

MUSWELLBROOK DEPOT TRAFFIC REPORT

252 Coal Road, Muswellbrook

FINAL REPORT

This document was prepared for Diversi Consulting

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Table of Contents

1 Int	troduction	3	
1.1	1 Background		
1.2	1.2 Purpose of this Report		
2 Ex	kisting Site	4	
2.1	Site Description	4	
2.2	Road Network	4	
2.3	Public Transport	5	
2.4	Existing Traffic Conditions	5	
3 Co	onstruction Management	6	
3.1	Construction Activities	6	
3.2	Vehicle Routes	6	
4 Pr	oposed Development	7	
4.1	Site Overview	7	
4.2	Parking		
4.3	Car Park Design		
4.4	Driveway Access		
4.5	Trip Generation		
4.6	Trip Impacts and Distribution		
5 Fu	iture Development	10	
5.1	Future Coal Road Works	10	
5.2	Site Upgrade Requirements	10	
6 Co	onclusion	11	

1 Introduction

1.1 Background

TAR Technologies Pty. Ltd. has been commissioned by Diversi Consulting to prepare a traffic report for Muswellbrook Council's proposal to redevelop the existing Waste Facility at 252 Coal Road, Muswellbrook, into a community infrastructure depot.

1.2 Purpose of this Report

This report sets out to assess the expected traffic implications of the proposed development, including:

- Impacts of construction vehicles on the surrounding road network;
- Existing traffic conditions;
- Proposed traffic generation;
- Parking requirements for staff and visitors;
- Suitability of the design to the proposed conditions;
- Suitability of the site access layouts;
- Traffic implications of the site to Coal Road and its surrounding road network.

2 Existing Site

2.1 Site Description

The subject site is 252 Coal Road, Muswellbrook, within the Muswellbrook Council area. It is currently operating as a Waste Management Facility. The location of the subject site is shown in Figure 2.1.

Figure 2.1 - Site Locality



2.2 Road Network

Coal Road is a two-way, undivided local road that leads to a gated dead end on the approach to the Muswellbrook Coal Mine. The gate is located near the subject site, approximately 0.5km from Common Road and 2.5km from Victoria Street, the only two significant intersecting roads.

Victoria Street and Common Road connect Coal Road to the town centre and Sydney Street, the closest State Road.

Coal Road is approximately 8m wide and rural.

2.3 Public Transport

There are no public transport routes that travel along Coal Road. 252 Coal Road is about a 25-minute walk from the closest bus stop and a 45-minute walk from the train station.

2.4 Existing Traffic Conditions

The council provided Average Annual Daily Traffic (AADT) data for both Coal and Common Roads. Data for the years 2008, 2015 and 2022 have been used for comparison and analysis and are provided in Table 2.1.

Road	AADT			
	2008	2015	2022	
Coal Road	212	211	613	
Common Road	832	NA	986	

Table 2.1 - AADT Data

Some growth can be seen along Coal Road between 2015 and 2022, but the reason for this is unknown. It is assumed this correlates with Coal Mine activities or the opening of the existing dead-end street. Therefore, it is unknown if the existing volume has decreased or remains similar to that of 2022.

No further investigative analysis has been conducted on queuing or delays along Coal Road or at its intersection with Common Road; however, it can be assumed that Coal Road operates unhindered, with traffic free flowing from the existing Waste Facility into Muswellbrook Town Centre. The road is primarily shared with Muswellbrook Landscaping Supplies, which has access to other roads that are assumed to be more utilised than Coal Road, given they provide better access to the town centre and main roads. Coal Road terminates as a gated dead end slightly beyond the Waste Facility access. It is assumed these gates are sometimes opened and used by the Coal Mine, but this information is still unknown.

3 Construction Management

3.1 Construction Activities

All construction activities will occur within the site. At this stage, excavated materials are proposed to remain on-site. No exporting of materials will be undertaken. Therefore, no traffic management of construction vehicles off-site is necessary.

3.2 Vehicle Routes

Construction vehicles accessing the site should utilise only State and Regional roads where possible. The route to the site from Sydney Street (state road) is shown in Figure 3.1.





No detailed assessment of the more comprehensive transport network has been undertaken. These roads are expected to have suitable capacity to accommodate the low volume of vehicles to and from the site.

4 Proposed Development

4.1 Site Overview

The proposed site will consist of the following areas:

- 700m² Office area including meeting rooms and amenities
- 10,000m² Staff and operational parking area
- 150m² Workshop
- 500m² Internal storage area
- 460m² Covered storage area (lower ground floor)

4.2 Parking

The isolated location of the development guarantees that almost all staff will arrive in their private vehicles, with the possibility of a small number of ride-sharing. Therefore, trip generation rates presented in *Guide to Traffic Generating Developments* and supplementary technical direction *TD 2013/04a* of around 1 trip per 100m² for a typical office space are considered inappropriate for the subject site.

Office staff will be split among 28 full-time and 17 part-time members, with up to 45 drop-in staff members allocated. Therefore, 45 spaces for typical weekly staff are required, with enough capacity to accommodate additional drop-in staff.

The site will provide 51 passenger vehicle parking spaces on the west side of the facility and an additional 70 (including 2 disabled) spaces on the east side of the facility. Therefore, a total of 121 passenger vehicle parking spaces. Five motorcycle spaces will also be provided on the east side. Additionally, the site has the capacity to store 28 large trucks. However, the facility has a range of different-sized vehicles, which will all utilise the truck spaces. For example, excavators, forklifts and graders will share parking with the trucks and trailers. An additional 11 spaces are provided underneath the office facility to store smaller machinery such as mowers and tractors. The proposed number of parking spaces exceeds the Muswellbrook Council DCP requirements of 1 space per 45m² of parking for an office space.

4.3 Car Park Design

As per the Council DCP, parking areas are to be designed according to AS2890.1 for general off-street parking and AS2890.2 for off-street parking for commercial vehicles.

General staff parking has been designed at 90 degrees and complies with AS2890.1 with bay dimensions of 2.5m wide and 5.4m long.

Commercial vehicle parking has been designed at 60 degrees and complies with AS2890.2. There are two types of bay dimensions provided -23 spaces at 3.6m x 9.1m and 5 spaces at 3.85m x 18.2m (measured perpendicular to the direction of travel).

The car park layout is flat, and aisle widths have been designed to accommodate the largest number of vehicles accessing the site. Diversi Consulting's swept paths show the suitable access and circulation design of the car park.

4.4 Driveway Access

A 10m driveway is proposed from Coal Road into the site. The driveway will accommodate the movements of 19m Semi-Trailers. Both Council and Diversi Consulting have undertaken swept paths.

4.5 Trip Generation

Assuming all 45 full-time and part-time staff are on-site together on certain days and arrive and leave the site simultaneously during AM and PM peaks, then 45 trips would be the maximum trips per peak hour. Drop-in staff are likely to be distributed randomly throughout the day. Council work vehicles leaving and returning to the site are assumed to likely occur outside peak hour times and be distributed throughout the day.

4.6 Trip Impacts and Distribution

All incoming trips will be northbound on Coal Road from Victoria or Common Street, and all outgoing trips will be southbound and back towards Victoria Street. Traffic to and from the site is expected to be free-flowing and cause no interruption to the existing flows on Coal Road, which is already low volume. Coal Road has priority entering Victoria Street; therefore, no queuing will occur at the intersection. Given equal travel times to the subject site from both Common Street and Victoria Street, it is assumed that 50% of traffic will be distributed between the two roads. Some traffic will travel into Muswellbrook Town Centre while the remaining will split 50/50 to the northbound/southbound directions at Sydney Street.

5 Future Development

5.1 Future Coal Road Works

Coal Road is part of a proposed Muswellbrook Bypass development that would bypass Muswellbrook Town Centre. Two roundabouts will be installed on Coal Road as part of the future proposal connecting the bypass on/off ramps. The closest roundabout will be approximately 500m east of the waste management facility driveway.

5.2 Site Upgrade Requirements

Depending on future volumes, infrastructure upgrades, such as auxiliary lanes, may need to be considered as part of the Coal Road upgrade at the waste facility.

Acceleration and deceleration lanes would help to mitigate queuing associated with regular heavy vehicle movements to and from the site. To satisfy a 60km/h speed zone:

- a truck is required to have 320m of acceleration length (60m taper inclusive) to reach 60km/h. (Austroads guidelines)
- Deceleration lanes of a 55m deceleration lane (taper inclusive).

Currently, Coal Road is a dead-end east of the Waste Facility. However, with the future extension of Coal Road to the east, a right-turn bay would be necessary to mitigate interruption to future traffic flows along Coal Road. Coal Road currently has 39m of road reserve width to accommodate all upgrades.

6 Conclusion

Coal Road is a low-volume, low-hazard road operating in a rural environment. The low traffic volumes generated at the new development site are not foreseeable issues. Furthermore, the surrounding road network is expected to have enough capacity to accommodate any additional traffic generated by the site. These conclusions apply to both construction and post-development traffic generation.

The development will provide adequate parking for all staff members and the fleet of vehicles to be stored on-site.