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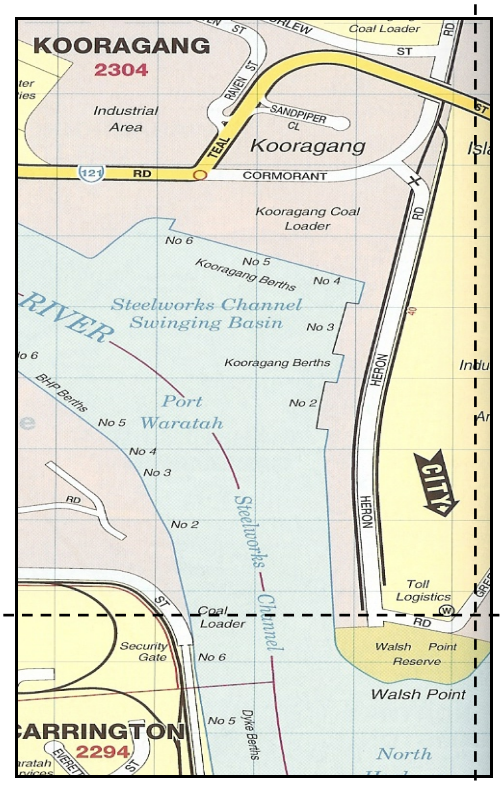
TRAFFIC ASSESSMENT REPORT

PROPOSED BULK LIQUIDS STORAGE FACILITY

Lots 1-4, DP234887, Greenleaf Road, KOORAGANG ISLAND



May 2007

Marstel Terminals Pty Ltd
(The Applicant)

Newcastle City Council Local Government Area

Prepared by
Terry Keating
Director
TPK & Associates Pty Ltd

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TRAFFIC ASSESSMENT

SECTION 1 - INTRODUCTION

1.1. – The Project

TPK & Associates Pty Ltd (TPK) was invited by HLA ENSR for The Applicant, Marstel Terminals to join their project team to provide traffic assessment services for the subject project; the project is a proposed Bulk Storage Facility on land at:

Lots 1 – 4 DP234887, Greenleaf Road, Kooragang Island

The general site location is highlighted on the cover page map.

1.2. – Task Description

The assessment and report focuses on the following objectives: -

- Establish that the surrounding road network will service all user needs in terms of road safety and traffic management.
- Establish that the appropriate road safety and traffic management guidelines and standards are to be addressed by the proposal.
- Evaluate the potential impact of the project on the road network capacity.

This assessment report is a supplement to the Environmental Assessment prepared by HLA ENSR for the project.

1.3. – Project Representative

Mr. Terry Keating, Director, undertook the evaluation and preparation of the report. He has over 40 years experience in the road safety and traffic management profession, including the assessment of traffic generating developments.

1.4. - References

The assessment and report have been provided as an outcome of reference to:

- Newcastle City Council DCP 2005
- AS 2890.1 & 2
- RTA Guide to Traffic Generating Developments
- Austroads Part 5 Intersections at Grade
- Project Plans as provided by the project team, Plan Number 12822-PBA1, E

SECTION 2 – EXISTING CONDITIONS

2.1. - Locality

The site has frontage to Greenleaf Road, Kooragang and is to occupy land on the eastern side of the road at its most southern extremity on Walsh Point.

2.2. – Road Network

Greenleaf Road is classified as a local road providing one leg of a loop road on Walsh Point. Greenleaf Road connects to Stockton Bridge (MR108) along the eastern side of the road loop and connects into the western side of the loop, Heron Road then on to the Teal Street (MR108) roundabout via Cormorant Road.

MR108, to which this road loop connects, provides links to Newcastle, F3 Freeway and Nelson Bay.

MR108 on Stockton Bridge had a 2004 AADT of 18,966vpd based on data contained in RTA's Traffic Volume Data 2004 publication; with growth trends from the permanent counting station the 2007 AADT likely to be approaching 20,000vpd.

Peak hour traffic volumes past the site frontage taken in 2007 are shown below in Table 1.

	North Bound	**South Bound**
PM PEAK	15 MIN. TOTALS	15 MIN. TOTALS
3.30-3.45	1	10
3.45-4.00	3	3
4.00-4.15	2	2
4.15-4.30	0	3
HOUR TOTAL	**6**	**18**
AM PEAK	15 MIN. TOTALS	15 MIN. TOTALS
7.30-7.45	5	3
7.45-8.00	3	6
8.00-8.15	5	4
8.15-8.30	3	3
HOUR TOTAL	**16**	**16**

TABLE 1 – Traffic Survey May 2007

2.3. – Traffic Management

The current road environment has no traffic facilities on the 22.9m wide carriageway; the existing road environment is shown in Photos 1 & 2

PHOTO 1 – GREENLEAF RD LOOKING NORTH

PHOTO 2 – GREENLEAF ROAD LOOKING SOUTH

SECTION 3 – GUIDELINES, REQUIREMENTS AND OUTCOMES

The traffic generation and parking requirements for this project have been determined in this section; Table 2 sets out the relevant land use for this project.

TABLE 2 – PROJECT LAND USE DETAILS

LAND USE TYPE	DETAILS
Bulk Fuel Storage Facility	Base products arrive by ship with direct download to the site (minimal delivery by road) Distribution by road Staff required for: • Site operation up to 3 • Shipping download up to 12 (Maximum of 10 ship arrivals per year)

3.1.1 – Road Network Traffic Generation

The RTA Guide to Traffic Generating Developments suggests traffic generating rates for a range of land use activities. The Business Plan for this development is not reflected in the standard rates contained in that document; Table 3 sets out the rates adopted for this project as provided by The Applicant from the business plan.

TABLE 3 – POTENTIAL TRAFFIC GENERATION

USE – Bulk Fuel Storage Facility	ADOPTED RATE AND TRIPS
	Note: Hours for site operation expected to be 6am to 4pm Mon-Fri and 6am to 12noon Sat. Shipping times are random
Road Delivery Trips	Up to 40 heavy vehicle trips per day; no defined peak hour
Staff Trips	Site: 6 trips per day, 3 trips in the peak Shipping: up to 12 trips spread over 36 hours on 10 occasion each year
PROJECT TRIP TOTALS	Daily 46 trips Peak 5 trips (allowing for 1 truck arrival and departure, no shipping staff)

3.1.2 – Distribution

Catchment

The traffic will converge from and disperse to the broad road network at potentially 2 locations:

- Cormorant & Teal Streets roundabout.
- Stockton Bridge on load and off load routes.

Modal Split

The distribution will be via the following gateways:

- Tourle Street Bridge for southern destinations, New England Highway & F3 corridors.
- Stockton Bridge for Pacific Highway north of Hexham.

The proportion on each leg will be driven by product demand at the time.

3.2 – Parking Requirements

Newcastle City Council's DCP 2005, Element 4.1, Schedule 1 provides a range of requirements for various land use categories; categories such as Road Transport Terminals, Industry or Warehouse are not applicable; Table 4 sets out the recommended requirements.

TABLE 4 – PARKING REQUIREMENTS

USE	RATE & REQUIRED
Delivery Trucks	Nil, no trucks parked on site other than in the product pick up lanes.
Staff	Site Staff: 3 spaces Casual Staff for shipping unloading service will be spread over a 36 hour period relative to need – no specific allocation made (see Section 4.1)
Requirement	3 spaces

The project proposal provides for 6 spaces and has areas for overflow.

SECTION 4 – PARKING & SITE AMENITY

Overview

A project summation of key site elements is provided in Table 5.

TABLE 5 – PARKING & ACCESS ASSESSMENT

Ref. AS/NZS 2890.1-2004 (AS), AS2890.2 (AS2)-2002 and/or NCC DCP 2005

CRITERIA	CLAUSE	ASSESSMENT or REQUIRED	PROVIDED	COMPLIES
Classification of Use	(AS) Table 1.1	Class 1	NA	NA
Road Frontage type	(AS) Table 3.1	Local	NA	NA
Number of Parking spaces	(AS) Table 3.1	<25 range	6	See report
Parking Bays	(AS) Figure 2.2	90 Degree, 5.4m x 2.6m	5.5m x 2.6m	Yes
Parking Aisle	(AS) Figure 2.2	Staff Car Park – 6.2m	6.6m	Yes
Driveway Category	(AS) Table 3.1 (AS2) Figure 3.1	Category 1 AV	NA NA	NA NA
Driveway Design	(AS) Table 3.2 (AS2) Figure 3.1	3.0 to 5.0m combined. 12.5m wide at kerb	Car Park 6.6m comb. Trucks flow One Way	Yes Yes
Driveway location	(AS) Clause 3.2.3	Figure 3.1	Not at an intersection	NA
Sight distances	Figure 3.2	65m	Unlimited to the north, 65m through bend to the south	Yes

4.1 – Parking Overview

The land use will generate little demand for parking as staff levels are small. There will be random increases in demand when a ship has docked. At this time the 6 proposed off street spaces will be maximised and where site and shipping staff times coincide some short term use of on street parking may eventuate.

TPK have assessed the proposed off street capacity of 6 spaces to be realistic given the normal site demands and the prevailing road environment.

It is proposed to provide the staff parking area outside the proposed security fencing and have a separate driveway to move to/from the parking area.

TPK support the proposed staff parking option as any potential conflict with truck movements on site is removed; there is little pedestrian movement past the site and adequate footway space is retained.

During the construction phase of the project site management will provide off street parking with the site for construction staff.

4.2 – Site Amenity, Traffic Flow

The heavy vehicle traffic will flow one way south through the site; entering left in from the north and exiting left out to the south.

As indicated in Section 4.1 the staff car park is separated from the truck lane. TPK did not identify any potential issues with traffic flow on site.

The trip path of the heavy vehicles will be a directive of management to the contracted transport providers; TPK did not conclude this directive needed support from signage, however should road authorities require an “ONLY” for left regulatory sign can be located at the site boundary exit point.

4.3 – Site Amenity, Pedestrian

The office and workshop area are located adjacent to the staff car park; gated access from the car park should be provided to minimise pedestrian trip distance.

The movement of pedestrians around the site including the pump areas is not seen as a matter that can be controlled by specific pedestrian movement paths. Pedestrian activity will be of a roaming style and a matter seen to be controlled by on-site work practice and OH & S strategies.

TPK have not recommended the provision of specific pedestrian pathways on the site.

SECTION 5 – ROAD NETWORK

The land use will generate minimal traffic in terms of impact on intersection or road network capacity; allowing for 1 heavy vehicle arrival and departure in the peak period the development will only generate an additional 5 peak trips per hour.

TPK concluded that detailed intersection analysis for the surrounding road network was not required for this development to confirm the conclusion above.

Heavy vehicle trips will utilise the off load ramp from Nelson Bay Road (at Stockton Bridge) to access Greenleaf Road and approach the site. The departure trip will be left from the site and travel on Herons Road to continue on to MR 108, Cormorant Road. All intersections traversed provide adequate geometric layouts, as part of their design to cater for heavy vehicles.

Figure 1 below shows the proposed exit driveway relative to the existing Toll Logistics driveway on the opposite side of Greenleaf Road. TPK submit that existing traffic flow past the site (see Table 1) affords prolonged gaps in the traffic flow to access Greenleaf Road. Both driveways have adequate sight distance and the number of trips on each site per hour is so low that traffic conflict will not eventuate between the two driveways.

FIGURE 1 – CONCEPT AERIAL OVERLAY

(Provided by Page-Green & Associates Pty Ltd)

TPK submit the development will have no impact on road network performance.

The construction phase will require construction staff ranging from 10 and peaking for a short period at around 50.

TPK submit that the construction traffic trips will be spread rather than a short peak arrival/departure; given the site location there is potential for car pooling by some staff. At the peak staff demand level the peak hour traffic increase is not expected to exceed 30 trips and will not have an adverse impact on the road network.

As indicated in Section 4.1 of this report construction staff will be provided with off street parking within the site.

SECTION 6 – SUMMATION

The assessment by TPK & Associates has concluded that:

- ✓ The development will not create an adverse impact on the road network performance.
- ✓ There is adequate provision for the heavy vehicle trip paths generated by the site in terms of access and journey.
- ✓ The development will provide adequate site amenity in terms of parking, sight lines and turn paths given heavy vehicles are to be directed to travel left in and left out.

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