

Traffix Group

Traffic Management Plan

Proposed Rehabilitation and Earthworks
181 Cummings Road, Parwan

Prepared for
Shinboners Pty Ltd

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1. Introduction

Traffix Group has been engaged by Shinboners Pty Ltd to prepare a Traffic Management Plan for the Proposed Rehabilitation and Earthworks at 181 Cummings Road, Parwan.

In particular, this report provides a broad overview of the traffic routes that are available to and from the site, and a high-level assessment of the traffic impacts on the surrounding road network and intersections for trucks associated with the proposed earthworks.

This report has been prepared to address the requirements of Condition 8 of the Request for Further Information (RFI) issued by Moorabool Shire Council.

2. Existing Conditions

2.1. Subject Site

The subject site, addressed as 181 Cummings Road, is located at the west side of Cummings Road between Smiths Road and School Lane in Parwan as shown in the locality plan at Figure 1.

The site has a frontage to Cummings Road to the east and Smiths Road to the south as shown in the aerial photograph at Figure 2.

A dam known as 'Star Dam' is located toward the northern end of the site adjacent to the Parwan Creek. We understand that the dam was previously an open cut coal mine. This use ceased a number of years ago and the dam is permanently inundated with water. Vehicle access to the site is provided via three connections to Cummings Road along the site's eastern boundary.

The subject site is zoned Special Use Zone (SUZ) under the Moorabool Planning Scheme, as shown in the land zoning map at Figure 3. Land zoning in the immediate vicinity of the site comprises a mixture of special use and farming zones.

We understand that Planning Permit No. PA2018/319 (issued on 7 August 2019) applies to the site and allows for rehabilitation and earthworks in association with Star Dam.

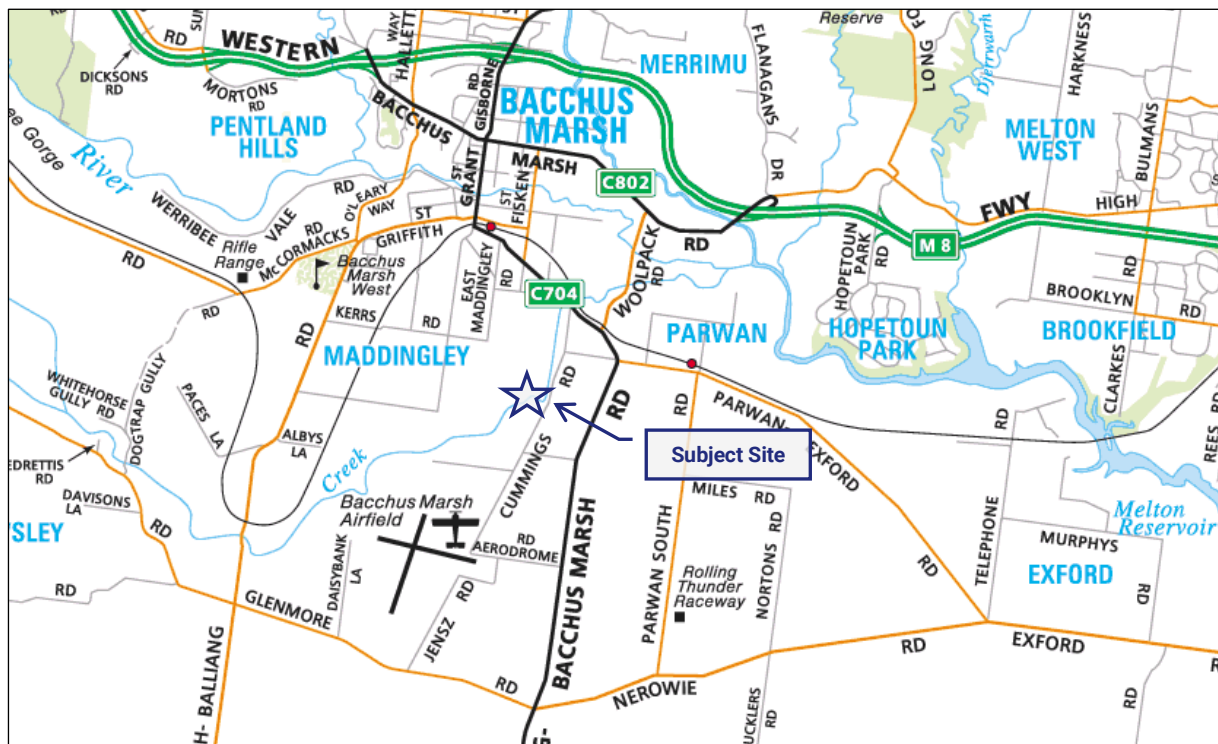


Figure 1: Locality Map

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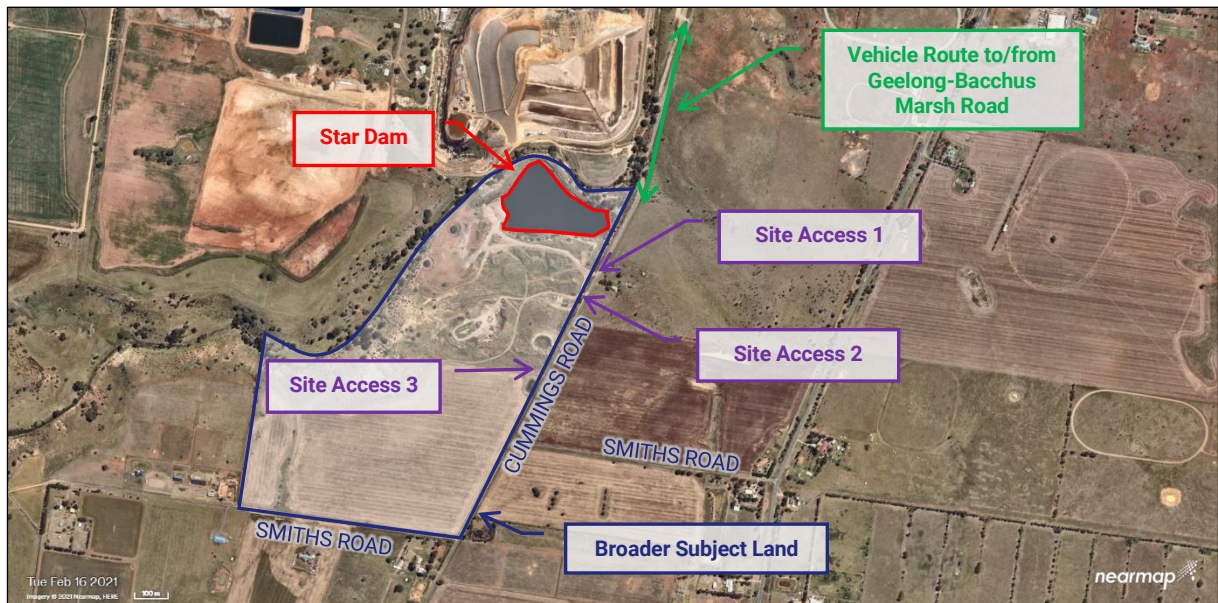


Figure 2: Aerial Photograph

Source: Nearmap

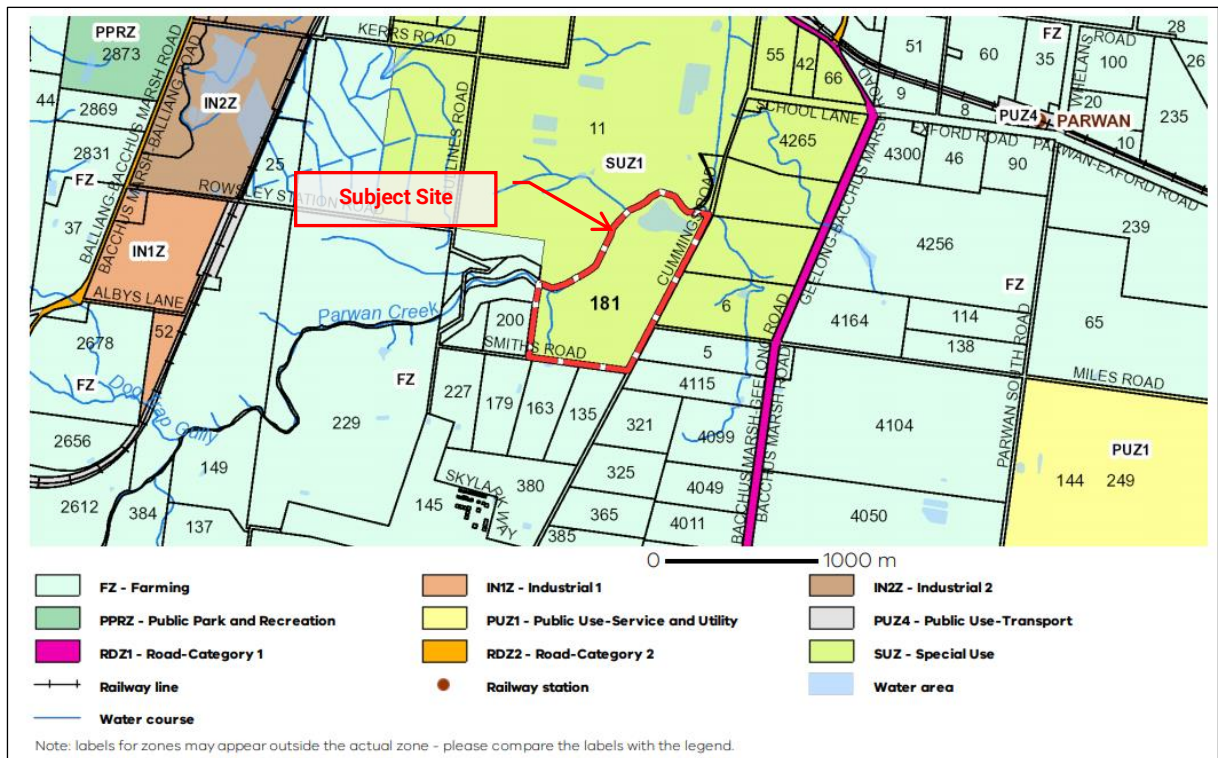


Figure 3: Planning Scheme Zoning Map

Source: VicPlan, <https://mapshare.vic.gov.au/vicplan/>

2.2. Road Network

Cummings Road is a local road under the control of Council and is aligned in a north-south direction along the eastern boundary of the site. Cummings Road provides a connection between Geelong-Bacchus Marsh Road to the north and Aerodrome Road to the south.

In the vicinity of the site, Cummings Road has a sealed carriageway that accommodates a single traffic lane in each direction and has gravel/grass shoulders on both sides.

The default rural speed limit of 100 km/h applies to Cummings Road in the vicinity of the site.

Geelong-Bacchus Marsh Road is an arterial road managed by VicRoads and is zoned 'Road Zone Category 1' under the Planning Scheme.

In the vicinity of Cummings Road, Geelong-Bacchus Marsh Road is aligned in a general northwest-southeast direction and accommodates a single traffic lane in each direction.

A speed limit of 80 km/h applies to Geelong-Bacchus Marsh Road in the vicinity of the site.

Smiths Road is a local road that is under the control of Council and is aligned in an east-west direction between Geelong-Bacchus Marsh Road to the east and Cummings Road to the west. Smiths Road provides a sealed carriageway approximately 3.6 metres wide and has gravel/grass shoulders on both sides.

The default rural speed limit of 100 km/h applies to Cummings Road in the vicinity of the site.

It is noted that a separate road also named Smiths Road which extends east from Cummings Road along the subject site's southern abuttal.

Woolpack Road is a Council arterial road that is zoned 'Road Zone Category 2' under the Planning Scheme and extends between Geelong-Bacchus Marsh Road to the south and Bacchus Marsh Road (The Avenue of Honour) to the north.

Woolpack Road provides a sealed carriageway accommodating a single lane of traffic in each direction.

A speed limit of 80 km/h applies to Woolpack Road.

Bacchus Marsh Road (The Avenue of Honour), located approximately 2 km to the north of the subject site, is an arterial road managed by VicRoads and is zoned 'Road Zone Category 1' under the Planning Scheme. Bacchus Marsh Road is aligned in a north-west to south-east direction, providing connections with the Western Freeway to both the east and west directions.

Bacchus Marsh Road generally accommodates a single lane of traffic in each direction and continues as Main Street through the Bacchus Marsh Town Centre.

A speed limit of 60 km/h applies to Bacchus Marsh Road, reducing to 50 km/h through Main Street.

Grant Street is an Arterial Road managed by VicRoads and is zoned 'Road Zone Category 1' under the Planning Scheme. Grant Street is aligned in a north-south direction between Parwan Road to the south and Main Street to the north. To the north of Main Street, Grant Street continues north as Gisborne Street and provides a connection with the Western Freeway.

Grant Street/Gisborne Street provides for a single lane of traffic in each direction and an additional lane of kerbside parking on both sides along certain sections of the road.

Speed limits of 60 km/h and 50 km/h generally apply to Grant Street and Gisborne Road respectively, however 40 km/h speed limits apply during school times along certain sections.

A roundabout forms the intersection of Grant Street/Gisborne Road/Main Street, and is provided with a semi-mountable island.

Figure 6 to Figure 11 provide views of the surrounding road network.



Figure 4: Cummings Road – View North



Figure 5: Cummings Road – View South



Figure 6: Geelong-Bacchus Marsh Road (near Smiths Road)– View North



Figure 7: Geelong-Bacchus Marsh Road (near Smiths Road) – View South



Figure 8: Geelong-Bacchus Marsh Road (near Cummings Road) – View West



Figure 9: Geelong-Bacchus Marsh Road (near Cummings Road) – View East



Figure 10: Smiths Road (east of Cummings Road) – View East



Figure 11: Smiths Road (east of Cummings Road) – View West

2.3. B-Double Road Network

The VicRoads heavy vehicle (B-Double) map, illustrated in Figure 12, sets out routes that have been assessed to be suitable for heavy vehicles to use. Proximate to the subject site, roads that would be appropriate for heavy vehicles to utilise include the following:

- Geelong-Bacchus Marsh Road,
- Woolpack Road,
- Bacchus Marsh Road (The Avenue of Honour),
- Grant Street,
- Gisborne Road,
- Old Western Highway, and
- Western Freeway.



Source: <https://www.vicroads.vic.gov.au/>

Figure 12: VicRoads B-Double Road Network Map

2.4. Bacchus Marsh Traffic Improvements Package

The Bacchus Marsh Traffic Improvements Package comprises a range of projects to improve the flow of traffic and road safety between Bacchus Marsh and the Western Freeway.

The Halletts Way Interchange Project was completed in August 2018, which involved the construction of new entry and exit ramps at Halletts Way to access the Western Freeway (Melbourne bound). This provides for a more direct and convenient route for residents and businesses who reside proximate to Halletts Way to access the Western Freeway, resulting in a reduction of vehicles having to travel through the Bacchus Marsh town centre.

The Gisborne Road/Western Freeway interchange upgrade was completed in the middle of 2018. This project involved upgrading the intersection of Gisborne Road and Holts Lane with the addition of new trafficable lanes and traffic lights, and providing a slip lane to the Melbourne-bound on ramp of the Western Freeway.

The Victorian Government is undertaking a planning study for a potential Eastern Link Road in Bacchus Marsh, in response to future urban growth and increasing congestion through the Bacchus Marsh town centre. The study intends to review the possible impacts of a north-south link, determine a route and seek approvals for land to be eventually integrated into the Moorabool Planning Scheme.

2.5. Traffic Surveys

Traffix Group previously commissioned traffic surveys at the intersection of Bacchus Marsh-Geelong Road and Cummings Road on Thursday 7 December, 2017 in the morning between 7:00-9:00am and the afternoon between 3:30pm-6:30pm.

The surveys established the morning peak hour as 7:45am-8:45am, and the afternoon peak hour as 3:45pm-4:45pm.

The peak hour movements recorded at the intersection for these peak periods are presented at Figure 13 with specific heavy vehicle volumes illustrated in Figure 14. For the purposes of these traffic surveys, 'heavy vehicles' refer to any 6.4 metre long truck (Small Rigid Vehicle) or larger.

The surveys found that there are very low existing traffic volumes along Cummings Road during weekday peak hours. We do not expect that traffic volumes on Cummings Road would have materially changed since the surveys were undertaken in December 2017.

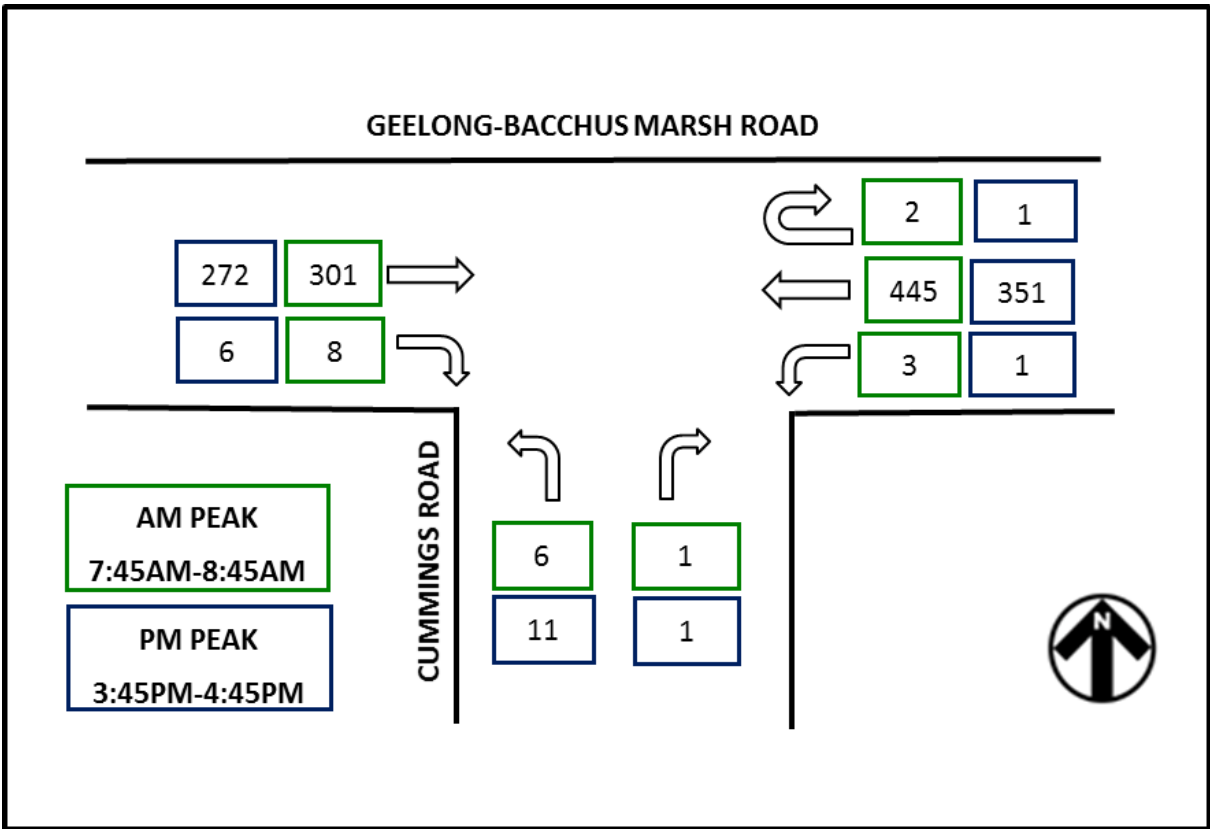


Figure 13: Existing Total Traffic Volumes Thursday 7 December, 2017

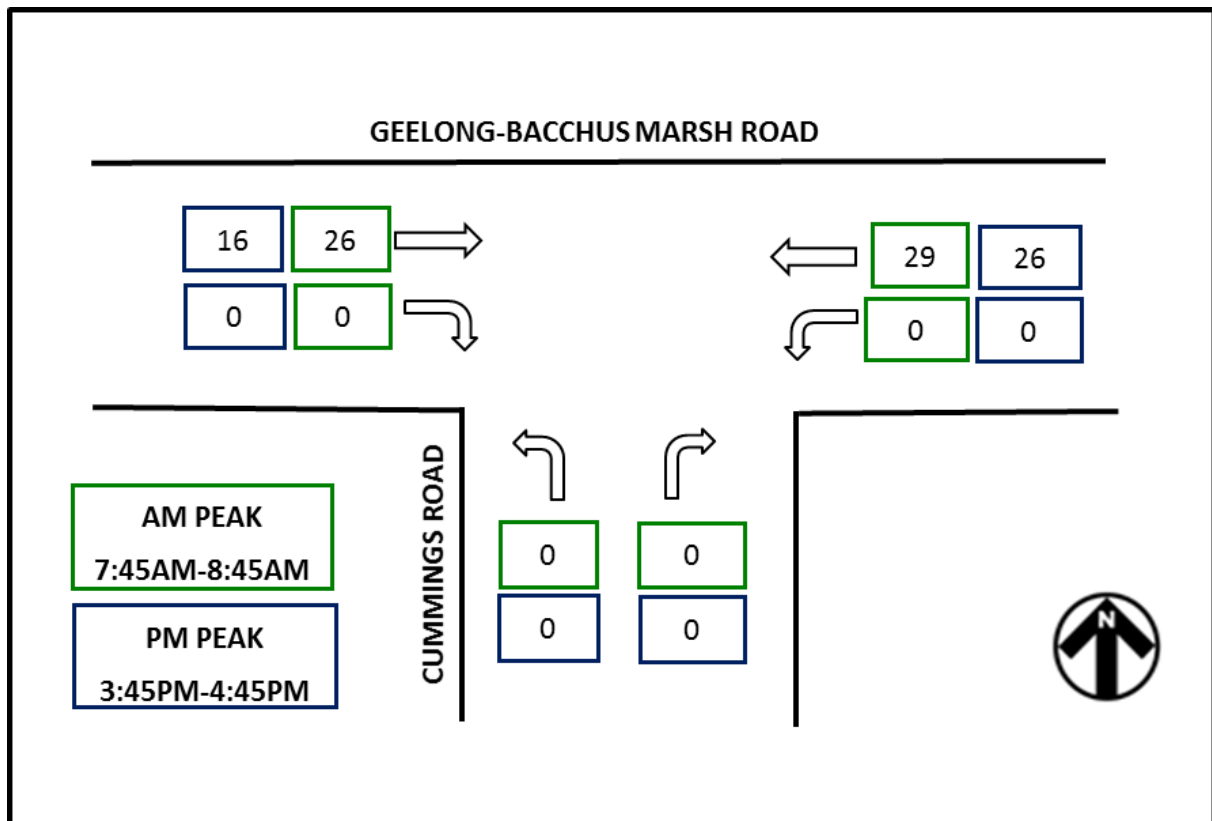


Figure 14: Existing Heavy Vehicle Volumes Thursday 7 December, 2017

2.6. Crash Review

A review was undertaken of the Department of Transport crash statistics database for the last five years of available data (last updated 30th June 2020). The crash investigation area captured Cummings Road (between Geelong-Bacchus Marsh Road and Smiths Road) and Smiths Road (between Geelong-Bacchus Marsh Road and Cummings Road) including intersections.

The data identifies that there were no crashes recorded within the subject area during this period.

3. Proposal

The proposal is for an amended planning permit to undertake rehabilitation and earthworks on the land at 181 Cummings Road, Parwan.

The proposed works will involve transport of approximately one million cubic metres of clean fill to the site for rehabilitation of the former mine and other disturbed areas. This equates to approximately 1.65 million tonnes of soil.

Over the life of the rehabilitation works on the site, an expected total maximum of 50,000 trucks are anticipated based on average load of 33 tonnes per truck.

We have been informed by the operator of the site that the filling process is expected to take between 10 and 12 years to complete, with an average of 20 trucks per day (truck and dog type). The maximum number of trucks per day could be up to 50% above the average over the short-term.

Trucks delivering material are proposed to enter and exit the site during the following times:

- Monday to Friday between the hours of 7am and 4pm, and
- Saturday between the hours of 7am and 1pm.

It noted that typical operations will be 5 days a week (Monday to Friday) and that operations on Saturdays are to allow for flexibility when needed.

The majority of heavy vehicle movements are anticipated to be to/from sites across Melbourne. The proposed haulage route will be generally via Woolpack Road to/from the Western Freeway.

Access is proposed via Cummings Road at the northernmost existing vehicle access connection located approximately 1.1km south of School Lane as shown in Figure 2.

An internal unsealed roadway will provide access to the dam. A rocked roadway or jetty is to be constructed out towards the centre of the dam to accommodate infill activities.

4. Traffic Generation and Travel Routes

4.1. Traffic Generation

Traffix Group has been advised by the operator of the site that the fill is estimated to take between 10 and 12 years to complete. For the purposes of our assessment, we have assessed the shortest timeframe being 10 years and associated average daily number of 20 trucks (truck and dog type) expected to enter and exit the site on each day of operation. Therefore, it is projected that the project will generate an average of 40 truck movements per day including 20 entry movements and 20 exit movements.

Daily truck movements to/from the site are expected to be spread across the nine hour operating period between 7am and 4pm on weekdays. This equates to an average of approximately 4 to 5 truck movements per hour, or one vehicle movement every 13.5 minutes on average. As noted previously, Saturdays are not proposed to be part of normal operations and therefore this assessment has considered 5 days of operation per week.

This level of traffic generation is relatively low in traffic engineering terms.

4.2. Likely Travel Routes

Traffix Group has been advised by the future operator of the site that heavy vehicle traffic associated with the proposal is generally expected to travel to/from various sites across Melbourne. Therefore, it is likely that all vehicle movements will be predominantly generated to and from the east.

There are a number of alternative routes between Melbourne and the site. Traffix Group has been advised by the future operator of the site that the haul route to/from the Western Freeway will be via Woolpack Road. The most direct and convenient route for heavy vehicles between the site and the Western Freeway would be:

- Via Cummings Road > Geelong-Bacchus Marsh Road > Woolpack Road > Bacchus Marsh Road > Hopetoun Park Road (Melbourne-bound only) > Western Freeway. For arrival trucks from Melbourne, a freeway exit connection is provided directly with Bacchus Marsh Road.

This route is expected to be the quickest, shortest and most direct route, and avoids travelling through the Bacchus Marsh town centre. Furthermore, this route is consistent with the routes set out by VicRoads that have been defined as suitable for heavy vehicles (B-Double) to travel along.

Non-locally generated site traffic would generally be distributed via the wider road network between a number of different routes and destinations including Melbourne (to/from the east), Ballarat (to/from the west), Werribee and Geelong (to/from the south). Figure 15 provides an illustration of the likely travel routes to and from the site.

Vehicles accessing the site to/from the south (which is expected to occur occasionally only) may elect to utilise Smiths Road or School Lane to access Cummings Road from Geelong-Bacchus Marsh Road given the shorter travel distance.

These are considered to be suitable alternative travel routes for the occasional truck movement given that only a limited number of properties take access via these roads and therefore associated existing traffic volumes are low. Whilst School Lane has a carriageway that accommodates simultaneous two-way traffic, Smiths Road only accommodates a single lane of two-way traffic. Nevertheless, Smiths Road has a wide gravel/grass shoulder on both sides which allows for vehicles to pull over and pass during the unlikely situation where vehicles are travelling along this road at the same time.

Accordingly, we are satisfied that above routes can adequately accommodate the traffic generated by the proposal without any noticeable impacts to the surrounding road network.

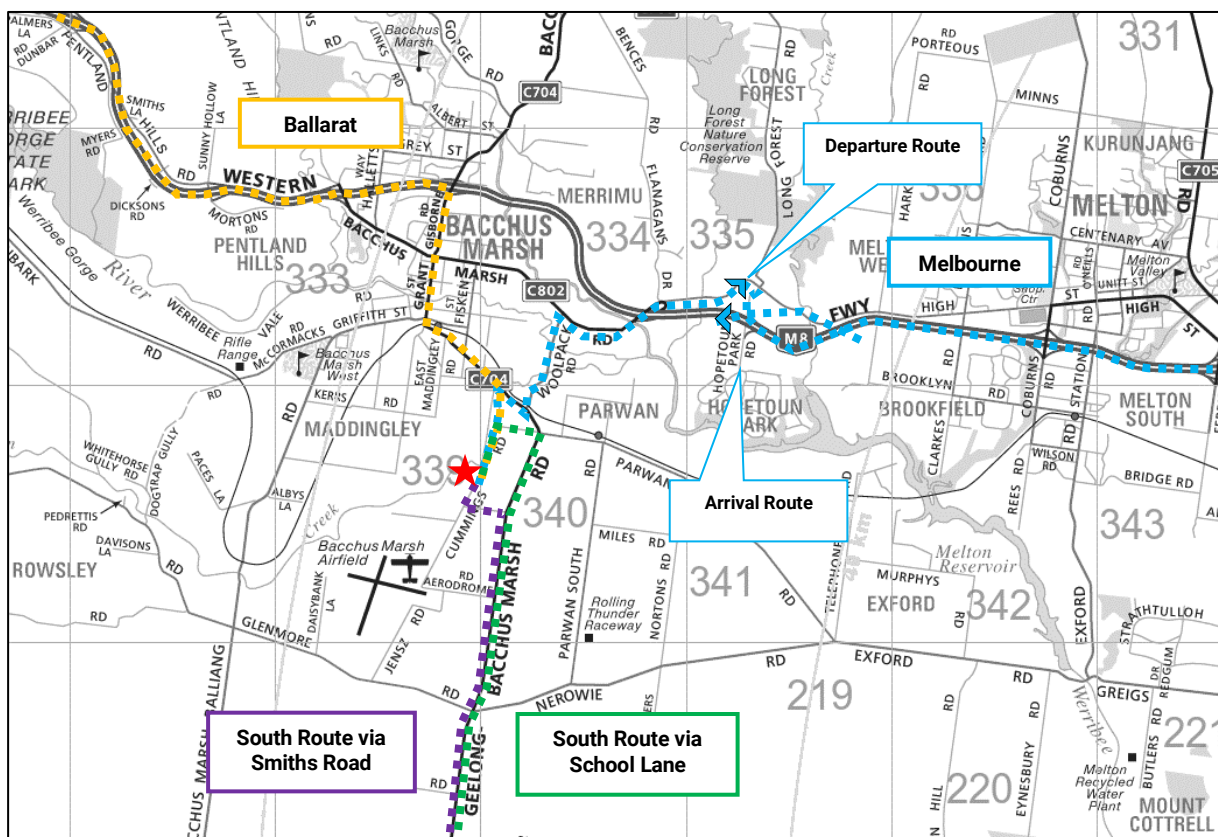


Figure 15: Likely Travel Routes

4.3. Traffic Impacts

With regard to the likely travel route identified above, it is projected that most (if not all) traffic generated by the proposal will utilise the intersection of Geelong-Bacchus Marsh Road/Cummings Road.

Upgrade works will not be required to the existing Geelong-Bacchus Marsh/Cummings Road intersection given that historically the site would have utilised this intersection to accommodate traffic generated by the previous coal mine operations including large trucks. The proposal intends to utilise 'truck and dog' type heavy vehicles which is presumably similar to the historical use of the site. Furthermore, the predicted vehicle movements associated with the proposal are relatively low and likely to be less frequent compared with the previous coal mine operation. Accordingly, we are satisfied that the existing intersection geometry of Geelong-Bacchus Marsh Road/Cummings Road can satisfactorily accommodate the turning movements of a 'truck and dog' type heavy vehicle.

We anticipate minimal traffic generated to the intersections of Smiths Road and School Lane with Geelong-Bacchus Marsh Road as a result of the proposal and accordingly any upgrade works are not necessary.

With regard to the wider road network, the proposed travel route is consistent with the nominated B-Double routes set out by VicRoads as discussed previously and therefore the route can adequately accommodate the traffic generated by the proposal without any adverse impacts to the surrounding road network. It is noted that Cummings Road is not a nominated B-Double route, however as discussed above, Cummings Road has historically been utilised to access the site and can satisfactorily accommodate 'truck and dog' vehicles.

Based on the above, the level of traffic generated as a result of the proposal will be low, spread throughout the day and have no detriment to the operation of the Geelong-Bacchus Marsh Road/Cummings Road intersection and the surrounding road network and intersections.

4.4. Internal Traffic Management

The site is very large and the area where fill is to be placed is extensive. Therefore, there will be significant opportunities along internal vehicle accessways where trucks can queue or park. Accordingly, there is no requirement for a specific truck queuing area. Furthermore, there is no need for trucks to queue on the external road network.

Based on the above, no internal traffic management plan is considered necessary to manage queueing of trucks.

5. Conclusions

Having prepared a traffic management plan the proposed earthworks at 181 Cummings Road, Parwan, we are of the opinion that:

- a) the proposal will generate a maximum of approximately 20 trucks (40 total movements) to/from the site per day during normal operations between 7:00am-4:00pm Monday to Friday,
- b) appropriate travel routes are available and are all B-Double approved except for Cummings Road which has historically accommodated heavy vehicle movements to/from Geelong-Bacchus Marsh Road,
- c) the existing Geelong-Bacchus Marsh Road/Cummings Road intersection can satisfactorily accommodate the predicted truck and dog movements without any need for upgrade or improvement works,
- d) the level of traffic generated as a result of this proposal is low, spread throughout the day and will not have a detrimental impact on the surrounding road network and intersections, and
- e) there are no traffic engineering reasons why an amended planning permit for the proposed rehabilitation and earthworks at 181 Cummings Road, Parwan, should be refused.