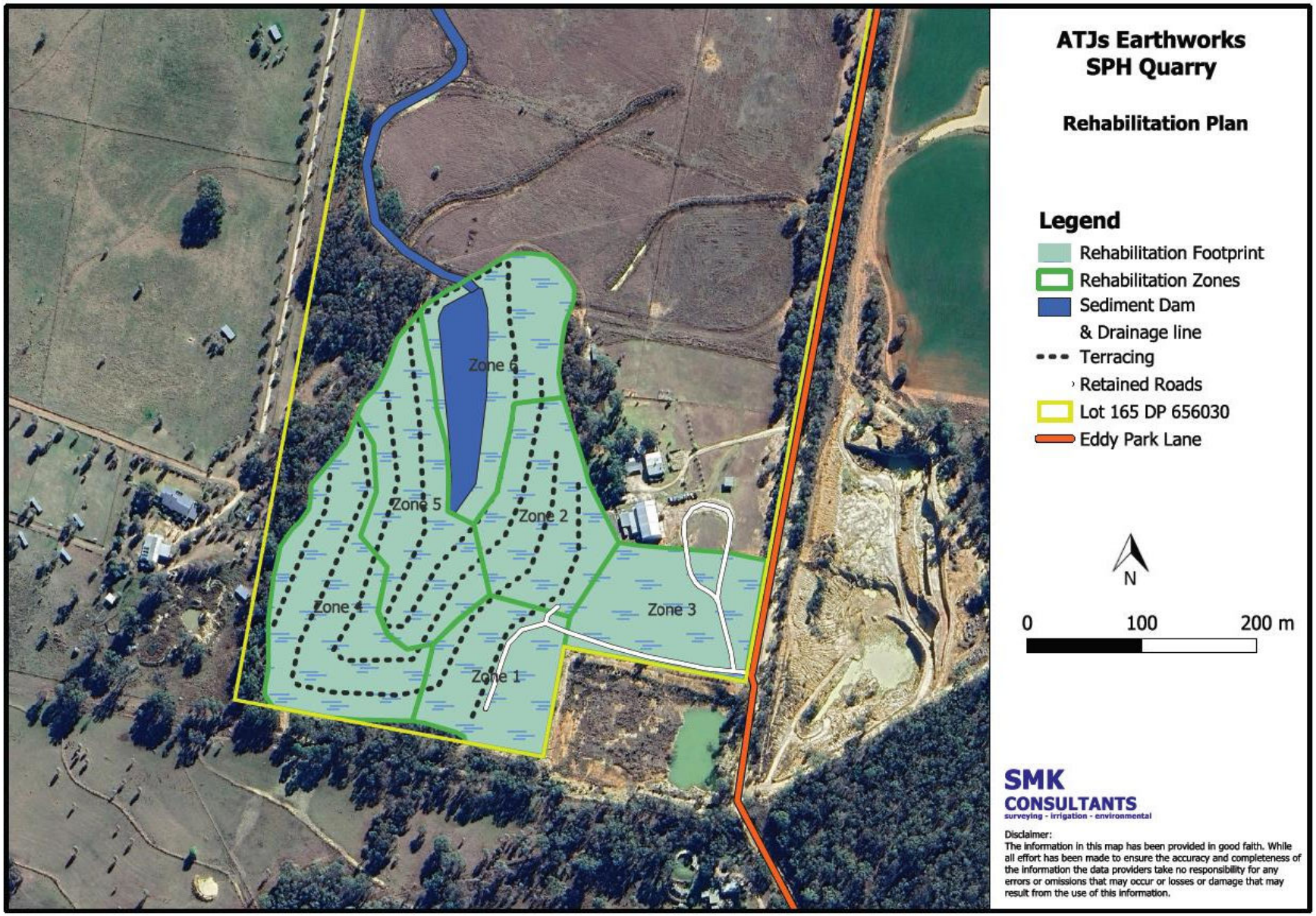
The code of conduct objectives aims to:

To maximise safety and minimise impacts of trucks on other road users and community amenity.

Truck Drivers Code of Conduct	
Truck Operators/ Contractors	It is the responsibility of the truck operator to conform to ATJs Earthworks site policies for truck standards and operation within the boundary of the facility and while under employment or contract to collect and deliver material from the SPH Quarry.
	Operate equipment in accordance with the equipment operator's manual.
	Trucks entering the site must be maintained in accordance with the manufacturer's specification to comply with relevant noise and emission regulations.
	Ensure that all guards and silencers are in place when equipment is being used.
	Contract truck operators to provide details of registration and road worthy certification upon request by ATJs Earthworks
	Avoid unnecessary engine revving during operations.
	Do not exceed the speed limit of 15 km/h on the quarry site for all heavy vehicles in accordance with internal speed signs.
	Avoid the use of exhaust brakes on trucks while traversing village areas.
	Trucks may only enter and exit the site from the designated entrance road.
	Truck operators to be courteous when approaching other heavy vehicles, including school buses.
	Comply with the School Zones during delivery operations.
	All loads leaving the site are to be covered in order to prevent dust emissions from the material being carried during truck movements.
	When transporting material use only the approved Haulage Routes.
	Strictly comply with all traffic rules and regulations.
	Report any complaints or incidents to the Quarry Manager.
	Adhere to Site Operating Conditions for Traffic Management and Noise Restrictions and Operating Hours.

Truck Drivers Code of Conduct	
	Ensure there is no loading over registered gross mass.
	Ensure drawbars, tailgates, rails and duals are clear of quarry product before leaving the quarry site.
	Comply with all posted speed limits on all roads.
	Always drive in a manner that is in accordance with road conditions.
	Only use horn when appropriate to do so.
	Decrease truck speeds to minimise dust and noise around private dwellings, road works, pedestrians, cyclists and stationary vehicles.
	In the event of an environmental incident, make every endeavour to contain and minimise environmental harm.
	Demonstrate professional and appropriate use of two-way radios.
	Remain calm and courteous when in contact with other road users and members of the public.
	Compliance will be assessed in the event of a complaint, incident or emergency and may also be subject to random inspection
	Report any sections of road along haul routes which may be of concern to operations including making other SPH Quarry trucks operators aware of these concerns, so that appropriate action and where require caution, will be adopted under the principles of safe road travel. Quarry management should be made aware of these concerns to ensure that other trucks drivers are informed and the concerns acted upon.

Appendix H: Rehabilitation Plan



Rehabilitation Plan Details

Rehabilitation Zones

Rehabilitation Zone	Area (ha)		Date	Revegetation Species
	Total	Landscaped & revegetated		
Zone 1	1.33	0.35	Nov 2022	*Eucalyptus sideroxylon, Eucalyptus moluccana, Eucalyptus melliodora, Eucalyptus microcorys, Acacia melanoxylon, Dianella cerulean, Hardenbergia violacea*
Zone 2	1.53	0.05	Nov 2022	*Eucalyptus sideroxylon, Eucalyptus melliodora, Dianella cerulean, Poa labillardieri*
Zone 3	1.54	0.05	2020-2024	*Eucalyptus Citriodora, Eucalyptus Scoparia, Pyrus calleryana*, Prunus nigra Sp.**
Zone 4	2.18	0.1	Nov 2024	*Eucalyptus Albens, Eucalyptus melliodora, Eucalyptus crebra, Angophora floribunda*
Zone 5	1.83	0.1	Nov 2024	*Eucalyptus Albens, Eucalyptus melliodora, Eucalyptus crebra, Angophora floribunda*
Zone 6	1.88	0.1	Sept 2024-	*Eucalyptus sideroxylon, Eucalyptus melliodora, Eucalyptus crebra*
Totals	**10.29**	**0.75**		

**Planted around permanent infrastructure*

Figure 1: Zone 1 Rehabilitation Nov 2024

Figure 2: Zone 1 Rehabilitation Nov 2024

Appendix I: AHIMS Search Results

AHIMS Web Services (AWS)
Search Result

Your Ref/PO Number : Gum Flat
Client Service ID : 900437

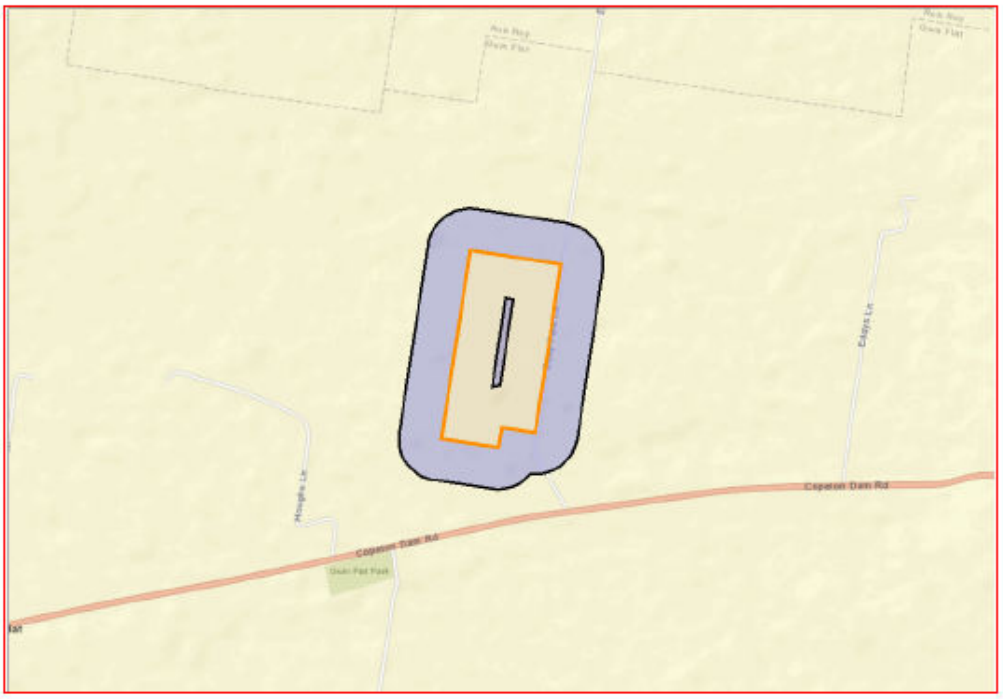
SMK Consultants Pty Ltd - Moree
P O Box 774
Moree New South Wales 2400
Attention: Peter Taylor
Email: ptaylor@smk.com.au

Date: 13 June 2024

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 106, DP:DP656030, Section : - with a Buffer of 200 meters, conducted by Peter Taylor on 13 June 2024.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

0	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Heritage NSW and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings.
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.