VOLUME 1

ENVIRONMENTAL ASSESSMENT

SANDSTONE RECYCLING FACILITY

LOT 1, DP 88087 and LOT B, DP 376646

No.2 ALBERT STREET

St PETERS

24 September 2012

Prepared by:
Nexus Environmental Planning Pty Ltd
Suite 29, 103 Majors Bay Road
PO Box 212
CONCORD NSW 2137
Tel: (02) 9736 1313
Fax: (02) 9736 1306
Email: kennan@ozemail.com.au

B1855

STATEMENT OF VALIDITY

Submission of Environmental Assessment

Prepared under Part 3A of the Environmental Planning and Assessment Act 1979

Environmental Assessment prepared by

Name:	Neil Richard Kennan
Qualifications:	B.A., Dip. Urb. & Reg. Plan., Dip. Cart., Ord 4. Certified Practising Planner
Address:	PO Box 212 **CONCORD NSW 2137**
In respect of:	Project Application for a Sandstone Recycling Facility

---

Applicant and Land Details

Applicant name:	The Concrete Recyclers (Group) Pty Ltd
Applicant address:	PO Box 238 **RYDALMERE NSW 1701**
Land to be developed:	Lot 1, DP 88087 and Lot B, DP 376646 No.2 Albert Street **St Peters NSW 2044**

Environmental Assessment An Environmental Assessment is attached

---

Statement of Validity

I certify that I have prepared the contents of this Environmental Assessment in accordance with the Director-General's Requirements dated 22 July 2011 and that, to the best of my knowledge, the information contained in the Environmental Assessment is neither false nor misleading.

Signature: 

Name: Neil Kennan

Date: 24 September 2012

EXECUTIVE SUMMARY

INTRODUCTION

Concrete Recyclers seeks the approval of the Minister for Planning and Infrastructure to establish a Sandstone Recycling Facility at No.2 Albert Street, St Peters.

The objectives of the proposal are:

(a) To remove the existing stockpile of sandstone material from the Site.

(b) To establish a commercially viable Sandstone Recycling Facility which is capable of recovering recyclable sandstone and sand from the waste stream for reuse.

(c) To assist the NSW State government in achieving its objectives for the recovery and recycling of waste as detailed in the *NSW Waste Avoidance and Resource Recovery Strategy 2007*.

(d) To establish an environmentally responsible and sustainable industry which would create employment.

THE SITE

The Site is:

Lot 1, DP 88087 and Lot B, DP 376646
No.2 Albert Street
St PETERS

The Site covers an area of 17,216m^2 comprising:

- Lot 1, DP 88087 - 10,380m^2
- Lot B, DP 376646 - 6,836m^2.

THE EXISTING ENVIRONMENT

The following development is located either adjoining the Site or in the vicinity of the Site:

- the Dial a Dump Waste Management Facility to the west and south, which extends from Albert Street through to Canal Road,
- residential development to the north in Albert Street and Campbell Road,
- industrial development in Woodley Street and Holland Street, and
- Sydney Park to the north east of the Site on the opposite side of Campbell Road.

Air Quality

The Sydney Airport station is located approximately 4km south-southwest of the Site. Data have been collected over an approximate 71 year period, with January recorded as the hottest month with a mean maximum temperature of 26.4^{o} C and July as the coldest month with a mean minimum temperature of 7.1^{o} C.

Rainfall data show that June is the wettest month with an average rainfall of 119.8mm over 8.7 days.

The airport is likely to be windier than the Site which is sheltered by terrain and buildings in the surroundings.

The annual wind rose indicates the predominant wind direction to be from the south and to a lesser extent from the north-west. The seasonal wind roses show that, during summer, the predominant wind direction is from the south.

In winter, the dominate wind direction is from the west with a spread of winds from the north-west quadrant.

Autumn winds mainly originate from the north-west with lesser winds from the south.

The spring distribution shows dominant winds from the south and spread of winds from the north-west and north to north-east.

Acoustic Environment

Background noise levels determined from noise logging at the rear of the house nearest the Site which forms the basis for the noise goals to assess site noise emissions are:

Day (dBA)	6:00am to 7:00am Morning Shoulder Period (dBA)
48	46

Note: Background noise levels are the Rating Background Levels determined in accordance with the DECCW Industrial Noise Policy.

Visual Environment

Residential development

- The existing stockpile of sandstone material on the Site is visible from the adjoining residential development fronting Campbell Road.
- There is an existing brick wall located on the southern side of Campbell Lane on the boundary of the Site.
- To the south of the brick wall is a significant stand of vegetation.

There are a number of commercial developments located on the Pacific Highway to the west of

the Site. The location of those activities is such that they have a limited visual catchment to the Site and that visual catchment has, in its foreground, the dial a dump operation.

Traffic

Campbell Street and Campbell Road form part of Regional Road 7017 which carries heavy industrial traffic between the Princes Highway (SH1) and Ricketty Street (MR 183).

Albert Street runs east / west parallel to Campbell Street and then runs north to form an offset four-way channelised intersection with Campbell Street, Campbell Road and Barwon Park Road.

At Campbell Road, Albert Street is controlled by "Give Way Signs".

The Site entrance is adjacent to the entrance to St. Peters Waste Transfer Station in Albert Street. Albert Street is 15.8 metres wide kerb to kerb and carries two-way traffic. There are no turning restrictions at Campbell Road.

Campbell Road is 12.9 metres wide kerb to kerb and has 2 traffic lanes and 2 kerbside parking lanes but these are sign posted "No Stopping" in the vicinity of Albert Street.

Woodley Street and Holland Street, to the east of the Site, are 12.9 metres and 12.8 metres wide kerb to kerb respectively and have 2 traffic lanes and 2 kerbside parking lanes.

Trucks exiting from the St. Peters Waste Transfer Station are some 12 metres to the west of the exit from No.2 Albert Street. A driver exiting from No. 2 Albert Street has adequate sight distance of a truck exiting the Waste Transfer Station or vice versa to stop as necessary. These trucks merge some 25 metres north of the Site boundary.

Infrastructure Services

No services are currently connected to the Site.

Electricity would be required to the office and amenities building on the Site. Connection would be made via the existing street electricity infrastructure.

Water to the Site would be connected by way of the existing Sydney Water services in the vicinity of the Site.

Telecommunication facilities are not currently available at the Site. Telephone facilities at the Site would be mobile services.

The Site is currently not connected to sewer services. Portable toilet facilities would be installed to service the Site.

THE PROPOSED DEVELOPMENT

The proposal is for a sandstone recycling facility which would recycle the existing sandstone material on the Site by means crushing and separating that material into different sizes to be sold

to various industries in the Sydney metropolitan area. The recycled materials would be used mainly in the building and civil engineering industries.

The proposal is also for the continuation of the operation of the sandstone recycling facility upon the completion of the processing of the existing sandstone stockpile. Concrete Recyclers would import other source separated sandstone material to the Site from excavations sites in the Sydney CBD and waste from building and construction industries in the Sydney metropolitan area. The imported material would consist of source separated bricks, concrete and sand which would be mixed with sandstone material to form a quality road base material.

Component Requirements

The use of the Site as a sandstone recycling facility would require the use of a number of related components. The key elements of the proposal are as follows:

- 1 x wheel loader.
- 1 x hydraulic track excavator.
- Jaw crusher on tracks.
- Screen on tracks.
- Water cart.
- Office, staff lunch room and associated amenities.
- Car park.

Hours of Operation

The proposed hours of operation would be:

Loading of trucks	Monday to Friday	6:00am to 6:00pm
	Saturday	7:00am to 4:00pm
Truck movements	Monday to Friday	6:00am to 6:00pm
	Saturday	7:00am to 4:00pm
Use of crusher/screens	Monday to Friday	7:00am to 6:00pm
	Saturday	7:00am to 4:00pm.

Employees

There would be 3/4 employees comprising:

- Loader driver
- Excavator driver
- Crusher operator
- Docket issuer.

Traffic Generation

Concrete Recyclers has prepared a schedule of estimated truck loads during the years 1 to 5 and the on going operational phase commencing in year 6. The majority of imported materials are expected to be sandstone from excavation sites in the Sydney CBD and virgin sand from the eastern suburbs.

Average truck loads are expected to be 25 tonnes. Recycled materials would be delivered in 30 tonne loads.

The proportions of imported materials for blending with sandstone materials on site in years 1 to 5 is estimated to be 40:60 in the recycled material exported from the Site.

The Site would operate 6 days per week subject to demand. Truck movements to and from the Site would take place between 6:00am and 6:00pm, Monday to Friday and 7:00am and 4:00pm on Saturday.

Trucks bringing imported materials to the Site would arrive loaded and leave empty. Trucks carrying recycled material from the Site would leave loaded and return empty.

The Site would be available to process material 303 days per year subject to demand.

Estimated truck movements are shown in the table below.

Year	Annual Tonnage	Weekly Tonnage	Likely Max. Daily Tonnage	Truck Movements									
				6am - 8am		8am - 10am		10am - 12pm		12pm - 2pm		2pm - 5pm	
				In	Out	In	Out	In	Out	In	Out	In	Out
1 In	20,000	400	320	4	4	3	3	3	3	2	2	1	1
Out	50,000	1,000	800	7	7	7	7	6	6	5	5	2	2
2 In	40,000	800	400	4	4	4	4	4	4	3	3	1	1
Out	100,000	2,000	1,000	8	8	8	8	7	7	7	7	3	3
3 In	60,000	1,200	400	4	4	4	4	4	4	3	3	1	1
Out	150,000	3,000	1,000	8	8	8	8	7	7	7	7	3	3
4 In	60,000	1,200	400	4	4	4	4	4	4	3	3	1	1
Out	150,000	3,000	1,000	8	8	8	8	7	7	7	7	3	3
5 In	60,000	1,200	400	4	4	4	4	4	4	3	3	1	1
Out	150,000	3,000	1,200	8	8	8	8	7	7	7	7	3	3
6 In	150,000	3,000	1,000	7	7	11	11	10	10	8	8	4	4
Out	150,000	3,000	1,000	9	9	9	9	8	8	4	4	3	3

Note: "In" refers to raw materials delivered to the Site
"Out" refers to processed material leaving the Site

Fire Control

Fire control facilities on the Site would be provided to meet the requirements of the Building

Code of Australia.

Water Requirements

The maximum daily water usage in summer during the on going operational phase is estimated to be 40,000 litres.

Approvals Required

The *Protection of the Environmental Operations Act 1997* (**POEO Act**) requires an Environment Protection Licence to be obtained from the NSW Office of Environmental and Heritage (**OEH**) for the carrying out of *scheduled development works* which would enable a *scheduled activity* to be carried out.

The proposed project would fall within the category of Resource Recovery and, as such, an Environment Protection Licence is required to operate the proposed activity.

IMPACT OF THE PROPOSED DEVELOPMENT

Air Quality

Dust emissions from the proposed development have been estimated for all dust generating activities. The primary dust sources identified from the proposed development are:

- wind blown dust from stockpiles and exposed areas, and
- dust generated during the operation of the proposed development.

The following measures would mitigate the impact of dust from the proposed development.

Source	Control Procedure
Exposed areas	Disturb only the minimum areas Rehabilitation of exposed area completed as soon as possible Use water sprays to minimise dust lift off
Stockpiles	Water stockpiles to minimise dust lift off Ensure that materials are wetted before handling
Hauling activities	Establish a stabilised access to the Site Watering of all haul areas to minimise dust
Processing materials	Water sprays installed on equipment Material wetted before handling

Noise

During the early phase of the project, noise levels are expected to comply with the construction noise management level at the nearest dwellings, with the exception of the first few days where a marginal 2dBA exceedance is predicted for an excavator which would need to operate at the Site boundary at the bottom of the ramp. The duration of these works is expected to be relatively short. For the most part, the noise levels are expected to fall within the construction objective

at the nearest dwellings.

During the early site preparation stage, noise levels near the western boundary extending into the nearby landfill site are expected to be in the order of 80dBA, with progressive reduction as the excavator moves up the ramp to the top of the main stockpile. This exceeds the 75dBA objective for industrial receptors within a localised area close to the boundary. This area, however, appears to be used for temporary stockpiling and is not considered likely to interfere with the site operations.

Following relocation of the crusher and commencement of "normal" operations, the crushed stockpile would be maintained between the north western dwellings and the relocated crushing and screening plant to mitigate noise from the Site. A minimum 4 metre high crushed stockpile is expected to minimise noise to below the noise objectives. Compliance with criteria is also predicted during temporary periods when the crusher is relocated and the stockpile is temporarily reduced in height.

As the main stockpile is reduced in height, there is more space for trucks to manoeuvre, such that it would be easier to maintain the crushed stockpile on the western edge of the top of stockpile working area. In addition, the northern bund would be maintained at RL 25 metres, or at least 5 metres above the working area.

During the normal operational phase, noise levels within the most affected western industrial boundary are expected to comply with the L_{Aeq} 70dBA limit recommended by the INP.

Noise emission from the Site during loading between 6:00 am and 7:00 am is also predicted to meet the shoulder period intrusive noise criteria and the sleep disturbance criterion of 61dBA.

Based on a peak number of hourly truck movements of 8 per hour, the $L_{Aeq,1hr}$ traffic noise contribution is calculated at 56dBA at both the Campbell Road and Albert Street facades. This noise level is well below the current night time road traffic noise levels, even in the early morning shoulder period between 6:00 am and 7:00 am and would result in a 1dBA increase in noise levels. This satisfies the ECRTN recommendation not to increase the existing noise level by more than 2dBA.

In relation to maximum noise levels, on the Campbell Road facade, the maximum noise level during truck pass by, and trucks accelerating on the far lane, is estimated at approximately 73dBA outside, which translates to 63dBA (with windows open for ventilation purposes). This exceeds the 50dBA to 55dBA internal noise guideline considered unlikely to result in awakening reactions. A review of the monitored noise data, however, indicates that the prevailing external L_{A1} noise levels (which are considered representative of the maximum noise levels) are typically in the order of 70dBA and higher between 6:00 am and 7:00 am, i.e 60dBA internally.

In addition, traffic counting from 2009 indicates approximately 55 truck movements per hour during this time period, therefore, an additional 8 movements per hour (assuming in the worst case that all traffic travels in the one direction) of similar maximum noise levels to those prevailing is considered unlikely to be perceived as a new source of sleep disturbance.

Updated counting in 2011 was only undertaken during the peak hours after 7:00 am and not in

the early morning period. Nevertheless, it showed an increase in the number of trucks during the peak hours to in excess of 100 truck movements between 7:00 am and 8:00 am.

On Albert Street, the dwelling does not contain bedroom windows so sleep disturbance is not an issue on this facade of the dwelling.

The potential increase in noise levels from additional truck movements to and from the site, including the early morning shoulder period would meet the ECRTN L_{Aeq} criteria and result in negligible impact. The small percentage increase in truck movements is not expected to result in any change in sleep disturbance, given the high number of truck movements already using the local roads at this time.

In order to achieve compliance with the noise objectives and minimise potential noise disturbance to the potentially most affected receptors closest to the Site, mitigation measures are recommended.

Traffic Impact

Trucks travelling to the Site would travel on classified main roads, regional roads and industrial roads where there is a high percentage of heavy trucks.

Trucks travelling from the Site would travel on regional roads, classified main roads and industrial roads in the Alexandria / Botany Bay region, and on the Princes Highway and M5 Motorway to their destinations.

The number of trucks expected to be generated by the proposed development is very small in the 8:00am to 9:00am morning peak hour, and much less in the 4:00am to 5:00pm afternoon peak hour.

In the morning peak hour, the increase in truck volumes in Campbell Road is expected to be about 1%. The increase in Campbell Street is expected to about 0.26%.

The increased traffic would have minimal impact on the capacity of the above intersection and the road network.

Waste Impact

Little waste would be generated in the operation of the proposed development. The proposed development has been designed such that the vast majority of materials delivered to the Site are recycled. Approximately 0.5% of the material delivered to the Site is material which cannot be recycled.

Social and Economic Impact

The social impact of the proposed development would be positive in that:

- the existing stockpile of sandstone material would be removed from the Site and recycled.

- material delivered to the Site to be processed with the existing sandstone on the Site, which would otherwise be disposed of to landfill, can be recycled.

- material which is recycled through the proposed sandstone recycling facility would reduce the amount of virgin material from quarrying activity which would otherwise be required to fulfil the market for such materials.

- recycling of such material would increase the life of existing landfill sites.

- having a recycling facility closer to the both the unprocessed material and the users of the recycled product would:

    (i) limit the amount of truck traffic on many metropolitan roads,

    (ii) result in the use of less fuel in the delivery of materials to and from the Site, and

    (iii) result in less congestion on certain roads.

- the creation of up to 3 new jobs in the local area.

The economic impact would be positive in that:

- employment opportunities would be generated.

- the proposed development is one where sandstone from excavation sites and waste from the building and construction industry in the Sydney metropolitan area would be received as an incentive to recycle waste rather than dispose of that waste to landfill. The money saved by industry and the State government in waste disposal costs is such that there is an economic incentive to recycle waste.

CONCLUSION

The proposed development is for a sandstone recycling facility to be located at Albert Street, St Peters.

The assessment undertaken of the impact the proposed development would have on the environment of the Site and its locality has been canvassed in the main body of the Environmental Assessment with the conclusion that, with attenuation measures, there would be no impact to the environment of the Site which would be considered significant.

It is concluded that the proposed development is an acceptable land use for the Site.

GLOSSARY OF TERMS AND ABBREVIATIONS

Consent Authority	In relation to a project application under Part 3A of the Environmental Planning and Assessment Act 1979, the Minister for Planning and Infrastructure.
Project	The carrying out of development that is declared to be a project: (a) by a State environmental planning policy, or (b) by order of the Minister published in the Gazette.
Designated development	Section 77A of the Environmental Planning and Assessment Act 1979 states that *"Designated development is development that is declared to be designated development by an environmental planning instrument or the regulations."* Schedule 3 of the Environmental Planning and Assessment Regulation 2000 defines the type of development which is classified as designated development.
Integrated development	Development which requires development consent and one or more of the approvals listed in Section 91 of the Environmental Planning and Assessment Act 1979.
Local Environmental Plan	Local Environmental Plans are planning documents prepared by a Council which detail the zoning of land and the type of development which is permitted with consent or prohibited in a particular zone. Controls on development are also provided.
State Environmental Planning Policy	A planning instrument made by the State. State Environmental Planning Policies deal with issues of State significance.
The Site	Refers to the land upon which the proposed development is to take place.

OEH	Office of Environment and Heritage
DP	Deposited Plan
EA	Environmental Assessment
EMP	Environmental Management Plan
EPBA Act	Environment Protection and Biodiversity Conservation Act 1999
INP	Industrial Noise Policy
LEP	Local Environmental Plan
POEO Act	Protection of the Environment Operations Act 1997
RTA	Roads and Traffic Authority
SEPP	State Environmental Planning Policy
vph	Vehicles per hour
vpd	Vehicles per day

Part One
INTRODUCTION

1.1 Statement of the Proposal

This Environmental Assessment has been prepared on behalf of Concrete Recyclers (Group) Pty Ltd (**Concrete Recyclers**) in support of a Part 3A Project application.

Concrete Recyclers seeks the approval of the Minister for Planning and Infrastructure to establish a Sandstone Recycling Facility at No.2 Albert Street, St Peters (**the Site**). **Figure 1-1** shows the Site location.

© GOOGLE Maps

Figure 1-1: Site Location Map

The objectives of the proposal are:

(a) To remove the existing stockpile of sandstone material from the Site (which was abandoned by the previous tenant) in a manner which would maximise its highest and best use.

(b) To establish a commercially viable Sandstone Recycling Facility which is capable of recovering recyclable sandstone and sand from the waste stream for reuse.

(c) To assist the NSW State government in achieving its objectives for the recovery and recycling of waste as detailed in the *NSW Waste Avoidance and Resource Recovery Strategy 2007*.

(d) To establish an environmentally responsible and sustainable industry which would create employment.

1.2 Background to the Proposal

1.2.1 Government Initiatives in Waste Management

In 1992, the then NSW Minister for the Environment released a Waste Management Green Paper. The paper endorsed both the waste minimisation and recycling targets established by the Australian and New Zealand Environmental and Conservation Council and the Commonwealth's National Waste Minimisation and Recycling Strategy. It set out the then NSW State government's goal of achieving a 50% reduction in the per capita amount of waste sent to disposal by the year 2000, compared to the base year of 1990.

In 2003, the NSW State government prepared its *Waste Avoidance and Resource Recovery Strategy 2003* which stated, among other things:

> *The NSW Waste Avoidance and Resource Recovery Strategy 2003 provides a framework for reducing waste and making better use of our resources.*
>
> *The Strategy sets out 'where we are now' and 'where we want to be in the future' and the challenges we face to get there. It establishes targets and an action agenda which are both realistic and visionary and which reflect Australian and international best practice and performance.*
>
> *The Strategy identifies four key areas where we must achieve outcomes.*
>
> *These are:*
>
> - *Avoidance and preventing waste.*
> - *Increased use of renewable and recovered materials.*
> - *Reducing toxicity in products and materials.*
> - *Reducing litter and illegal dumping.*

With regard to *Increasing recovery and use of secondary resources*, the Strategy provides the following targets to be achieved by 2014:

> *Increase recovery and utilisation of materials from municipal sector from the*

current 26% to 66%.

Increase recovery and utilisation of materials from the commercial & industrial sector from the current 28% to 63%.

Increase the recovery and utilisation of materials from the construction & demolition sector from the current 65% to 76%.

More recently, the then NSW Department of Environment & Climate Change released the *NSW Waste Avoidance and Resource Recovery Strategy 2007* which states, among other things:

The Waste Avoidance and Resource Recovery Strategy 2007 (Waste Strategy 2007) updates the Waste Avoidance and Resource Recovery Strategy 2003 (Waste Strategy 2003).

The underlying policy drivers behind Waste Strategy 2003 were the need to maximise conservation of our natural resources and to minimise environmental harm from waste management and disposal of solid waste. These drivers are even more important in 2007 against a backdrop of a growing population in NSW and a healthy economy that is producing more goods and services.

Waste Strategy 2007 continues to provide guidance and priorities for action to ensure that efficient resource use and impacts on the environment are considered throughout the life cycle of goods and materials. This includes extraction of raw materials, manufacturing, distribution, consumption and recovery for reprocessing or safe disposal.

Since Waste Strategy 2003 was released, there has been mounting scientific research that has quantified the benefits and impacts of waste related actions to other parts of the environment e.g. water savings, conservation of virgin resources, greenhouse gas and soil health. There has also been a growing understanding that actions taken to tackle any environmental or resource use issue are strongly interconnected in people's minds. This means that continuing to encourage waste related actions, such as recycling, that are practical and relatively easy to undertake, can naturally lead to actions on other important environmental issues such as reducing energy and water consumption.

All of these factors reinforce the importance of a Waste Avoidance and Resource Recovery Strategy for NSW.

Waste Strategy 2007 has been produced in light of current national and international practice, and emerging trends and challenges. It identifies priority actions that will guide the work of all key groups in NSW in contributing to the minimisation of environmental harm from waste disposal and the conservation and efficient use of our resources. The Strategy focuses on solid wastes that, unless recovered and diverted to beneficial uses, would be disposed of to solid and inert waste landfills throughout NSW.

With regard to *Increasing recovery and use of secondary resources*, the 2007 Strategy adopts the same target as described above for the 2003 Strategy.

The State government has determined that sandstone from excavations is waste.

1.2.2 Concrete Recyclers

Concrete Recyclers currently operates three (3) recycling facilities as follows:

1. A large scale recycling facility at Thackeray Street, Camellia. This facility is the main recycling facility operated by Concrete Recyclers.

2. A smaller scale recycling facility at the Kimbriki Recycling & Waste Disposal Centre, Mona Vale Road, Ingleside.

3. A recycling facility at Captain Cook Drive, Kurnell which is a similar size to that which operates at the Kimbriki Recycling & Waste Disposal Centre.

1.2.3 Lease over the Site

Concrete Recyclers has negotiated a lease with the then NSW Roads and Traffic Authority (**RTA**) (the landowner of the Site) for the establishment of a sandstone recycling facility on the Site.

The Site has previously been used as a storage area for approximately 400,000 tonnes of sandstone material which has been won in excavations in the Sydney metropolitan area. The material was collected as part of two development consents issued by the then South Sydney Council and Marrickville Council for the processing of sandstone material. Both development consents have now lapsed due to the expiration of leases and sunset clauses in both development consents. A copy of each of the development consents is at **Appendix 1**.

The sandstone material on the Site is material which was to be processed as part of the abovementioned development consents before those consents lapsed and the Site was abandoned by the then tenants.

1.3 Need for an Environmental Assessment

Pursuant to **Schedule 3** of the *Environmental Planning and Assessment Regulation 2000* (**the Regulation**), the proposed development is Designated Development being *Crushing, grinding or separating works* which are defined as:

Crushing, grinding or separating works

(1) Crushing, grinding or separating works, being works that process materials (such as sand, gravel, rock or minerals) or materials for recycling or reuse (such as slag, road base, concrete, bricks, tiles, bituminous material, metal or timber) by crushing, grinding or separating into different sizes:

(a) that have an intended processing capacity of more than 150 tonnes per day or 30,000 tonnes per year, or

(b) that are located:

(i) within 40 metres of a natural waterbody or wetland, or

(ii) within 250 metres of a residential zone or dwelling not associated with the development.

(2) This clause does not apply to development specifically referred to elsewhere in this Schedule.

Notwithstanding, before its repeal, **Section 75A** of Part 3A of the *Environmental Planning and Assessment Act 1979* (**the Act**), defined a *project* as:

***project** means development that is declared under section 75B to be a project to which this Part applies.*

Sub-section 75B (1) (a) of the Act stated:

Projects to which Part applies

*(1) **General***

This Part applies to the carrying out of development that is declared under this section to be a project to which this Part applies:

(a) by a State environmental planning policy, or

(b) ....

Prior to its repeal, **Sub-clause 6(1)** of *State Environmental Planning Policy (Major Development) 2005* (**SEPP Major Development**) stated:

Identification of Part 3A projects

(1) Development that, in the opinion of the Minister, is development of a kind:

(a) that is described in Schedule 1 or 2, or

(b) that is described in Schedule 3 as a project to which Part 3A of the Act applies, or

(c) to the extent that it is not otherwise described in Schedules 1–3, that is described in Schedule 5,

is declared to be a project to which Part 3A of the Act applies.

Schedule 1 of the then SEPP Major Development contained the following definition:

Resource recovery or waste facilities

(1) Development for the purpose of regional putrescible landfills or an extension to a regional putrescible landfill that:

(a) has a capacity to receive more than 75,000 tonnes per year of putrescible waste, or

(b) has a capacity to receive more than 650,000 tonnes of putrescible waste over the life of the site, or

(c) is located in an environmentally sensitive area of State significance.

(2) Development for the purpose of waste transfer stations in metropolitan areas of the Sydney region that handle more than 75,000 tonnes per year of waste.

(3) Development for the purpose of resource recovery or recycling facilities that handle more than 75,000 tonnes per year of waste or have a capital investment value of more than $30 million.

(4) Development for the purpose of waste incineration that handles more than 1,000 tonnes per year of waste.

(5) Development for the purpose of hazardous waste facilities that transfer, store or dispose of solid or liquid waste classified in the Australian Dangerous Goods Code or medical, cytotoxic or quarantine waste that handles more than 1,000 tonnes per year of waste.

(6) Development for the purpose of any other liquid waste depot that treats, stores or disposes of industrial liquid waste and:

(a) handles more than 10,000 tonnes per year of liquid food or grease trap waste, or

(b) handles more than 1,000 tonnes per year of other aqueous or non-aqueous liquid industrial waste.

The proposed project would recycle more than 75,000 tonnes per annum of building and construction waste and, as such, was a *Part 3A project* for the purposes of the then SEPP Major Development.

The then Department of Planning correspondence dated 29 April 2010 notified Nexus Environmental Planning Pty Ltd that:

> *I, the Director, Mining & Industry Projects of the Department of Planning, as delegate of the Minister for Planning under delegation executed on 25 January 2010, have formed the opinion that the development described in the Schedule below, is development of a kind that is described in Schedule 1 of the State Environmental Planning Policy (Major Development) 2005 - namely clause 27 "development for the purposes of resource recovery or recycling facilities that handle more than 75,000 tonnes per year of waste" - and is thus declared to be a project to which Part 3A of the Environmental Planning and Assessment Act 1979 applies for the purposes of section 75B of that Act.*

A copy of the 27 April 2010 *Record of Minister's opinion for the purposes of Clause 6(1) of the State Environmental Planning Policy (Major Projects) 2005* is at **Appendix 2**.

1.4 Director-General's Requirements

Pursuant to the then **Section 75F** of the Act, by letter dated 22 July 2011, the Director-General provided the requirements for the Environmental Assessment. A copy of the Director-General's Requirements is at **Appendix 3**. A summary of the Director-General's Requirements is outlined in **Table 1-1** together with the relevant section of the Environmental Assessment which addresses those matters.

Table 1-1: Summary of Director-General's Requirements

Issue	Summary of matters to be addressed in the EA	Reference in EA
Description of the Project	A detailed description of the project including: - need for the project - alternatives considered - various components and stages of the project.	Part 4.4 Part 5
Historical operations	A detailed description of the history of the site.	Part 2.2 Appendix 1
Existing operations	A detailed description of existing and approved operations.	Part 2.2
Description of the project	A detailed description of the project	Part 4
Risk assessment	Risk assessment of the potential environmental impacts	Part 6 Appendices 6, 7, 8 and 10

Issue	Summary of matters to be addressed in the EA	Reference in EA
Waste management	Including waste receival, classification, stockpiling and litter control.	Part 4 Part 6.5
Soil and water	Including surface and groundwater impacts, stormwater management, including detailed consideration of any potential offsite drainage impacts; flooding; wastewater disposal; erosion and sediment controls; leachate management spill containment.	Part 3.6 Part 4.8 Part 4.9 Part 4.11 Part 6.5 Appendix 8
Noise	Assessment of noise during construction, operation and traffic.	Part 3.3 Part 6.2 Appendix 7
Air quality	Assessment of air quality impacts, including odour, dust and green house gas emissions.	Part 3.2 Part 6.1 Appendix 6
Hazards and risks	Including handling of potential hazardous materials and fire management. SEPP 33 preliminary assessment.	Part 2.6 Part 4.12
Greenhouse Gas Emissions & Energy Efficiency	A comprehensive assessment of the potential scope 1, 2 and 3 greenhouse emissions of the project and the potential impacts of these emissions on the environment.	Part 6.7 Appendix 10
Traffic and transport	Details of the traffic volumes that are likely to be generated during construction and operation, and an assessment of the impact of this traffic on the safety and efficiency of the surrounding road network.	Part 3.5 Part 4.10 Part 6.4 Appendix 8
A draft Statement of Commitments	Describe in detail how the environmental performance of the proposal would be monitored and managed over time.	Part 7

1.5 Local Government, Government and Statutory Authority Consultation

In the preparation of this Environmental Assessment, consultation was undertaken with:

- Sydney City Council.
- Marrickville Council.
- the NSW Office of Water.
- Office of Environmental and Heritage.
- the then Roads and Traffic Authority.

Copies of the responses receive are at **Appendix 4**.

1.6 Structure of the Environmental Assessment

The Environmental Assessment continues as follows:

Part 2	A description of the Site, its operational history, and the planning controls applying to the Site.
Part 3	The existing environment.
Part 4	A description of the proposed development.
Part 5	Justification of the proposed development and alternatives to that which is proposed.
Part 6	Impact of the proposed development.
Part 7	A draft Statement of Commitments.
Part 8	Conclusion to the Environmental Assessment.

1.7 Project Team

Nexus Environmental Planning	Town Planning and Project Management.
Lyle Marshall & Associates Pty Ltd	Architectural, Traffic, Access and Stormwater Management.
Wilkinson Murray Pty Ltd	Acoustics, Air Quality and Greenhouse Gas Emissions.
Aquila Ecological Surveys	Flora and Fauna.
Archaeological & Heritage Management Solutions	Archaeological Assessment.

Part Two

SITE INFORMATION AND PLANNING CONTROLS

2.1 Site Location

The Site is located on the south western side of Albert Street.

The Site is:

Lot 1, DP 88087 and Lot B, DP 376646
No.2 Albert Street
St PETERS

The Site is in the ownership of NSW Roads and Maritime Services (formerly the Roads and Traffic Authority).

The Site covers an area of 17,216m^2 comprising:

- Lot 1, DP 88087 - 10,380m^2
- Lot B, DP 376646 - 6,836m^2.

A copy of the Certificate of Title for each of the above lots is at **Appendix 5**.

An extract from an aerial photograph showing the Site is at **Figure 2-1**.

A survey of the Site has been undertaken by Asher Consulting Pty Ltd. The survey information provided by Asher Consulting is represented in the extract at **Figure 2-2**.

The Site has frontage to Albert Street.

The following development is located either adjoining the Site or in the vicinity of the Site:

- the Dial a Dump Waste Management Facility to the west and south, which extends from Albert Street through to Canal Road;
- residential development to the north in Albert Street and Campbell Road;
- industrial development in Woodley Street and Holland Street, and
- Sydney Park to the north east of the Site on the opposite side of Campbell Road.

Figure 2-1: Aerial photograph indicating the location of the Site.

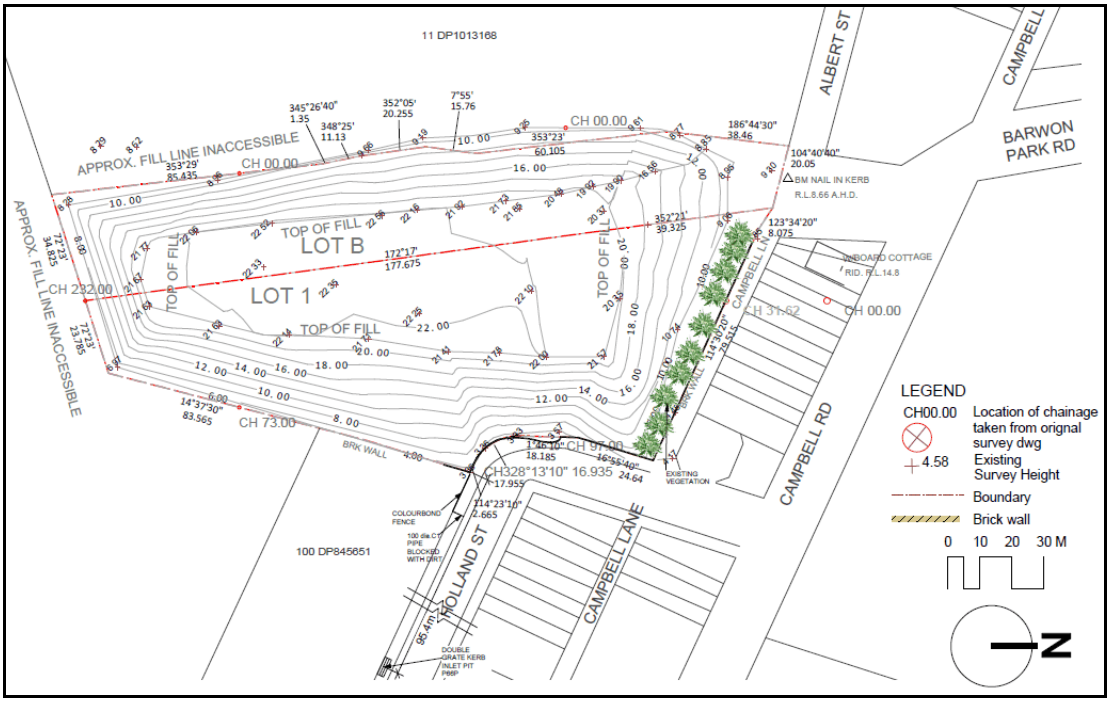

Figure 2-2: Site survey information

2.2 Operational History of the Site

The Site has previously been used as a storage area for approximately 400,000 tonnes of sandstone material which has been won in excavations in the Sydney metropolitan area. The material was collected as part of two development consents issued by the then South Sydney Council and Marrickville Council for the processing of sandstone material in a manner the same as is now proposed. It was necessary to seek two development consents as the Site falls within two local government areas.

A copy of each of the development consents is at **Appendix 1**.

Development Consent No.U90-00211

At its 12 December 1990 Meeting, the then South Sydney Council granted consent to Development Application No.U90-00211:

> *... to use the subject site for the stockpiling and grading of sandstone and road base material and to carry out associated site works including fencing and landscaping.*

Development Consent No.U90-00211 had, as its condition (A) (1):

> *That the use shall cease after a period of five years from the date of consent;*
>
> *(The applicant is advised that a further application may be lodged before the expiration of this consent for Council's consideration of the continuation of the proposed use).*

By letter dated 31 July 1996, the then South Sydney Council notified Keown & Drummond Pty Ltd that it had approved a modification to Consent No.U90-00211 as follows:

> *Arising from consideration of the application, Council at its meeting held on 24 July 1996, decided pursuant to Section 102 of the Environmental Planning and Assessment Act 1979, as amended, to modify the consent granted on 12 December 1990 only in so far as the deletion of the following condition:*
>
> ***(1) That the use shall cease after a period of five years from the date of consent;***
>
> ***(The applicant is advised that a further application may be lodged before the expiration of this consent for Council's consideration of the continuation of the proposed use)***
>
> *and insert in lieu thereof of the following condition set out hereunder:*
>
> ***(1) That the use shall cease after a period of ten years from the date of***

consent;

(The applicant is advised that a further application may be lodged before the expiration of this consent for Council's consideration of the continuation of the proposed use).

Development Consent No.657/95

Development Application No.657/95 was lodged with Marrickville Council for:

... the continued use of the land at 2 Albert Street St peters for the stockpiling and grading of sandstone and road base material relating to the property situated at:

2 ALBERT STREET, ST PETERS

The Development Application was determined on 8 January, 1991 ....

By letter dated 22 August 1996, Marrickville Council notified Keown & Drummond Pty Limited that:

The Council has considered your application under Section 102 of the Environmental Planning and Assessment Act to modify Development Consent No.13498 (DA 657/95).

*The Council resolved to **APPROVE** the application and to issue an amended Development Consent ... in the following manner:*

2. The approval being limited to a period of ten (10) years expiring on 8th January, 2001.

Reason: In view of the County Road proposal affecting the property.

The 400,000 tonnes of sandstone material on the Site is material which was to have been processed as part of the abovementioned development consents before those consents lapsed and the Site was abandoned by the then tenants. Both development consents have now lapsed due to the expiration of leases and sunset clauses in both development consents.

2.3 Land Tenure

The Site is owned by NSW Roads and Maritime Services (**RMS**) (formerly the Roads and Traffic Authority (**RTA**)). The consent of the then RTA to lodge the project application is contained as part of the Major Project Application Form which was Attachment 2 to the 23 November 2009 letter to the Director-General of the then NSW Department of Planning.

2.4 Site Zoning

The following planning documents are relevant to the proposed development:

- Marrickville Local Environmental Plan 2011.
- South Sydney Local Environmental Plan 1998.
- State Environmental Planning Policy (Infrastructure) 2007.
- State Environmental Planning Policy No.33 - Hazardous and Offensive Development.
- State Environmental Planning Policy No.55 - Remediation of Land.
- State Environmental Planning Policy (Major Development) 2005.
- Protection of the Environment Operations Act 1997.
- Commonwealth Environment Protection and Biodiversity Conservation Act 1999.

2.4.1 Marrickville Local Environmental Plan 2011

The Site is partly within the IN1 General Industrial zone of the Marrickville Local Environmental Plan 2011.

The adjoining zone is the IN2 Light Industrial zone.

An extract from the Marrickville Local Environmental Plan 2011 is at **Figure 2-3**.

The proposed development is a *resource recovery facility* which is defined in the Marrickville Local Environmental Plan 2011 as:

> ***resource recovery facility*** *means a building or place used for the recovery of resources from waste, including works or activities such as separating and sorting, processing or treating the waste, composting, temporary storage, transfer or sale of recovered resources, energy generation from gases and water treatment, but not including re-manufacture or disposal of the material by landfill or incineration.*

A *resource recovery facility* is a use which is permissible with consent in the IN1 General Industrial zone and is thus permissible on the Site.

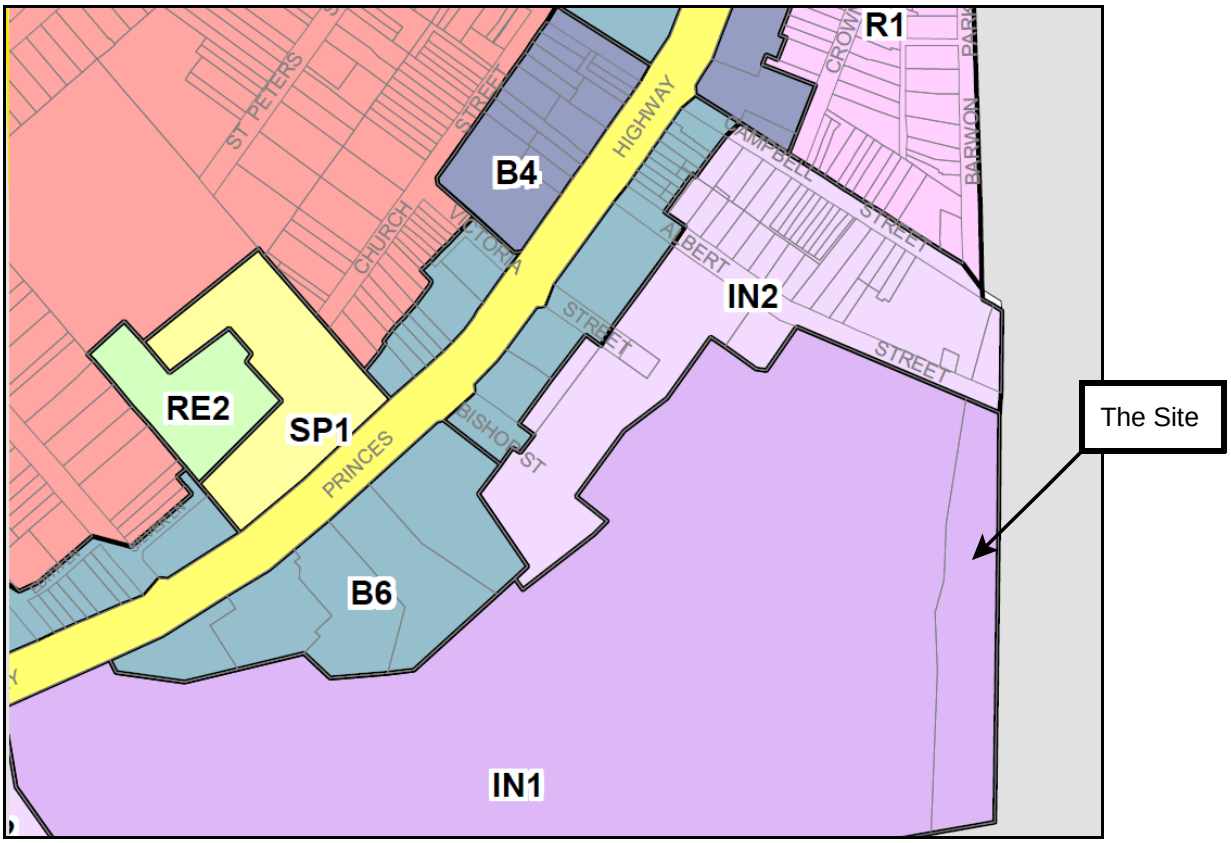

Figure 2-3: Extract from the Marrickville Local Environmental Plan 2011 Map

2.4.2 South Sydney Local Environmental Plan 1998

The site is within the 9(a) Arterial Road Reservation zone pursuant to the South Sydney Local Environmental Plan 1998.

The adjoining zone is 4(a) Industrial.

An extract from the South Sydney Local Environmental Plan 1998 Map is at **Figure 2-4**.

Pursuant to **sub-clause 30(4)** of the South Sydney Local Environmental Plan 1998:

> *(4) A person may, with the consent of the Council, carry out development on land within Zone No 9(a):*
>
> *(a) for a purpose for which development may be carried out (with or without the consent of the Council) on land in an adjoining zone, or*
>
> *(b) for any purpose which is compatible with development which may be carried out on land in an adjoining zone.*

For the purposes of South Sydney Local Environmental Plan 1998, the proposed development is a *materials recycling depot* which is defined as:

> ***materials recycling depot*** *means land used for the collection, storage, abandonment or sale of scrap metals, waste paper, rags, bottles or other scrap materials, or for the collecting, dismantling, storage, salvaging, or abandonment of vehicles or machinery or the sale of their parts.*

A *materials recycling depot* is a use which is permissible with consent in the 4(a) Industrial zone and is thus permissible on the Site.

Figure 2-4: Extract from the South Sydney Local Environmental Plan 1998 Map

2.5 State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Infrastructure) 2007 (**SEPP Infrastructure**) has as its aim:

> *... to facilitate the effective delivery of infrastructure across the State by:*
>
> *(a) improving regulatory certainty and efficiency through a consistent planning regime for infrastructure and the provision of services, and*

(b) providing greater flexibility in the location of infrastructure and service facilities, and

(c) allowing for the efficient development, redevelopment or disposal of surplus government owned land, and

(d) identifying the environmental assessment category into which different types of infrastructure and services development fall (including identifying certain development of minimal environmental impact as exempt development), and

(e) identifying matters to be considered in the assessment of development adjacent to particular types of infrastructure development, and

(f) providing for consultation with relevant public authorities about certain development during the assessment process or prior to development commencing.

Clause 100 of SEPP Infrastructure states:

100 Development on proposed classified road

(1) Consent for development for any of the following purposes on land reserved for the purposes of a classified road (but before the land is declared to be a classified road) may be granted only with the concurrence of the chief executive officer of the RTA:

(a) subdivision that results in the creation of an additional lot with dwelling entitlements,

(b) development with a capital investment value greater than $150,000,

(c) development for the purpose of dwellings that are, or any other building that is, to be held under strata title.

(2) Before determining a development application (or an application for modification of a consent) for development to which this clause applies, the consent authority must:

(a) give written notice of the application to the chief executive officer of the RTA within 7 days after the application is made, and

(b) take into consideration any response to the notice that is received within 21 days after the notice is given.

(3) In deciding whether to grant concurrence to proposed development under this clause, the chief executive officer of the

RTA must take the following matters into consideration:

(a) the need to carry out development for the purposes of a classified road or a proposed classified road,

(b) the imminence of acquisition of the land by the RTA,

(c) the likely additional cost to the RTA resulting from the carrying out of the proposed development.

(4) The consent authority must give the RTA a copy of the determination of the application within 7 days after the determination is made.

(5) The consent authority may grant consent to development to which this clause applies without the concurrence of the chief executive officer of the RTA if:

(a) the consent authority has given the chief executive officer notice of the development application, and

(b) 21 days have passed since giving the notice and the chief executive officer has not granted or refused to grant the concurrence.

Clause 104 of SEPP Infrastructure states:

104 Traffic-generating development

(1) This clause applies to development specified in Column 1 of the Table to Schedule 3 that involves:

(a) new premises of the relevant size or capacity, or

(b) an enlargement or extension of existing premises, being an alteration or addition of the relevant size or capacity.

(2) In this clause, relevant size or capacity means:

(a) in relation to development on a site that has direct vehicular or pedestrian access to any road—the size or capacity specified opposite that development in Column 2 of the Table to Schedule 3, or

(b) in relation to development on a site that has direct vehicular or pedestrian access to a classified road or to a road that connects to a classified road where the access (measured along the alignment of the connecting road) is within 90m of the connection—the size or capacity

specified opposite that development in Column 3 of the Table to Schedule 3.

(3) Before determining a development application for development to which this clause applies, the consent authority must:

(a) give written notice of the application to the RTA within 7 days after the application is made, and

(b) take into consideration:

(i) any submission that the RTA provides in response to that notice within 21 days after the notice was given (unless, before the 21 days have passed, the RTA advises that it will not be making a submission), and

(ii) the accessibility of the site concerned, including:

(A) the efficiency of movement of people and freight to and from the site and the extent of multi-purpose trips, and

(B) the potential to minimise the need for travel by car and to maximise movement of freight in containers or bulk freight by rail, and

(iii) any potential traffic safety, road congestion or parking implications of the development.

(4) The consent authority must give the RTA a copy of the determination of the application within 7 days after the determination is made.

Schedule 3 of SEPP Infrastructure includes *Landfill, recycling facilities, waste transfer station* of any capacity in both Column 2 and Column 3. As such, Roads and Maritime Services (Roads and Traffic Authority) must be consulted as part of the assessment of the Project.

2.6 State Environmental Planning Policy No.33 - Hazardous and Offensive Development.

State Environmental Planning Policy No.33 - Hazardous and Offensive Development (**SEPP 33**) aims, among other things:

(d) to ensure that in determining whether a development is a hazardous or offensive industry, any measures proposed to be employed to reduce the impact of the development are taken into account; and

(e) to ensure that in considering any application to carry out potentially hazardous or offensive development, the consent authority has sufficient information to assess whether the development is hazardous or offensive and to impose conditions to reduce or minimise any adverse impact.

The proposed development is not a "Hazardous Industry", "Potentially Hazardous Industry" or "Hazardous Storage Establishment" as defined in SEPP 33 as it would not pose a significant risk in relation to the locality to human health, life or property, or to the biophysical environment.

The proposed development is, however, "Potentially Offensive Industry".

When determining an application for Potentially Offensive Industry, the consent authority must, pursuant to clause 13 of SEPP 33, consider:

(a) current circulars or guidelines published by the Department of Planning relating to hazardous or offensive development; and

(b) whether any public authority should be consulted concerning any environmental and land use safety requirements with which the development should comply; and

(c) ....., and

(d) any feasible alternatives to the carrying out of the development, and the reasons for choosing the development the subject of the application (including any feasible alternatives for the location of the development and the reasons for choosing the location of the subject application); and

(e) any likely future use of the land surrounding the development.

With regard to current circulars and guidelines, the then Department of Planning has prepared Circular B27 and the 1994 publication *Applying SEPP 33 Hazardous and Offensive Development Application Guidelines*. A Consultation Draft of an amending set of Guidelines was prepared in 2008.

With regard to "Potentially Offensive Industry", the 1994 Guidelines, at pages 13 & 14, give guidance to Council with regard to the information which should be provided with a Development Application. Those requirements were reiterated in the draft 2008 Guidelines at page 12. This Environmental Assessment provides sufficient detail in this regard.

As indicated in the guidelines, if a licence is required by the Environment Protection Authority (now the Office of Environment and Heritage), then it is safe to assume that the proposed development is "Potentially Offensive Industry". As discussed in **Part 2.9**,

the proposed development would fall within the category of Resource Recovery of the Protection of the Environment Operation Act 1997 and, as such, an Environment Protection Licence is required to operate the proposed activity.

As such, it is concluded that the proposed development is "Potentially Offensive Industry".

2.7 State Environmental Planning Policy No.55 - Remediation of Land

State Environmental Planning Policy No.55 - Remediation of Land (**SEPP 55**) aims:

> *.... to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment.*

Clause 7 of SEPP 55 states:

> *7. (1) A consent authority must not consent to the carrying out of any development on land unless:*
>
> *(a) it has considered whether the land is contaminated, and*
>
> *(b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and*
>
> *(c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.*
>
> *(2) Before determining an application for consent to carry out development that would involve a change of use on any of the land specified in subclause (4), the consent authority must consider a report specifying the findings of a preliminary investigation of the land concerned carried out in accordance with the contaminated land planning guidelines.*
>
> *(3) The applicant for development consent must carry out the investigation required by subclause (2) and must provide a report on it to the consent authority. The consent authority may require the applicant to carry out, and provide a report on, a detailed investigation (as referred to in the contaminated land planning guidelines) if it considers that the findings of the preliminary investigation warrant such an investigation.*
>
> *(4) The land concerned is:*

> *(a) land that is within an investigation area,*
>
> *(b) land on which development for a purpose referred to in Table 1 to the contaminated land planning guidelines is being, or is known to have been, carried out,*
>
> *(c) to the extent to which it is proposed to carry out development on it for residential, educational, recreational or child care purposes, or for the purposes of a hospital land:*
>
> *(i) in relation to which there is no knowledge (or incomplete knowledge) as to whether development for a purpose referred to in Table 1 to the contaminated land planning guidelines has been carried out, and*
>
> *(ii) on which it would have been lawful to carry out such development during any period in respect of which there is no knowledge (or incomplete knowledge).*

The then Department of Urban Affairs and Planning publication *Managing Land Contamination - Planning Guidelines SEPP 55 - Remediation of Land* provides advice on the process of determination as to whether a site is contaminated. In this regard, sections 2.1 and 2.2 of the Guidelines state:

> *When carrying out planning functions under the EP & A Act, a planning authority must consider the possibility that a previous land use has caused contamination of the site as well as the potential risk to health or the environment from that contamination.*
>
> *When an authority carries out a planning function, the history of the land use needs to be considered as an indicator of potential contamination. Where there is no reason to suspect contamination after acting substantially in accordance with these Guidelines, the proposal may be processed in the usual way.*

The Guidelines continue at section 3.2.1 by stating that:

> *The potential for contamination is often linked to past uses of land and a good early indicator of possible uses is land zoning. Contamination is more likely to have occurred if the land is currently, or was previously, zoned for industrial, agricultural or defence purposes.*

The Site contains approximately 400,000 tonnes of sandstone material which has been won in building and civil excavations in the Sydney metropolitan area. This material was earmarked for use in civil projects throughout Sydney.

The nature of the material and its source suggests that the material is not contaminated.

As part of the operation of the proposed development, Concrete Recyclers would test material to be recycled in accordance with the *Protection of the Environment Operations (Waste) Regulation 2005 - The Excavated Natural Material Exemption* (the **Exemption Regulation**). If, however, contamination is encountered during the recycling of the material, it would be isolated and removed to an appropriate EPA licensed landfill.

2.8 State Environmental Planning Policy (Major Development) 2005

As discussed in **Part 1.3** of this Environmental Assessment, the proposed development would recycle more than 75,000 tonnes of waste per annum and, as such, is a *Part 3A project* for the purposes of the then State Environmental Planning Policy (Major Projects) 2005. The then Department of Planning correspondence dated 29 April 2010 notified Nexus Environmental Planning Pty Ltd that:

> *I, the Director, Mining & Industry Projects of the Department of Planning, as delegate of the Minister for Planning under delegation executed on 25 January 2010, have formed the opinion that the development described in the Schedule below, is development of a kind that is described in Schedule 1 of the State Environmental Planning Policy (Major Development) 2005 - namely clause 27 "development for the purposes of resource recovery or recycling facilities that handle more than 75,000 tonnes per year of waste" - and is thus declared to be a project to which Part 3A of the Environmental Planning and Assessment Act 1979 applies for the purposes of section 75B of that Act.*

A copy of the 27 April 2010 *Record of Minister's opinion for the purposes of Clause 6(1) of the State Environmental Planning Policy (Major Projects) 2005* is at **Appendix 2**.

2.9 Protection of the Environment Operations Act 1997

Section 43 of the Protection of the Environment Operations Act 1997 (**POEO Act**) requires an Environment Protection Licence to be obtained from the NSW Office of Environment and Heritage (**OEH**) for the carrying out of *scheduled development works* which would enable a *scheduled activity* to be carried out.

Schedule 1 of the POEO Act defines the following scheduled activities for which an Environment Protection Licence is required:

> ***34 Resource recovery***
>
> *(1) This clause applies to the following activities:*
>
> ***recovery of general waste**, meaning the receiving of waste (other than hazardous waste, restricted solid waste, liquid waste or*

special waste) from off site and its processing, otherwise than for the recovery of energy.

....

(2) However, this clause does not apply to any of the following:

(a) materials separation and sorting of less than 60 tonnes per year of waste lead acid batteries,

(b) the treatment of sewage within a sewage treatment system (whether or not that system is licensed),

(c) the recovery of stormwater.

(3) Each activity referred to in Column 1 of the Table to this clause is declared to be a scheduled activity if:

(a) it meets the criteria set out in Column 2 of that Table, and

(b) either:

(i) less than 50% by weight of the waste received in any year requires disposal after processing, or

(ii) the regulations under section 286 exempt the person carrying out the activity from the requirements of section 48 (2) as they apply to waste disposal (application to land), waste disposal (thermal treatment), waste processing (non-thermal treatment) and waste storage.

Table

Column 1	***Column 2***
Activity	***Criteria***
Recovery of general waste	*involves having on site at any time more than 2,500 tonnes or 2,500 cubic metres, whichever is the lesser, of waste* *involves processing more than 120 tonnes of waste per day or 30,000 tonnes of waste per year*
....	....

The proposed development would fall within the above category of Resource Recovery

and, as such, an Environment Protection Licence is required to operate the proposed activity.

2.10 Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (**EPBC Act**) came into force from 16 July 2000. The EPBC Act requires actions which are likely to have a significant impact on matters of National Environmental Significance or which have a significant impact on Commonwealth land to be referred to the Commonwealth Minister for the Environment for approval.

The Site is not listed as a national heritage place and the proposed development would not impact on any national heritage places.

The proposed development would not impact on any threatened species and communities.

No National Environmental Significance matters would be impacted by the proposed development. As such, the proposed development has not been referred to the Commonwealth Minister for the Environment and approval pursuant to the EPBC Act is not required.

Part Three

THE EXISTING ENVIRONMENT

3.1 Surrounding Land Use

The following development is located either adjoining the Site or in the vicinity of the Site:

- the Dial a Dump Waste Management Facility to the west and south, which extends from Albert Street through to Canal Road;
- residential development to the north in Albert Street and Campbell Road;
- industrial development in Woodley Street and Holland Street, and
- Sydney Park to the north east of the Site on the opposite side of Campbell Road.

3.2 Air Quality

In order to ascertain the impact the proposed Project would have on the air quality of the locality, Wilkinson Murray has prepared a report titled *Materials Recycling Facility. 2 Albert Street, St Peters. Air Quality Assessment* (**the Air Quality Report**) a copy of which is at **Appendix 6**.

The following information has been extracted from the Air Quality Report.

3.2.1 Local Climate

For this Environmental Assessment, site-specific meteorological data are not available, however, representative meteorological data have been obtained from the Bureau of Meteorology weather station at Sydney Airport AMO (Site No.066037). These data have been used to characterise the local climate in proximity to the Site.

The Sydney Airport station is located approximately 4km south-southwest of the Site. Data have been collected over an approximate 71 year period, with January recorded as the hottest month with a mean maximum temperature of 26.4^{o} C and July as the coldest month with a mean minimum temperature of 7.1^{o} C.

Rainfall data show that June is the wettest month with an average rainfall of 119.8mm over 8.7 days.

Table 3-1 presents a summary of long term average values of climatic elements.

Table 3-1: Monthly Climatic Statistics Summary

Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature												
Mean max (°C)	26.4	26.3	25.2	22.9	20.0	17.6	17.0	18.3	20.5	22.5	24.0	25.7
Mean min (°C)	18.8	19.0	17.5	14.1	10.9	8.6	7.1	8.1	10.3	10.3	15.3	17.5
Rainfall												
Rainfall (mm)	93.8	112.6	115.3	106.1	101.0	119.8	71.3	76.3	60.8	71.6	80.8	73.8
No. of rain days	8.1	8.6	9.1	8.4	8.7	8.7	6.7	6.8	6.9	7.9	8.4	7.7

The airport is likely to be windier than the Site which is sheltered by terrain and buildings in the surroundings.

Stability class has been determined using Turner's 1964 method based on observed values for cloud cover, cloud ceiling height and wind speed data collected at Sydney Airport. **Table 3-2** presents the stability class distribution for the 2008 dataset.

Table 3-2: Stability Class for Sydney Airport (Station No.066037)

Stability Class	Frequency of Stability Class Occurrence (5)
A	0.8
B	7.2
C	16.1
D	48.3
E	16.5
F	11.1

Figure 3-1 presents the annual and seasonal wind roses prepared from the 2008 calendar year dataset.

The annual wind rose indicates the predominant wind direction to be from the south and to a lesser extent from the north-west. The seasonal wind roses show that, during summer, the predominant wind direction is from the south.

In winter, the dominate wind direction is from the west with a spread of winds from the north-west quadrant.

Autumn winds mainly originate from the north-west with lesser winds from the south.

The spring distribution shows dominant winds from the south and spread of winds from the north-west and north to north-east.

On an annual basis, calm winds occur approximately 0.3% of the time. The Site recorded an annual average wind speed of 5.68m/s.

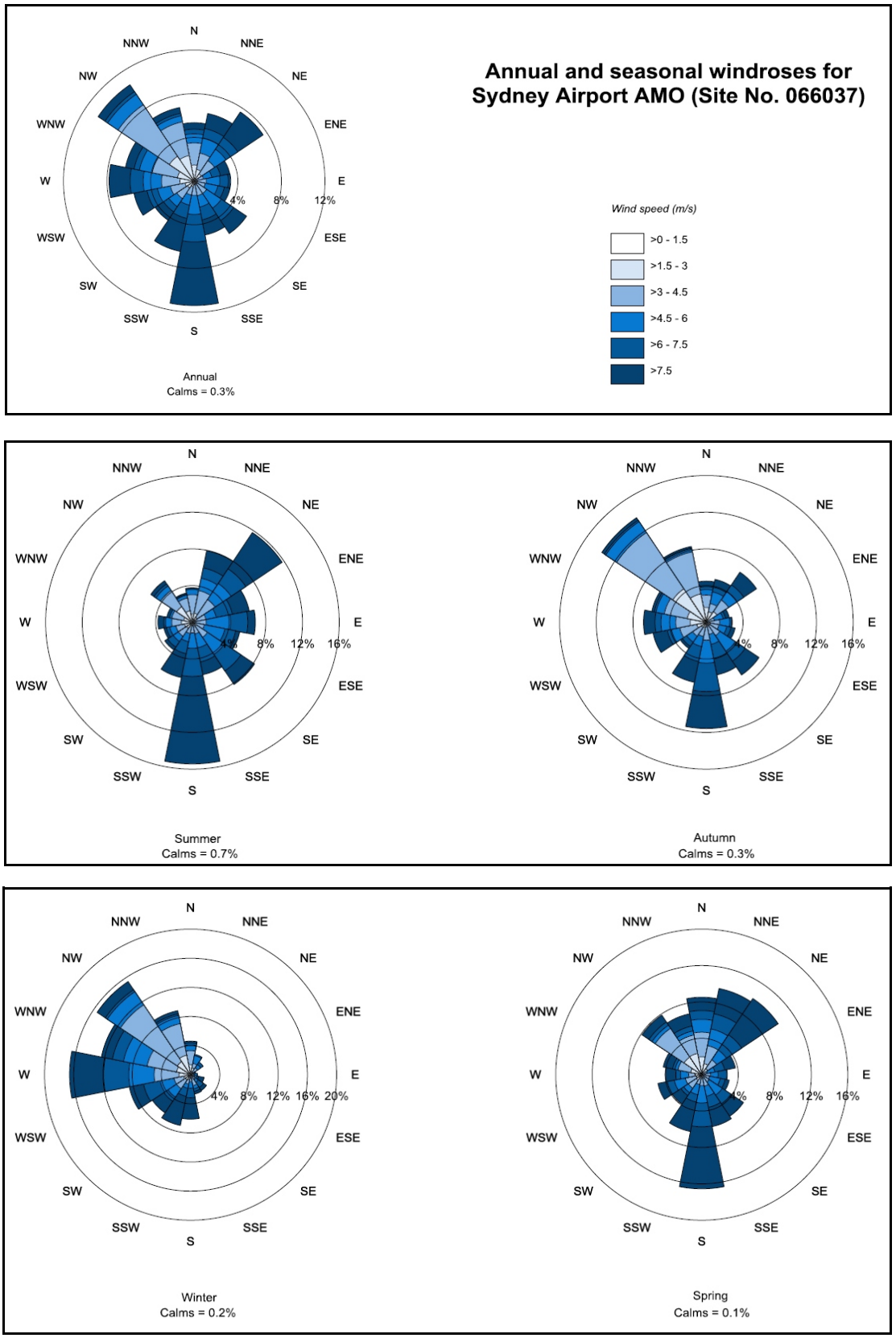

Figure 3-1: Annual and Seasonal Wind Roses for Sydney Airport

3.2.2 Local Air Quality

Suitable site specific air quality monitoring data is not available. As such, background ambient monitoring data has been obtained from two OEH monitoring sites which measure PM_{10} concentration using a Tapered Element Oscillating Microbalance. The sites are located at Earlwood, situated approximately 4km west of the Site and at Randwick, situated approximately 6km east-southeast of the Site.

A summary of the monthly PM_{10} monitoring data from 2005 to 2010 collected at the Earlwood and Randwick monitoring sites is presented in Table 6-3 and Table 6-4 respectively of the Air Quality Report. The monitoring data shows the annual average PM_{10} concentrations at both sites are below the 30Ig/m^3 criterion for all years reviewed.

The maximum monthly 24-hour average criterion of 50Ig/m^3 is exceeded on a number of occasions at both monitoring sites. Investigation into the possible causes of these exceedances has found that bushfire activities near the Sydney area may have caused many of the elevated readings. Additionally, in 2009 there were notable occasions of widespread dust storm events which contributed to high dust concentrations.

3.3 Acoustic Environment

In order to assess the potential impacts of noise from the use of the Site for recycling purposes, Wilkinson Murray Pty Ltd was commissioned to prepared a Noise Impact Assessment (**the Acoustic Report**). A copy of the Acoustic Report is at **Appendix 7**.

The Acoustic Report states, among other things:

> *The site is located in St Peters in a pocket of land zoned "Arterial Road Reservation", within a greater industrial area. The nearest and potentially most affected receptors are a small group of dwellings located near the northern boundary of the site, in Campbell Road. Of these, the potentially most affected dwelling is at 13 Campbell Road (Location A), near the corner of Campbell Road and Albert Street. The remaining few dwellings located further to the east are at a lower surface level to the site, as the land progressively falls away. This provides increased acoustic shielding from the future activities on site.*
>
> *To the north-west of the site, there is another small pocket of dwellings, across the north western leg of Albert Street (Location B). It is important to note that both the abovementioned pockets of dwellings are located on land zoned by the relevant Councils for future arterial road purposes i.e. not on land zoned "Residential".*
>
> *The nearest industrial facility to the west of the site is a recycling facility incorporating some landfill activity and truck movements to and from the adjoining site along Albert Street.*

A short length of 3m Colorbond fence is located on the northern boundary of the site, near the entrance. A 2m Colorbond fence is located at the northern boundary of the neighbouring industrial site, to the west.

When discussing the ambient noise environment and noise monitoring, the Acoustic Report states:

The ambient noise environment at the nearest dwellings is typical of an urban environment with some noise contribution from the existing recycling facility and road traffic noise from Campbell Road and Princes Highway. The current noise environment appears to be strongly controlled by road traffic noise, particularly at locations fronting the local roads.

In order to quantify the existing acoustic environment, unattended noise monitoring using environmental noise loggers was carried out at the potentially most affected location, 13 Campbell Road (Location A), immediately to the north of the site.

The noise loggers were located on site on Tuesday, 12 January 2010 in order to capture at least one full week of ambient noise data. In order to provide data in relation to existing levels of road traffic noise, one unattended environmental noise logger was located at 13 Campbell Road fronting Campbell Road, and one noise logger was located at the side of the dwelling, fronting Albert Street. These two noise loggers were shielding from the environment at the rear of the house by way of the dwelling itself and fencing between the front portion and rear portion of the house.

In order to provide data to quantify the noise environment for the purpose of noise emission from the proposed site, another noise logger was located at the rear of the dwelling. The noise environment at this location (Location A) is considered to be reasonably similar to that at the dwellings further to the north-west of the site (Location B) and therefore representative of that location as well.

The weather during the first few days of the survey was somewhat unstable with some showers and thunderstorms. However, commencing from 16 January 2010, there was a full week of fine weather, with sunny conditions.

Table 3-3 summarises the background noise levels determined from noise logging at the rear of the house at Location A which forms the basis for the noise goals to assess site noise emissions.

Table 3-3: Background Noise Levels

Day (dBA)	6:00am to 7:00am Morning Shoulder Period (dBA)
48	46

Note: Background noise levels are the Rating Background Levels determined in accordance with the DECCW Industrial Noise Policy.

3.4 Visual Environment

The height of the components of the proposed recycling facility could have an adverse impact on the visual amenity enjoyed by the existing residents in the locality and the businesses which operate along the Pacific Highway to the west of the Site.

An inspection of the development in the vicinity of the Site which has a view to the Site was undertaken.

Residential development

- The existing stockpile of sandstone material on the Site is visible from the adjoining residential development fronting Campbell Road.

- There is an existing brick wall located on the southern side of Campbell Lane on the boundary of the Site. A portion of this brickwall is seen in **Photograph 1** below.

- To the south of the brick wall is a significant stand of vegetation. A section of this vegetation can be seen in **Photograph 2** below.

Photograph 1: This photograph shows part of the existing brick wall along Campbell Lane at the rear of the dwellings which have frontage to Campbell Road. Some of the screening vegetation can also be seen.

Photograph 2: This photograph shows a dwelling with frontage to Campbell Road with the existing vegetation on the Site shown behind that dwelling house. The large trees shown would remain as part of the development process.

Photograph 3 below shows an existing motor vehicle repair business located in Campbell Road to the north of the Site and adjacent to the residential development in Campbell Road. The existing large trees on the Site seen in this photograph would remain such that there would be no visual impact.

Photograph 3: This photograph shows the existing vehicle repair facility in Campbell Road. The large trees at the rear of that site would screen any development of the Site.

There are a number of commercial developments located on the Pacific Highway to the west of the Site. The location of those activities is such that they have a limited visual catchment to the Site and that visual catchment has, in its foreground, the dial a dump operation.

3.5 Traffic

In order to provide information with regard to access to the Site and the impact the proposed development would have on the existing traffic network, Lyle Marshall & Associates Pty Ltd has prepared a report (**the Marshall Report**), a copy of which is at **Appendix 8**.

The following information is extracted from the Marshall Report.

3.5.1 Existing Road Network

Campbell Street and Campbell Road form part of Regional Road 7017 which carries heavy industrial traffic between the Princes Highway (SH1) and Ricketty Street (MR 183).

Albert Street runs east / west parallel to Campbell Street and then runs north to form an offset four-way channelised intersection with Campbell Street, Campbell Road and Barwon Park Road.

At Campbell Road, Albert Street is controlled by "Give Way Signs".

The Site entrance is adjacent to the entrance to St. Peters Waste Transfer Station in Albert Street. Albert Street is 15.8 metres wide kerb to kerb and carries two-way traffic. There are no turning restrictions at Campbell Road.

Campbell Road is 12.9 metres wide kerb to kerb and has 2 traffic lanes and 2 kerbside parking lanes but these are sign posted "No Stopping" in the vicinity of Albert Street.

Woodley Street and Holland Street, to the east of the Site, are 12.9 metres and 12.8 metres wide kerb to kerb respectively and have 2 traffic lanes and 2 kerbside parking lanes.

3.5.2 Existing Traffic Volumes

Automatic tube counters were installed in Albert Street and in Campbell Road opposite Car Shop No.17 for 7 days in December 2009 by CFE Information Technologies to

record hourly traffic volumes over 24 hours, vehicle classes and vehicle speeds. A traffic volume count was made of all movements at the intersection of Campbell Street / Campbell Road with Albert Street during the 7:00 - 9:00am commuter peak hours in March 2011.

The heavy vehicle movements and total traffic movements at this intersection are much higher in the AM commuter peak hours than at any other time during the day. PM counts were not considered necessary.

The commuter peak hours were 7:00 - 8:00am and 5:00 - 6:00pm. The weekday average number of heavy vehicles in the am and pm peak hours and lunch hour in Campbell Road and Albert Street are listed in Table 2.3 of the Marshall report, an extract from which is at **Table 3-4**.

Table 3-4: Extract from Table 2.3 of the Marshall Report which shows Total Hourly Volumes of all Vehicles and Hourly Volumes of Heavy Vehicles in December 2009.

Road	Time	Eastbound		Westbound		TWO-WAY TOTAL	
		Total Vehicles	Heavy Vehicles	Total Vehicles	Heavy Vehicles	Total Vehicles	Heavy Vehicles
Campbell Rd	7:00-8:00am	915	68	132	46	1047	114
	12:00-1:00pm	407	63	228	54	635	117
	5:00-6:00pm	351	20	474	22	825	42
Albert St.		NORTHBOUND		SOUTHBOUND			
	7:00-8:00am	53	11	37	11	90	22
	12:00-1:00pm	59	13	64	21	123	34
	5:00-6:00pm	30	2	16	2	46	4

3.5.3 Intersection Capacity

A count was made of all turning movements at the intersection of Albert Street with Campbell Road from 7:00am to 9:00am in March 2011. The turning movements in the 8:00 - 9:00am peak hour are shown in Figure 4 of the Marshall Report, an extract from which is at **Figure 3-2**. When the tube counts were made in December 2009 the morning peak hour was 7:00 - 8:00am.

At this unsignalised tee intersection there is no cross traffic and the turning volumes are relatively low.

An analysis has been made of the absorption capacity for the right turn from Albert Street into Campbell Road. The right turn is the "critical movement" and the right turn is highest in the am peak hour.

Using the formula for "practical absorption capacity" in Section 8.3.2 in Austroads Part 2 Roadway Capacity, and assuming that trucks require a critical acceptance gap of 8 seconds and a follow up headway of 5 seconds to cross 2 lanes 2-way for a two-way flow

of 1059 pcus/hr in Campbell Road, the practical capacity is 272 vehicles/hour. The assumed existing right turn volume is 41 pcus/hr.

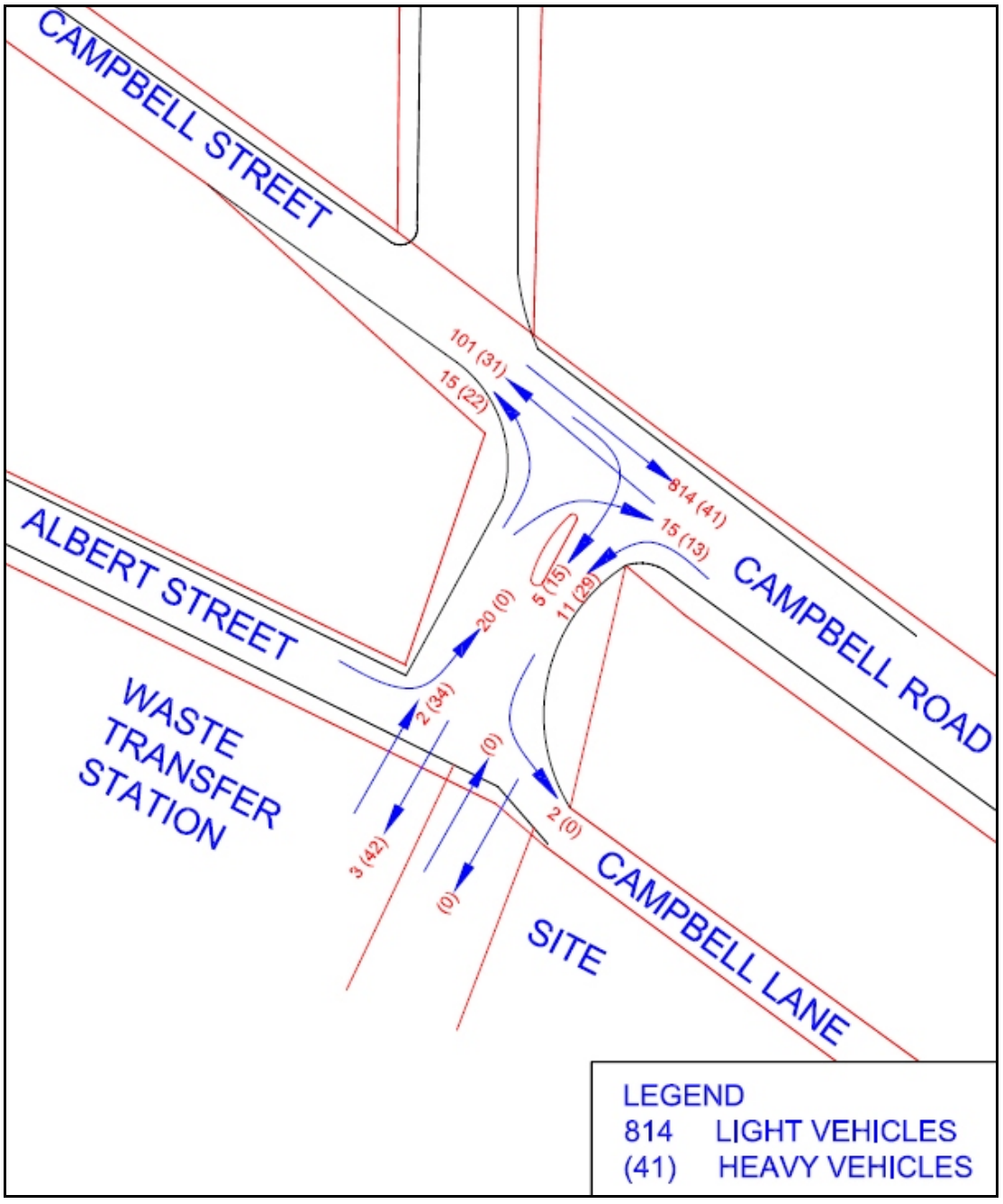

Figure 3-2: Extract from Figure 4 of the Marshall Report showing turning movements in the 8:00am to 9:00am peak hour.

3.5.4 Vehicle Access to the Site

The existing vehicular crossing and entrance to the Site is in Albert Street adjacent to the

vehicular crossing and separate entrance and exit crossings to St. Peters Waste Transfer Station as seen in **Photograph 4**.

Photograph 4: This photograph shows the existing entrance to the Site and the entrance to the adjoining waste management facility to the right of the Site entrance.

There is no conflict between vehicles entering the St. Peters Waste Transfer Station and trucks exiting from No.2 Albert Street.

A driver exiting from No.2 Albert Street has adequate sight distance to a truck exiting the Waste Transfer Station or vice versa to stop as necessary. These trucks merge some 25 metres north of the Site boundary.

3.6 Water Quality and Stormwater Drainage

In order to ascertain the impact the proposed development would have on the stormwater drainage system, Lyle Marshall & Associates Pty Ltd has prepared a report (**the Marshall Report**) a copy of which is at **Appendix 8**.

The following information has been extracted from the Marshall Report.

3.6.1 Sydney City Council and Sydney Water Requirements

The Sydney City Council Drainage Connection Information states that:

> *.... for all sites greater than 250m^2 OSD is required in accordance with the current Sydney Water guidelines that is the 100 year Average Recurrence Interval (ARI) post development site run-off must be limited to the pre-development 5 year (ARI) site run-off. All run-off must pass through a silt trap located on site, before entering the City's drainage system.*

In response to a facsimile with details of the Site, proposed processing operations, aerial photo of the Site and a survey plan, Sydney Water advised by letter dated 1 April 2011 that:

> *... on site detention was not required for one year after which the requirements would be updated upon re application.*

The Site is currently a stockpile of clean sandstone excavated from sites in the Sydney CBD and suburbs which was intended to be processed pursuant to the Development Consents which have now lapsed. The steep batters to the west and south and level plateau at the top of the stockpile are stoney and are covered in sparse spiky vegetation. The surface is stabilised against wind erosion.

There are no Sydney Water stormwater assets in the vicinity of the Site.

Campbell Lane, Woodley Street and Holland Street drain to a double grated gully pit some 95 metres to the eastern boundary of the Site in the City of Sydney LGA. These pipelines and pits belong to the City of Sydney.

Sydney City Council allows a maximum number of three stormwater drainage outlets in a set at any one point along the kerb. The centre lines of each outlet are spaced at 300 mm. These outlets can be 100 x 150 galvanised RHS or 100 mm diameter UPVC Class 12. A second set of outlet pipes may be located not less than 6 metres from the first set. The discharge from each set of 3 outlets is restricted to 45 litres/sec.

Site preparation works would be required initially followed by a number of excavation / operational stages to lower the existing stockpile to its base level of about RL8.5 metres for the ongoing operational stage.

Because the site preparation and each excavation / operational stage are relatively short term, the stormwater management procedures would be mainly for erosion and sediment control.

3.6.2 Existing Stormwater Drainage System

The survey of the Site shows that the natural fall of the land across the Site is from west to east. The existing stormwater management system is assumed to be adequate for the site area of 1.72ha in its natural condition.

The estimated peak discharge from a 1 in 5 year storm on the pre-developed site is 424 l/sec.

The steep batters forming the north, east and south faces of the stockpile are covered with dense vegetation which filters stormwater runoff from the Site.

The driveway from Holland Street to the Dial a Dump Recycling site which abuts the south eastern corner of the Site is flanked on the right by a low brick wall and a concrete block wall at the toe of the steep, densely vegetated bank leading to the reinforced concrete wall and entry gate.

At the toe of the densely vegetated batter within the Dial-a-Dump site, there is a concrete lined stormwater channel which extends for 125 metres to the south and then along the western side of the Site. The concrete lined stormwater channel conveys filtered stormwater from both the Site and the Dial-a-Dump site.

The concrete lined trapezoidal shaped channel is approximately 1500mm wide at the top, 350mm wide at the base, and 250mm deep. The channel slope is approximately 1.8% and varies. There is a gross pollutant trap fenced with open mesh fencing some 31 metres upstream of the grated inlet pit. Some of the runoff enters a grated inlet pit and the balance is directed across the paved driveway by a low concrete diversion bank to a shallow concrete lined drain 4.3 metres wide which runs along the southern side of the dividing wall between the Dial-a-Dump site and Lot 100, DP 845651 which has a frontage to Holland Street.

The shallow concrete lined drain extends along the concrete wall for 75 metres and discharges into a grated surface inlet pit. A silt fence extends for the length of this drain and the channel which surrounds the Dial-a-Dump frontage to the Site.

The existing stormwater management system complies with the comprehensive guidelines in *Managing Urban Stormwater Soils and Construction* published by the NSW Department of Housing.

3.7 Flora and Fauna

Figure 3-3 is an extract from an aerial photograph of the Site. From that aerial photograph, it can be seen that there is a significant stand of vegetation located in the northern section of the Site. The trees along the northern boundary of the Site can also be seen in **Photographs 2 and 3** above.

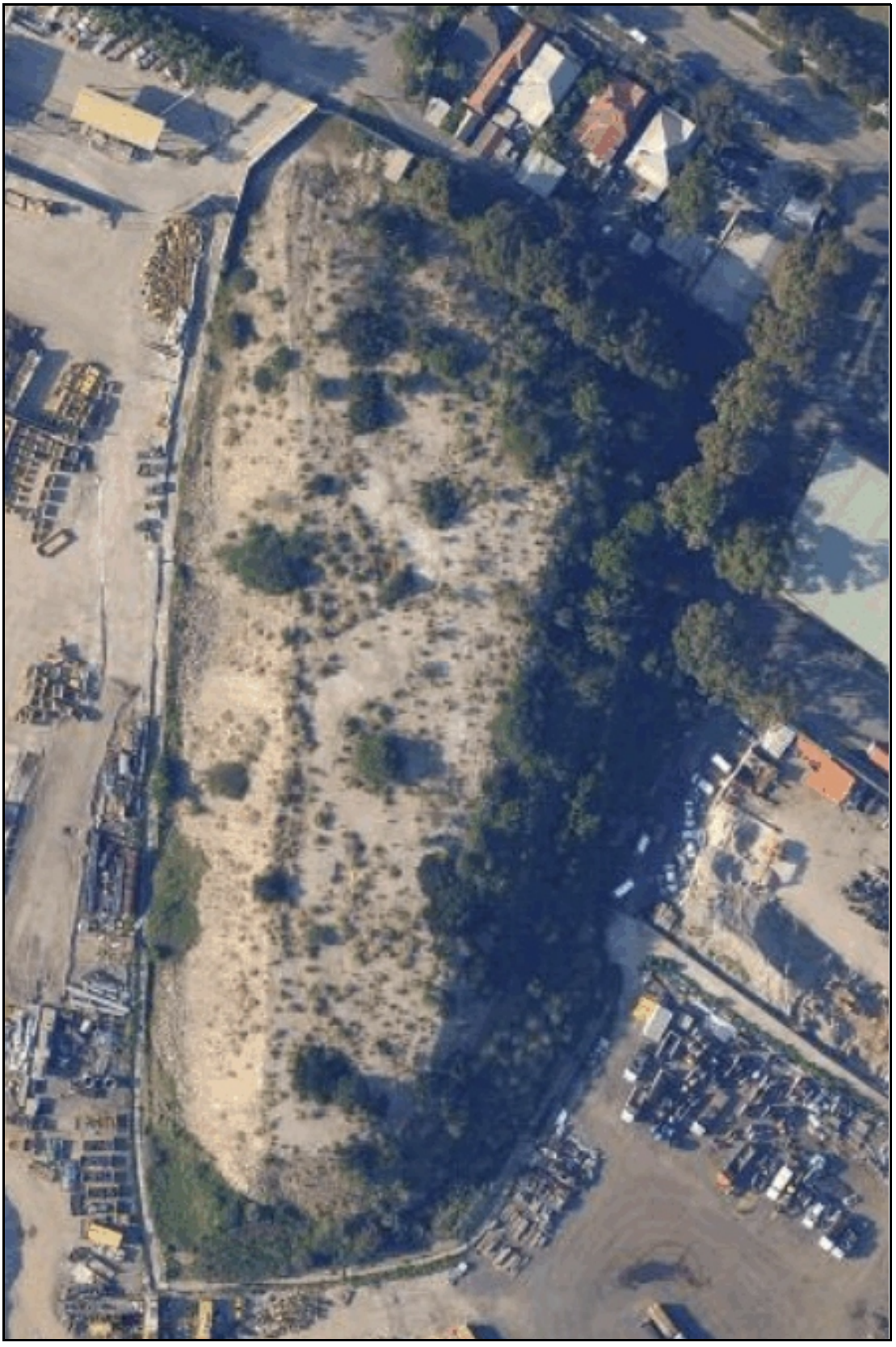

Figure 3-3: Extract from an aerial photograph of the Site showing the existing vegetation on the Site

In order to preserve the visual environment of the Site when viewed from surrounding properties and, indeed, to assist in mitigation of potential environmental impacts associated with the proposed development, it is proposed to retain all of the existing vegetation along the northern boundary of the Site.

There is also some scattered vegetation on the Site located within the main stockpile. That vegetation would be removed as part of the development of the Site as proposed.

To determine whether the existing vegetation on the Site is of significance such that it should be retained, Aquila Ecological Surveys has prepared a report titled *Flora and Fauna Assessment, Proposed Sandstone Recycling Facility, 4 Albert Street, St Peters* (the **AES Report**). A copy of the AES Report is at **Appendix 11**.

The aims of the AES Report are to determine:

- whether the proposal is likely to have a *significant effect on threatened species, populations or ecological communities or their habitats*, based on the seven factors listed in Section 5A of the *Environmental Planning and Assessment Act 1979* as amended by the *Threatened Species Conservation Act 1995* (***TSC Act***) and the *Fisheries Management Act 1994* (***FM Act***), and

- impacts on threatened species and ecological communities under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (***EPBC Act***).

Existing Vegetation

The existing vegetation on the Site is described as follows:

The site is vegetated with a range of plants which have colonised the which has been deposited on the Site. The most common species is Pampas Grass (*Cortaderia selloana*) which has stems to 4 metres tall.

The most common shrubs are Golden Wreath Wattle (*Acacia saligna*) and Sydney Golden Wattle (*A.longifolia*) which grow from 2 to 4 metres.

Golden Wreath Wattle is a West Australian species which grows on roadsides around Sydney along with the native Sydney Golden Wattle. Other common shrub species are Crofton weed (*Ageratina* adenophora), Lantana (*Lantana camara*), Privet (*Ligustrum spp*) and Inkweed (*Phytolacca octandra*) whilst the groundcover includes a number of Asteraceous (Daisy family) weeds such as Fleabane (*Conyza Canadensis*), Cobbler's Pegs (*Bides pilosa*) and Catsear (*Hypochaeris radicata*).

The Site's vegetation is highly modified and has no conservation significance.

Existing Fauna

The vegetation description broadly outlines fauna habitat. Other features which influence

the range and abundance of fauna are:

- The Site is within an industrialised and urbanised area limiting the range of abundance of habitat features which may favour the presence of native fauna species. The adjacent refuse centre affords habitat for some bird species which were observed moving between the refuse centre and the top of the stockpile.

- There are no tree hollows or stags (standing dead trees) suitable for habitation by vertebrate fauna.

- A small pond with dimensions of approximately 2 metres by 2 metres and 15cm depth occurs on top of the Stockpile. Although this may harbour common frog species such as the Eastern Common Froglet (*Crinia signifera*), no frogs, tadpoles or egg congregations were observed in the pond.

Threatened Fauna

A narrow range of fauna species was detected during the site survey. Species detected were Australian White Ibis (*Threskiornis moluccana*), Peregrine Falcon (*Falco peregrinus*), Willie Wagtail (*Rhipidura leucophrys*), Australian Raven (*Corvus coronoides*), Common Myna (*Sturnus tristis*), House Mouse (*Mus domesticus*), Dog (*Canis familiaris*) and Garden Skink (*Lamprophilus delicata*). The House Mouse was detected through the placement of the hair tubes. Long-nosed Bandicoots were not detected in this manner, nor were any other signs of the species' habitation (e.g. scats, conical feeding holes in the ground) observed.

Whilst the lack of fauna is to some degree a reflection of the brevity of the field survey, it is also a function of the limited habitat value of the Site and its environs. No fauna species listed as threatened on the *TSC Act* or the *EPBC Act* were detected during the survey.

3.8 Infrastructure Services

No services are currently connected to the Site.

Electricity would be required to the office and amenities building on the Site. Connection would be made via the existing street electricity infrastructure.

Water to the Site would be connected by way of the existing Sydney Water services in the vicinity of the Site.

Telecommunication facilities are not currently available at the Site. Telephone facilities at the Site would be mobile services.

The Site is currently not connected to sewer services. Portable toilet facilities would be installed to service the Site.

3.9 Aboriginal Cultural Heritage

The Site is one which contains a stockpile of sandstone which has been won in excavation sites across the Sydney CBD and nearby areas. As such, it is unlikely that any items of Aboriginal Cultural Heritage are present in the sandstone stockpile which is proposed to be removed as part of the proposed development.

In order to verify the above, Archaeological & Heritage Management Solutions (**AHMS**) has prepared an Aboriginal Heritage Assessment, a copy of which is at Appendix 12. The conclusion of the AHMS report is:

> *No registered Aboriginal objects or places are present within the subject area, and none were observed during the site inspection. The subject area is likely to be located on the edge of a soil landscape consisting of aeolian sand dunes bordering Botany Bay. Natural shell beds were present within this sand to the south of the subject area. Shell beds were also present along the line of Alexandra Canal, to the south and south east of the subject area; and archaeological material was found within these deposits.*
>
> *However, the subject area itself has been significantly disturbed by the construction and operation of a brickworks in the twentieth century. Excavation required for the proposed development is likely to affect only introduced material (the sandstone stockpile), and the disturbed soils below this. It is therefore considered that the proposed development is unlikely to involve any impact to Aboriginal heritage.*
>
> *It should be noted that deep sand deposits may survive below this disturbance, and that these deposits may include archaeological material. Should there be any modification to the development proposal, or any future development proposal, that requires deep excavation, further investigation of the potential for Aboriginal heritage impact is recommended.*
>
> *It should further be noted that all Aboriginal sites, objects and places are protected under the National Parks and Wildlife Act 1974. Should any such items be uncovered in the course of the work, work should cease in the vicinity, and advice should be sought from the Office of Environment and Heritage.*

Part Four

THE PROPOSED DEVELOPMENT

4.1 Introduction

The then NSW Department of Environment & Climate Change has released the *NSW Waste Avoidance and Resource Recovery Strategy 2007* which states, among other things:

> *The Waste Avoidance and Resource Recovery Strategy 2007 (Waste Strategy 2007) updates the Waste Avoidance and Resource Recovery Strategy 2003 (Waste Strategy 2003).*
>
> *The underlying policy drivers behind Waste Strategy 2003 were the need to maximise conservation of our natural resources and to minimise environmental harm from waste management and disposal of solid waste. These drivers are even more important in 2007 against a backdrop of a growing population in NSW and a healthy economy that is producing more goods and services.*
>
> *Waste Strategy 2007 continues to provide guidance and priorities for action to ensure that efficient resource use and impacts on the environment are considered throughout the life cycle of goods and materials. This includes extraction of raw materials, manufacturing, distribution, consumption and recovery for reprocessing or safe disposal.*
>
> *Since Waste Strategy 2003 was released, there has been mounting scientific research that has quantified the benefits and impacts of waste related actions to other parts of the environment e.g. water savings, conservation of virgin resources, greenhouse gas and soil health. There has also been a growing understanding that actions taken to tackle any environmental or resource use issue are strongly interconnected in people's minds. This means that continuing to encourage waste related actions, such as recycling, that are practical and relatively easy to undertake, can naturally lead to actions on other important environmental issues such as reducing energy and water consumption.*
>
> *All of these factors reinforce the importance of a Waste Avoidance and Resource Recovery Strategy for NSW.*
>
> *Waste Strategy 2007 has been produced in light of current national and international practice, and emerging trends and challenges. It identifies priority actions that will guide the work of all key groups in NSW in contributing to the minimisation of environmental harm from waste disposal and the conservation and efficient use of our resources. The Strategy focuses on solid wastes that, unless recovered and diverted to beneficial uses, would be disposed of to solid and inert waste landfills throughout NSW.*

With regard to *Increasing recovery and use of secondary resources*, the 2007 Strategy adopts the same target as the 2003 Strategy, being that the following targets be achieved by 2014:

> *Increase recovery and utilisation of materials from municipal sector from the current 26% to 66%*
>
> *Increase recovery and utilisation of materials from the commercial & industrial sector from the current 28% to 63%*
>
> *Increase the recovery and utilisation of materials from the construction & demolition sector from the current 65% to 76%.*

The proposed development would assist in achieving the above targets of the State government through the removal of excavated sandstone waste from the waste stream which might otherwise have been diverted to landfill and recycling the existing stockpile of sandstone material on the Site which would relieve pressure on natural sandstone resources.

4.2 The Proposed Sandstone Recycling Facility

The proposal is for a sandstone recycling facility which would recycle the existing sandstone material on the Site by crushing and separating that material into different sizes to be sold to various industries in the Sydney metropolitan area. The recycled materials would be used mainly as sub-base material and/or select fill material.

The proposed development is the essentially the same as the development which previously operated in the Site under the consents listed in **Appendix 1**.

The proposal is also for the continuation of the operation of the sandstone recycling facility upon the completion of the processing of the existing sandstone stockpile. Concrete Recyclers would import sandstone material to the Site which is waste from excavations in the Sydney metropolitan area and sand from the eastern suburbs to produce a screened sandstone fill product. The recycling process would be essentially the same as that described above.

The sandstone material currently located on the Site, in isolation, is not ideal for use in major civil projects in that it is low strength material. To achieve many engineering specifications, it would be required to mix that crushed and separated sandstone material with other material such as crushed concrete/asphalt. In this regard, Concrete Recyclers has obtain advice from Network Geotechnics Pty Ltd which states:

> *Typically the sandstone found in the Sydney CBD is known as Hawkesbury Sandstone. The sandstone depending upon the degree of weathering (ie fresh to extremely weathered) yields soaked California Bearing Ratios (CBR) of 10-25% dependant on grading and clay content of the sandstone.*

Many civil projects within NSW use sandstone road base and require it to comply with specification RTA 3071 "Select Material for Formation". This specification requires the road base to be well graded and having CBR values in excess of 30%.

Prior testing has indicated that Hawkesbury sandstone blended with crushed concrete has improved the grading and increased the CBR value to above the 30% required by RTA specification.

In light of the above, it is proposed to blend the crushed sandstone with crushed concrete/demolition rubble and asphalt. This material would generally be sourced from the Alexandria and Botany region. It is expected to blend 25-30% concrete/brick and 70-75% sandstone. The blend mix may vary depending on the project specification.

Small quantities of virgin free draining sand would also be received at the Site which would be screened and resold. Expected total quantities of imported material are:

Year 1	20,000 tonnes
Year 2	40,000 tonnes
Year 3	60,000 tonnes
Year 4	60,000 tonnes
Year 5	60,000 tonnes
Year 6	150,000 tonnes.

Materials received would be limited to the predicted quantities to be sold for the following two months. It is anticipated that no more than 2,000 tonnes of unprocessed concrete/brick would be on site at any time.

There would be no waste generated from the process as only clean demolition brick and concrete would be received. Therefore, there would be no waste removed from the Site.

It is intended that the proposed facility, when operating at full capacity, would process approximately 150,000 tonnes per annum.

Recycling is generally undertaken by way of crushing the source material to generate a specific sized product depending on the requirements of the customer of the product material. Sorting of the crushed material is undertaken by way of screens located after the crushing machinery.

Crushed material is transported by way of front end loader to a product specific stockpile. Processed material is loaded into trucks for delivery to the end user of the processed materials. Materials can be used for, among other things, road base, drainage and landscaping.

4.3 Stages of Development

The recycling of the existing stockpile on the Site would be undertaken in stages. Layout plans for the proposed stages of the development are provided at **Appendix 9** which detail the processing area in each stage of the development. The following description is provided of the various stages of the development process.

Site Preparation

The initial part of the development process (refer Drawings Nos.06-08 at **Appendix 9** and **Figure 4-1**) would the establishment of the Site as follows:

- Provision of a portable 9 x 3 metre amenities building at the entrance to the Site. This building would contain the Site office and staff amenities.
- Provision of 3 car parking spaces adjacent to the amenities shed.
- Installation of 2 rain water tanks adjacent to the car parking area.
- Establishment of a perimeter bund and perimeter drain.
- Establishment of a stabilised site access.
- Grading of the Site along its western boundary to provide for an accessway for trucks and machinery to access the top of the stockpile. Material graded from this section of the Site would be stockpiled at the southern end of the Site awaiting crushing.
- A separate stockpile of uncrushed material to RL 25 metres would be established at the northern end of the Site to assist in the mitigation of acoustic and other impacts to the adjoining residential development.
- Establishment of the mobile crushing machinery at the top of the stockpile at the southern end of the Site.
- Establishment of a crushed material stockpile.

Figure 4-1 is an extract from the proposed site preparation plan and **Figure 4-2** is an extract from the 3D model image of the preparation of the Site when viewed from the south.

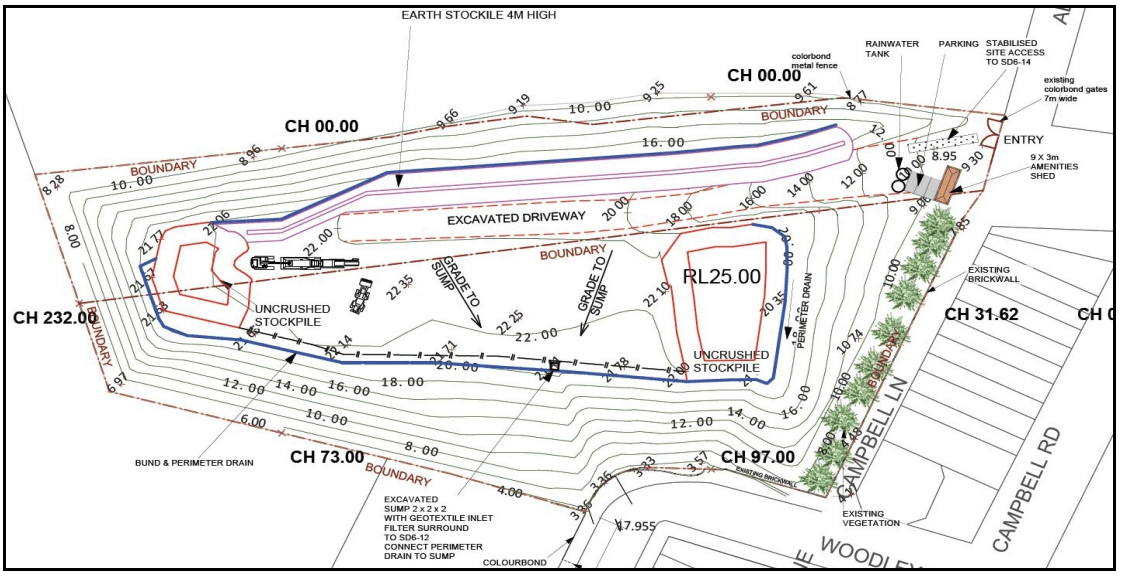

Figure 4-1: Extract from the Site Preparation plan for the initial stage of the proposed development. Full details are provided on Drawing No.06, Issue D of the plans of the proposed development at **Appendix 9**.

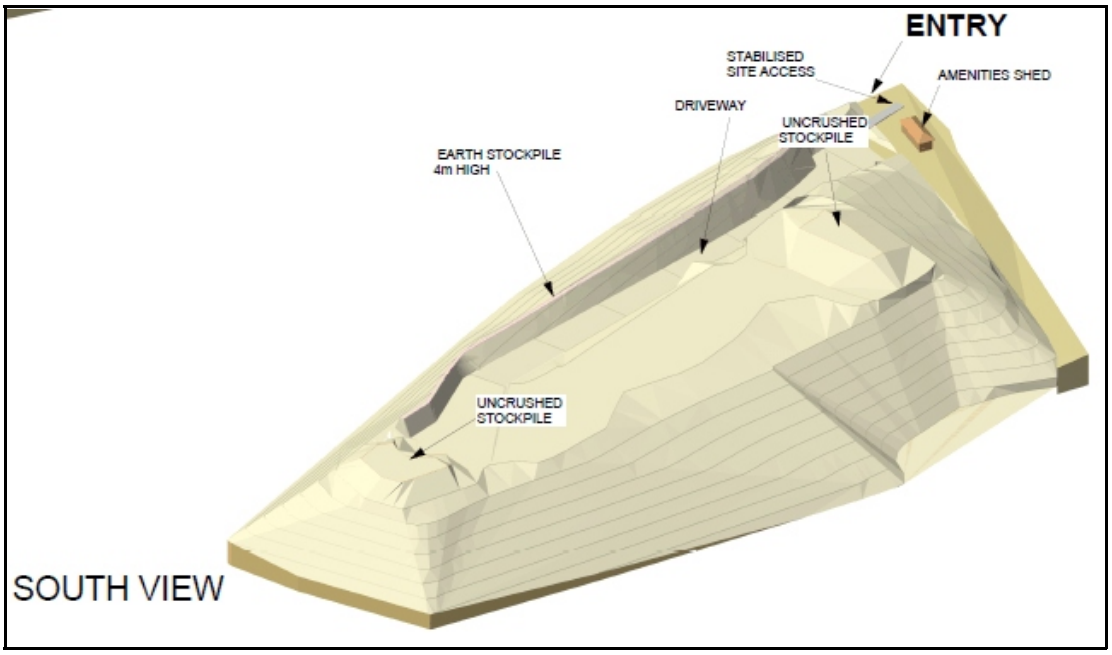

Figure 4-2: Extract from the 3D model of the Site Preparation Stage of the proposed development. Full details are provided on Drawing No.08, Issue D of the plans of the proposed development at **Appendix 9**.

Following the completion of the site preparation, there would be 5 stages to remove the existing sandstone stockpile. Each of the stages would take approximately 1 year, depending on the demand for the product to be produced.

Stage 1

This stage of the development process is depicted on Drawing Nos.09-12 at **Appendix 9** and comprises:

Initial Phase

- Installation of a wheel wash facility at the Site entrance.
- Cutting of the southern end of the stockpile to RL 19 metres with a batter of 1 in 3 as shown on Drawing No.09 and **Figure 4-3** while maintaining the northern stockpile at RL 25 metres.

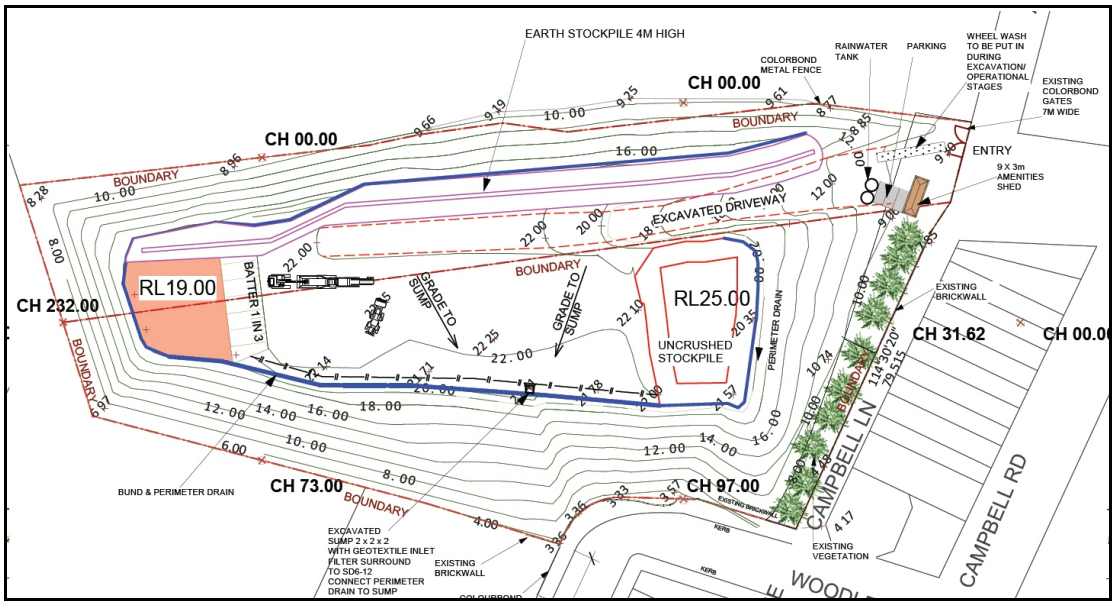

Figure 4-3: Extract from the initial Stage 1 plan. Full details are provided on Drawing No.09, Issue E of the plans of the proposed development at **Appendix 9**.

Subsequent Phase

- Progressive cutting of the remaining area of the stockpile to RL 19 metres as depicted on Drawing No.10 and **Figure 4-4**.
- The final Stage 1 process would retain the 5 metre high stockpile at the northern end of the Site at a height of RL 24 metres for impact mitigation purposes.

Figure 4-5 is an extract from the 3D model image of Stage 1when viewed from both the north and the south.

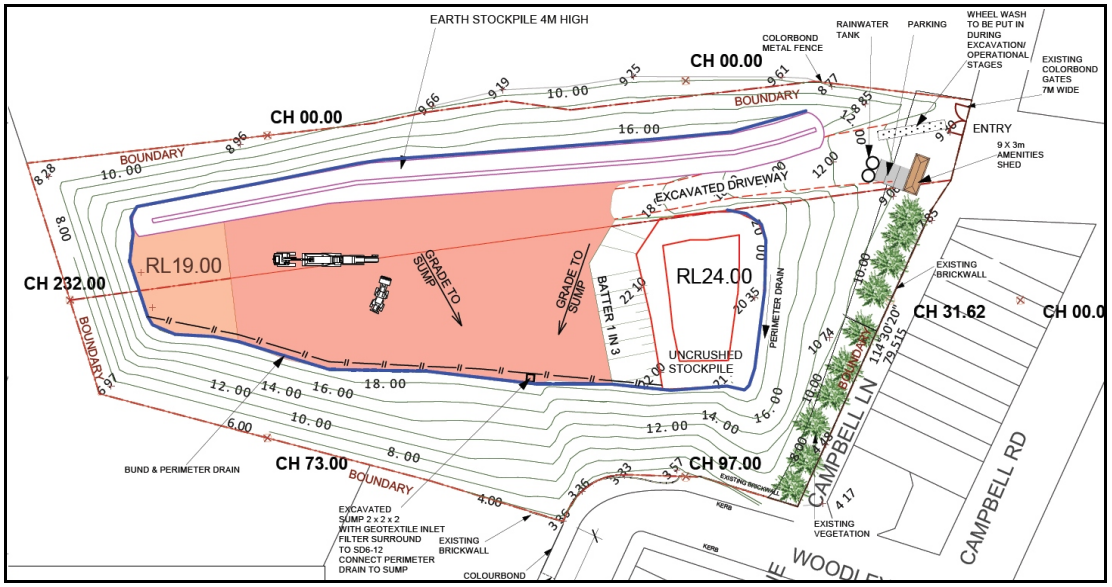

Figure 4-4: Extract from the subsequent Stage 1 plan of the proposed development. Full details are provided on Drawing No.10, Issue E of the plans of the proposed development at **Appendix 9**.

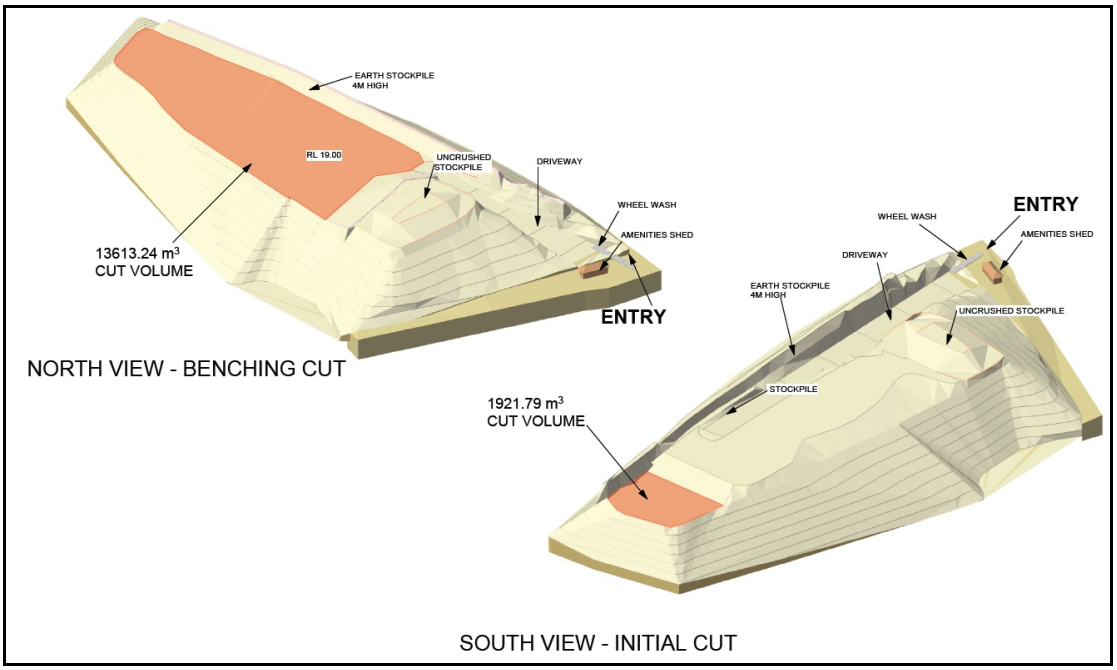

Figure 4-5: Extract from the 3D model of Stage 1 of the proposed development. Full details are provided on Drawing No.12, Issue E of the plans of the proposed development at **Appendix 9**.

Stage 2A

This stage of the development process is depicted on Drawing Nos.13-15 at **Appendix 9** and comprises:

- Cutting of the southern end of the stockpile to RL 16 metres with a batter of 1 in 3 as shown on Drawing No.13 and **Figure 4-6**.

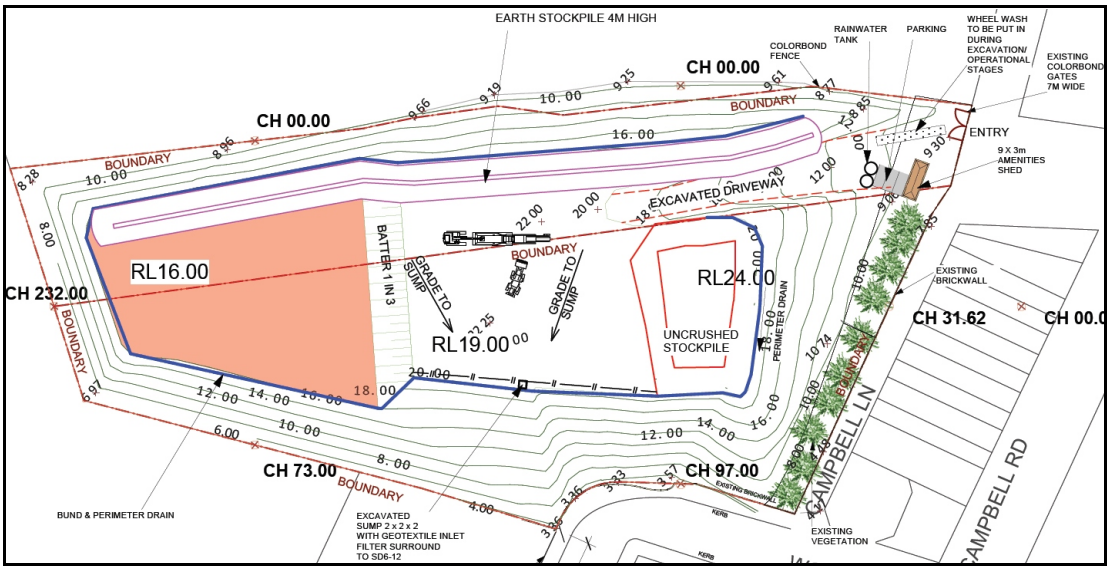

Figure 4-6: Extract from the Stage 2A plan of the proposed development. Full details are provided on Drawing No.13, Issue E of the plans of the proposed development at **Appendix 9**.

Figure 4-7 is an extract from the model image of Stage 2A when viewed from the south.

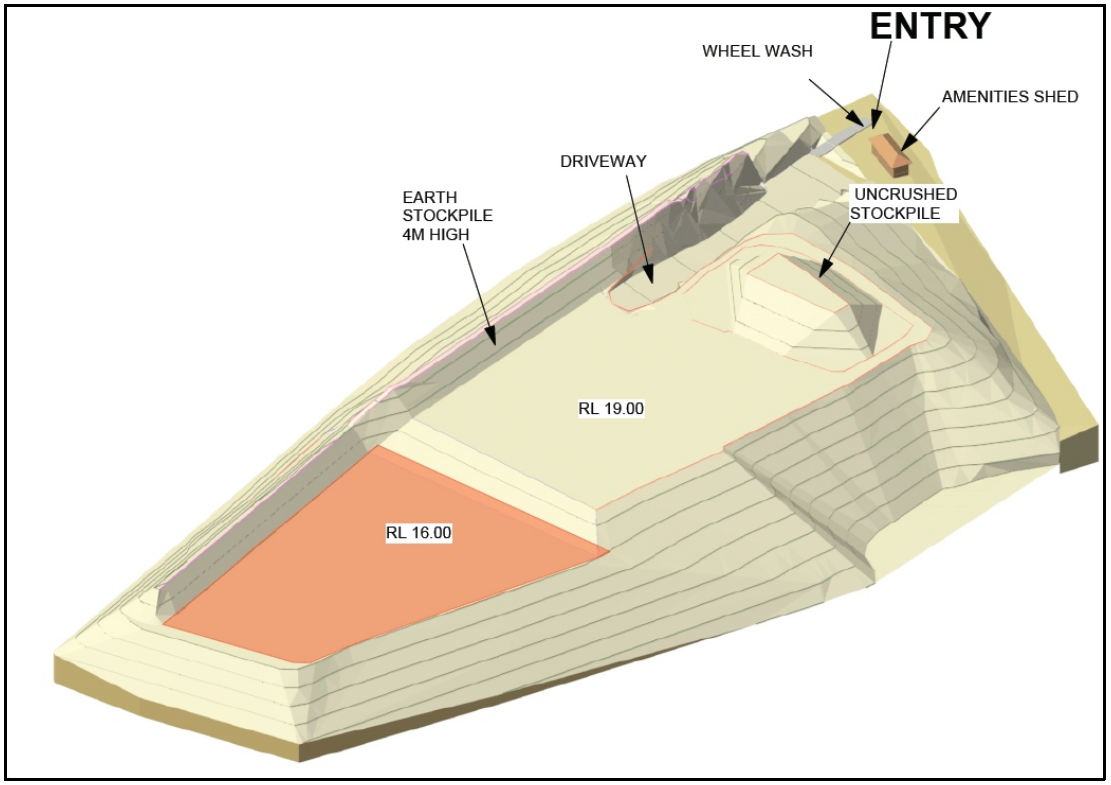

Figure 4-7: Extract from the 3D model of Stage 2A. Full details are provided on Drawing No.15, Issue E of the plans of the proposed development at **Appendix 9**.

Stage 2B

This stage of the development process is depicted on Drawing Nos.16-18 at **Appendix 9** and comprises:

- Benching of the stockpile to create a benching cut to RL 16 metres as depicted on Drawing No.16 and **Figure 4-8**.

- Reduction in the height of the northern stockpile to RL 21 metres to maintain a 5 metre height for impact mitigation purposes.

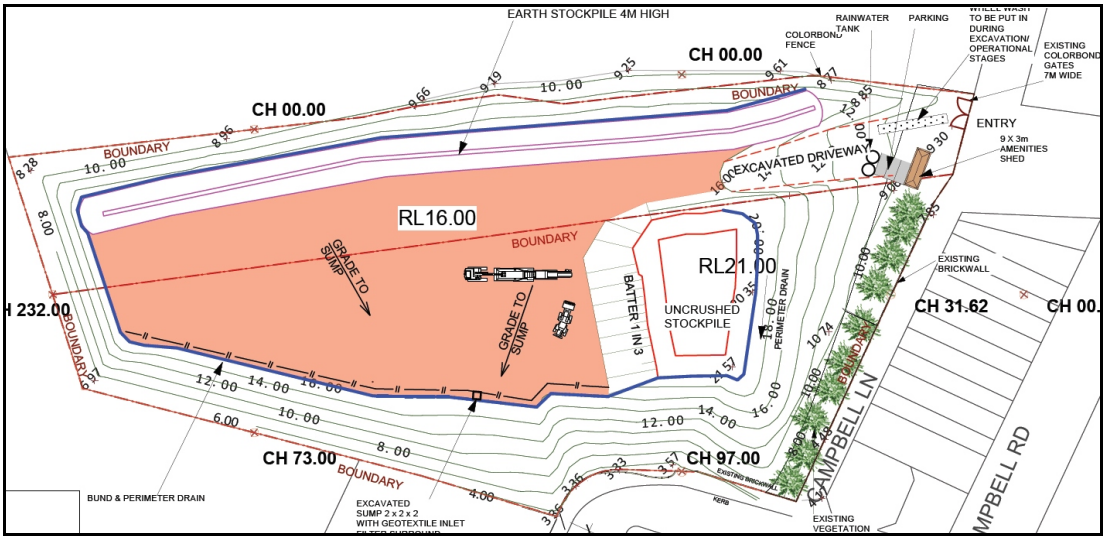

Figure 4-8: Extract from the plan of Stage 2B. Full details are provided on Drawing No.16, Issue E of the plans of the proposed development at **Appendix 9**.

Figure 4-9 is an extract from the model image of Stage 2B when viewed from the north.

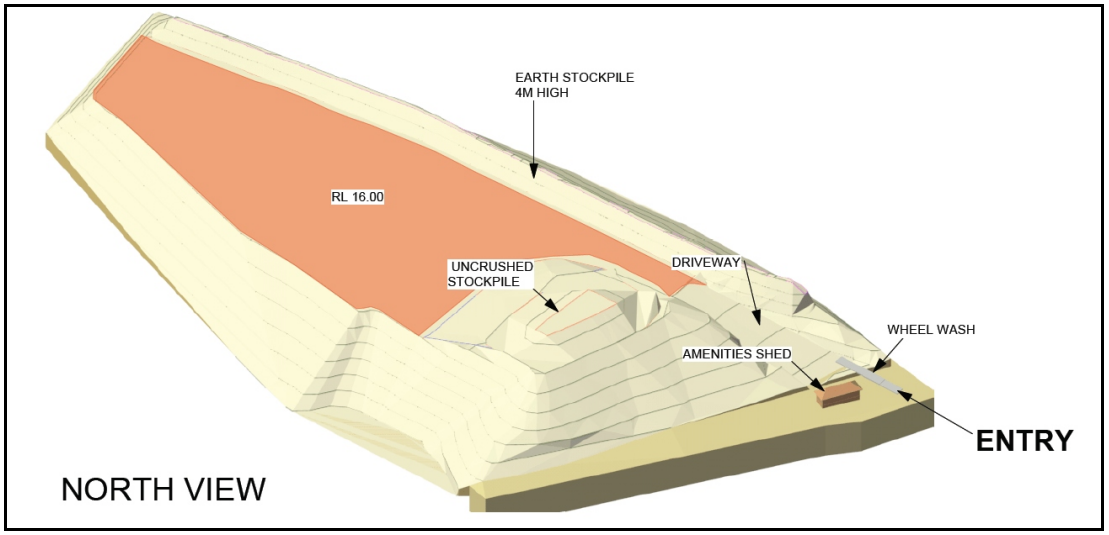

Figure 4-9: Extract from the 3D model of Stage 2B. Full details are provided on Drawing No.18, Issue E of the plans of the proposed development at **Appendix 9**.

Stage 3

Stage 3 of the development process is depicted on Drawing Nos.19-21 at **Appendix 9** and comprises:

- Benching of the stockpile to RL 13 metres as depicted on Drawing No.19 and **Figure 4-10**.

- Reducing the height of the northern stockpile to RL 18 metres to maintain the 5 metre height for impact mitigation purposes.

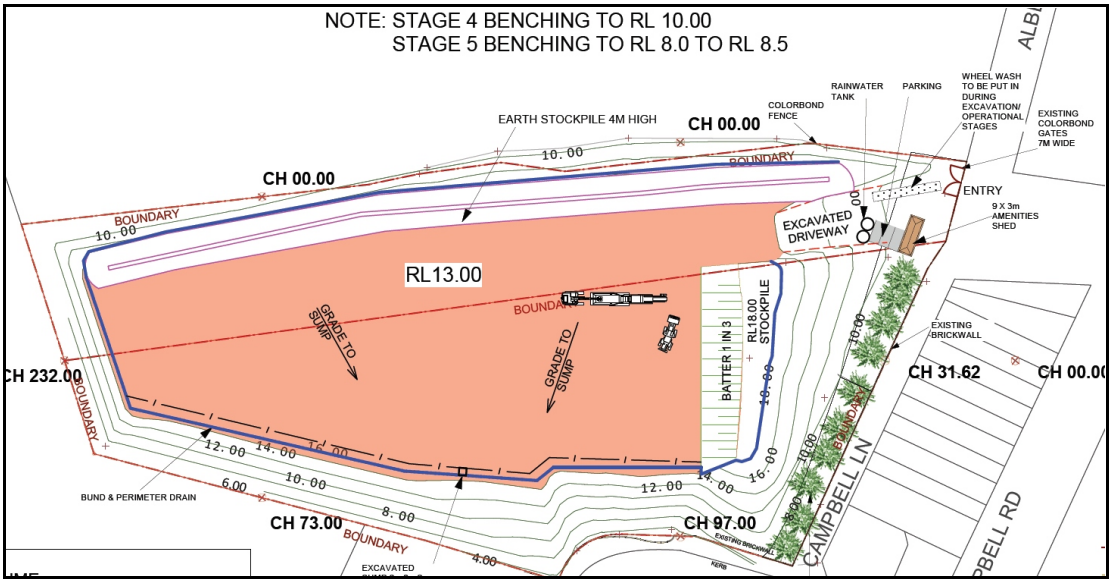

Figure 4-10: Extract from the plan of Stage 3. Full details are provided on Drawing No.19, Issue E of the plans of the proposed development at **Appendix 9**.

Figure 4-11 is an extract from the model image of Stages 3, 4 & 5.

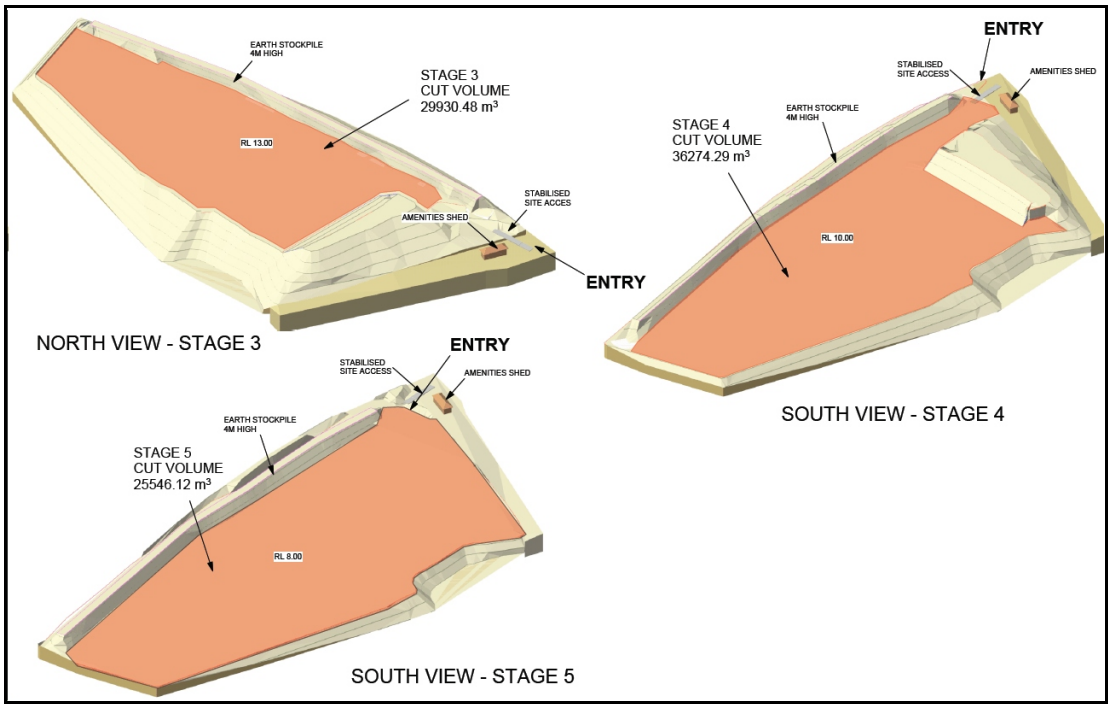

Figure 4-11: Extract from the 3D model of Stages 3, 4 & 5. Full details are provided on Drawing No.21, Issue E of the plans of the proposed development at **Appendix 9**.

Stage 4

Stage 4 of the development process is depicted on Drawing No.21 and comprises:

- Benching of the stockpile to RL 10 metres.
- Reducing the height of the northern stockpile to RL 15 metres to maintain the 5 metre height for impact mitigation purposes.

Figure 4-11 is an extract from the model image of Stages 3, 4 & 5.

Stage 5

Stage 5 of the development process is the establishment of the Site for the continued operation of a sandstone recycling facility as depicted on Drawing No.22 and **Figure 4-12**.

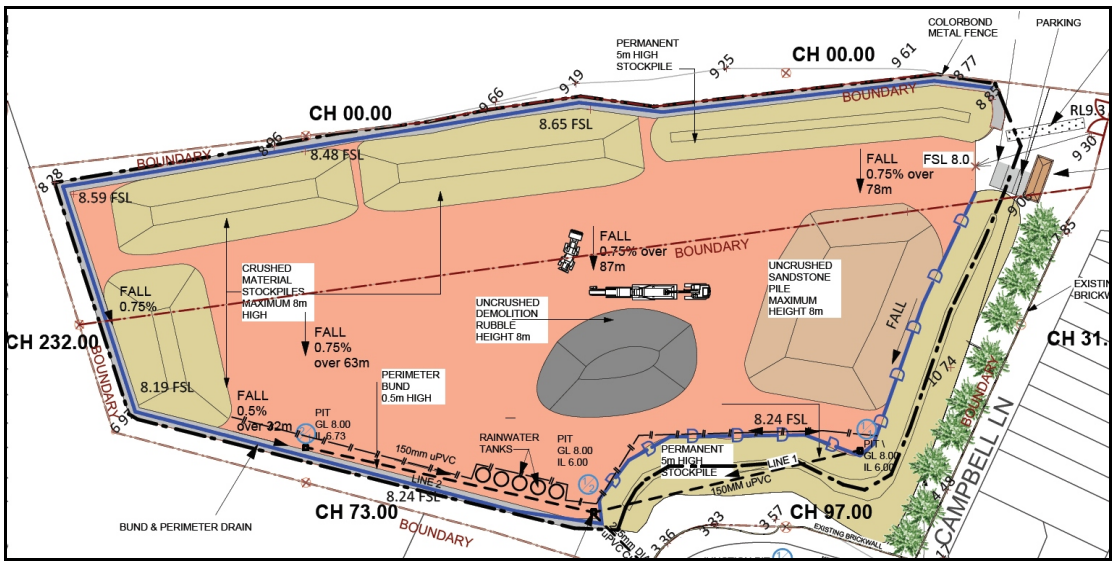

Figure 4-12: Extract from the plan of the final operational stage of the proposed development. Full details are provided on Drawing No.22, Issue E of the plans of the proposed development at **Appendix 9**.

Stage 5 comprises:

- Benching of the stockpile to RL 8 metres.
- Establishment of a permanent 5 metre high stockpile around the north eastern, northern and north western boundary of the Site.
- Creation of a perimeter bund 0.5 metres in height along the eastern, southern and western boundary of the Site.
- Creation of crushed material stockpiles along the western and southern boundary of the Site to a maximum height of 8 metres.
- Establishment of an uncrushed sandstone stockpile to a maximum height of 8 metres.
- Establishment of an uncrushed demolition rubble stockpile to a maximum height of 8 metres.
- Establishment of a permanent stormwater management system linked to the existing stormwater system.

4.4 Component Requirements

The use of the Site as a sandstone recycling facility would require the use of a number of

related components. The key elements of the proposal are as follows:

- 1 x wheel loader.
- 1 x hydraulic track excavator.
- Jaw crusher on tracks.
- Screen on tracks.
- Water cart.
- Office, staff lunch room and associated amenities.
- Car park.

4.5 Site Layout

Site layout plans have been prepared by Lyle Marshall & Associates, copies of which are at **Appendix 9**. Extracts from the site layout plans are provided above as **Figures 4-1 to 4-12**.

4.6 Hours of Operation

The proposed hours of operation would be:

Loading of trucks	Monday to Friday	6:00am to 6:00pm
	Saturday	7:00am to 4:00pm
Truck movements	Monday to Friday	6:00am to 6:00pm
	Saturday	7:00am to 4:00pm
Use of crusher/screens	Monday to Friday	7:00am to 6:00pm
	Saturday	7:00am to 4:00pm.

4.7 Employees

There would be 3/4 employees comprising:

- Loader driver
- Excavator driver

- Crusher operator
- Docket issuer.

Not all employees would be on the Site and any one time. On most days, there would be only two employees (excavator driver and loader driver) with the loader driver issuing dockets.

4.8 Stormwater Management

Lyle Marshall & Associates Pty Ltd has prepared a report detailing the existing and proposed stormwater management for the Site (the **Marshall Report**) a copy of which is at **Appendix 8**. The following information has been extracted from the Marshall Report.

There are no Sydney Water stormwater assets in the vicinity of the Site. Campbell Lane, Woodley Street and Holland Street drain to a double grated gully pit some 95 metres to the eastern boundary of the Site in the City of Sydney LGA.

Sydney City Council allows a maximum number of three stormwater drainage outlets in a set at any one point along the kerb. The centre lines of each outlet are spaced at 300mm. These outlets can be 100mm x 150mm galvanised RHS or 100mm diameter UPVC Class 12. A second set of outlet pipes may be located not less than 6 metres from the first set. The discharge from each set of 3 outlets is restricted to 45 litres/sec.

Site preparation works would be required initially, followed by a number of excavation / operational stages to lower the existing stockpile to its base level of about RL8.5 metres for the ongoing operational stage.

The stormwater management procedures would be mainly for erosion and sediment control during the site preparation and each excavation / operational stage.

4.9 Proposed Stormwater Drainage System

4.9.1 Proposed Stormwater Drainage System During Site Preparation and Excavation/Operational Stages 1 to 5.

Site Preparation

The top of the stockpile of material on the Site is at approximately RL 22 metres and rises from a low point of RL 8.95 metres near the Albert Street entrance to the Site.

The Site is to be regraded and an access driveway constructed. Runoff from the Site catchment would drain to Retention Basins 1 and 2 which have a combined capacity of 743m^3. An extract from Sheet 1 of the stormwater drawings at **Appendix 8** is at **Figure 4-13** below.

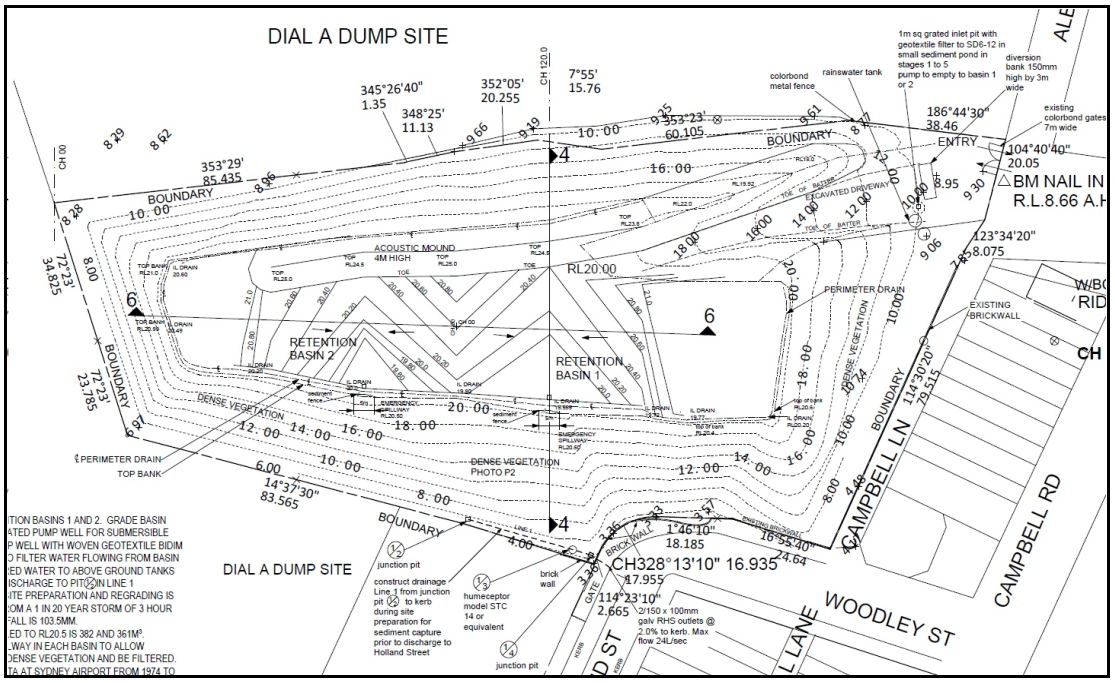

Figure 4-13: An extract from Sheet 1 of Drawing No.9167-12 at Appendix 8.

The estimated runoff from a 1 in 20 year storm on the plateau area in a 3 hour storm is 346m^3. The earthworks quantities in the site preparation amount to about 4,650 cu.m. and have been balanced in the site regrading so that material quantity required for building the acoustic mounds is equal to the excavated material.

Since the storage capacity of Retention Basins 1 and 2 to RL 20.5 metres at the emergency spillways is 743m^3, and therefore able to store 200mm of rainfall, it is very unlikely that the basins would overflow. An overflow spillway and sediment fence is provided from each basin for such an emergency.

Stormwater in the basins would be removed by pumping after heavy rain and the basins would be emptied so that recycling operations are not delayed or constrained by ponded water.

A cross section through Retention Basin 1 is shown on Sheet 2A of Drawing 9167-12 (**Appendix 8**) together with details of the spillway, pumpwell and sediment fence. A longitudinal section through Retention Basins 1 and 2 is shown on Sheet 2 of Drawing 9167-12 (**Appendix 8**).

A perimeter drain as shown on Sheet 1 (**Appendix 8)** encircles the work and stockpile areas and discharges to Retention Basins 1 and 2.

Diesel pumps would be operated manually between the hours of 6:00am to 6:00pm as required to discharge stormwater from the Site to Holland Street. Drainage Line 1 is to be constructed from the kerb to junction pit in the site preparation stage and is to include a Humeceptor model STC 14 Hydrodynamic device or equivalent that would capture 80% of Total Suspended Solids and reduce the suspended solids in the discharge to 50mg/litre and thus comply with the ANZECC water quality guidelines. The Humeceptor has been modelled by Humes Water Solutions for the Site.

Primary sediment treatment would be provided by a sediment fence with Bidim A12 Geotextile erected around each pumpwell to capture course sediment and other material as shown in Detail B on Sheet 2A (**Appendix 8**).

Excavation/Operational Stages 1 to 5

The stockpile of sandstone material would be excavated in a series of benches commencing at the southern end and working progressively to the stockpile at the northern end.

As work progresses, detention basin 2 would be removed and any water stored in this basin would be pumped into Holland Street or into the above ground storage tanks. Hence, the need to have 2 basins which alternate for storage of stormwater during Stages 1 and 2.

As work reaches basin 1, a new basin 2 would be formed at the lower level and any water remaining in basin 1 would be pumped to Holland Street or into the above ground tanks and/or into basin 2.

The pumpwell and sediment fence, perimeter drain, spillway and sediment fence would have to be progressively re-established during the benching operations to maintain the integrity of the system.

Proposed Stormwater Drainage System During the On Going Operational Stage

The Site, when excavated to base level, would fall from west to east as shown in the site regrading on Sheet 3 of Drawing No. 9167-12 of the drawings at **Appendix 8**, an extract from which is at **Figure 4-14** below.

The site regrading for the retention storage allows the driveway to drain into the basin and the diversion bank and sediment pond required in Stages 1 to 5 will be removed.

The Site in the on going/operational stage has been modelled using the ILSAX program for 1 in 100 year storms having durations from 5 minutes to 6 hours. The total inflow from a 1 in 100 year storm of 3 hours duration is 1342m^3 based upon a catchment area of 1.34 ha. The ILSAX inflow hydrograph is contained in Appendix B of **Appendix 8**.

All stormwater discharge to Holland Street would comply with ANZECC guidelines and the peak discharge would not exceed 24 litres/sec.

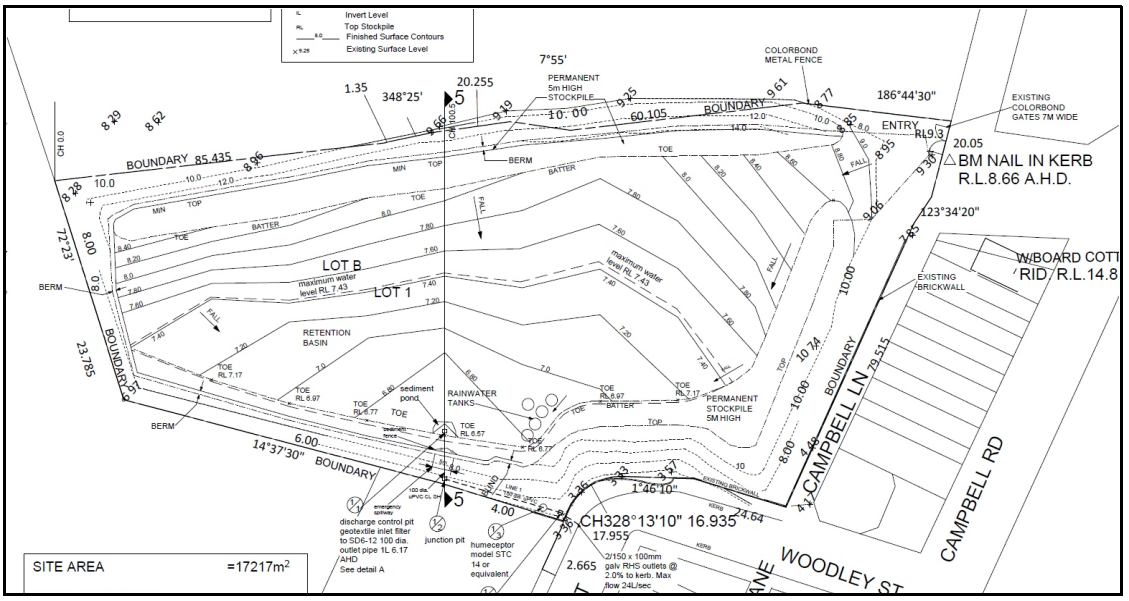

Figure 4-14: Extract from Sheet 3 of Drawing No.9167-12 at Appendix 8.

The maximum storage volume with outflow from the High Energy Discharge pit would be 1,162 cu.m., and the maximum water level in the Retention Basin has been calculated to be RL 7.43 metres. The basin would empty under gravity control after each storm.

The basin would empty after each storm and overflow would not occur, however, an emergency spillway is to be provided.

The above ground stormwater storage tanks are proposed to be 3.4 metres diameter for transport by truck. The height will vary depending upon availability, but is expected to be in the order of 8 to 9 metres. The capacity of each tank will be 72.6 or 81.7 cu.m. The 5 tanks shown on **Figure 4-14** would have a capacity of 363 or 408 cu.m.

4.10 Traffic Generation

Concrete Recyclers has prepared a schedule of estimated truck loads during the years 1 to 5, which involves the recycling of the existing sandstone material on the Site, and the on going operational phase commencing in year 6.

The majority of imported materials are expected to be demolition rubble from industrial sites in the Alexandria / Botany area, sandstone from Sydney CBD and virgin sand from the eastern suburbs. Average truck loads are expected to be 25 tonnes. Recycled materials would be delivered in 30 tonne loads.

The proportions of imported materials for blending with sandstone materials on site in years 1 to 5 is estimated to be 40:60 in the recycled material exported from the Site.

The Site would operate 6 days per week subject to demand. Truck movements to and

from the Site would take place between 6:00am and 6:00pm, Monday to Friday and 7:00am and 4:00pm on Saturday.

Trucks bringing imported materials to the Site would arrive loaded and leave empty. Trucks carrying recycled material from the Site would leave loaded and return empty.

The Site would be available to process material 303 days per year subject to demand. Estimated truck movements are shown in **Table 4-1**.

Table 4-1: Estimated Truck Movements

Year	Annual Tonnage	Weekly Tonnage	Likely Max. Daily Tonnage	Truck Movements									
				6am - 8am		8am - 10am		10am - 12pm		12pm - 2pm		2pm - 5pm	
				In	Out	In	Out	In	Out	In	Out	In	Out
1 In	20,000	400	320	4	4	3	3	3	3	2	2	1	1
Out	50,000	1000	800	7	7	7	7	6	6	5	5	2	2
2 In	40,000	800	400	4	4	4	4	4	4	3	3	1	1
Out	100,000	2000	1,000	8	8	8	8	7	7	7	7	3	3
3 In	60,000	1200	400	4	4	4	4	4	4	3	3	1	1
Out	150,000	3000	1,000	8	8	8	8	7	7	7	7	3	3
4 In	60,000	1200	400	4	4	4	4	4	4	3	3	1	1
Out	150,000	3000	1,000	8	8	8	8	7	7	7	7	3	3
5 In	60,000	1200	400	4	4	4	4	4	4	3	3	1	1
Out	150,000	3000	1,200	8	8	8	8	7	7	7	7	3	3
6 In	150,000	3000	1,000	7	7	11	11	10	10	8	8	4	4
Out	150,000	3000	1,000	9	9	9	9	8	8	4	4	3	3

Note: "In" refers to raw materials delivered to the Site
"Out" refers to processed material leaving the Site

4.11 Access and Parking

An existing access to the Site is provided off Albert Street. There is proposed to be no change to that Site access.

Three car parking spaces would be provided adjacent to the amenities building near the entrance to the Site.

4.12 Fire Control

Fire control facilities on the Site would be installed to meet the requirements of the Building Code of Australia.

4.13 Water Requirements

The maximum daily water usage in summer during the on going operational phase is estimated to be 40,000 litres.

4.14 Erosion and Sediment Control

Detailed erosion and sediment control measures to be employed as part of the proposed development are discussed in Section 11 of the Marshall Report at **Appendix 8**. The following information has been extracted from the Marshall Report.

4.14.1 Site Preparation Stage (Short Term)

The Site preparation stage would involve:

- excavation and site regrading to form the detention basins;
- regrading an access track from the entrance to the top of the stockpile at a grade of about 14.2%;
- installation of a cattle grid at the exit;
- construction of stockpiles for noise control;
- construction of a diversion bank and a small sediment fence;
- construction of a perimeter drain, and
- construction of a rock rubble lined spillway for each retention basin with a sediment fence to trap coarse sediment and litter.

All erosion and sediment control works would be carried out in accordance with the guidelines outlined in *Managing Urban Stormwater: Soils and Construction (Landcom 2004)*.

Where practicable, the soil erosion hazard on the Site would be kept as low as possible and as outlined in **Table 4-2**.

Table 4-2: Limitation to Site Access

Land Use	Limitation	Comments
Construction Areas	Disturbance to be confined to plateau at RL 20 metres.	A perimeter drain to be excavated within the plateau to form a 0.5 metre high bank to prevent loose material from falling down the steep batter slopes. Batters prevent movement outside the driveway.
Vehicular Access	Limited to a maximum width of 10 metres.	Batters prevent movement outside the driveway.
Steep Batters	Entry to these areas prohibited.	

4.14.2 Excavation / Operational Stages

The stockpile of sandstone material would be excavated in a series of 3 metre benches to base level. The benching is shown conceptually on Sheets 9, 10, 13, 16, 19 and 22 and in section on Sheets 7, 11, 14, 17, 20 and 23 of Drawing No. 9167-10 (refer **Appendix 9**).

These works including the installation of a wheel wash, sediment fence, perimeter bund and retention basins, and sump with geotextile filter would be carried out after each benching stage is completed.

On Going Operational Stage

When the Site has been excavated to base level it would be regraded to fall to a retention basin or a drain at the perimeter of the Site which discharges into the retention basin and would be bunded. Rainwater tanks are to be brought to the Site and installed in a tank farm for use in the recycling operations. A spillway and silt fence would be provided for any overflow through dense vegetation to the existing concrete drainage channel.

4.14.3 Erodibility of the Western Face of the Existing Stockpile

The western face of the existing stockpile is sparsely vegetated but has a firm hard crust which appears to be devoid of erosion and is quite stable. During the site preparation and excavation stages to base level, this face would not be disturbed. The acoustic mound is insitu material created by excavation during the benching processes.

The western face would be inspected after heavy rain, and if there is any erosion, the surface would be stabilised with spray grass or a light grade woven polypropylene fabric pinned to the surface.

4.15 Approvals Required

Section 43 of the *Protection of the Environmental Operations Act 1997* (**POEO Act**) requires an Environment Protection Licence to be obtained from the NSW Office of Environment and Heritage (**OEH**) for the carrying out of *scheduled development works* which would enable a *scheduled activity* to be carried out.

Schedule 1 of the POEO Act defines the following scheduled activities for which an Environment Protection Licence is required:

> ***34 Resource recovery***
>
> *(1) This clause applies to the following activities:*
>
> ***recovery of general waste**, meaning the receiving of waste (other than hazardous waste, restricted solid waste, liquid waste or special waste) from off site and its processing, otherwise than for the recovery of energy.*
>
> *....*
>
> *(2) However, this clause does not apply to any of the following:*
>
> *(a) materials separation and sorting of less than 60 tonnes per year of waste lead acid batteries,*
>
> *(b) the treatment of sewage within a sewage treatment system (whether or not that system is licensed),*
>
> *(c) the recovery of stormwater.*
>
> *(3) Each activity referred to in Column 1 of the Table to this clause is declared to be a scheduled activity if:*
>
> *(a) it meets the criteria set out in Column 2 of that Table, and*
>
> *(b) either:*
>
> *(i) less than 50% by weight of the waste received in any year requires disposal after processing, or*
>
> *(ii) the regulations under section 286 exempt the person carrying out the activity from the requirements of section 48 (2) as they apply to waste disposal (application to land), waste disposal (thermal treatment), waste processing (non-thermal treatment) and waste storage.*

Table

Column 1	***Column 2***
Activity	***Criteria***
Recovery of general waste	*involves having on site at any time more than 2,500 tonnes or 2,500 cubic metres, whichever is the lesser, of waste* *involves processing more than 120 tonnes of waste per day or 30,000 tonnes of waste per year.*

The proposed project would fall within the above category of Resource Recovery and, as such, an Environment Protection Licence is required to operate the proposed activity.

Part Five

DEVELOPMENT JUSTIFICATION AND ALTERNATIVES

5.1 Development Need and Justification

As detailed in **Part One** of this Environmental Assessment, the then NSW Department of Environment & Climate Change released the *NSW Waste Avoidance and Resource Recovery Strategy 2007* which states, among other things:

> *The Waste Avoidance and Resource Recovery Strategy 2007 (Waste Strategy 2007) updates the Waste Avoidance and Resource Recovery Strategy 2003 (Waste Strategy 2003).*
>
> *The underlying policy drivers behind Waste Strategy 2003 were the need to maximise conservation of our natural resources and to minimise environmental harm from waste management and disposal of solid waste. These drivers are even more important in 2007 against a backdrop of a growing population in NSW and a healthy economy that is producing more goods and services.*
>
> *Waste Strategy 2007 continues to provide guidance and priorities for action to ensure that efficient resource use and impacts on the environment are considered throughout the life cycle of goods and materials. This includes extraction of raw materials, manufacturing, distribution, consumption and recovery for reprocessing or safe disposal.*
>
> *Since Waste Strategy 2003 was released, there has been mounting scientific research that has quantified the benefits and impacts of waste related actions to other parts of the environment e.g. water savings, conservation of virgin resources, greenhouse gas and soil health. There has also been a growing understanding that actions taken to tackle any environmental or resource use issue are strongly interconnected in people's minds. This means that continuing to encourage waste related actions, such as recycling, that are practical and relatively easy to undertake, can naturally lead to actions on other important environmental issues such as reducing energy and water consumption.*
>
> *All of these factors reinforce the importance of a Waste Avoidance and Resource Recovery Strategy for NSW.*
>
> *Waste Strategy 2007 has been produced in light of current national and international practice, and emerging trends and challenges. It identifies priority actions that will guide the work of all key groups in NSW in contributing to the minimisation of environmental harm from waste disposal and the conservation and efficient use of our resources. The Strategy focuses on solid wastes that, unless recovered and diverted to beneficial uses, would be disposed of to solid and inert waste landfills throughout NSW.*

The proposed Sandstone Recycling Facility would provide an effective means of reducing the total waste stream to landfill through recovery and recycling of waste from the building and construction industry in the Sydney metropolitan area which would be combined with the existing stockpile of sandstone on the Site to create a suitable material for use in the construction industry.

The objectives of the proposed project are:

(a) To remove the existing stockpile of sandstone material from the Site (which was abandoned by the previous tenant) in a manner which would maximise its highest and best use.

(b) To establish a commercially viable Sandstone Recycling Facility which is capable of recovering sandstone and sand from the waste stream for reuse.

(c) To assist the NSW State government in achieving its objectives for the recovery and recycling of waste as detailed in the *NSW Waste Avoidance and Resource Recovery Strategy 2007*.

(d) To establish an environmentally responsible and sustainable industry which would create employment.

Concrete Recyclers currently operate three sites in the Sydney metropolitan area at Camellia, Kimbriki Recycling & Waste Disposal Centre and Kurnell. The proposed Sandstone Recycling Facility at St Peters would provide a means by which:

- the existing stockpile of sandstone on the Site would be removed.
- sandstone from excavations in the Sydney CBD and sand from the eastern suburbs would be recycled rather than being disposed of as fill.
- sandstone would be recycled in a more efficient and cost effective manner with commensurate dramatic reduction in traffic movements on the metropolitan road network.
- civil contractors would be able to purchase recycled sandstone material rather than accessing virgin quarried sandstone.

The proposed Sandstone Recycling Facility would offer a more convenient option for inner Sydney excavation companies with commensurate:

- reduction in haulage distance and haulage time.
- reduction in the number of trucks on some metropolitan roads.
- cost savings to the industry and, hence, the economy in general.

5.2 The Principles of Ecologically Sustainable Development

Schedule 2 of the Environmental Planning and Assessment Regulation 2000 provides the parameters for an Environmental Impact Statement with regard to the principles of ecologically sustainable development, being:

(1) The reasons justifying the carrying out of the development or activity in the manner proposed, having regard to biophysical, economic and social considerations, including the following principles of ecologically sustainable development:

*(a) the **precautionary principle**, namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.*

In the application of the precautionary principle, public and private decisions should be guided by:

(i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and

(ii) an assessment of the risk-weighted consequences of various options,

*(b) **inter-generational equity**, namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations,*

*(c) **conservation of biological diversity and ecological integrity**, namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration,*

*(d) **improved valuation, pricing and incentive mechanisms**, namely, that environmental factors should be included in the valuation of assets and services, such as:*

(i) polluter pays, that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement,

(ii) the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste,

(iii) environmental goals, having been established, should be

pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.

5.2.1 The Precautionary Principle

This Environmental Assessment has assessed the possible alternatives to the proposed development in terms of environmental risk. Investigations have been undertaken to identify risk associated with the proposed development in terms of hazardous impacts, air quality, traffic, acoustic amenity and visual amenity.

None of the potential risks identified during the assessment of the proposed development would pose a threat of serious irreversible environmental damage. As detailed in **Part 6** of this Environmental Assessment, where potential impacts have been identified, mitigation measures have been put into place which would mitigate those potential impacts.

5.2.2 Inter-generational Equity

The principle of inter-generational equity requires that the present generation ensures that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.

The proposed development is for the establishment of a Sandstone Recycling Facility on the Site for:

- the recycling of the existing stockpile of sandstone material on the Site;
- the collection and recovery of sandstone from excavations in the Sydney CBD, and
- the collection and recovery of waste from the building and construction industry which would be combined with the sandstone material on the Site to be reused and recycled in the Sydney metropolitan area.

The proposed development, in addition to removing the existing stockpile on the Site, would provide an environmental benefit through the recovery of concrete, brick, asphalt, sandstone and sand from the waste stream of the excavation, building and construction industry in the inner Sydney metropolitan area, thus removing some of the pressure on natural material resources which might otherwise have been required to produce materials which would be generated by the proposed Sandstone Recycling Facility.

The proposed development would divert waste from the waste stream which might otherwise have been directed to landfill, which would:

- minimising the environmental impacts to existing landfill operations;
- assist in extending the lifespan of landfill operations, and
- assist in stalling the need for the creation of new landfill sites.

5.2.3 Conservation of Biological Diversity and Ecological Integrity

The proposed development would remove an existing stockpile of sandstone material on the Site while at the same time allowing for the recycling of excavated sandstone and building and construction waste from the inner Sydney area. There would be no impact to biological diversity or ecological integrity as a result of the proposed development.

5.2.4 Improved Valuation, Pricing and Incentive Mechanisms

In addition to the recycling of the existing stockpile on the Site, the proposed development is one where sandstone from excavations and waste from the building and construction industry in the inner Sydney metropolitan area would be received as an incentive to recycle waste rather than dispose of that waste to landfill. The money saved by industry and the State government in waste disposal costs is such that there is an economic incentive to recycle waste.

The proposed development would provide:

- Increased life to existing landfill operations by the removal of sandstone, building and construction waste from the waste stream.
- A means by which the waste reduction targets of the State government can be achieved.
- An avenue whereby what would otherwise be waste becomes a valuable resource and, hence, improves its value.
- A resource based industry which would provide benefits to future generations through the reduction in the use of raw materials for the production of materials for road construction and the like, and extending the life of existing landfill operations.

5.3 Development Alternatives

5.3.1 Location

Concrete Recyclers has entered into an lease agreement with NSW Roads and Maritime Services (the Roads and Traffic Authority) to remove the existing stockpile of sandstone material on the Site. As such, there is no alternative location for this aspect of the proposed development.

Concrete Recyclers has also concluded that the most cost effective and environmentally acceptable location for the recycling of sandstone from inner Sydney excavation sites is to establish a facility which would combine the excavated sandstone material with recycled building and construction materials from inner Sydney sites.

5.3.2 Production Method

The proposed means by which:

- the existing stockpile of sandstone on the Site would be recycled, and
- sandstone from excavations and waste from the inner Sydney construction and demolition industry would be received, processed and recycled to the market

is state of the art practice which has been developed over the life of the industry, and by Concrete Recyclers in particular. There are no practical cost effective alternatives to those proposed as part of the proposed development.

5.3.3 Non Development

The proposed operation of the Concrete Recyclers facility from the Site:

- is a cost effective means by which the existing stockpile of material on the Site can be removed and recycled, and
- is a business decision made by Concrete Recyclers to promote the most cost effective means by which its business can operate.

The non development option would not promote the efficient operation of its business in the Sydney metropolitan area and would not assist the State government in its goal to reduce the waste stream to landfill.

No development would mean that the existing stockpile of useable sandstone would

remain on the Site and remain a liability for Roads and Maritime Services which, in turn, would limit the ability of Roads and Maritime Services to lease the Site and achieve an economic return from its asset.

No significant environmental benefit would be gained by non development.

Part Six

IMPACT OF THE PROPOSED DEVELOPMENT

6.1 Air Quality

The Air Quality Report (**Appendix 6**) details the predicted impact of the proposed development. The following information has been extracted from the Air Quality Report.

6.1.1 Air Quality Assessment Criteria

Air quality criteria are benchmarks set to protect the general community against adverse health and nuisances effects arising from air pollution.

Particulates

Air quality goals which are relevant to this development as sourced from the Office of Environment and Heritage document *Approved Methods for the Modelling and Assessment of Air Pollution in NSW* are provided in **Table 6-1**

Table 6-1: OEH Air Quality Impact Assessment Criteria

Relevant Criteria Pollutants			
Pollutant	**Averaging Period**	**Criterion**	**Source**
Total suspended particulates (TSP)	Annual	$90\mu g/m^3$	NHMRC (1996)
Particulate Matter < $10\mu_{10}$)	Annual	$30\mu g/m^3$	EPA (1998)
		$50\mu g/m^3$	NEPC (1998)

The air quality goals for the relevant criteria pollutants relate to the total pollutant burden in the air and not just the pollutants from the proposed development. As such, consideration of background pollutant levels needs to be made when using these goals to assess potential impacts.

Deposited Dust (Insoluble Solids)

In addition to an assessment of potential health impacts, airborne dust is also assessed due to the potential to cause nuisance by depositing on surfaces. **Table 6-2** shows the criteria for maximum acceptable increases in dust deposition over existing dust levels from an amenity perspective.

Table 6-2: OEH Criteria for Insoluble Solids

Pollutant	Averaging Period	Maximum Increase in Deposited Dust Level	Maximum Total Deposited Dust Level	Source
Deposited dust	Annual	2g/m^2/month	4g/m^2/month	NERDDC (1998)

6.1.2 Emission Estimation

Dust emissions from the proposed development have been estimated for all dust generating activities. The detailed calculations are presented in Appendix A of the Air Quality Report, which provides information on the equations used, the basic assumptions about material properties (e.g. moisture content, silt content etc.), quantities of materials which would be handled during operations and control measures employed. **Table 6-3** summarises the estimated TSP emissions based on the proposed operations occurring at the Site.

Table 6-3: Estimated TSP Emissions

Activity	TSP Emissions (kg/year)
Hauling imported material on site	594
Unloading imported material to stockpile	254
Excavator removing material	381
FEL loading to crusher	636
Crushing and/or scalping screen	405
FEL on stockpile	636
Loading to trucks	636
Hauling product off site	1,342
Wind erosion	3,101
TOTAL	**7,985**

6.1.3 Dispersion Modelling

AUSPLUME Version 6.0 was used in predicting the air quality impacts for this study. AUSPLUME is a Gaussian dispersion model developed by the Victorian EPA.

Eight residential properties have been identified surrounding the Site and each of these has been specified as a discrete receptor in the dispersion model to allow specific model predictions to be made at each receptor. The residences located approximately 15m to the north of the Site have frontage to Campbell Road and there is a vegetation buffer between the Site and the residences. Figure 3-1 of the AIR Quality Report shows the location of the receptors, an extract from which is at **Figure 6-1**.

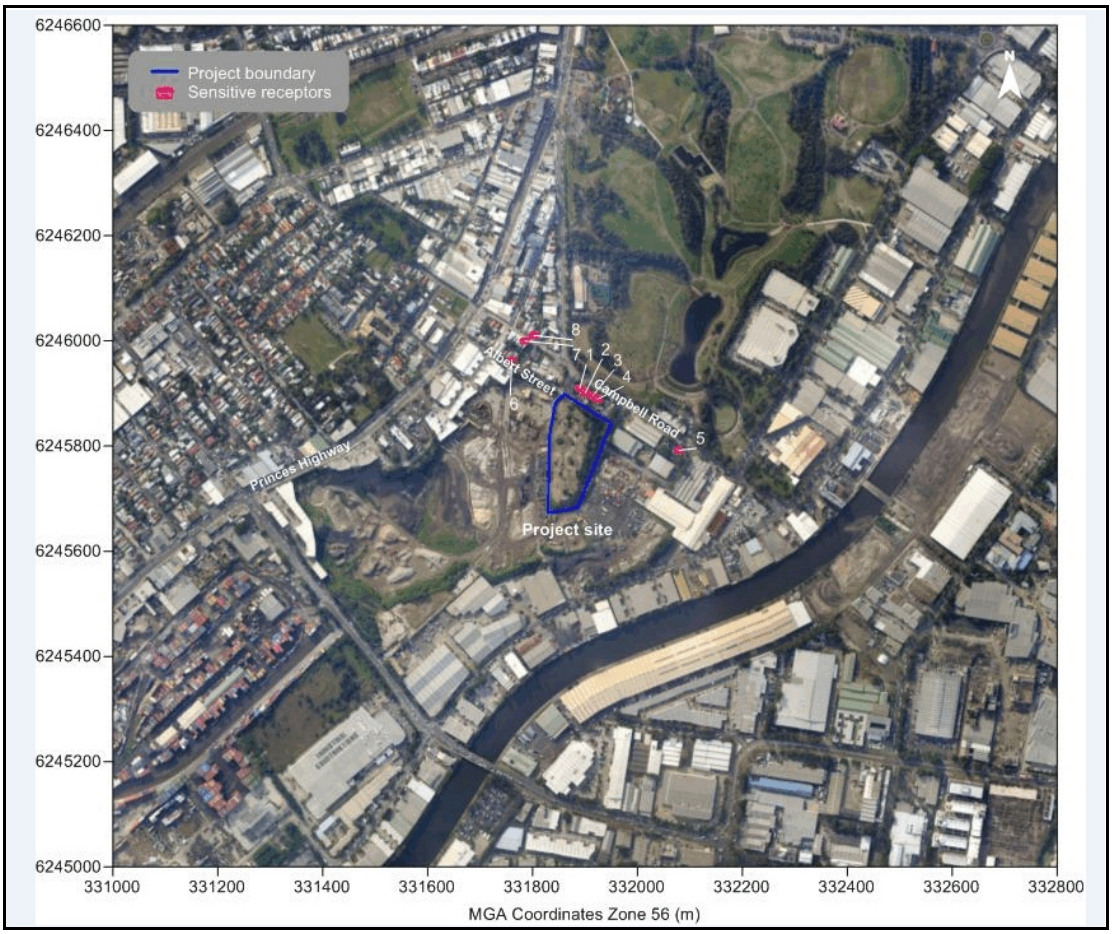

Figure 6-1: An extract from Figure 3 of the Air Quality Report showing the location of the eight residential receptors included in the dispersion model.

The predicted impacts on air quality arising from dust emissions from the proposed development for each relevant dust metric are provided in **Table 6-4** which presents the dispersion modelling results at each of the discrete receptors shown in **Figure 6-1**.

Table 6-4: Dispersion Modelling Results for Discrete Receptors (Project Only)

Receptor ID	PM_{10}(µg/m^3)		TSP (µg/m^3)	DD (g/m^2/month)
	24 hour average	Annual average	Annual average	Annual average
1	7.7	1.3	2.8	1.9
2	7.8	1.3	2.8	1.9
3	8.0	1.2	2.6	1.8
4	7.9	1.1	2.4	1.7
5	1.8	0.3	0.5	0.3
6	2.3	0.3	0.6	0.3

Receptor ID	PM_{10}(µg/m^3)		TSP (µg/m^3)	DD (g/m^2/month)
	24 hour average	Annual average	Annual average	Annual average
7	1.5	0.3	0.6	0.3
8	1.5	0.3	0.6	0.3

24 Hour Average PM_{10}

It can be observed from **Table 6-4** that the predicted maximum incremental 24-hour average PM_{10} concentration is 8µg/m^3 at receptor 3. All other discrete receptor locations are below this value.

To assess cumulative maximum 24-hour average PM_{10} concentrations, a contemporaneous impact and background analysis was completed for receptor 3, the most impacted receptor.

To refine the assessment at receptor 3, each individual dispersion model prediction is added to the corresponding measured background concentration for selected days of high risk. The results of this analysis are summarised in Table 8-2 and Table 8-3 of the Air Quality Report for the Earlwood Monitoring Site and the Randwick Monitoring Site, respectively.

The analysis shows that potential impacts from the Site would not contribute to total levels over the OEH criterion of 50µg/m^3 on any day at the worst affected receptor.

Annual Average PM_{10}

The incremental annual average PM_{10} concentrations at the nearest residential receptors are less than 1.4µg/m^3 and, considering the background levels and the annual average criterion of 30µg/m^3, the impacts from the proposed development are unlikely to have any significant effect on the cumulative annual average PM_{10} concentration in the surrounding residential areas.

Annual Average TSP

The incremental annual average TSP concentrations at nearest residential receptors are less than 2.9µg/m^3 and, considering the background levels and the annual average criterion of 90 µg/m^3, the impacts from the proposed development are unlikely to have any significant effect on the cumulative annual average TSP concentration in the surrounding residential areas.

Dust Deposition

The predicted dust deposition impacts arising from the proposed development alone are shown in Figure 8-4 of the Air Quality Report, and extract from which is at **Figure 6-2**.

Figure 6-2: Predicted Annual Average Deposited Dust Levels (g/m^2/month) (extracted from Figure 8.4 of the Air Quality Report)

The incremental annual average dust deposition levels at nearest discrete receptors are below 2g/m^2/month and would comply with the OEH criteria. Considering a conservative background level of 2g/m^2/month for the area surrounding the Site, the predicted cumulative annual average dust deposition level would also comply with the OEH criterion of 4g/m^2/month in the surrounding residential areas.

6.1.4 Mitigation Measures

The proposed development would generate dust, therefore, there is a requirement that practicable measures be taken to prevent or minimise dust impacts at the surrounding receptors.

The primary dust sources identified from the proposed development are:

- wind blown dust from stockpiles and exposed areas, and
- dust generated during the operation of the proposed development.

The following measures would be implemented to mitigate the impact of dust from the proposed development.

Table 6-5: Air Quality Mitigation Measures

Source	Control Procedure
Exposed areas	Disturb only the minimum areas Rehabilitation of exposed area completed as soon as possible Use water sprays to minimise dust lift off
Stockpiles	Water stockpiles to minimise dust lift off Ensure that materials are wetted before handling
Hauling activities	Establish a stabilised access to the Site Watering of all haul areas to minimise dust
Processing materials	Water sprays installed on equipment Material wetted before handling

6.2 Acoustic Impact

The Acoustic Report (**Appendix 7**) details the predicted impact of the proposed development. The following information has been extracted from the Acoustic Report.

6.2.1 Construction Noise

The *NSW Interim Construction Noise Guideline* (**ICNG**) presents the NSW Government's process to assess construction noise. The ICNG was developed by the then Department of Environment, Climate Change & Water (**DECCW**) taking into consideration that construction is temporary, noisy and difficult to ameliorate. As such, the ICNG was developed to focus on applying a range of work practices most suited to minimising construction noise impacts, rather than focussing only on achieving a numeric noise level.

The ICNG recommends that standard construction work hours should typically be as follows:

Monday to Friday 7:00am to 6:00pm

Saturday 8:00am to 1:00pm

No work on Sundays or Public Holidays.

The ICNG also recommends management quantitative noise goals at residences as presented in **Table 6-6**.

Based on a full week of noise monitoring carried out at the rear of the dwelling near the corner of Albert Street, the RBL has been calculated to be 48dBA. Therefore, the development specific criterion at the dwellings for assessment purposes during recommended construction hours is:

Construction Noise Management Level (**NML**) 58dBA.

At industrial receptors, the construction noise guideline recommends a $L_{Aeq,15min}$ noise level of 75dBA which is applicable at the closest and potentially most affected industrial premises.

Table 6-6: Construction Dwelling Noise

Time of Day	Management Level $L_{Aeq(15min)}$	How to Apply
Recommended standard hours: Monday to Friday 7am to 6pm Saturday 8am to 1pm No work on Sundays or Public Holidays	Noise affected RBL* + 10dBA	The noise affected level represents the point above which there may be some community reaction to noise. Where the predicted or measured $L_{Aeq\,(15\,min)}$ is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to minimise noise. The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.
	Highly noise affected 75dBA	The highly noise affected level represents the point above which there may be strong community reaction to noise. Where noise is above this level, the proponent should consider very carefully if there is any other feasible and reasonable way to reduce noise to below this level. If no quieter work method is feasible and reasonable, and the works proceed, the proponent should communicate with the impacted residents by clearly explaining the duration and noise level of the works, and by describing any respite periods that will be provided.
Outside recommended standard hours	Noise affected RBL + 5dBA	A strong justification would typically be required for works outside the recommended standard hours. The proponent should apply all feasible and reasonable work practices to meet the noise affected level. Where all feasible and reasonable practices have been applied and noise is more than 5dBA above the noise affected level, the proponent should negotiate with the community.

* RBL - The Rating Background Level

6.2.2 Industrial Noise Policy

The NSW Government policy and guidelines for the assessment of industrial noise is presented in the *Industrial Noise Policy* **(INP**).

The INP's noise criteria at residences are:

Intrusiveness Noise Criterion

- The $L_{Aeq,15min}$ noise level within the day (7:00am to 6:00pm, 8:00am to 6:00pm Sundays and Public Holidays), evening (6:00pm to 10:00pm) or night time (10:00pm to 7:00am, 10:00pm to 8:00am Sundays and Public Holidays) assessment periods should not exceed the L_{A90} background noise level within that period by more than 5dBA.

The purpose of this noise goal is to minimise the likelihood of disturbance.

In recognition that in many areas, the ambient noise environment often commences its night time to day time increase during the early morning hours between for example 6:00am to 7:00am, the INP allows for the establishment of noise criteria for this "shoulder" period in these cases.

For this particular development, based on Rating Background Levels obtained for the day time, and the 6:00am to 7:00am early morning shoulder period as determined from the ambient noise monitoring carried out at the rear of the dwelling near the corner of Albert Street, the Intrusiveness Noise Criteria are:

Day time	53dBA
Morning (6.00am to 7.00am) Shoulder Period	51dBA.

Amenity Noise Criterion

- The maximum ambient L_{Aeq} noise level within the day, evening and night assessment period should not exceed deemed acceptable noise levels, dependant on the relevant receiver type and Council zoning.

The purpose of this noise goal is to provide an upper limit to industry related noise emission. The INP sets out Amenity Noise Criteria corresponding to various categories of residential receiver, typically including Rural, Suburban and Urban categories.

In the case of the dwellings closest to the Site, the dwellings could be considered isolated residences within an industrial zone for which the Industrial Amenity Criterion (70dBA) would apply.

Alternatively, if the residences are considered as Urban, for the day time, a criterion of 60dBA would apply and for the whole of the night time period a criterion of 45dBA

would apply. As existing L_{Aeq} noise levels in the 1 hour early morning shoulder period are already 60dBA or higher on weekdays as a result of traffic and industrial noise and, both are unlikely to reduce in the future, an amenity criterion of 50dBA would apply in strict accordance with the INP for this 1 hour.

For the proposed truck loading activity during the 1 hour early morning period, the L_{Aeq} noise levels over a busy 15 minute period is likely to be 2-3dBA noisier than a 1 hour period. On this basis, the Intrusiveness Noise Criteria are the most stringent to assess the noise impact at the dwellings for both the day time and early morning period.

In the case of industrial receptors, the INP recommends an Amenity Criterion, when in use, of 70dBA.

Sleep Disturbance Criterion

It is proposed to load trucks during the 6:00am to 7:00am period which forms part of the night time. Short term high noise level events have the potential to cause sleep disturbance if they emerge significantly above the background level. The INP does not specifically address sleep disturbance from these types of noise level events.

The OEH, in the *Noise Guide For Local Government (NGLG)* recommends that the $L_{A1,1min}$ noise level should not exceed the background LA90 level by more than 15dBA, which should be used as a screening test.

Based on a background noise level of 46dBA in this time period, this results in a criterion of 61dBA.

In addition, the *Environmental Criteria for Road Traffic Noise (ECRTN)* includes the following statements based on transportation type noise for internal noise levels:

> *Maximum internal noise levels below 50-55dBA are unlikely to cause awakening reactions.*
>
> *One or two events per night, with maximum internal noise levels of 65-70dBA, are not likely to affect health and well being significantly.*

Given there would be more than one or two events per night, the 50-55dBA range inside should be adopted as a noise goal and, allowing an industry accepted 10dBA difference from outside to inside with an open window, this equates to maximum external levels of 60-65dBA which is similar to the 61dBA discussed above.

6.2.3 Noise Modelling

The A-Weighted sound power levels (**SWL**) used in the noise modelling for the more significant plant to be used on site are provided in **Table 6-7** based on data contained within the Wilkinson Murray database and measurements specifically undertaken for the

proposed development.

Table 6-7: Sound Power Levels

Noise Source	$L_{Aeq, 15\ min}$ Sound Power Level, dBA
Truck Manoeuvring on site	81 (maximum pass by noise level at 7m)
Front end loader (Post Site Preparation Phase)	106 (115 L_{amax} from loading)
Excavator	105
Screen	110
Crusher	110

From the sound power levels in **Table 6-7**, it is evident that the most significant sources of steady noise are the Crusher and Screen. The predicted $L_{Aeq, 15min}$ noise levels from the proposed development are shown in **Table 6-8** below which deals with the ongoing operation stage of the proposed development in addition to the site preparation stage. Locations A, B and C in **Table 6-8** refer to Locations A, B and C, as shown in Figure 3-1 of the Wilkinson Murray Report at **Appendix 7** and extract from which is at **Figure 6-3**.

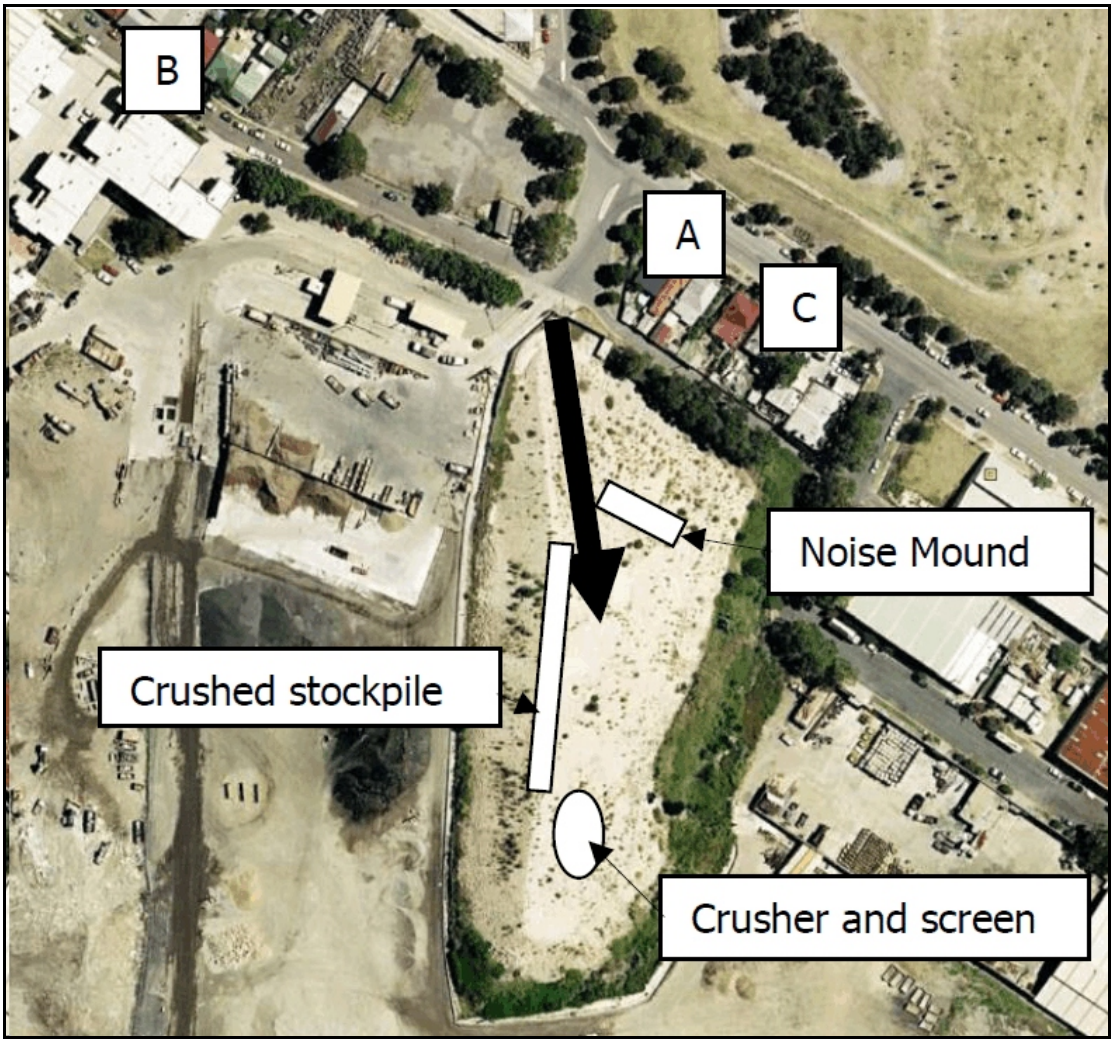

Figure 6-3: An extract from Figure 3.1 of the Wilkinson Murray Report at **Appendix 7**

Table 6-8: Predicted Site Noise Emissions $L_{Aeq, 15min}$dBA

Stage	Description	Noise Goals dBA	Location A	Location C	Location B
Site Preparation	Excavator clearing near northern boundary and during building of ramp	58	60	57	52
	Excavator at top of ramp with crusher at initial location near top of ramp 20m from northern edge of main stockpile during building of mound	58	55	55	52
Normal Operation	Crusher and screen at southern end. Excavator and Loader working near the crusher. Trucks between site entry and crushed stockpile. RL 20m high and RL 8 m low.	53	47 High	43 High	48 High
			47 Low	44 Low	51 High
	Possible temporary scenario without full height of crushed stockpile. Crusher and screen at southern end. Excavator and Loader working near the crusher. Trucks between site entry and crushed stockpile. RL 20m high and RL 8 m low.	53	47 High	43 High	51 High
			47 Low	44 Low	52 Low
	Excavator/Loader loading truck only near crushed stockpile between 6am and 7am. High and Low scenarios similar.	51 L_{Aeq}	47	43	46
		61 L_{Amax}	60	55	54

The predicted noise levels in **Table 6-8** are based on the "worst case scenario". During the early phase of the project, noise levels are expected to comply with the construction noise management level at the nearest dwellings, with the exception of the first few days where a marginal 2dBA exceedance is predicted for an excavator which would need to operate at the Site boundary at the bottom of the ramp. The duration of these works is expected to be relatively short. For the most part, the noise levels are expected to fall within the construction objective at the nearest dwellings.

During the early site preparation stage, noise levels near the western boundary extending into the nearby landfill site are expected to be in the order of 80dBA, with progressive reduction as the excavator moves up the ramp to the top of the main stockpile. This

exceeds the 75dBA objective for industrial receptors within a localised area close to the boundary. This area, however, appears to be used for temporary stockpiling and is not considered likely to interfere with the site operations.

Following relocation of the crusher and commencement of "normal" operations, the crushed stockpile would be maintained between the north western dwellings and the relocated crushing and screening plant to mitigate noise from the Site. A minimum 3-4 metre high crushed stockpile is expected to minimise noise to below the noise objectives. Compliance with criteria is also predicted during temporary periods when the crusher is relocated and the stockpile is temporarily reduced in height.

As the main stockpile is reduced in height, there is more space for trucks to manoeuvre, such that it would be easier to maintain the crushed stockpile on the western edge of the top of stockpile working area. In addition, the northern bund would be maintained at RL 25 metres, or at least 5 metres above the working area.

During the normal operational phase, noise levels within the most affected western industrial boundary are expected to comply with the L_{Aeq} 70dBA limit recommended by the INP.

Noise emission from the Site during loading between 6:00am and 7:00am is also predicted to meet the shoulder period intrusive noise criteria and the sleep disturbance criterion of 61dBA.

6.2.4 Road Traffic Noise

The NSW Government released a new *Road Noise Policy* (**RNP**) on 1 July 2011 which replaces the *Environmental Criteria for Road Traffic Noise* (**ECRTN**). These policies present recommended guidelines and criteria for the assessment of road traffic noise on public roads, however, the requirements of the Office of Environment and Heritage (**OEH**) in its letter of 7 July 2011 were still to use the previous ECRTN.

In relation to this development, the RNP would be marginally less stringent as Campbell Road (a collector road under the ECRTN) would now fall under the "Sub Arterial" category, and require assessment over 15 hours and 9 hours rather than the worst case 1 hour in either the day or night time.

Nevertheless, as a conservative approach, the previous ECRTN requirements have been adopted.

Although not an explicit criterion, the RNP also recommends consideration of sleep disturbance which might result from road traffic noise. Based upon a review of a number of relevant studies, the ECRTN suggests that internal maximum noise levels below 50dBA to 55dBA are unlikely to result in awakening reactions. The ECRTN, however, recognises that awakening reactions are subject to many variables including background noise level, age, sleep state, number of maximum noise level events, etc. Research in this

regard is not conclusive, and no definitive correlation exists between awakening reactions and maximum noise level events.

For the purpose of acoustic assessment, based on definitions and guidelines provided within the ECRTN, Albert Street performs the function of a "Local Road" whereas Campbell Road performs the function of a "Collector Road".

Based on the noise monitoring adjacent to facades fronting Albert Street and Campbell Road undertaken for the purpose of this assessment, the prevailing road traffic noise levels are summarised in **Table 6-9**.

Table 6-9: Existing Road Traffic Noise Levels

Road	Day $L_{Aeq,1hr}$ Level (dBA)	Night $L_{Aeq,1hr}$ Level (dBA)
Campbell Road	66	60
Albert Street	67	63

The prevailing road traffic noise levels in **Table 6-9** are above the relevant noise criteria for the Albert Street and Campbell Road facades. For this development, however, it is not reasonable for the proponent to implement measures to reduce overall road traffic noise to the noise criteria levels, therefore, as recommended by the ECRTN, and consistent with its approach, any additional traffic noise generated by the project should not result in an increase of more than 2dBA, to minimise any noise impact to within acceptable levels.

Based on a peak number of hourly truck movements of 8 per hour, the $L_{Aeq,1hr}$ traffic noise contribution is calculated at 56dBA at both the Campbell Road and Albert Street facades. This noise level is well below the current night time road traffic noise levels, even in the early morning shoulder period between 6:00am and 7:00am and would result in a 1dBA increase in noise levels. This satisfies the ECRTN recommendation not to increase the existing noise level by more than 2dBA.

In relation to maximum noise levels, on the Campbell Road facade, the maximum noise level during truck pass by, and trucks accelerating on the far lane, is estimated at approximately 73dBA outside, which translates to 63dBA (with windows open for ventilation purposes). This exceeds the 50dBA to 55dBA internal noise guideline considered unlikely to result in awakening reactions. A review of the monitored noise data, however, indicates that the prevailing external L_{A1} noise levels (which are considered representative of the maximum noise levels) are typically in the order of 70dBA and higher between 6:00am and 7:00am, i.e 60dBA internally.

In addition, traffic counting from 2009 indicates approximately 55 truck movements per hour during this time period, therefore, an additional 8 movements per hour (assuming the worst case that all traffic travels in the one direction) of similar maximum noise levels to those prevailing is considered unlikely to be perceived as a new source of sleep disturbance.

Updated counting in 2011 was only undertaken during the peak hours after 7:00am and not in the early morning period. Nevertheless, it showed an increase in the number of trucks during the peak hours to in excess of 100 truck movements between 7:00am and 8:00am.

On Albert Street, the dwelling does not contain bedroom windows so sleep disturbance is not an issue on this facade of the dwelling.

The potential increase in noise levels from additional truck movements to and from the Site, including the early morning shoulder period would meet the ECRTN L_{Aeq} criteria and result in negligible impact. The small percentage increase in truck movements is not expected to result in any change in sleep disturbance, given the high number of truck movements already using the local roads at this time.

6.2.5 Mitigation and Management Recommendations

In order to achieve compliance with the noise objectives and minimise potential noise disturbance to the potentially most affected receptors closest to the Site, the following mitigation measures are recommended, and where appropriate, have been taken into consideration in the modelling having regard to the more sensitive 6:00am to 7:00am morning shoulder period.

- Consult with the industrial facility on the western boundary in relation to higher noise levels near the boundary during the establishment phase of the development.
- Maintain the existing fencing on the northern boundary of the Site to help contain noise within the Site.
- Minimise works near the northern boundary of the Site wherever feasible.
- During the establishment stage, locate the crusher a minimum of 20 metres from the northern edge of the main stockpile.
- On relocating the crusher, the crusher and screen units should be located to the southern boundary of the Site and a crushed stockpile maintained whenever possible so as to maximise shielding to the dwellings to the north-west of the Site.
- Following relocation of the crusher and commencement of ongoing operations, maintain a mound to RL25 metres or at least 5 metres above the working area between the plant and equipment and the potentially most affected dwellings to the north and an uncrushed stockpile at least 4 metres above the working area to the west.
- Ensure mobile plant used is fitted with residential grade silencers.

- To minimise disturbance to the residents, advise truck drivers not to queue outside the gates before 6:00am.

- At all times, but particularly prior to 7:00am, trucks should be loaded in a quiet manner by placing rather than dropping material into trucks.

- Plant based at the Site must incorporate "quacker" style reversing alarms.

- Trucks with traditional "beep beep" alarms will not reverse on the Site prior to 7:00am.

6.3 Visual Impacts

The components of the proposed recycling facility could have an adverse impact on the visual amenity enjoyed by the existing residents in the locality and the businesses which operate along the Pacific Highway to the west of the Site.

An inspection of the development in the vicinity of the Site which has a view to the Site was undertaken. In this regard, the following conclusions were reached:

Impact on residential development

- The existing stockpile of sandstone material on the Site is visible from the adjoining residential development fronting Campbell Road.

- As detailed on the plans of the proposed development, there is an existing brick wall located on the southern side of Campbell Lane on the boundary of the Site. A portion of this brickwall is seen in **Photograph 6-1** below.

- To the south of the brick wall is a significant stand of vegetation. A section of this vegetation can be seen in **Photograph 6-2** below.

- **Figure 6-4** is an extract from an aerial photograph of the Site. The existing trees on the northern section of the Site can be seen on that aerial photograph in relation to the residential development in Campbell Road to the north of the Site. This stand of trees would not be altered as part of the proposed development and, combined with the 5 metre high stockpile of uncrushed material to be located at the northern end of the working area of the Site, would act as a visual screen between the residential development on Campbell Road and the proposed development. It can be seen from the plans of the proposed development that the 5 metre high stockpile of uncrushed material at the northen end of the Site will reduce in RL as the stockpile is removed, however, that stockpile would remain at a height of 5 metres above the working surface. It is proposed to spray the batter slopes of the stockpile with vegetation to enhance its visual appearance as well at to reduce any potential for wind blown dust from that stockpile.

Figure 6-4: An aerial photograph which indicates the trees at the northern end of the Site.

- During the operation of the permanent facility, the existing trees along Campbell Lane would remain and a permanent stockpile would be located along the north eastern, the northern and the north western boundary of the Site as seen on the plans of the proposed development, an extract from which is at **Figure 6-5**.

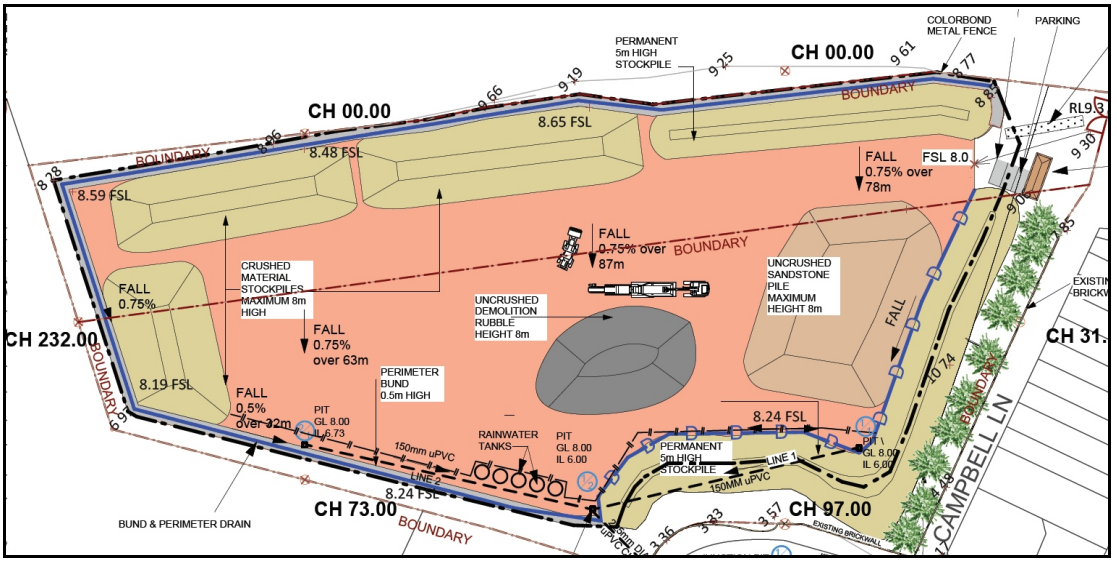

Figure 6-5: Plan showing the operational stage of the proposed development.

Photograph 6-1: This photograph shows part of the existing brick wall along Campbell Lane.

Photograph 6-2: This photograph shows a dwelling fronting Campbell Road with the existing trees on the Site shown behind that dwelling. The trees shown would remain as part of the development process.

Impact on Commercial Development

Photograph 6-3 below shows an existing motor vehicle repair business located in Campbell Road to the north of the Site. The existing trees on the Site seen in this photograph would remain such that there would be no visual impact resulting from the proposed development.

Photograph 6-3: This photograph shows the existing vehicle repair facility in Campbell Road Trees at the rear of that site would screen any development on the Site.

There are a number of commercial developments located on the Pacific Highway to the west of the Site. The location of those activities is such that they have a limited visual catchment to the Site and the visual catchment has, in its foreground, the "dial a dump" operation. **Photograph 6-4** below shows an example of the visual catchment from the commercial development fronting the Pacific Highway. The existing stockpile on the Site is visible in the background of this visual catchment.

As detailed in **Part 4** of this Environmental Assessment, the proposed development is designed such that the existing stockpile of sandstone on the Site is to be removed such that the visual catchment from the commercial development on the Pacific Highway would be improved over time as the stockpile is reduced in height to the level of the operational stage of the development.

As seen in **Figure 6-5** above, the operational stage of the proposed development would have permanent stockpiles located along the western boundary of the Site which would effectively screen and development on the Site. Those stockpiles would be sprayed with vegetation material such that the visual impact of the stockpiles would be reduced when viewed from the west of the Site.

Photograph 6-4: This photograph shows the existing view from commercial development with frontage to the Pacific Highway. The stockpile of sandstone material to be removed is shown in the background of the photograph. The existing dial-a-dump operation, which would remain, is seen in the foreground of the photograph.

Any activity which takes place on the Site as part of the proposed development would not adversely impact on the existing visual catchment of that commercial development. Indeed, the visual catchment would be enhanced over time as the existing stockpile of sandstone material is removed.

With the above screening of the Site during the development process, there would be no adverse impact to the visual environment from residential or commercial development as a result of the proposed development.

6.4 Traffic Impact

The Marshall Report (**Appendix 8**) provides an assessment of the impact the proposed development would have on the local road system. The following information is taken from the Marshall Report.

6.4.1 Directional Distribution of Trucks to Main Road System

The directional distribution of trucks carrying demolition rubble/sand/sandstone to the Site and recycled materials from the Site is likely to vary day by day.

An indicative estimate of truck routes to and from the Site during the operational phase has been made based upon the likely sources of waste material and destinations for recycled materials estimated by Concrete Recyclers.

The estimated truck routes with percentage of Concrete Recyclers trucks for raw materials in and processed materials out are as shown in Figures 5A and 5B respectively of the Marshall Report, extracts from which are at **Figures 6-6 and 6-7**.

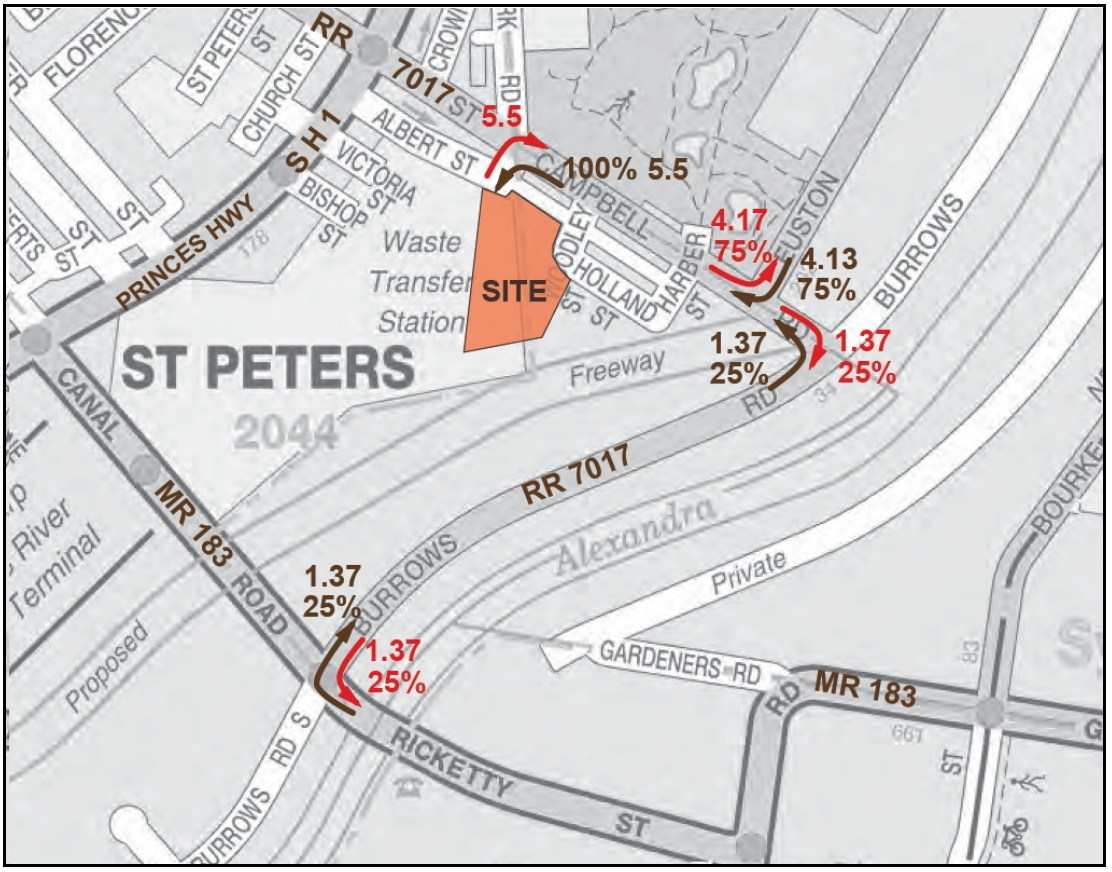

Figure 6-6: Truck routes and truck numbers for raw materials to be delivered to the Site for processing with the sandstone on the site. Raw materials in are shown as brown, empty trucks out are shown as red.

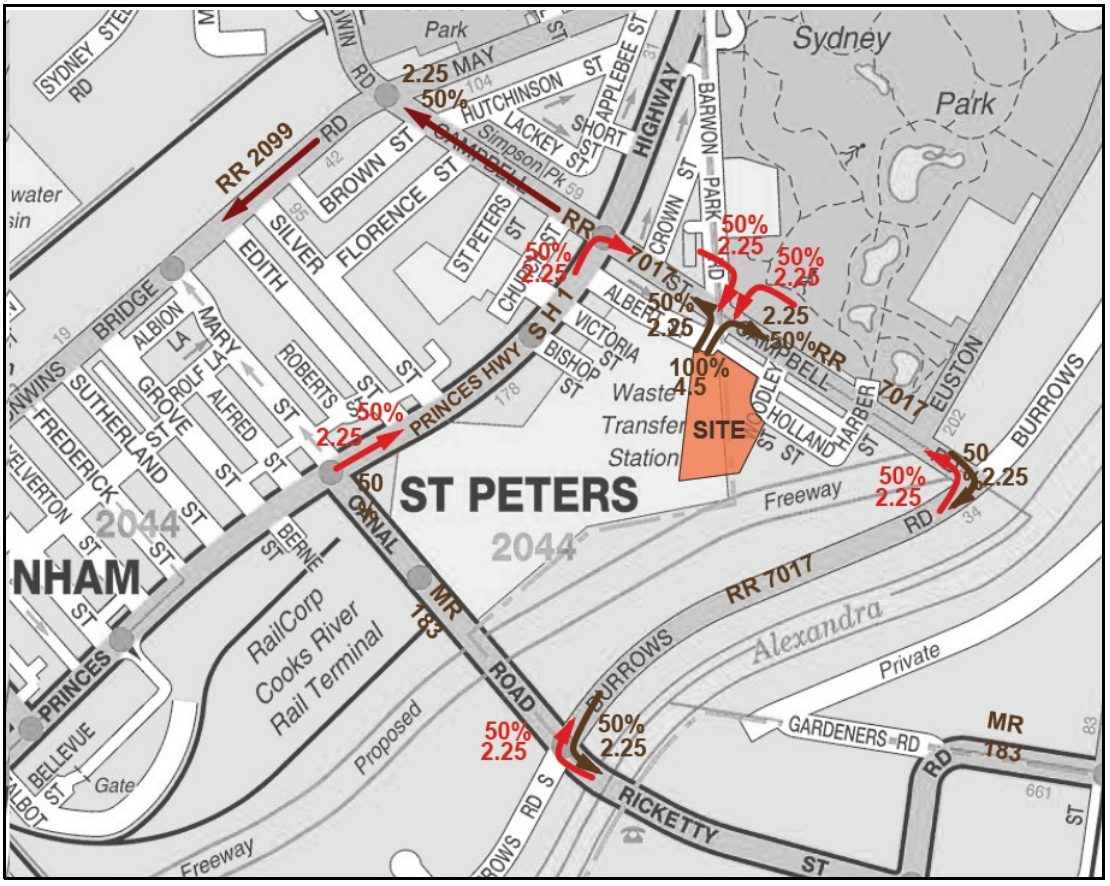

Figure 6-7: Truck routes and truck numbers for processed materials to be taken from the Site. Truck routes and truck numbers for processed materials leaving the Site as shown in brown, empty trucks arriving at the Site are shown in red.

Empty trucks leaving the Site after delivering raw materials and empty trucks entering the Site to be loaded with processed material would travel in the reverse direction to the loaded trucks.

6.4.2 Estimated Peak Hour Movements

The existing 8:00 - 9:00am peak hour volumes in Campbell Road are much higher than at 12:00 - 1:00pm and in the evening peak hour 5:00 - 6:00pm. The Site is not expected to generate any traffic after 5:00pm.

The impacts of additional trucks on the road network would be small at any time but higher in the am peak hour.

The future total 8:00 - 9:00am peak hour volumes at the Albert Street / Campbell Street / Campbell Road intersection during and after year 6 are shown in Figure 6B of the Marshall Report, an extract from which is at **Figure 6-8**.

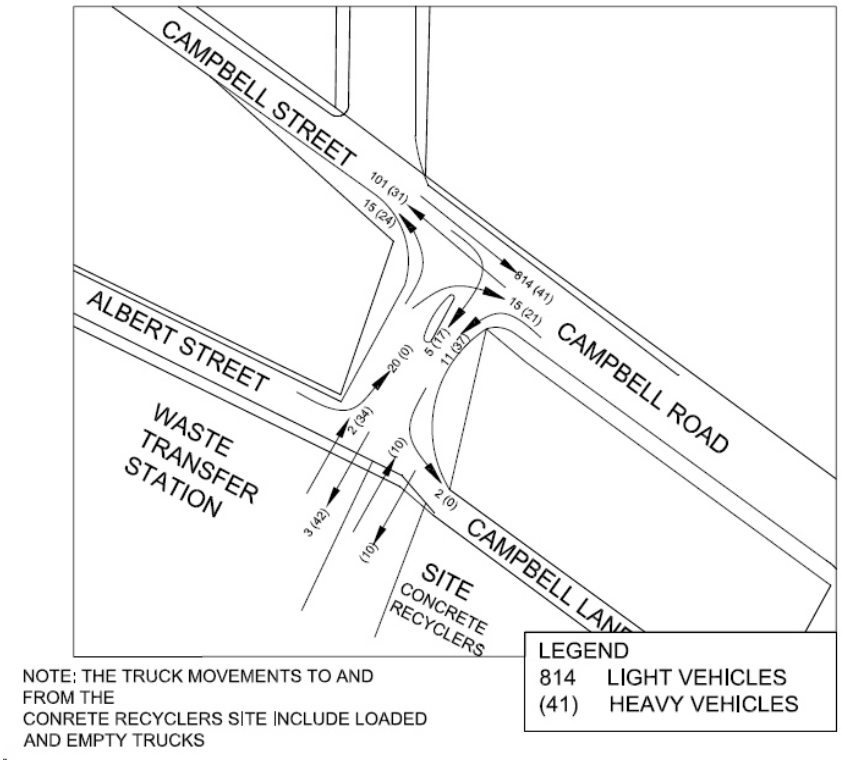

Figure 6-8: Future 8:00 - 9:00am traffic volumes after year 6 of the proposed development.

6.4.3 Performance of Campbell Road / Albert Street Intersection

Section 2.4 of the Marshall Report concludes that a capacity analysis of the intersection performance is unnecessary because of the relatively low turning volumes. The future right turn volume into Campbell Road is well below the practical absorption capacity of 272 veh/hour.

An analysis of the intersection performance under Give Way sign control has been made using SIDRA of the existing 8:00 - 9:00am peak hour traffic and future 8:00 - 9:00am peak hour with development traffic. The Level of Service on each approach is shown in **Table 6-10**.

Table 6-10: Level of Service

Approach Intersection	Peak Hour	EXISTING TRAFFIC			FUTURE TRAFFIC		
		Degree of Saturation DoS	Average Delay Secs/veh)	Level of Service LoS	Degree of Saturation DoS	Average Delay Secs/veh)	Level of Service LoS
Campbell Street		.509	2.3	A	.513	2.6	A
Campbell Road		.127	2.4	A	.136	2.8	A
Albert St.	**8:00 – 9:00am**	.184	12.3	B	.246	13.4	B

6.4.4 Effects of Increased Traffic On Road Network

The existing and future traffic volumes on the local roads near the Site vehicular access in the morning, mid-day and afternoon peak hours, and the estimated Levels of Service under existing and future traffic volumes are listed in Table 4.7 of the Marshall Report, a copy of which is at **Table 6-11** below.

Table 6-11: Existing and Future Traffic Volumes (After Year 6) on Local Roads

ROAD	PEAK HOUR	LOCATION	DIRECTION	EXISTING PEAK HOUR VOLUME				FUTURE TRAFFIC VOLUME AFTER YEAR 6.				INCREASE IN TRAFFIC	
				Light	Heavy	Total	LoS	Light	Heavy	Total	LoS	No.	%
Campbell Road	8-9am	East of Albert St	Eastbound	829	54	883	D	829	62	891	D	7.75	0.87
			Westbound	112	60	172	B	112	68	180	B	7.75	4.31
Campbell Street		West of Albert St	Eastbound	819	56	875	D	819	58	877	D	2.25	0.26
			Westbound	116	53	169	B	116	55	171	B	2.25	1.32
Albert Street		South of Campbell St	Northbound	30	35	65	A	30	45	75	A	10	13.33
			Southbound	16	44	60	A	16	54	70	A	10	14.29
Campbell Road	12.00 to 1pm	East of Albert	Eastbound	344	63	407	C	344	68	412	C	5	1.21
			Westbound	174	54	228	B	174	59	233	B	5	2.15
Campbell Street		West of Albert St	Eastbound	Not Counted									
			Westbound										
Albert Street		South of Campbell St	Northbound	46	13	59	A	46	19	65	A	6	9.23
			Southbound	43	21	64	A	43	27	70	A	6	8.57
Campbell Road	4-5pm	East of Albert	Eastbound	319	32	351	B	319	34.75	353.75	B	2.75	0.78
			Westbound	334	36	296	B	334	38.75	298.75	B	2.75	0.92
Campbell Street		West of Albert	Eastbound	Not counted									
			Westbound	Not counted									
Albert Street		South of Campbell	Northbound	42	6	48	A	42	9.5	51.5	A	3.5	6.86
			Southbound	22	5	27	A	22	8.5	30.5	A	3.5	11.48
Campbell Road	5.00 to 6pm	East of Albert St.	Eastbound	331	20	351	B	331	20	351	B	0	0
			Westbound	452	22	474	C	452	22	474	C	0	0
Campbell Street		West of Albert St.	Eastbound	Not Counted				No Increase				0	0
			Westbound									0	0
Albert Street		South of Campbell St	Northbound	28	2	30	A	31	2	3	A		
			Southbound	14	2	16	A	14	2	16	A	0	0

Trucks travelling to the Site would travel on classified main roads, regional roads and industrial roads where there is a high percentage of heavy trucks.

Trucks travelling from the Site would travel on regional roads, classified main roads and industrial roads in the Alexandria / Botany Bay region, and on the Princes Highway and M5 Motorway to their destinations.

The number of trucks expected to be generated by the proposed development is very small in the 8:00 - 9:00am morning peak hour, and much less in the 4:00 - 5:00pm afternoon peak hour.

In the morning peak hour, the increase in truck volumes in Campbell Road is expected to be about 1%. The increase in Campbell Street is expected to about 0.26%.

The critical movement at the intersection of Albert Street /Campbell Road with Campbell Street is the right turn from Albert Street into Campbell Road. The future right turning volume in the 8:00 - 9:00am morning peak hour is 57 pcus/hour which is well below the

absorption capacity of 104 pcus/hour.

The increased traffic would have minimal impact on the capacity of the above intersection and the road network.

The Level of Service on the existing roads would remain unchanged as shown in **Table 6-11** and there would be spare capacity based upon the indicative peak hour traffic volume capacity per lane.

6.4.5 Barwon Triangle Residential Development

The only development approved by Marrickville Council in the vicinity of the Site of the proposed sandstone recycling facility is DA 2012/00026 for a part 3 storey and part 4 storey residential building containing 23 dwelling units and a basement car park with 24 spaces. The residential dwelling units are 2 studios, 8 x 1 Bedroom, 10 x 2 Bedroom and 3 x 3 Bedroom.

Based upon traffic generation rates in Section 23.3.2 Medium Density Units in the RTA Guide to Traffic Generating Developments of 0.4 peak hour trips per 3 Bedroom unit and 0.3 trips per unit up to 2 Bedroom, the total AM and PM peak hour traffic generation is 7.2 trips in and out.

The estimated directional split in the peak hours is shown in **Table 6-12** below.

Table 6-12: Peak Hour Directional Split

Peak Hour	In	Out	Total
7:00 - 9:00 am	1.8	5.4	7.2
4:00 - 6:00 pm	4.8	2.4	7.2

Hence, the traffic impact in Campbell Road is negligible.

6.4.6 Cumulative Traffic Impacts

The only approved traffic generating development in the vicinity of the proposed sandstone recycling facility site is the Barwon Park residential building. The traffic impact in Campbell Road due to this development is negligible. There has been no traffic growth in Campbell Road in the period 1996 to 2005. Hence, the only increase would be due to the proposed sandstone recycling facility.

Trucks travelling to the Site would travel on classified main roads, regional roads and industrial roads where there is a high percentage of heavy trucks.

Trucks travelling from the Site would travel on regional roads, classified main roads and industrial roads in the Alexandria / Botany Bay region and on the Princes Highway and M5 Motorway to their destinations.

The number of trucks expected to be generated by this site in the excavation/operation and on going operations phases is very small in the 8:00 - 9:00am peak hour and much less in the 4:00 - 5:00pm afternoon peak hour. In the am peak hour, the increase in truck volumes in Campbell Road in the peak flow direction is expected to be about 1%. The increase in Campbell Street is expected to about 0.26%.

The critical movement at the intersection of Albert Street / Campbell Road with Campbell Street is the right turn from Albert Street into Campbell Road. The future right turning volume in the 8:00 - 9:00am peak hour is 57 pcus/hour and well below the absorption capacity of 104 vehs/hour. The SIDRA analysis of this intersection in the 8:00 - 9:00am peak hour shows that the Level of Service on each approach under existing and future traffic volumes is unchanged.

The increased traffic would have minimal impact on the capacity of the above intersection and the road network. The Level of Service (LoS) on the existing local roads would remain unchanged and there would be spare capacity based upon the indicative peak hour traffic volume capacity per lane.

6.5 Waste Impact

The waste to be received at the Site would be limited to that which the EPA Licence for the Site would permit and would include VENM / ENM (sandstone and sand) and bricks, concrete and asphalt.

Apart from visual inspections of waste as it arrives at the Site, it is a requirement of the EPA that all material leaving the Site complies with the POEO (Waste) Regulation 2005 - General Exemption Under Part 6, Clause 51 and 51A "The Recovered Aggregate Exemption 2010" or "The Excavated Natural Material Exemption 2008". These exemptions detail both the processes which must be adhered to and the chemical testing program required to allow the material leaving the Site to be applied to land. These exemptions would be utilised and complied with as part of the operation of the proposed facility.

Little waste would be generated in the operation of the proposed development. The proposed development has been designed such that the vast majority of materials delivered to the Site are recycled. Approximately 0.1% of the material delivered to the Site is material which cannot be recycled. Material is either:

- processed on Site for reuse,
- placed in a bin in the case of waste metal and wood, and transported off site for recycling, or

- in the case of general waste, stored in an appropriate waste bin for either recycling or transportation off site for disposal at landfill.

6.5.1 Leachate from Waste

There is potential for leachate being produced from crushed blending materials. To determine the impact of any such leachate, samples of crushed blended materials typically produced by Concrete Recyclers were tested by SESL Australia for PAH_S and pH_Sol in their NATA registered laboratory. The results of that testing are shown in **Table 6-13** below.

Table 6-13: Results of Leachate Testing

Sample No.	Material	Test Type	Total PAH_S mg/L	Final pH
1	20mm Hardroad (Crushed Asphalt)	PAH_S	.004	6.7
4	DG B20:Sandstone, 50:50 Composite (Sandstone/Concrete)	pH_Sol	_	11.1
5	20mm Hardroad: Sandstone, 50:50 Composite Asphalt/Sandstone	PAH_S	.005	5.7

Based upon the analysis undertake by SESL Australian, the following conclusions were drawn:

1. Materials in Tests 1 and 5 showed very little leachability and would not pose any significant runoff contamination issues, and

2. Results from Test No.4 showed that the material was highly alkaline.

Stormwater discharge would occur during the excavation / operational stages 1 to 5 and the ongoing operation stage after heavy rain. The stormwater would pass through the secondary hydro dynamic device and would be diluted.

Management measures

The analysis of historical Bureau of Meteorology data shows that stormwater would pond in the retention basins during rainfall events and be discharged by pumping during the site preparation and excavation / operation stages 1 to 5 and by gravity during the on going operational stage.

The laboratory tests indicate concentrations of contaminants in the very low risk area

except for pH, however, the dilution factor in any discharge after heavy rain is expected to reduce the pH value to within acceptable limits of 6.5 to 8.5 (refer to Appendix F of the Lyle Marshall Report at **Appendix 8**).

Management measures include testing of stormwater discharge after completion of the site preparation to confirm that the pH is within acceptable limits.

6.6 Social and Economic Impact

The social impact of the proposed development would be positive in that:

- the existing stockpile of sandstone material would be removed from the Site and recycled.
- material delivered to the Site to be processed with the existing sandstone on the Site, which would otherwise be disposed of to landfill, can be recycled.
- material which is recycled through the proposed sandstone recycling facility would reduce the amount of virgin material from quarrying activity which would otherwise be required to fulfil the market for such materials.
- recycling of such material would increase the life of existing landfill sites.
- having a recycling facility closer to both the unprocessed material and the users of the recycled product would:
  - (i) limit the amount of truck traffic on many metropolitan roads,
  - (ii) result in the use of less fuel in the delivery of materials to and from the Site, and
  - (iii) result in less congestion on certain roads.
- the creation of up to 3 new jobs in the local area.

The economic impact would be positive in that:

- employment opportunities would be generated.
- the proposed development is one where sandstone waste from the excavation, building and construction industry in the Sydney metropolitan area would be received as an incentive to recycle waste rather than dispose of that waste to landfill. The money saved by industry and the State government in waste disposal costs is such that there is an economic incentive to recycle waste.

6.7 Greenhouse Gas and Energy Efficiency

Wilkinson Murray Pty Ltd has undertaken an assessment of the proposed development with regard to greenhouse gas emissions. A copy of the Wilkinson Murray report is at **Appendix 10**. The following extracts are taken from the Wilkinson Murray report.

The following greenhouse gases have been identified as significant contributors to global warming:

- carbon dioxide (CO_2)
- methane (CH_4)
- nitrous dioxide (N_2O)
- synthetic gases
- Hydrofluorocarbons (HFCs), SF6, CF4 and C2F6.

HFCs and synthetic gases are not relevant to the proposed development.

The Department of Climate Change and Energy Efficiency Account (July 2011) has been used to provide a consistent set of emission factors, which are suitable for reporting Greenhouse Gas Emissions.

Under the Department of Climate Change and Energy Efficiency protocol, GHG emissions are categorised as Scope 1, Scope 2 and Scope 3 emissions, being:

Scope 1: Direct Greenhouse Gas Emissions

Direct greenhouse gas emissions are defined as those emissions which occur from sources which are owned or controlled by the reporting entity. Direct greenhouse gas emissions are those emissions which are principally the result of the following types of activities undertaken by an entity:

- Generation of electricity, heat or steam. These emissions result from combustion of fuels in stationary sources.
- Physical or chemical processing. Most of these emissions result from manufacture or processing of chemicals and materials, e.g. the manufacture of cement, aluminum etc.
- Transportation of materials, products, waste and employees. These emissions result from the combustion of fuels in entity owned/controlled mobile combustion sources, e.g. trucks, machinery, trains, ships, aeroplanes, buses and cars.
- Fugitive emissions. These emissions result from intentional or unintentional

releases, e.g. equipment leaks from joints, seals, packing, and gaskets; methane emissions from coal mines and venting; and methane leakages from gas transport.

Scope 2: Energy Product Use Indirect Greenhouse Gas Emissions

Scope 2 emissions are a category of indirect emissions which accounts for greenhouse gas emissions from the generation of purchased energy products (principally, electricity, steam/heat and reduction materials used for smelting) by the entity.

Scope 2 in relation to the proposed development covers purchased electricity defined as electricity which is purchased or otherwise brought into the organisations boundary of the entity.

Scope 3: Other Indirect Greenhouse Gas Emissions

Scope 3 emissions are defined as those emissions which are a consequence of the activities of an entity, but which arise from sources not owned or controlled by that entity. Some examples of Scope 3 activities provided in the Greenhouse Gas Protocol are extraction and production of purchased materials, transportation of purchased fuels, and use of sold products and services.

The Greenhouse Gas Protocol provides that reporting Scope 3 emissions is optional. If an organisation believes that Scope 3 emissions are a significant component of the total emissions inventory, these can be reported along with Scope 1 and Scope 2, however, the Greenhouse Gas Protocol notes that reporting Scope 3 emissions can result in double counting of emissions and can also make comparisons between organisations and/or products difficult because reporting is voluntary.

The Wilkinson Murray report considers the following GHG emissions and energy consumption activities associated with the proposed development:

Scope 1 - Direct Emissions

- On-site generation of GHG emissions from mobile plant and equipment.
- Transport of source materials to and from the Site.
- Employees of the recycling plant commuting to work.

Scope 2 - Indirect Emissions

- Electricity generated off-site which is consumed on the Site.

Scope 3 - Emissions Generated by External Operators

The following Scope 3 emission sources have not been considered:

- Off-site material handling activities.

- End use of product.

Greenhouse gases are formed and released during the combustion of fuels. The gas is liberated when fuels are burnt in diesel powered equipment and in the generation of the electrical energy which would be used by stationary plant and ancillary buildings.

Inventories of greenhouse gas emissions can be calculated using published emission factors.

Different gases have different greenhouse warming effects and emission factors take into account the global warming potentials of the gases created during combustion.

The estimated emissions are referred to in terms of CO_2 - equivalent emission by applying a global warming potential of one for CO_2.

6.7.1 Estimation of Greenhouse Gas Emissions

The following details are the estimated emissions associated with the establishment and operation of the proposed material recycling facility.

Site Establishment

For the purposes of an initial assessment, an estimate of emissions has been based on a three month site establishment period. Accordingly, the assessment of site establishment associated with the proposed materials recycling facility is limited to the following activities:

- Vehicles, machinery and plant used on the Site (average of one diesel item of machinery operating 8 hours a day).
- Electricity consumption associated with site establishment, office and other amenities (based on small fridge, 1 x computer, printer, hot water, fluorescent lighting and air conditioning).
- Nominal usage of power tools.
- Initial start up electricity requirements for the amenities building during site establishment (one week - based on pro rata operational consumption).
- Staff travel to the Site (average workforce of 3).

Equivalent CO_2 -e emissions have been estimated, and are presented in **Table 6-12**.

Table 6-14: Summary of Estimated Site Establishment CO_2 Emissions

Source	Tonnes of CO_2-e			
	Stage 1	Stage 2	Stage 3	Annual (t/y)
Electricity		5.3	-	5.3
Diesel	130.0		-	130.0
Petrol	2.3		-	2.3
Total	**132.3**	**5.3**	**-**	**137.6**

Operation

Carbon Dioxide emissions from the proposed development during operation would result from the following sources and yearly consumption:

- The operation of on site mobile plant 68,565 litres of diesel
- Transport of final product 122,850 litres of diesel
- Electricity usage at the Site 6,000 kWh
- Transport associated with staff 4,068 litres of petrol

Based on a maximum production rate of 150,000 tonnes per year, equivalent CO_2-e emissions have been estimated. These are presented in **Table 6-13**.

Table 6-15: Summary of Estimated Yearly CO_2 emissions

Source	Tonnes of CO_2-e			
	Stage 1	Stage 2	Stage 3	Annual (t/y)
Electricity		5.3	-	5.3
Diesel	4,207.1		-	4,207.1
Petrol	17.2		-	217.2
Total	**4,224.3**	**5.3**	**-**	**4,229.9**

The majority of emissions are associated with crushing and on-site operation of mobile plant.

Each tonne of product has been estimated to produce 25.2 kg CO_2-e/ tonnes of product.

Overall Emissions

Proposed production rates are envisaged to start at a rate of 70,000 tonnes per annum in the first year and increase to a maximum capacity of 150,000 tonnes per annum in Year

3. For the purposes of estimating total emissions during the life of the development, a 20 year period has been used for assessment purposes. **Table 6-14** details the emissions from Year 1 to 3.

Table 6-16: Years 1-3 Emissions

Year	Production Rate (tpa)	CO_2 Tonnes Per Annum
Year 1	70,000	1,973.8
Year 2	100,000	2,819.7
Year 3 Onwards	150,000	4,229.6

Australia's total greenhouse gas emissions in 2009 amounted to 564.5 million tonnes of carbon dioxide equivalent (Mt CO_2-e) whilst New South Wales accounted for 160.6 Mt of this total.

The proposed sandstone recycling facility, when at full production, accounts for less than 0.00003% of current NSW emissions.

Further, based on a nominal 20 year life span of the proposed development, it is estimated that the total emissions associated with the proposed development would be in the order of 76,903 tonnes. This is based on site establishment, operation and decommissioning stages of the project. In the case of decommissioning, an assumption of 50% of site establishment emissions has been assumed.

Part Seven

DRAFT STATEMENT OF COMMITMENTS

7.1 Introduction

The Director-General's Requirements stipulate that the Environmental Assessment must contain:

> *A draft Statement of Commitments, outlining environmental management, mitigation and monitoring measures.*

This part of the Environmental Assessment provides a draft Statement of Commitments which describes the management measures which Concrete Recyclers is prepared to implement with regard to the environmental management of the Site, and the mitigation and monitoring of potential environmental impacts associated with the operation of the proposed Sandstone Recycling Facility.

Concrete Recyclers is committed to the following objectives:

- To provide a long term, fully licensed Sandstone Recycling Facility capable of recycling sandstone from the excavation industry in the Sydney CBD and waste from the building and construction industry.

- To protect the health of site workers and the general public, and ensure business viability by compliance with relevant legislation, standards and regulating authorities.

- To ensure site operations do not significantly impact on potential environmental receptors and comply with the following environmental legislation:

  - the *Environmental Planning and Assessment Act 1979*, and

  - the *Protection of the Environment Operations Act 1997*.

- To ensure that new technologies are implemented in relation to resource recovery and environmental management of the Sandstone Recycling Facility throughout its life.

- To protect the surrounding environment through the implementation and management of environmental controls and contingency measures.

- To operate the Sandstone Recycling Facility in a manner which is sympathetic to the amenity of the area in which it is located.

7.2 General Commitments

1. The Project would be undertaken generally in accordance with the Project Application and the Environmental Assessment prepared by Nexus Environmental Planning Pty Ltd, including accompanying appendices.

2. The Project would be undertaken generally in accordance with the following drawings prepared by Lyle Marshall & Associates Pty Ltd:

   - Drawing Nos.9167-10-01 to 23.

3. The Project would be conducted and operated in accordance with this Statement of Commitments.

4. Concrete Recyclers would obtain the necessary approvals and permits to operate the Sandstone Recycling Facility.

5. A copy of the approved and certified plans, specifications and documents, including conditions of approval would be kept on the Site at all times.

7.3 Environmental Management Plan

During both the establishment and operational stages of the development, environmental reporting is essential to ensure that the facility operates within the parameters set down in the consent for the development and the relevant legislation and licences which guide the operation of the facility.

An Environmental Management Plan (**EMP**) would be developed for both the establishment and operation stages of the Sandstone Recycling Facility.

The key principles of the EMP would be to provide:

- An environmental management tool for the establishment and operation of the proposed Sandstone Recycling Facility.

- An outline of reporting requirements associated with the Sandstone Recycling Facility.

- The processes for interaction between Concrete Recyclers and the relevant government authorities.

- The means by which compliance with the conditions of consent and the requirements of the Environmental Protection Licence would be achieved.

The EMP would contain sub-sections which would provide details of the management

of the Sandstone Recycling Facility to minimise potential impacts discussed in the Environmental Assessment. Sub-sections of the EMP would include:

- Induction and Training.
- An Erosion and Sediment Control Plan which would cover both establishment and operation of the Sandstone Recycling Facility.
- A Construction and Operational Noise Management Plan which would detail measures to minimise acoustic impact during establishment and operation of the facility.
- A Air Quality Management Plan which would detail measures to be employed to minimise air quality impacts during both establishment and operation of the facility.
- A Waste Management Plan.
- A Stormwater Management Plan.
- A Traffic Management Plan.
- A Complaints Management Plan.

Following are drafts of the relevant sections of the EMP, refinement of which would be undertaken following receipt of consent for the proposed development.

TITLE	EP 1 - INDUCTION AND TRAINING
Consent/Licence Ref.	Insert relevant Conditions of Consent Insert relevant POEO Licence Conditions
Objectives	To ensure all persons working on the site are aware of their environmental obligations, site environmental issues and control measures, as well as roles and responsibilities.
Procedures	1. Environmental induction for all employees and contractors before starting work. Induction to cover the following issues: (i) requirements of the EMP; (ii) specific environmental issues on the site and control measures; (iii) roles and responsibilities for environmental management, and (iv) environmental incident procedures. 2. Retraining sessions within one month of changes to relevant sections of the EMP. 3. Retraining sessions within one month to persons identified by *Complaints Register* as not conforming to procedures. 4. All truck drivers entering the site for the first time to be provided with the *Site Induction for Drivers* form (attached).
Monitoring	Status of inductions to be checked monthly.
Reporting	Record of all inductions and retraining, including name and date provided, to be retained on site.
Responsible Person	Environmental Officer responsible for ensuring all persons working on the site are properly inducted and retraining provided as required.
Information/References	Insert relevant EPs and Policies.

TITLE	EP 2 - EROSION AND SEDIMENT CONTROL
Consent/Licence Ref.	Insert relevant Conditions of Consent Insert relevant POEO Licence Conditions
Objectives	To minimise and manage erosion and sedimentation on the site and ensure that sediment laden runoff is not discharged from the site.
Procedures	1. Construct all internal access tracks as per Appendix 8 of the Environmental Assessment and relevant EPA requirements. 2. Divert runoff to sediment basins, sediment traps and catch ponds as a primary means of sediment trapping before water is discharged to main storage pond/tank storage. 3. Inspect drainage and sediment controls monthly and conduct maintenance as required to ensure effectiveness. Where erosion is observed to be occurring, implement rehabilitation/stabilisation measures. 4. Implement and maintain silt fence. Fence to be maintained along boundary.
Monitoring	Monthly inspection of all drainage and sediment controls on site, including water storages, pumps, pipes and retention basin walls.
Reporting	As required by Conditions/Licence.
Responsible Person	Environmental Officer or person(s) authorised by Environmental Officer.
Information/References	Insert relevant EPs and Policies

TITLE	EP 3 - NOISE MANAGEMENT PLAN
Consent/Licence Ref.	Insert relevant Conditions of Consent Insert relevant POEO Licence Conditions
Objectives	To ensure that construction and operation noise complies with EPA regulations. To minimise impact of noise on surrounding residents. To ensure employees are not subject to noise levels above those specified in the OH&S legislation.
Procedures	1. Consult with the industrial facility on the western boundary in relation to higher noise levels near the boundary during the establishment phase of the development. 2. Maintain the existing fencing on the northern boundary of the site to help contain noise within the site. 3. Minimise works near the northern boundary of the site wherever feasible. 4. During the establishment stage, locate the crusher a minimum of 20 metres from the northern edge of the main stockpile. 5. On relocating the crusher, the crusher and screen units should be located to the southern boundary of the site and a crushed stockpile maintained whenever possible so as to maximise shielding to the dwellings to the north-west of the site. 6. Following relocation of the crusher and commencement of ongoing operations, maintain a mound to RL25 metres or at least 5 metres above the working area between the plant and equipment and the potentially most affected dwellings to the north and an uncrushed stockpile at least 4 metres above the working area to the west. 7. Ensure mobile plant used is fitted with residential grade silencers. 8. To minimise disturbance to the residents, advise truck drivers not to queue outside the gates before 6:00am. 9. At all times, but particularly prior to 7:00am, trucks should be loaded in a quiet manner by placing rather than dropping material into trucks. 10. Plant based at the site must incorporate "quacker" style reversing alarms. 11. Trucks with traditional "beep beep" alarms will not reverse on the site prior to 7:00am.
Monitoring	As required by Conditions/Licence.
Reporting	As required by Conditions/Licence.
Responsible Person	Environmental Officer to organise monitoring and reporting as required. Truck drivers responsible for required actions to reduce noise.
Information/References	Insert relevant EPs and Policies

TITLE	EP 4 - AIR QUALITY MANAGEMENT PLAN
Consent/Licence Ref.	Insert relevant Conditions of Consent Insert relevant POEO Licence Conditions
Objectives	To minimise dust generation and air pollution to prevent impact on surrounding residences and comply with the following ambient goals: (i) dust deposition - 4g/m^2/month (annual average); (ii) PM_{10} - 50µg/m^3 (average for rolling 24 hour period) or 30µg/m^3 (annual average). To ensure employees are not subject to dust levels above those specified in the OH&S legislation.
Procedures	1. Minimise the area of disturbance by only clearing areas immediately prior to processing. 2. Maintain dust suppression devices to all processing equipment. 3. Maintain the sprinkler system including fine sprays on the conveyors of the processing plant and stockpile sprinklers. 4. Stockpiles used for visual and/or acoustic mitigation to be planted with a non-invasive vegetation cover. 5. Use water cart to suppress dust on unsealed roads, truck loading areas and non permanent stockpiles during dry conditions on days of operation. 6. 20 km/hr speed limit on internal, unsealed access tracks to minimise dust generation. 7. All loaded vehicles entering and leaving the site to be covered. 8. Surface access road in selected hard, non-friable material. 9. Regular maintenance of mobile and fixed equipment to minimise exhaust emissions.
Monitoring	As required by Conditions/Licence.
Reporting	As required by Conditions/Licence.
Responsible Person	1. Drivers responsible for adherence to speed limits, covering loads, regular vehicle maintenance. 2. Site supervisor responsible for ensuring processing plant operator(s) maintain dust suppression equipment on the plant. 3. Environmental Officer or person(s) authorised by Environmental Officer responsible for dust and air quality monitoring and reporting, implementation of dust suppression controls.
Information/References	Insert relevant EPs and Policies

TITLE	EP 5 - WASTE MANAGEMENT PLAN
Consent/Licence Ref.	Insert relevant Conditions of Consent Insert relevant POEO Licence Conditions
Objectives	To minimise waste generated, maximise reuse and recycling, and ensure wastes are managed effectively to minimise impact on the environment.
Procedures	1. Maintain separate receptacles for paper, aluminium, glass, plastic and general domestic waste. 2. Recyclables (paper, aluminium, glass and plastic) to be collected by Council. 3. Pick-up of non-recyclable domestic waste from office by Council. 4. No putrescible material to be disposed on site. 5. No waste generated outside site to be stored, treated, processed, or disposed on site except as permitted by a licence. 6. Maintain on-site sewage treatment and disposal. 7. Encouragement of employees to adopt waste-reducing practices. 8. Apart from visual inspections of waste as it arrives at the site, it is a requirement of the EPA that all material leaving the site complies with the POEO (Waste) Regulation 2005 - General Exemption Under Part 6, Clause 51 and 51A "The Recovered Aggregate Exemption 2010" or "The Excavated Natural Material Exemption 2008". These exemptions detail both the processes which must be adhered to and the chemical testing program required to allow the material leaving the site to be applied to land. These exemptions are to be utilised and complied with as part of the operation of the facility.
Monitoring	Monthly inspection of on-site sorting and storage of recyclables.
Reporting	As required by Conditions/Licence.
Responsible Person	All staff are responsible for correct management and disposal of waste. Environmental Officer to educate new staff of waste minimisation procedures.
Information/References	Insert relevant EPs and Policies

TITLE	EP 6 - STORMWATER MANAGEMENT PLAN
Consent/Licence Ref.	Insert relevant Conditions of Consent Insert relevant POEO Licence Conditions
Objectives	To ensure discharge of stormwater from the site is clear of sediment, downstream ecosystems are protected, on-site re-use of water is maximised.
Procedures	1. Install and maintain water management structures as per Environmental Assessment Appendix 8 to contain and treat all rainfall and runoff. 2. Erosion and sediment control works to be implemented in accordance with EP 2. 3. Minimise the area of disturbance. 4. Install tank farm to store stormwater collected on the site for re-use in dust mitigation. 5. Testing of stormwater discharge after completion of the site preparation to confirm that the pH is within acceptable limits
Monitoring	As required by Conditions/Licence.
Reporting	As required by Conditions/Licence.
Responsible Person	Environmental Officer or person(s) authorised by Environmental Officer.
Information/References	Insert relevant EPs and Policies

TITLE	EP 7 - TRAFFIC MANAGEMENT PLAN
Consent/Licence Ref.	Insert relevant Conditions of Consent Insert relevant POEO Licence Conditions
Objectives	To minimise the impact of trucks on the local road network and local residents, and to comply with approved access and vehicle movements.
Procedures	1. All new truck drivers to be provided with *Site Induction for Drivers* form at the site entrance. 2. Drivers provided with Site Traffic Management Policy. 3. All loads must be fully covered prior to leaving the site. 4. 20 km/hr speed limit on internal road. 5. All vehicles are to enter and leave the site in a forward direction.
Monitoring	1. All loads to be inspected at site entrance to make sure they are covered. 2. Complaints register to be used to record traffic management complaints.
Reporting	As required by Conditions/Licence.
Responsible Person	1. Environmental Officer responsible for weekly inspections of site entrance for sand/clay accumulation, monthly inspections of road pavements for damage condition. 2. Truck drivers responsible to comply with permitted hours of operation.
Information/References	Insert relevant EPs and Policies

TITLE	EP 8 - COMPLAINTS MANAGEMENT
Consent/Licence Ref.	Insert relevant Conditions of Consent Insert relevant POEO Licence Conditions
Objectives	To ensure any site problems brought to the attention of Concrete Recyclers by the local community and/or relevant authorities are documented and acted upon to avoid re-occurrence.
Procedures	1. Complaints telephone number signposted at front gate. Telephone number, along with postal and email address for complaints advertised on website. 2. All complaints/concerns raised by local community/relevant authorities to be recorded on *Complaints Register* by Environmental Officer. *Complaints register* to be retained on site. 3. All complaints to be bought to the attention of the Environmental Officer immediately. 4. Environmental Officer to identify and initiate appropriate action in response to complaint and follow-up contact with complainant. 5. Any complaints received to be reviewed to ascertain if site management requires amendment.
Monitoring	1. All complaints to be recorded on *Complaints Register*. 2. *Complaints Register* to be checked monthly.
Reporting	Summary of complaints to the EPA as part of Annual Return for Licence.
Responsible Person	1. All persons who receive telephone complaints are responsible for completing the *Complaints Register* and notifying the Environmental Officer within 24 hours. 2. Environmental Officer responsible for initiating follow-up action and contact with complainant.
Information/References	Insert relevant EPs and Policies

Part Eight
CONCLUSIONS

8.1 Introduction

Consultation with the Director-General of the Department of Planning and Infrastructure has resulted in a number of Key Issues being identified for assessment as part of the preparation of this Environmental Assessment.

This Environmental Assessment has, in accordance with the requirements of the Director-General, considered the likely impacts to the environment which might potentially result from the use of the Site as a sandstone recycling facility.

Key issues which have been identified are:

- the potential for the proposed development to impact on the acoustic environment of the Site and its surroundings;

- the potential for activity associated with the proposed development to affect air quality in the environs of the Site;

- the potential for traffic generated by the proposed development to impact on the local road network, and

- to potential for visual impact to the locality.

8.2 Acoustic Impact

There is potential for the activities associated with the proposed development to impact on the existing acoustic environment of both the Site and its environs.

A comprehensive acoustic impact assessment has been undertaken by Wilkinson Murray which concludes:

> *Concrete Recyclers Pty Ltd is proposing to operate a recycling facility at 2 Albert Street in St Peters. This area is on the boundary between two council areas, namely Marrickville and City of Sydney Council. The area is predominately industrial, although there are pockets of existing residences within the area as well as a DCP for the Barwon Triangle which includes more residential in the future. The proposed site and the land occupied by the nearby dwellings is zoned by the respective councils for arterial road widening and upgrade purposes.*
>
> *Establishment of operations on site will require an initial construction phase*

(approximately 3 months) and then normal operations following relocation of the Crusher unit within the site and introduction of additional plant required by the operation at this stage.

Based on Office of Environment and Heritage (OEH) recommendations, noise during the construction phase is expected to comply with the Background + 10dBA noise objective, with the exception of a marginal 2dBA exceedance during the first few days where plant operates at the northern boundary. Noise at the nearest industrial boundary to the west is expected to exceed the recommended 75dBA construction noise objective, however this will only occur for the localised area near the boundary which appears to be used for temporary stockpiling and not permanently occupied by personnel.

Following relocation of the Crusher towards the southern end of the main stockpile furthest from the residences and onset of normal operations, the criteria recommended by the OEH's Industrial Noise Policy (INP) will be complied with by maintaining a northern mound between the plant operations and the dwellings to the north and to minimise noise a crushed stockpile along part of the western edge of the main stockpile to shield residences to the north-west.

The proposed operations will also require careful management of the site ... in particular the loading of trucks in the morning shoulder 6.00am to 7.00am period.

Road traffic noise associated with the development is expected to comply with the NSW Governments current and previous road traffic noise policy and the small increase in number of trucks at peak times should not adversely affect the acoustic amenity of the occupants of the nearby dwellings.

Concrete Recyclers has confirmed in its draft statement of commitments that it is prepared to undertaken the recommendations of Wilkinson Murray. With those recommendations and commitments in place, the proposed development should not have a significant impact on the acoustic environment.

8.3 Air Quality

There is potential for the proposed development to impact the existing air quality in the environs of the Site.

Wilkinson Murray has assessed that potential impact having regard to the impact mitigation measures proposed as part of the proposal and has concluded:

Dispersion modelling using the Ausplume model has been applied to predict off-site impacts from the Project on the surrounding area.

The results indicate that particulate emissions of TSP, PM_{10} and dust deposition

would comply with the NSW OEH criteria and would therefore not lead to unacceptable levels of environmental harm or impact on the amenity of the area.

8.4 Traffic Impact

The proposed access to the Site and traffic impact of the proposed development is discussed in the report of Lyle Marshall & Associates Pty Ltd.

Trucks travelling to the Site would travel on classified main roads, regional roads and industrial roads where there is a high percentage of heavy trucks.

Trucks travelling from the Site would travel on regional roads, classified main roads and industrial roads in the Alexandria / Botany Bay region, and on the Princes Highway and M5 Motorway to their destinations.

The number of trucks expected to be generated by the proposed development is very small in the 8:00am to 9:00am morning peak hour, and much less in the 4:00pm to 5:00 pm afternoon peak hour.

In the morning peak hour, the increase in truck volumes in Campbell Road is expected to be about 1%. The increase in Campbell Street is expected to about 0.26%.

The critical movement at the intersection of Albert Street /Campbell Road with Campbell Street is the right turn from Albert Street into Campbell Road. The future right turning volume in the 8:00am to 9:00am morning peak hour is 57 pcus/hour which is well below the absorption capacity of 104 pcus/hour.

The increased traffic would have minimal impact on the capacity of the above intersection and the road network.

8.5 Visual Impact

A development such as that which is proposed has potential to impact on the visual environment in that there would be stockpiles of unprocessed and processed material on the Site and machinery used in the processing of that material for recycling.

Subject to the proposed retention of screen planting on the northern boundary, the placement of permanent stockpiles along the other boundaries of the Site, and assuming a best practice dust management plan, the visual impacts of the development would be negligible and the application can be supported on visual grounds.

8.6 Conclusion

The proposed development is for a sandstone recycling facility to be located at Albert Street, St Peters.

The assessment undertaken of the impact the proposed development would have on the environment of the Site and its locality has been canvassed in the main body of the Environmental Assessment with the conclusion that, with attenuation measures, there would be no impact to the environment of the Site which would be considered significant.

It is concluded that the proposed development is an acceptable land use for the Site.

REFERENCES

Archaeological & Heritage Management Solutions, 2012. *Aboriginal Heritage Advice - Proposed Materials Recycling Facility, 2 Albert Street, St Peters, 2 August 2012*.

Lyle Marshall & Associates Pty Ltd, 2012. *Traffic and Stormwater Drainage Report For Establishment of a Materials Recycling Facility on Lot 1, D.P. 88087 and Lot B, D.P. 376646, No. 2 Albert Street, St. Peters*.

NSW Department of Environment and Climate Change, 2003. *Resource NSW. The NSW Waste Avoidance and Resource Recovery Strategy 2003.*

NSW Department of Environment and Climate Change, 2007. *NSW Waste Avoidance and Resource Recovery Strategy 2007.*

NSW Department of Lands, 2011. *Spatial Information eXchange*.

Wilkinson Murray Pty Limited, 2012. *2 Albert Street, St Peters. Proposed Recycling Plant. Noise Impact Assessment.*

Wilkinson Murray Pty Limited, 2011. *Materials Recycling Facility. 2 Albert Street, St Peters. Proposed Recycling Plant. Air Quality Assessment.*

Wilkinson Murray Pty Limited, 2011. *Materials Recycling Facility. 2 Albert Street, St Peters. Greenhouse Gas and Energy Efficiency Assessment.*

---------- ooo ----------