BARANGAROO, SYDNEY

DEMOLITION TRANSPORT MANAGEMENT PLAN

Prepared for

SYDNEY HARBOUR FORESHORE AUTHORITY

Jamieson Foley & Associates Pty Ltd
ABN 14 003 860 277
Suite 405
5 Hunter Street
Sydney NSW 2000
p +61 2 9233 1277
f +61 2 9235 2490
info@jamiesonfoley.com.au
www.jamiesonfoley.com.au

26 July 2007

TABLE OF CONTENTS

1 Introduction

Jamieson Foley Traffic & Transport Pty Ltd was engaged by the Sydney Harbour Foreshore Authority to prepare a transport management plan for the demolition works associated with the redevelopment of the Barangaroo site at East Darling Harbour, Sydney.

The requirements for the report are set out in the draft Director-General's Requirements for the Environmental Assessment of Demolition Works - Barangaroo, Sydney (MP 07-0077), dated June 2007. These include:

- Consider likely impacts from demolition traffic on nearby bus services.
- Impacts of demolition traffic upon the operations of the passenger terminal including events and functions staged at the terminal.
- Opportunities to maintain pedestrian access and safety adjacent to subject site during the period of activity.
- Consideration of the potential removal of waste by water based transport.
- The proposed means of vehicular access to and from the site and safety of proposed access points.
- Impact of generated traffic upon surrounding arterial road network and intersections.
- Details of anticipated truck routes to minimise impacts on residential areas.

The site was inspected on Tuesday 3 July 2007.

2 Site Location and Existing Conditions

Figure 2.1 and **Photos 2.1 to 2.11** provide an indication of the site location and the general conditions surrounding the site.

The following comments are offered for consideration:

- The site is located off Hickson Road, Millers Point and is currently used by P+O and Patricks Stevedoring, the Darling Harbour Passenger Terminal and several Sydney Ports operations.
- P+O and Patricks are in the process of moving their operations to Botany Bay and other ports.
- Hickson Rd is classified as a Regional Road SR7312 and falls under the care and control of the City of Sydney Council. It provides one traffic lane in each direction with parking generally on both sides.
- Parking varies from right angle parking to parallel parking and is banned at night.
- There is a total of 13 gates for access to the site, 12 of which provide access directly to Hickson Road and one off Towns Place.
- The numbering of the gates is inconsistent and that shown in **Figure 2.1** is for reference in this report only.
- Most gates provide full access to Hickson Road, except Gates 4a, 4b and 8c which are restricted to left-in-left-out access by means of a painted median.
- Gate 5 currently operates as the main gate and has full security access and custom control. This is the only operational gate for vehicular access for stevedoring and the Sydney Ports Corporation Harbour Control Centre tower.
- Gates 4a and 4b also have security control and provide parking for P+O and Patricks staff with pedestrian access only on to the customs secured area. These secured parking areas are planned for removal by P+O and Patricks when they finalise their operations.
- Gates 3, 6a and 6b are currently not in use and locked for access, including some concrete barriers.
- Gates 7a and 7b are used for access to the Sydney Ports Central Maintenance Depot and staff carpark. This area is fenced off from access to the P+O and Patricks stevedoring operational space.

- Gates 8a, 8b and 8c are used for access to the Darling Harbour Passenger Terminal and Function Centre. This area is also fenced off from access to the P+O and Patricks stevedoring operational space.

Figure 2.1 - Site Location

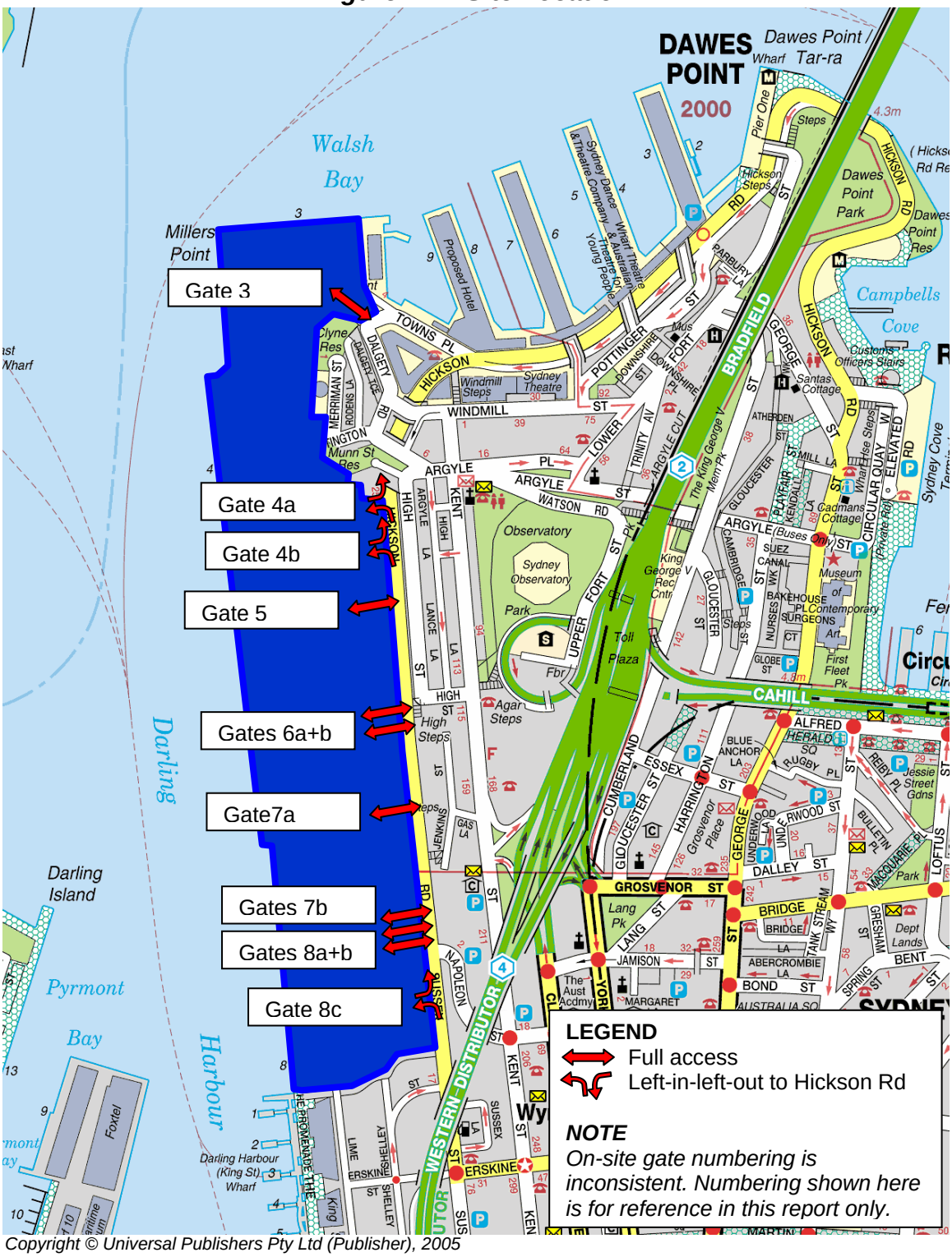


Photo 2.1 - Existing Buildings on Site (#6)

Photo 2.2 - Sydney Ports Harbour Control Centre Tower

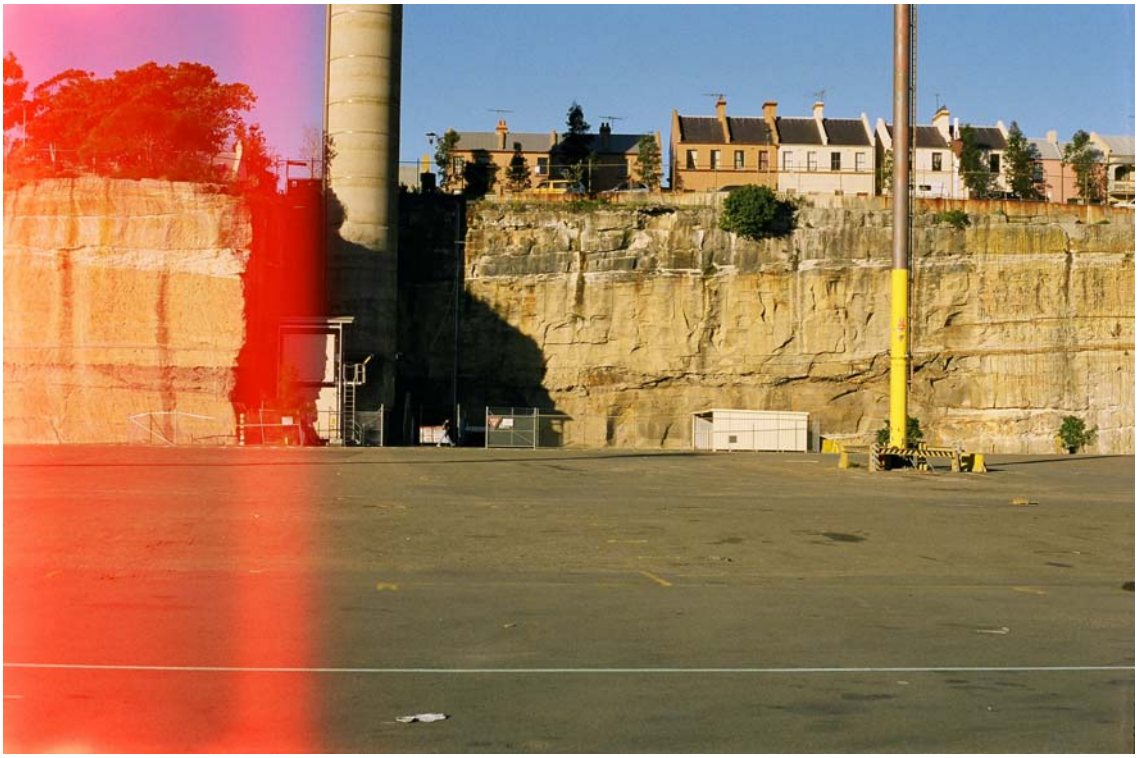


Photo 2.3 - Hickson Road, general layout

Photo 2.4 - Hickson Road, parking restrictions

Photo 2.5 - Gate 3 (not in use)

Photo 2.6 - Gates 4a and 4b (two separate carparks)

Photo 2.7 - Gate 5 (main gate)

Photo 2.8 - Gates 6a and 6b (not in use)

Photo 2.9 - Gate 7a (in use by Sydney Ports)

Photo 2.10 - Gates 7b, 8a and 8b (in use by Sydney Ports, formerly Spirit of Tasmania and Sydney Passenger Terminal deliveries)

Photo 2.11- Gate 8c (in use for Sydney Passenger Terminal general access)

3 Demolition Plan

3.1 General Process

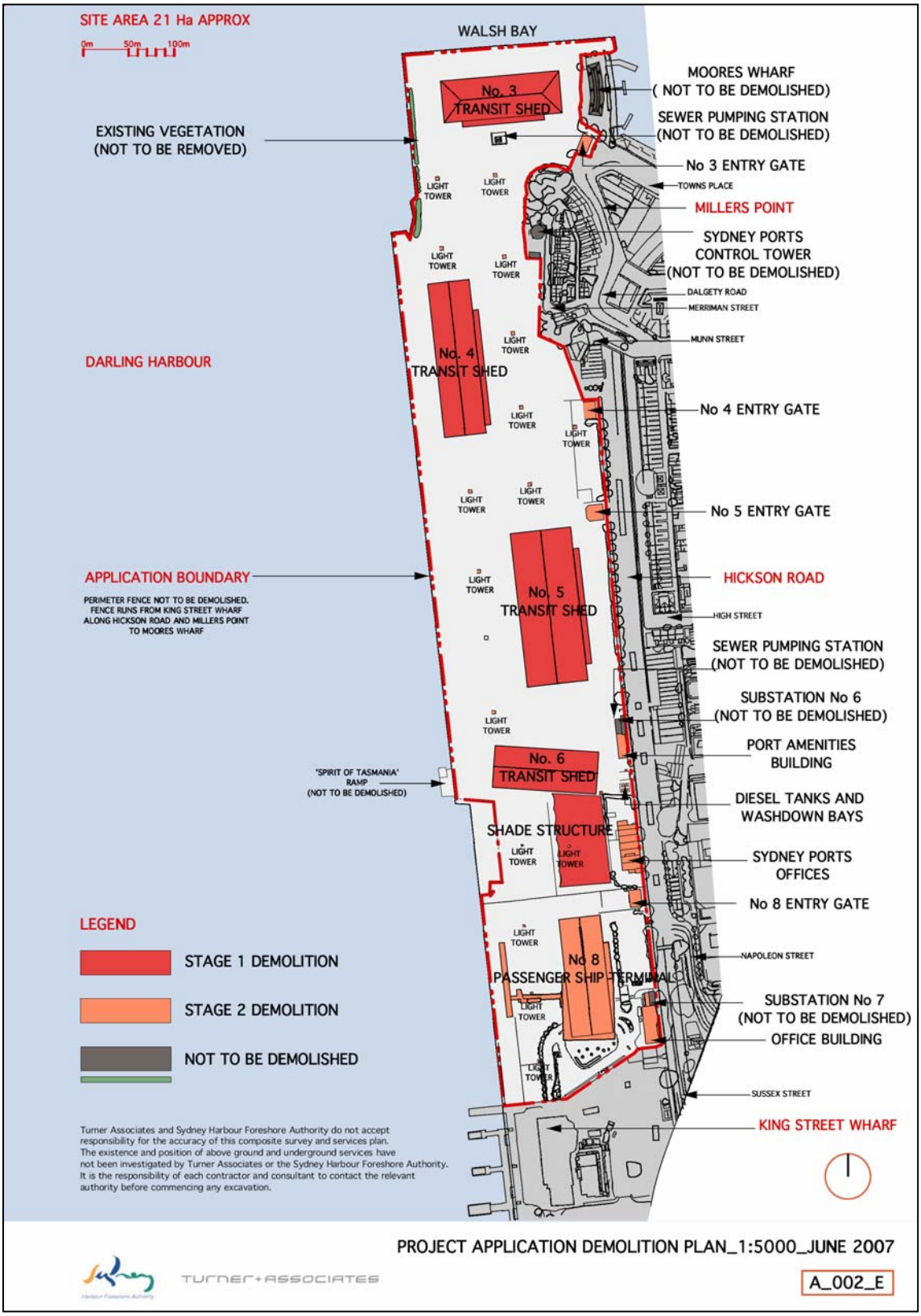
Figure 3.1 shows the proposed demolition plan. It includes two stages:

- Stage 1 includes the demolition of no3, no4, no5 and no6 sheds and related structures.
- Stage 2 includes the demolition of no8 shed and related structures, ie the passenger ship terminal or the "Darling Harbour Passenger Terminal and Function Centre", the amenities building, a two-storey office building, gatehouses, the Sydney Ports Central Maintenance Depot and the staff carpark

The two stages are completely separate, both in time and in space, ie:

- In terms of time, Stage 1 is planned for commencement in November 2007 with a demolition period of about six months. The timing of Stage 2 depends on Sydney Ports making alternative arrangements for the passenger terminal.
- In terms of separation in space, there are physical barriers between Stage 1 and Stage 2, which prevent access between the two sites. There are also barriers between the Sydney Ports Offices (ports depot) and the passenger terminal.
- Access for Stage 1 will generally be via the existing main Gate 5, although there are some ongoing activities that require separate access, which is discussed in **Section 3.2**.
- Access for Stage 2 demolition will be via Gates 7a/b or 8a/b/c, although the passenger terminal and the ports depot may demolished at different times, which affects the use of the various gates as discussed in **Section 3.3**.

Figure 3.1 - Proposed Demolition Plan



3.2 Stage 1 Demolition

Stage 1 includes the demolition of Sheds no3, no4, no5 and no6 and related structures. The demolition includes the following elements:

- roof structure, which contains asbestos sheeting
- walls and related structures
- steel support structures
- concrete footings.

Quantity Surveyors Donald Cant Watts Corke (NSW) Pty Ltd have provided the following estimates for Stage 1:

General

- Truck movements are mostly Truck & Trailer (Truck & Dog - 30t) with a load factor of 50%.
- The estimate of quantities is rough and the margin of error is +/- 30%
- The number of trucks per day is a function of the time taken to do the work and could be varied or limited to suit external constraints.

Commencing 1/11/07

- Precinct 4[1]: Estimated total tonnage of material to be removed is 7000t. Total number of trucks is 350.
- Precinct 5: Estimated total tonnage of material to be removed is 8000t. Total number of trucks is 400.
- Precinct 6: Estimated total tonnage of material to be removed is 5750t. Total number of trucks is 290.
- Duration - 12 to 18 weeks. Average trucks / day is 25, varying between peaks of 35-45 / trucks day and none /day. Maximum daily two-way truck movements (ie in plus out) is thus 70-90 truck movements per day.
- The maximum hourly flow is 6-8 trucks per hour, ie 3-4 trucks/hour inbound plus, 3-4 trucks/hour outbound.

Commencing 8/3/08

- Precinct 3: Estimated total tonnage of material to be removed is 6500t. Total number of trucks is 330.

[1] Precincts refer to sheds with the corresponding reference number, plus the related buildings.

- Duration - 5 to 7 weeks. Average trucks / day is 10, varying between peaks of 30 trucks / day and none /day. Maximum daily two-way truck movements (ie in plus out) is thus 60 truck movements per day.
- The maximum hourly flow is 5.5 trucks per hour, ie 2-3 trucks/hour inbound plus, 2-3 trucks/hour outbound.

3.3 Stage 2 Demolition

The timing of Stage 2 is uncertain and includes the passenger ship terminal as well as the amenities building, the two-storey office building and the Sydney Ports Offices / Central Maintenance Depot. The Sydney Ports Offices may cease operations separately from the other operations on the site.

The operations at the Stage 2 site are separate from the Stage 1 demolition works via Gate 5 and also operate independently from each other via two separate groups of gates, ie Gates 8a, 8b and 8c for the passenger terminal and Gates 7a and 7b for the Sydney Ports operations.

Demolition of the Ports Central Depot could proceed independently using Gate 7a, which is well clear off Gates 8a/b/c and provides full right turn access to Hickson Road.

However, if the passenger terminal is to be demolished while the Ports Depot remains operational, some changes to the Depot's current access arrangements would be required. Gates 8a/b are too close in proximity to gate 7b for safe access. Gate 8c provides left-in-left-out access to Hickson Road and would require Traffic Controllers to afford safe right turn access. Instead it may be more appropriate for the Depot to close its access at Gate 7b and use Gate 7a for all its access requirements. Alternatively, Gate 5 could be used.

Quantity Surveyors Donald Cant Watts Corke (NSW) Pty Ltd have not provided details for the Stage 2 demolition requirements. Instead, the client advises that the estimates for Precinct 5 apply to Precinct 8:

- Truck movements are mostly Truck & Trailer (Truck & Dog - 30t).
- The estimate of quantities is very rough and the margin of error is +/- 30%

- The number of trucks per day is a function of the time taken to do the work and could be varied or limited to suit external constraints.
- Estimated total tonnage of material to be removed is 8000t. Total number of trucks is 400.
- Duration - 5 to 7 weeks. Average trucks / day is 12, varying between peaks of 35 trucks / day and none /day. Maximum daily two-way truck movements (ie in plus out) is thus 70-75 truck movements per day.
- The maximum hourly flow is 6-7 trucks per hour, ie 3-3.5 trucks/hour inbound plus, 3-3.5 trucks/hour outbound.

3.4 Hours of Operation

The following hours of operation are proposed for the demolition works:

- 7AM - 6PM Monday to Friday
- 8AM - 2PM Saturday

Traffic movements are equally spread over the working day.

3.5 Expected Truck Volumes

Table 3.1 summarises the truck movement patterns associated with each Stage.

It is evident that two-way truck volumes vary from 60-87 truck movements per day and from 5.5-7.9 truck movements per hour.

Table 3.1 - Summary of Truck Traffic Movements

Precinct	Stage	Timing	Demolition Period	Quantity (tonnes)	Total No of Trucks[1] Required	Average Daily Truck Volume (Two-Way)	Max Daily Volume (Two-Way)	Max Hourly Volume (Two-Way)
3	1B	8/03/08	5-7 weeks	6500	330	20	60	5.5
4	1A	1/11/07	12-18 weeks	7000	350	25	76	6.9
5	1A	1/11/07		8000	400	29	87	7.9
6	1A	1/11/07		5750	290	21	63	5.8
8	2	not specified	5-7 weeks	8000	400	24	73	6.6

Notes
1) Truck volumes at 30tonne per truck and 50% load factor

4 Transport Management Plan (TMP)

4.1 General Requirements

At this stage, no contractor has been appointed and a number of factors may vary depending on the contractor's preferences:

- o Final destination of demolition materials
- o Use of water-based transport
- o Exact timing of the demolition process.

Therefore, for the purposes of this Transport Management Plan (TMP) a number of assumptions has been made. If actual operations vary significantly from these assumptions, it will be necessary to adjust the TMP accordingly.

TMP REQUIREMENT 1 The TMP shall be adjusted if any of the actual operations vary significantly from those assumed for the purposes of this report.

4.2 Types of Heavy Vehicles

The types of heavy vehicles used for transport of the demolition material are mostly truck & trailer (truck & dog) with a capacity of 30 tonnes. These are standard vehicles that operate freely along the general road system and no specific permits are required.

To assist in the demolition process, there may be a need for some specialised vehicles such as bulldozers, excavators, crushing plants, jack hammers, air compressors, bins and skips, air monitors, screens and scaffolding, etc.

TMP REQUIREMENT 2 Where plant / vehicles require delivery to the site on oversize transporters, specific permits shall be obtained separately by the contractor or the operator.

4.3 Disposal Site Locations

Table 4.1 details the proposed disposal site locations, as specified in the Environmental Management Plan prepared by ERM Australia[2].

It is evident that most sites are located in Western Sydney. The location for materials salvaged for reuse by the contractor will depend on the contractor.

Table 4.1 - Disposal Site Locations

Material	Possible Recycling Centre/ Disposal Site
Concrete	Boral Recycling Greystanes
Brick	Boral Recycling Greystanes
Timber	Salvaged for reuse by demolition contractor
Scrap metal / steel	Sell & Parker Blacktown / Smorgon Steel
Carpet	Salvaged for reuse by demolition contractor
Doors, sinks, toilets, roof sheeting, etc	Salvaged for reuse by demolition contractor
Scrap timber/ plasterboard, etc	Enviroguard Erskine Park
SMF	Enviroguard Erskine Park
Asbestos	Enviroguard Erskine Park

4.4 Truck Routes

Figure 4.1 shows the proposed truck routes. Upon departing the site with demolition materials, vehicles will either:

- Turn right out of the site at Gate 5 or Gate 8a/b, head south on Hickson Road, which becomes Sussex Street, and turn right onto the Western Distributor at Market Street.
- Turn right out of the site at Gate 5 or Gate 8a/b, head south on Hickson Road, head east up Napoleon Street, turn left onto Kent Street and access the Bradfield Highway via the on ramp opposite Gas Lane.

Vehicles arriving at the site will either:

- Exit the Western Distributor turning left onto Sussex Street at King Street, then travel north up onto Hickson Road and turn left into the site at Gate 5 or Gate 8a/b.

[2] ERM Australia 2007. Barangaroo Demolition Works. Environmental and Construction Management Plan (Demolition). Ref 0065952RP03 Rev03. June 2007. Annex D, pD1.

Figure 4.1 - Proposed Demolition Truck Routes