CLEANAWAY
Making a sustainable future possible

Construction Environmental Management Plan

Erskine Park Resource Management Facility
Stage 1 – Waste Transfer Station

Date: November 2018
Prepared by: SLR Consulting Australia Pty Ltd
Version: Rev 1

Contents

APPENDICES

1. INTRODUCTION

1.1 Revision

This Construction Environmental Management Plan (CEMP) was prepared and approved by the Department of Planning and Environment (DPE) in September 2017. The CEMP has been updated to respond to a new condition as a result of Modification (Mod) 4 to Development Consent SSD 7075. The new condition is Condition C1A which requires:

C.1A Prior to the commencement of extended construction hours approved as part of MOD 4, the Applicant must submit a revised Construction Environmental Management Plan to the satisfaction of the Planning Secretary. The plan must be prepared in consultation with the EPA and detail the environmental management practices and procedures to mitigate construction noise impacts during the out of hours construction periods.

The key changes to this document include:

- Updated construction hours (Table 3);
- Updated development description (Section 2); and
- The additional assessment and management measures relating to Condition C1A SSD 7075 (Section 4.5 and Table 17).

1.2 Background

The Planning Assessment Commission (PAC), acting as delegate of the Minister for Planning, approved an application for the Erskine Park Waste and Resource Management Facility (WRMF) Staged Development Application (SSD 7075) on the 5 October 2016, comprising:

- A concept proposal for a Waste and Resource Management Facility with a maximum processing capacity of 300,000 tpa. All waste received at the WRMF shall enter the Waste Transfer Station (Stage 1), up to 150,000 tpa of this waste may be recycled at the Resource Recovery Facility (Stage 2).
- Construction and operation of the Stage 1 Waste Transfer Station with a maximum processing capacity of 300,000 tpa.

The WRMF will be developed in two stages, the first being a Waste Transfer Station (WTS) and the second being a Resource Recovery Facility (RRF). An Environmental Impact Statement (EIS) was prepared to support the application for the WRMF Concept Proposal and the Stage 1 WTS. A separate EIS for the Stage 2 RRF will be developed at a later date.

Since the approval of the Development in 2016, four modifications (Mods) to the Development Consent have been applied for and approved by the DPE, as below:

- In July 2017 a DA Modification document (DA Mod 1) was submitted to the DPE to request a number of modifications to the project design and Concept Plan. These modifications included; changes to site levels, construction of an interim carpark, use of a temporary office, removal of truck parking, construction of landfill entry and exit ramps, amendment to the load out area and amendment to the stormwater management system. The DA Mod 1 was approved by DPE on 28 August 2017;
- Modification 2 (Mod 2) was submitted to the DPE on the 22 January 2018 and was approved on the 26 February 2018. Mod 2 sought to increase site levels and relocate the car park, to a location adjacent to the inbound road;
- Modification 3 (Mod 3) was approved by DPE on the 24 October 2018, to install a manual sorting line in the WTS; and
- Modification 4 (Mod 4) was approved by the DPE on the 25 October 2018 which extends construction hours.

The WTS will receive commercial and household waste from the Western Sydney region which would subsequently be transported to a licenced waste management facility off site. A proportion of the waste received at the WTS would be diverted to the RRF for recycling and recovery of saleable products. The design capacity of the completed WRMF is 300,000 tonnes per annum, inclusive of both stages.

While the Site is located in an industrial area, a key consideration in the planning and design of the WTS has been to avoid impacting on the amenity of the surrounding residential community, particularly in relation to odour, noise and traffic issues.

1.3 CEMP Context

This CEMP has been prepared by SLR Consulting Australia (SLR), on behalf of Cleanaway Pty Ltd (Cleanaway), for the Stage 1 Waste Transfer Station, to satisfy Schedule C (Part C), Condition C1 and C2 of Development Consent SSD 7075 as modified (refer to **Table 1).** A copy of the original Development Consent SSD 7075, as modified, is provided in **Appendix A**.

For the purpose of this document, the Development is described in:

- The Environmental Impact Statement (EIS) (SLR 2015a) and the appendices contained within;
- The Response to Submissions (RTS) (SLR 2015b) and the appendices contained within; and
- The DA Modification Environmental Assessment (EA) documents and the appendices contained within.

The CEMP has been updated to respond to a new condition of consent – Condition 1A - as a result of Modification 4, as shown in Table 1.

Table 1 – CEMP and Management Plans Development Consent Conditions

Condition No.	Conditions	CEMP Section
SCHEDULE C, Part C Construction Environmental Management Plan		
C1	Prior to the commencement of construction of the Development, the Applicant shall prepare a Construction Environmental Management Plan to the satisfaction of the Secretary. The Plan must:	This Plan
a.	be prepared by a suitably qualified and experienced person(s);	Appendix B
b.	describe all activities to be undertaken on the Site during construction, including a clear indication of construction stages;	Section 2.2
c.	identify the statutory approvals that apply to the Development;	Section 3
d.	outline all environmental management practices and procedures to be followed during construction (e.g. construction traffic management, dust management and construction noise and vibration management), including all reasonable and feasible mitigation measures to protect the amenity of the surrounding environment;	Section 4
e.	detail how the environmental performance of construction will be monitored, and what actions will be taken to address identified adverse environmental impacts;	Sections 4, 7 and 8
f.	describe the roles and responsibilities for all relevant employees involved in construction;	Section 4
g.	include arrangements for community consultation and complaints handling procedures during construction; and	Sections 5 and 7

h.	consolidate the construction related parts of any management plans and monitoring programs required in the conditions of this consent.	Section 4
C1A	Prior to commencement of extended construction hours approved as part of MOD 4, the Applicant must submit a revised Construction Environmental Management Plan to the satisfaction of the Planning Secretary. The plan must be prepared in consultation with the EPA and detail the environmental management practices and procedures to mitigate construction noise impacts during the out of hours construction periods.	This Plan Section 4.5 and Table 17
C2	The Applicant shall carry out the development in accordance with the Construction Environmental Management Plan approved by the Secretary (as revised approved by the Secretary from time to time), unless otherwise agreed by the Secretary.	This Plan
SCHEDULE C, Part C Management Plan Requirements		
C4	The Applicant shall ensure that the environmental management plans/strategies required under this consent are prepared in accordance with any relevant guidelines and include:	Section 4.4, 4.5 and 4.8
i.	detailed baseline data;	Refer to EIS (SLR, 2015a) and RTS (SLR, 2015b)
j.	a description of:	
	(i) the relevant statutory requirements (including any relevant approval, licence or lease conditions);	Section 3 and 4
	(ii) any relevant limits or performance measures/criteria;	Section 4
	(iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the Development or any management measures;	Section 4, 7, and 8
	(iv) the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;	Section 4
k.	a program to monitor and report on the:	
	(i) impacts and environmental performance of the Development;	Section 6
	(ii) effectiveness of any management measures;	Section 5 and 6
	(iii) a contingency plan to manage any unpredicted impacts and their consequences;	Section 4.10 and 8
	(iv) a program to investigate and implement ways to improve the environmental performance of the Development over time;	Section 3.3, 6 and 9
l.	a protocol for managing and reporting any:	
	(i) incidents;	Section 8
	(ii) complaints;	Section 7
	(iii) non-compliances with statutory requirements;	Section 8
	(iv) exceedances of the impact assessment criteria and/or performance	Section 4 and 8

	criteria; and	
	(v) a protocol for periodic review of the plan.	Section 9

In accordance with Development Consent SSD 7075 as modified, a number of CEMP supporting documents are required to be prepared in consultation with specific approval authorities. A Consultation Register and proof of consultation is included in **Appendix C**. Consultation has been undertaken in accordance with the requirements of Schedule B, Condition A8.

The CEMP has also been prepared in accordance with relevant commitments made in the EIS (SLR, 2015a) Statement of Commitments. Commitments that are relevant to this CEMP are included in **Table 2**

Table 2 - Relevant Commitments provided in the EIS Statement of Commitments

EIS Section	Aspect/Commitment	CEMP Section
Section 7.11.5	A Construction Environmental Management Plan (CEMP) will be prepared for the Development, with sub-plans for specific environmental risk areas, including but not limited to noise, dust and traffic issues.	This CEMP

Other construction commitments proposed in the EIS and outlined in the Statement of Commitments have been incorporated in relevant sections of this CEMP. These include mitigation measures, monitoring activities and management strategies.

This CEMP has been prepared in accordance with the *Guideline for the Preparation of Environmental Management Plans* (DPE, 2004). It also addresses comments received from DPE on 26 July 2017 on the original CEMP document, submitted to DPE on 28 June 2017.

1.4 CEMP Objectives

The objectives of the CEMP are to:

- Support construction of the Development in accordance with Conditions C1 and C2 of Development Consent SSD 7075, as modified;
- Ensure compliance with all other relevant regulatory requirements;
- Minimise the environmental impacts of the Development during the construction phase;
- Engage with the community to minimise complaints;
- Maintain a high level of environmental performance through on-going training and inductions;
- Ensure the commitments made in the approvals documentation are fully implemented and/or complied with during the construction phase of the Development; and
- Ensure the environmental risks associated with the construction of the Development are properly managed.

2. Development Description

2.1 Site Description

Development Consent SSD 7075 as modified gives permission for the construction and operation of the Stage 1 Waste Transfer Station with a maximum processing capacity of 300,000 tpa. The key aspects of the Development are:

- General site clearance and earthworks to establish suitable grades for construction;
- A steel framed and clad waste transfer station building with associated offices, amenities and lower level transfer vehicle load-out area;
- A manual sort line within the WTS building for basic resource recovery;
- Fast acting roller shutter doors which will be normally closed;
- Transfer station working floor with concrete and asphalt peripheral roads;
- An active ventilation system and air treatment system with controlled discharge as part of the overall approach to air emissions and odour management;
- Associated infrastructure including all hardstand areas, car park, weighbridges, and sealed roads;
- Ancillaries including perimeter security fencing, security gates, rain water harvesting, fire suppression system, signage, landscaping, drainage and services.

The layout of the WTS is shown in **Figure 1** and the Site Layout for the Concept Plan and Full Site Development is provided in **Figure 2**.

The Development site is located approximately 11 kilometres south-east of Penrith in western Sydney, NSW (see **Figure 3**). It is addressed to 85-87 Quarry Road, Erskine Park NSW, and is identified as Lot 1 in Deposited Plan (DP) 1140063 in the Penrith Local Government Area (LGA). The title comprises approximately 3 hectares. As shown the site is west of and adjacent to the existing Erskine Park Landfill that is located adjacent to the site (Lot 4, DP 1094504).

Sensitive receptors of the Development site are shown on **Figure 4**. The nearest affected residences are located as follows:

- To the west, approximately 850m from the site (RR1);
- To the south, approximately 1.3km from the site (RR2) – this location corresponds to a retirement village;
- To the east, approximately 1.3km from the proposed site (RR3) – this refers to an isolated residence located in the Erskine Business Park; and
- To the north, approximately 850m from the proposed site (RR4).

A new child care centre (CC1) is located approximately 670m to the west of the closest boundary of the Development site.

The nearest potentially affected industrial premises are located:

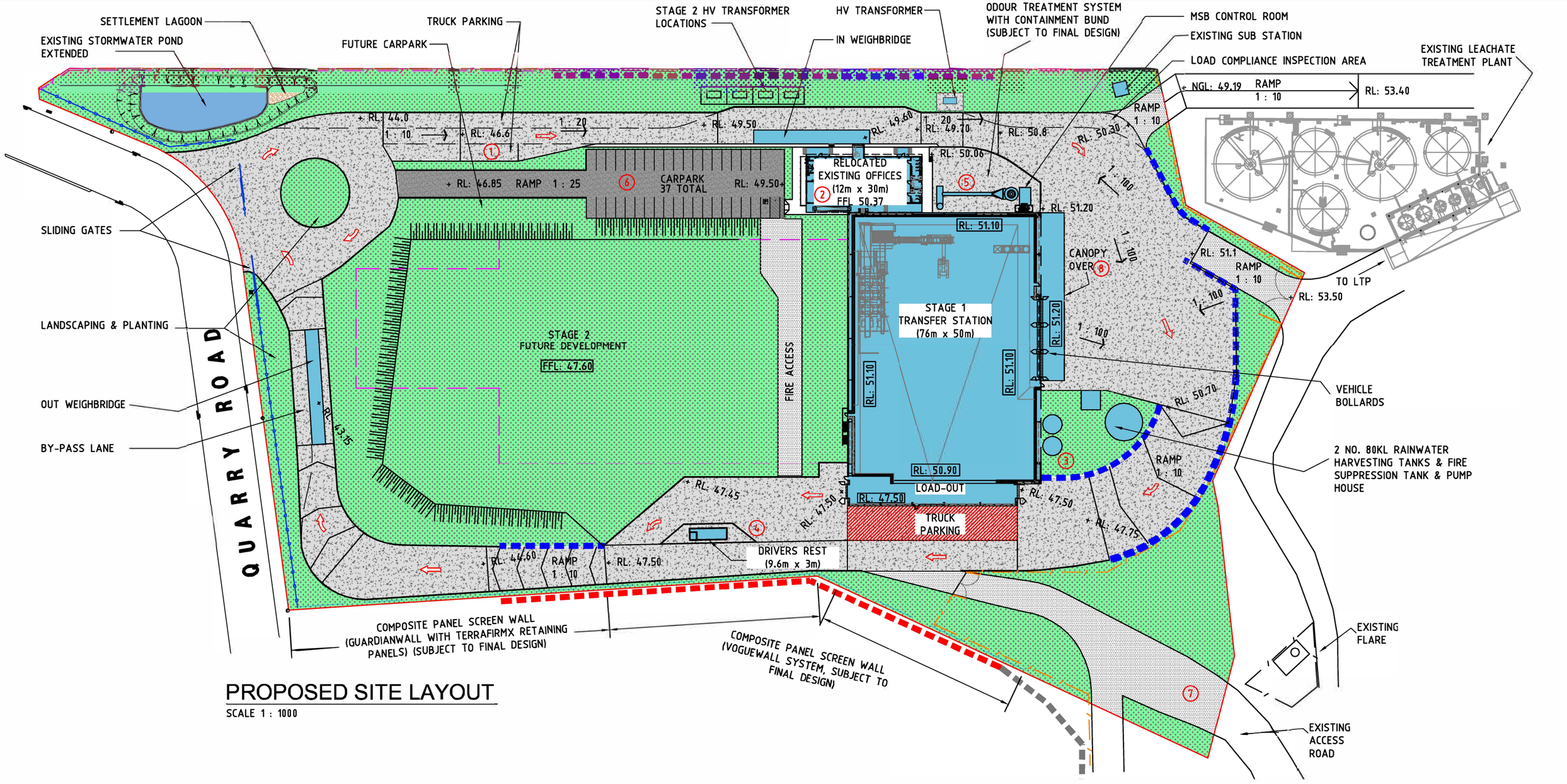
- To the north, approximately 30m to the closest boundary of the site (IR1);
- To the southwest, approximately 50m to the closest boundary (IR2); and
- To the south, approximately 115m to the closest boundary (IR3).

Once operational, the Development will primarily comprise a putrescible Waste Transfer Station with a nominal daily volume of approximately 1,040 tonnes of putrescible waste per day (design capacity 300,000 tonnes per annum [tpa]). However, subject to market factors, initially around 90,000 tpa of putrescible waste will be received at the site.

Waste delivery vehicles will enter the site from the adjoining Quarry Road, weighing on the incoming weighbridge located adjacent to the office. Delivery vehicles then proceed to the eastern side of the building where they align with one of the roller shutter door entrances on the eastern elevation. The vehicles reverse through one of the rapid acting roller shutter doors, discharge their waste and then drive out of the building, down a ramp and proceed to the south of the transfer station towards the outgoing weighbridge, exiting the site onto Quarry Road. The majority of the material received is waste from commercial waste collection trucks, stationary compactor (packer) hooklift loads and side-loader collections (e.g. 240L mobile garbage bin collections from commercial premises).

Waste offloaded on the tipping floor would be separated into two categories; putrescible and non-putrescible incl. wood, masonry, rigid plastics, and old corrugated cardboard. The non-putrescible waste would be sorted for recycling, while the remaining would be consolidated with the putrescible waste and transferred into transfer vehicles by a front-end loader which would lift the material over a wall opening for top loading. Waste will be transferred from site using B-Doubles or single trailers to an appropriately licensed waste management facility in accordance with relevant waste management regulations.

When the RRF is operational, waste deemed suitable (recyclable) would be diverted to the RRF for recycling and recovery of saleable products.



PROPOSED SITE LAYOUT

SCALE 1 : 1000

LEGEND

- DEVELOPMENT BOUNDARY
- ASPHALT HARDSTAND
- CONCRETE HARDSTAND
- GRAVEL HARDSTAND
- LANDSCAPED AREAS
- TRAFFIC DIRECTIONS
- EXISTING FENCELINE
- 1.5M HIGH NEW BLACK PALISADE FENCE
- CHAIN LINK FENCE
- 2.4M HIGH NEW COMPOSITE PANEL SCREEN WALL
- EXISTING RETAINING WALL REMOVED/MODIFIED
- PROPOSED RETAINING WALL

SCHEDULE OF CHANGES

1. ADDITIONAL TRUCK PARKING TO NTH DRIVEWAY
2. OFFICE LAYOUT REVISED
3. PROPOSED STAGE 2 ADDITION DELETED, 2x80KL RW TANKS NOTED
4. DRIVERS REST ADDED TO STH DRIVEWAY
5. NTH ELEVATION DUCT WORK REVISED
6. ADDITIONAL STAGE 1 CAR PARKING
7. EXISTING ACCESS ROAD IN STH WEST RETAINED
8. EAST CANOPY RAISED BY 500MM

PROJECT :

ERSKINE PARK RMF - STAGE 1
WASTE TRANSFER STATION
FOR
CLEANAWAY WASTE MANAGEMENT LTD

CLEANAWAY
Making a sustainable future possible

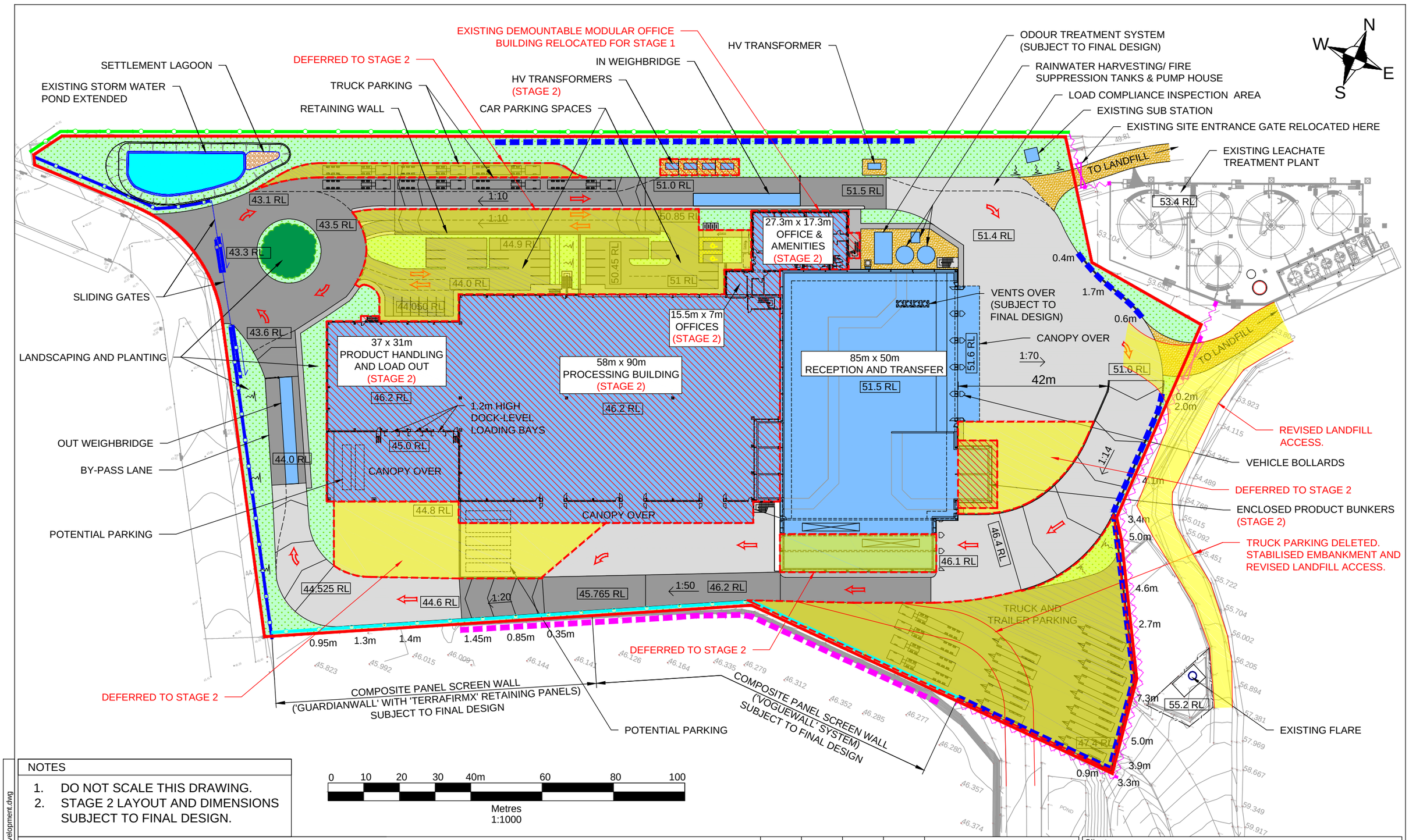
ARCHITECTS DOCUMENTATION:

NICHOLAS & ALEXANDER ARCHITECTS
37 Bevan Street, Albert Park, 3206
Tel: 9696 5822
Email: naarch@bigpond.net.au
A.C.N. 070 432 932

PROPOSED SITE LAYOUT - STAGE 1 - MOD 3 FIGURE 1

DEVELOPMENT CONSENT

DATE	MARCH 2018
SCALE	AS SHOWN @ A3
PLOT SCALE	1 : 1
DRWG. No.	17567
DOCUMENTATION	JH
DRAWN	JH
CHECKED	ND
SHEET. No.	003
REV.	19



NOTES

1. DO NOT SCALE THIS DRAWING.
2. STAGE 2 LAYOUT AND DIMENSIONS SUBJECT TO FINAL DESIGN.

0 10 20 30 40m 60 80 100

Metres
1:1000

LEGEND

- DEVELOPMENT BOUNDARY
- GRAVEL HARDSTANDING
- EXISTING FENCELINE
- 2.4m HIGH NEW COMPOSITE PANEL SCREEN WALL
- ASPHALT HARDSTANDING
- LANDSCAPED AREAS
- 1.8m HIGH NEW BLACK PALISADE FENCE
- EXISTING RETAINING WALL REMOVED/ MODIFIED
- CONCRETE HARDSTANDING
- TRAFFIC DIRECTION
- CHAIN LINK FENCE WITH GATE
- PROPOSED BOUNDARY RETAINING WALL

Revision	Drawn By	Chkd By	Date	Comments
0	DH	LN	07.06.17	DEVELOPMENT CONSENT

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Client: CLEANAWAY WASTE MANAGEMENT LTD.

Project: ERSKINE PARK RMF, STAGE 2

Drawing: **SITE LAYOUT - CONCEPT PLAN FULL SITE DEVELOPMENT**

Date: JUNE 2017

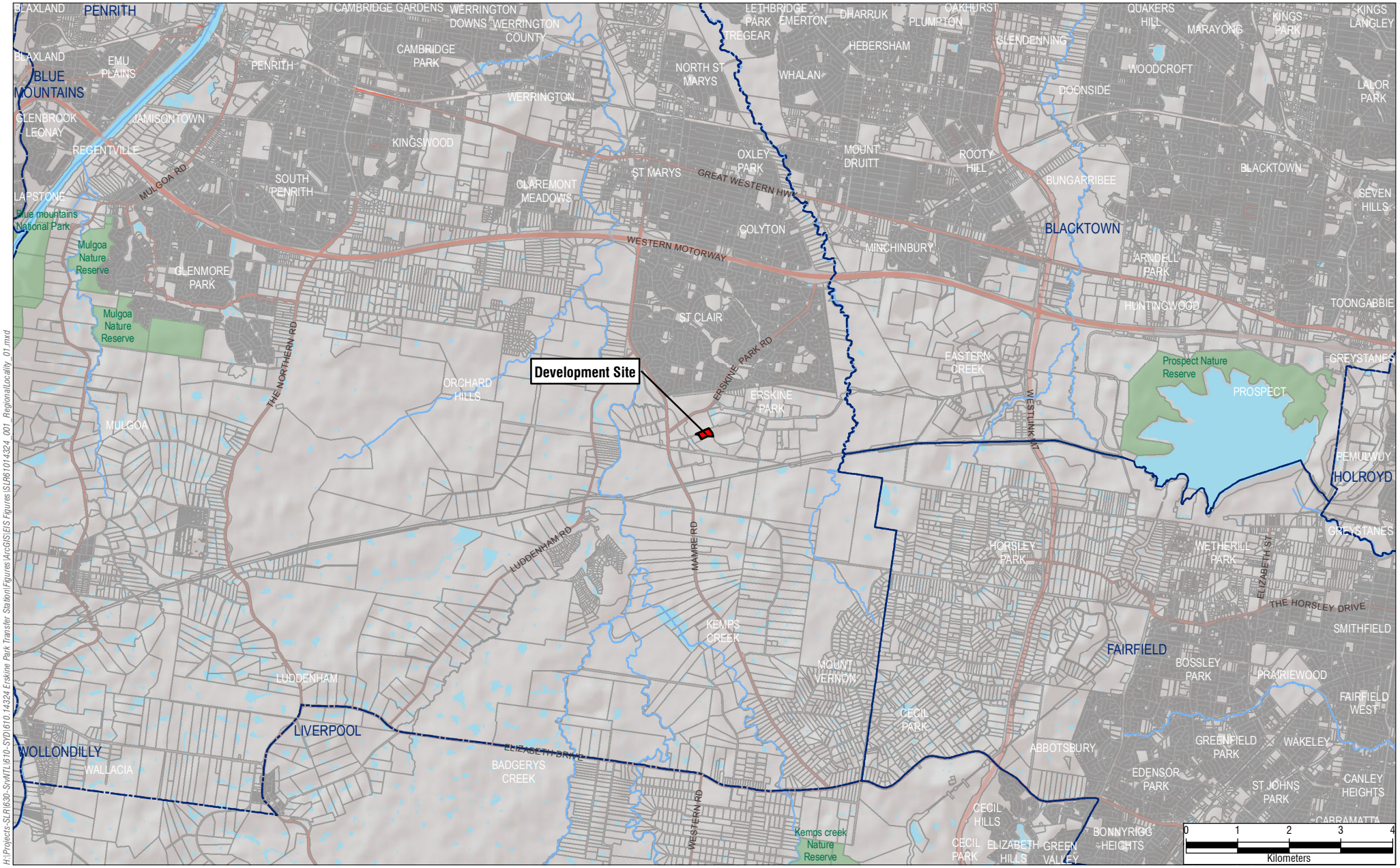
Drawing Number: **Figure 2**

Revision: **0**

Scale: 1:1000 @ A3

DEVELOPMENT CONSENT

03561.00024.03.103.0 - Site Layout Overall Development.dwg



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SLR

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Project No.:	610.14324
Date:	11/08/2015
Drawn by:	KC
Scale:	1:100,000
Sheet Size:	A4
Projection:	GDA 1994 MGA Zone 56

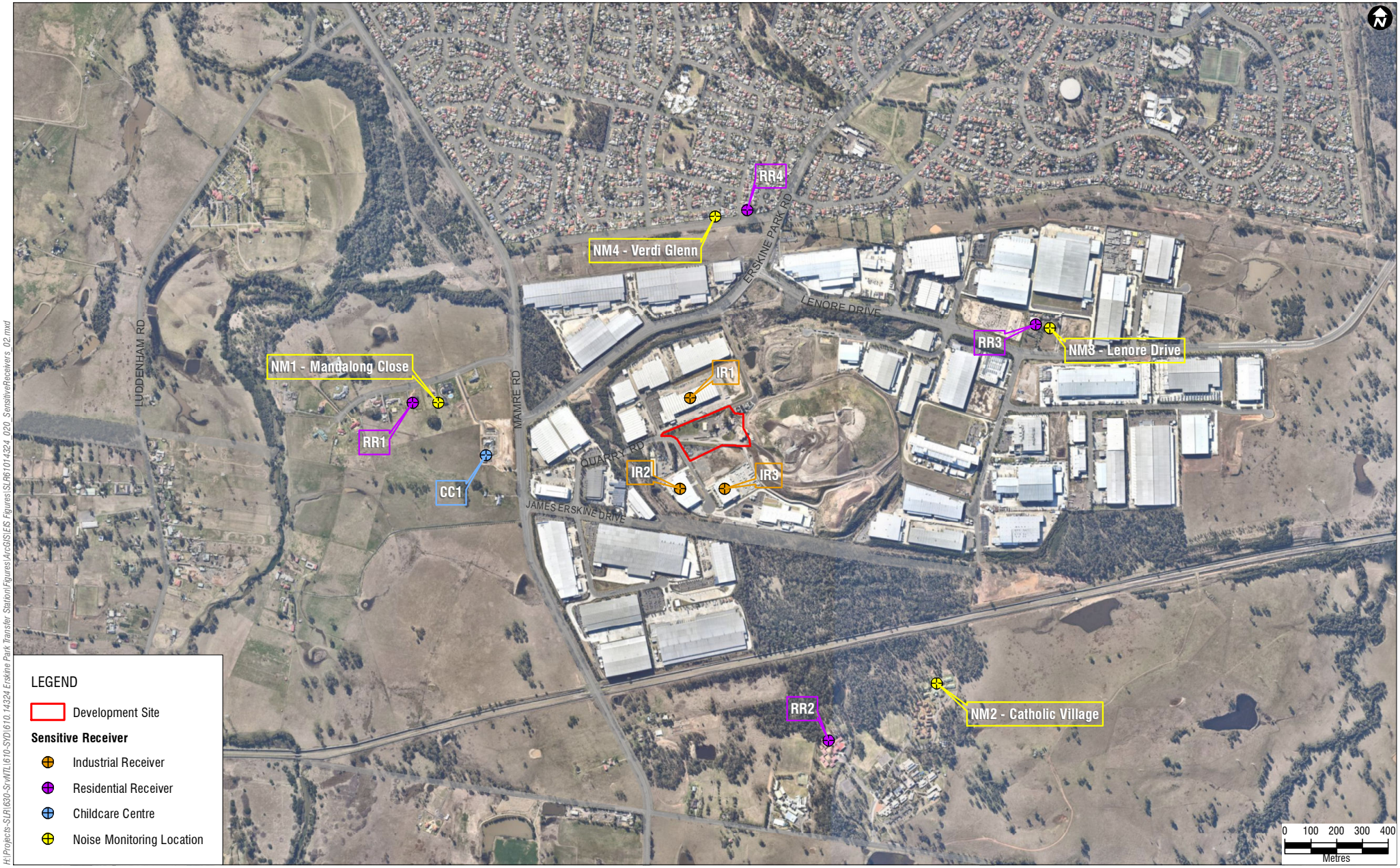
Notes:
1. All features are approximate only and subject to detailed survey.
2. Aerial Imagery courtesy Nearmap.
3. DCDB courtesy NSW LPI.

Transpacific Industries Group LTD

Erskine Park Waste Transfer Facility

Site Location in Regional Context

FIGURE 3



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Project No.:	610.14324
Date:	10/09/2015
Drawn by:	KC
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Projection:	GDA 1994 MGA Zone 56

Notes:
1. All features are approximate only and subject to detailed survey.
2. Aerial Imagery courtesy Nearmap.
3. DCDB courtesy NSW LPI.

Transpacific Industries Group LTD

Erskine Park Waste Transfer Facility

Site Location and Sensitive Receptors

FIGURE 4

2.2 Construction Activities

Traditional methods of construction will be employed by a contractor to develop the facility. Consideration will be given to stage construction of access ways and weighbridges, prior to removal of existing structures, to ensure business continuity for existing landfilling operations, and access for post-closure rehabilitation activities. Approximately 30 to 50 construction workers will be employed during the construction phase of the Development.

Construction works have commenced on site under the approved SSD 7075 and includes earthworks and demolition of buildings, car parks, sheds, laydown areas, weighbridge and sealed roads and clearing of minor vegetation.

Construction activities will include the following elements:

Site Clearance, Earthworks and Preparation

Site demolition will include heavy duty tracked excavators and breakers to remove existing concrete and pavement on site and deeper excavation to remove existing building foundations. Concrete will be crushed off-site, where possible, for reuse in construction or sent off site for recycling, whilst steel will be removed from site for recycling.

Cranes will be utilised on site to remove above ground structures, and during the building erection and installation of the structural steel elements.

Heavy earthmoving plant will be utilised to excavate and prepare site levels, and to transport excess material to the existing landfill (e.g. tracked excavators, wheeled loaders, dump trucks).

Significant earthworks will largely comprise excavation to reduce levels of the site. A recent ground investigation has identified made ground to a depth of 3.0m to 5.0m, the reduced level of the transfer building is 50.0m to reduce the depth of excavation and foundations required for founding onto competent ground. This platform level will require a reduction in ground level which will produce surplus material of approximately 50,000m^3; this will be transported to a stockpile within (nominally) 300m of the transfer station site for later use as material for the closure of the nearby landfill (i.e. it would not require transportation outside of the overall site).

Retaining walls and substructure will require excavation, fixing of steel bar reinforcement, formwork and concrete placement with concrete pumps, delivery vehicles and cranage.

The sewer and water line will be temporarily disconnected to allow construction activities to be undertaken. Temporary septic tanks and a temporary water line will be installed and utilised while these disconnections are in place. During the removal of the sewer and water system, demolition materials such as concrete will be sent off site for recycling.

Building Construction

The installation of site services will include trenching, laying of pipework and ducting, placement of stone and concrete surrounds and backfilling in layers with a vibrating wheeled roller.

Building foundations will require temporary works in the form of excavation supports (where required), placement of mass concrete and reinforced concrete foundations. Reinforced concrete foundations and columns are incorporated in the tunnel structure detailed design.

For the steel frame superstructure, heavy delivery vehicles and cranage will be required for delivery, unloading and erection of the steel members. Scaffolding is required for roof, wall cladding and installation of guttering.

Granular capping material will be placed on top of the concrete slab for internal floor slab construction. This additional granular layer increases durability of the slab and provides additional protection from chemical attack from leachates. Concrete poured in bays together with hot rolled asphalt will be laid to form road pavements and ramps.

The weighbridge decks will be installed on concrete foundations and will be delivered to site on a large flatbed trailer. The weighbridges will be craned into position from the flatbed trailer onto the concrete foundations.

The existing transportable offices on site will be moved and re-used as interim offices.

Building services, such as lighting (internal and external), ventilation and fire/water services installation will typically be retrofitted once the main superstructure has been installed.

Construction Materials
A Building and Material Schedule has been prepared for the Development and is contained within **Appendix D**. The Schedule provides an estimation of the type and quantity of materials that will be used for the construction of Stage 1 of the Development. The Penrith City Council Development Control Plan (DCP) has no requirements for Building and Material Schedules.

Construction Staging and Schedule
Construction will be staged to maintain continuous access to the adjacent landfill site, enabling continued operation and closure.

Construction will be undertaken in a number of key stages, including:

- Award of Contract;
- Detailed Design and Approvals;
- Demolition and civil works;
- Re-locate and prepare office block;
- Construct Waste Transfer Station;
- External Works; and
- Commissioning.

Construction Schedule
A construction schedule is provided in **Appendix E**. Cleanaway commenced construction in November 2017. Construction is expected to conclude on 16 December 2018.

Construction Hours
In accordance with Schedule C (Part B), Condition B28 of Development Consent SSD 7075, as modified, the construction hours for the Development are listed in **Table 3**. All construction activities will occur within the hours listed in **Table 3**.

Table 3 - Construction Hours

Activity	Day	Hours
Construction	Monday - Friday	5 am to 6 pm
	Saturday	5 am to 5 pm
	Sunday & Public Holidays	Nil

2.3 Key Contact Details

Table 4 lists the key contacts during the construction phase of the Development.
Table 4 - Construction Contact Details

Location / Personnel	Contact Details
Cleanaway - Erskine Park Site	Ph: 0466 442 834 Email: paul.antony@cleanaway.com.au
Cleanaway - Customer Inquiries	Ph: 13 13 39

Location / Personnel	Contact Details
Cleanaway - Emergency Spills Response	Ph: 1800 774 557 (1800 SPILLS)
Cleanaway - Complaints and Feedback	Ph: 1800 213 753
Construction company	TBD

Table 5 lists the contact details for the regulatory authorities that have an interest in the construction phase of the Development.

Table 5 - Regulatory Authority Contacts List

Regulatory Authority	Contact Details
Department of Planning and Environment	
Sydney Office	1300 305 695
Environment Protection Authority (EPA)	
Environment Line	Ph: 131 555 or 02 9995 5555 Email: info@epa.nsw.gov.au
Parramatta Office	Ph: 02 9995 5000
Office of Environment and Heritage (OEH)	
Heritage Division	Ph: 131 555 or 02 9995 5555 Email: info@environment.nsw.gov.au
Parramatta Regional Operations	Ph: 02 9995 5000
Penrith City Council	
Penrith Office	Ph: 02 4732 7777 Email: council@penrith.city
NSW Health	
North Sydney Office	Ph: 02 9391 9000
WorkCover NSW	
Incident Notification Hotline	Ph: 131 050
Fire and Rescue NSW	
St Marys Fire Station	Ph: 02 9623 3897
Emergency Services	
NSW Police Fire and Rescue NSW NSW Ambulance Service	Ph: 000

3. Environmental Management Framework

3.1 Development Consent

The Development will be constructed in accordance with Development Consent SSD 7075, as modified, and in accordance with the other documents referenced under Condition A1 of the Consent:

- The Staged Development Application (SSD 7075);
- EIS (SLR 2015a);
- The RTS (SLR 2015b);
- The site layout plan and elevations attached to the Development Consent as Appendix 1 and 2, which have been sourced from the EIS (SLR 2015a) and RTS (SLR 2015b); and
- The Management and Mitigation Measures attached to the Development Consent as Appendix 3, which have been replicated from the EIS (SLR 2015a).

If there is any inconsistency between the plans and documentation referred to in Condition A1, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of Development Consent SSD 7075, as modified, prevail to the extent of any inconsistency.

3.2 Environmental Protection Licence (EPL)

An Environmental Protection Licence (EPL) 20986 was obtained from EPA on the 18 of September 2017 to allow for construction of the WTS (refer to **Appendix F**).

A variation to the EPL to support the operation of the WTS will be undertaken prior to the operation of the WTS.

3.3 Water Licence – DPI Water

In the event that groundwater is intercepted during construction a water licence will be obtained from the Department of Primary Industries (DPI) Water. The water licence will allow for a water interference activity to take place, including extraction (dewatering).

3.4 Permits – Oversized and Overmass Loads

At times there may be a requirement to carry oversized and overmass loads in to and from the site. A separate permit will be required to carry these loads, as per normal load restrictions. Applications for such permits will be submitted to the Roads and Maritime Services (RMS) for review and approval, as required. Generally, loads over 2.5m wide require a permit.

3.5 Sydney Water Approvals

In accordance with Condition B23 of the Development Consent SSD 7075, as modified, a Section 73 Compliance Certificate covering water and sewer requirements for the Development has been obtained from Sydney Water for the site (see **Appendix G**). Building Plan approval was also obtained from Sydney Water (see **Appendix G**).

A Trade Waste Agreement already exists between Cleanaway and Sydney Water for the Development site (landfill) (see **Appendix G**), allowing for a maximum discharge volume of 1036kL/day and average daily discharge of 750kL/day average. This is unlikely to change with the construction of the Development.

3.6 Principal Contractor Approvals

The Principal Contractor has obtained approvals from Endeavour Energy for an upgrade of electrical infrastructure.

The Principal Contractor has also obtained relevant approvals for temporary infrastructure/utilities and relevant approvals for crushing of concrete, tiles and bricks

3.7 Inductions and Training

Cleanaway Site Management / Principal Contractor will ensure that all employees and contractors involved with the construction of the Development are suitably inducted and trained prior to commencing any work on site. Training in relation to environmental responsibilities and implementation of this CEMP will take place initially through a site induction and then on an on-going basis through "toolbox talks" (or similar).

The topics to be covered during the induction and toolbox talks include:

- General site maintenance and management expectations and requirements;
- Traffic management;
- Familiarisation with site environmental management and mitigation measures in this CEMP;
- The environmental management commitments and responsibilities in this CEMP;
- Waste avoidance and management strategies;
- The unexpected finds protocol for Aboriginal heritage items/sites as outlined in **Section 4.8**;
- Appropriate response and management of complaints received from the public, government agencies or other stakeholders in accordance with the protocol detailed in **Section 7**; and
- Appropriate response and management of environmental incidents in accordance with the protocol detailed in **Section 8**.

Records of all inductions and training undertaken will be recorded in an Environment Training Register.

4. Environmental Management Measures

Key environmental issues associated with the Development are identified and addressed in the EIS (SLR 2015a), RTS (SLR 2015b) and EA (SLR 2017), and a suite of development design, best management practices and mitigation measures have been committed to minimise the potential for adverse impact on the local environment and surrounding community. The environmental mitigation and management measures relevant to the construction phase of the Development are provided in the following sections

4.1 General

Table 6 outlines the general environmental management and mitigation measures that will be implemented throughout the construction phase of the Development to minimise the potential for adverse impacts on the local environment and surrounding receptors.

Table 6 - General Construction Management and Mitigation Measures

Mitigation Measures	Responsibility	Timing / Frequency
Pests, vermin and declared noxious weeds will be controlled on site by appropriate means, such as spraying.	Cleanaway Site Management	On-going
All new buildings and structures, and any alterations or additions to existing buildings and structures will be constructed in accordance with the relevant requirements of the *Building Code of Australia*.	Cleanaway Site Management / Principal Contractor	During construction
Adequate fire fire-fighting capacity will be maintained on site.	Cleanaway Site Management	On-going
A perimeter fence and security gates will be installed, maintained and locked at all times when the site is unattended.	Cleanaway Site Management / Principal Contractor	On-going
Employees and contractors involved with the construction of the Development will be suitably inducted and trained prior to commencing any work on site.		Inductions prior to construction. Regular / as needed toolbox talks.
Contact details will be displayed on signage at the entrance to the site.	Cleanaway Site Management / Principal Contractor	On-going

4.2 Air Quality, Odour and Dust

An Odour Management Plan has been prepared for the Development and is attached as **Appendix H**.

The Odour Management Plan lists the management and mitigation measures that will be implemented during and upon completion of construction of the Development to minimise the impacts of odour and dust on air quality.

Once the Principal Contractor is appointed, the site layout will be planned to ensure that machinery and dust causing activities are located away from receptors, wherever possible.

In accordance with EPL 4865, dust monitoring is undertaken at the Erskine Park Landfill. Dust deposition monitoring is undertaken at six (6) dust gauges (D1, D2, D4, D6 D7 and D8) around the perimeter of the landfill (see **Figure 5** below). Average dust levels experienced at the site over the past year, based on dust deposition data (TSP), is 1.18 g/m2/month. The EPA goals for allowable dust deposition are provided in **Table 7**. The site complies with maximum total allowable deposited dust levels.

Table 7 EPA Goals for Allowable Dust Deposition

Averaging Period	Maximum Increase in Deposited Dust Level	Maximum Total Deposited Dust Level
Annual	2 g/m2/month	4 g/m2/month

Source: (NSW DEC, 2005)

The dust monitoring program will be continued throughout the construction of the Development. Two additional dust gauges will be set-up at the entrance of the Development site and at the wheel wash. Dust deposition will be monitored at these sites on a monthly basis in accordance with Australian standard 3580.10.1-1991. Samples collected from the dust gauges will be analysed for total solids, soluble matter, total insoluble matter, combustible matter and ash content. A weather station is currently operated at the Development site and will continue to be operated during construction for interpretation of air quality monitoring results.

SLR (SLR 2015) prepared a risk-based assessment of dust impacts for the Stage 1 Development EIS. The assessment determined the category of risk associated with construction activities and proposed a comprehensive set of mitigation measures (refer to **Table 8**). With the implementation of these mitigation measures it is expected that the EPA goals for allowable dust deposition will not be exceeded. If the EPA goals are exceeded, then remedial measures will be implemented (refer to **Section 6.1**).

H:\Projects-SLR\675-PER\610-SYD\610.16277 - Erskine Park\GIS\SLR_610_16277_002_01.mxd

SD003
CS7
D6
BH18
BH19
CS1
D4
GS6
BH20
D8
BH15B
BH16A
BH5
LP001
D2
BH16B
BH16A
17E
17D
GS9
Weather Station
Auxiliary Riser
GS2
SD004
BH21
SD002
BH23
GS3
BH22
BH24
GS8
GS4
D7
D1

LEGEND

- Weather Station
- Groundwater Well
- Surface Water Sample
- Leachate Locations
- Dust Gauge
- Gas Well
- Leachate Treatment Plant

Notes:
1. Aerial imagery courtesy of Nearmap 9/05/2012
2. All features are approximate only and subject to detailed survey
3. Contours represent final approved landform

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Date:	15-Mar-2017
Drawn by:	AB
Scale:	1:4,000
Sheet Size:	A4
Projection:	GDA94 MGA zone 56

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Cleanaway Waste Management Ltd

Landfill Closure Plan
Erskine Park Landfill

Location of Monitoring Sites

FIGURE 5

Table 8 - Air Quality Construction Management and Mitigation Measures

Control	Responsibility	Timing / Frequency
All vehicles on site will not exceed a speed of 10 kilometres per hour.	Cleanaway Site Management / Principal Contractor / Subcontractors	On-going
All construction vehicles leaving the site will be cleaned of dirt, sand and other materials before they leave the site, to avoid tracking the materials on public roads.	Cleanaway Site Management / Principal Contractor / Subcontractors	On-going
The premises will be maintained in a condition which minimises or prevents the emission of dust from the premises.		
Trucks entering and leaving the premises that are carrying loads will be covered at all times.		
The Air Pollution Control System will be installed and able to operate before the facility accepts any waste.	Cleanaway Site Management / Principal Contractor	Upon completion of construction
Barriers will be erected around the site boundary that are at least as high as any stockpiles on site (at least 2 metres high).		Prior to the commencement of construction
Where there is a high potential for dust production and the site is active for an extensive period the site will be enclosed with a suitable barrier.		On-going
Site fencing, barriers and scaffolding will be kept clean using wet methods.		
Long-term stockpiles will be seeded or fenced.		
The use of diesel or petrol-powered generators will be avoided where practicable and mains electricity or battery powered equipment will be used. .		
Cutting, grinding or sawing equipment will only be used in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.		
Adequate water supply will be provided on site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.	Cleanaway Site Management / Principal Contractor	On-going
Dust-generating construction activities will be amended during adverse wind conditions blowing in the direction of sensitive receptors.		

Control	Responsibility	Timing / Frequency
Earthworks and exposed areas/soil stockpiles will be re-vegetated as soon as possible to stabilise surfaces.		
Hessian, mulches or tackifiers will be used where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.		
Coverings will only be removed in small areas during work (not all at once).		
Sand and other aggregates will be stored in bunded areas and not allowed to dry out.		
Premixed concrete will be used in this project. However, in the event of requirement for site prepared concrete bulk cement and other fine powder materials will be delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.		
Bags of smaller volume supplies of fine powder materials will be sealed after use and stored appropriately to prevent dust.		
Dry sweeping of large areas will be avoided.		
The integrity of on-site haul routes will be maintained and any necessary repairs will be undertaken to the surface as soon as reasonably practicable.		
All inspections of haul routes and any subsequent action will be recorded in a site log book.		
A wheel washing system will be implemented (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).		
There will be adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.	Cleanaway Site Management / Principal Contractor	On-going

4.3 Traffic and Access

lists the management and mitigation measures that will be implemented during and upon completion of construction of the Development to minimise the impacts of traffic and access.

Table 9 - Traffic Construction Management and Mitigation Measures

Control	Responsibility	Timing / Frequency
Site access, driveways and parking areas will be constructed in accordance with the latest versions of Australian Standards AS 2890.1, AS 2890.2, AS 2890.6 and AS 1428.1.	Cleanaway Site Management / Principal Contractor	During construction

Control	Responsibility	Timing / Frequency
The swept path of the longest vehicle entering and exiting the subject site, as well as manoeuvrability through the site, will be constructed in accordance with AUSTROADS Guide to Road Design.	Cleanaway Site Management / Principal Contractor	During construction
All vehicles will enter and leave the site in a forward direction	Cleanaway Site Management / Principal Contractor / Subcontractors/ Material Suppliers	On-going
Signage will be installed to ensure traffic from the adjacent landfill provides right-of-way to construction traffic.	Cleanaway Site Management / Principal Contractor	Prior to construction
Designated pedestrian access will be provided from Quarry Road to the offices.	Cleanaway Site Management / Principal Contractor	Implemented during construction and on-going
Any existing unnecessary property access will be removed, the kerb reinstated to suit the existing kerb, and the verge area reinstated with grass seeded topsoil or turf, which will be addressed in further designed stages.		
All vehicles will turn off their engines when stationary (no idling), where practicable.	Principal Contractor / Subcontractors/ Material Suppliers	On-going
Methods of communication will be by two-way radio, mobile phone, visual and verbal. Site supervisors, traffic controllers and employees/contractors (as appropriate) will have a two-way radio to be contactable at all times. The communication channels for two-way radio will be advised.	Cleanaway Site Management / Principal Contractor/ Subcontractors/ Material Suppliers	

A Construction Traffic Management Plan (TMP) has been prepared for the Development and is provided in the sections below. It provides further details regarding management and mitigation measures to be undertaken to reduce traffic impacts during construction.

4.4 Traffic Management Plan

Plan Objectives

The objectives of this Traffic Management Plan are to:

- Describe the measures that would be implemented to manage potential traffic impacts resulting from the construction of the Development;
- Provide a means of monitoring and reporting on the effectiveness of traffic impact mitigation measures; and
- Satisfy the requirements of Development Consent SSD 7075, as modified, and other project conditions and commitments.

Consultation

This Construction Traffic Management Plan was not prepared in consultation with the appointed builder as one had not been appointed at the time of preparing this Management plan. Upon appointment of the principal contractor this Management Plan will be revised, if deemed necessary.

Regulatory Requirements

Relevant Legislation

This Traffic Management Plan has been completed in accordance with the following relevant legislative requirements, government policies and guidelines:

- *NSW Protection of the Environment Operations Act 1997* (POEO Act);
- *Heavy Vehicle National Law* (NSW) 2013;
- *NSW Road Transport* (General*) Regulation* 2013;
- *NSW Transport Administration Act 1988*; and
- *NSW Road Transport (Safety and Traffic Management) Act 1999.*

Project Approval Conditions

Project approval conditions relevant to this Traffic Management Plan are provided in

above.

Statement of Commitments

Commitments made in the EIS (SLR, 2015a) Statement of Commitments relevant to this Management Plan are provided in **Table 9** above.

Relevant Guidelines, Standards and Notices

This document has been prepared in accordance with the following guidelines and standards:

- *Guide to Traffic Generating Developments RMS* (2013);
- *Heavy Vehicle Driver Handbook* (RMS, 2016); and
- *Additional Access Conditions for Oversize and Overmass Heavy Vehicles and Loads* (RMS, 2015).

Existing Traffic Environment

Site Access

The Development site has two vehicular crossings on Quarry Road, including:

- Driveway 1: a 7.0 metre wide entry/exit driveway leading to the staff and visitor parking area associated with the Cleanaway Office; and

- Driveway 2: a 14.0 metre entry/exit driveway leading to the weighbridges and waste transfer area.

Road Network

The road hierarchy for the existing road network is provided below.

Mamre Road:	An RMS Main Road (MR 536) that generally traverses in a north south direction between the Great Western Highway to the north and Elizabeth Drive to the south. Mamre Road carries approximately 14,000 vehicles per day in the vicinity of the subject site. It generally has a two-lane, two-way undivided cross-section south of the M4 Western Motorway, with auxiliary turn lanes at key Intersections. It is posted 80km/hr in the vicinity of the site.
Erskine Park Road:	An RMS Main Road (MR 629) that generally traverses in a north south direction between the M4 Western Motorway to the north and Mamre Road to the south. Erskine Park Road carries approximately 28,000 vehicles per day in proximity to the subject site. It has a four-lane, two-way cross-section in the vicinity of the site, and is posted as 70km/hr.
Lenore Drive:	A relatively recently constructed RMS road (completed in mid-2013) that traverses in an east-west direction, connecting from Westlink M7 (via Old Wallgrove Road) to the east, to Erskine Park Road to the west. This road provides a vital link to the western Sydney employment area and has a posted speed of 80km/hr. Lenore Drive generally has a four-lane, two-way divided cross-section with auxiliary turn lanes provided along its length.
James Erskine Drive:	A local road that traverses in an east-west direction between Mamre Road to the west and its termination to the east the Quarry Road roundabout. James Erskine Drive is subject to a 50km/h speed zoning and generally carries two lanes of traffic in either direction.
Quarry Road:	A local road that extends from James Erskine Drive to its termination to the south of the subject site. Quarry Road is subject to a 50km/h speed zoning and carries a single lane of traffic in either direction within an undivided carriageway. Access to the site is proposed via Quarry Site.

Approved Heavy Vehicle Routes

Access to the site from the arterial road network (the M4 Western Motorway and Westlink M7) via a number of approved heavy vehicle routes on the following roads:

- Quarry Road;
- James Erskine Drive;
- Mamre Road;

- Erskine Park Road;
- Lenore Drive; and
- Old Wallgrove Road.

Key Intersections

The key intersections in proximity to the site include:

- Mamre Road / Erskine Park Road;
- Mamre Road / James Erskine Drive; and
- Quarry Road / James Erskine Drive.

Pedestrian Crossings

Signalised pedestrian crossings are provided on all three approaches to the Mamre Road / Erskine Park Road intersection, with a zebra crossing on the left turn slip lane. Signalised pedestrian crossings are also provided on the southern and eastern approaches of the Mamre Road / James Erskine Drive intersection, with zebra crossings on the left turn slip lanes.

Car parking

The Development site has a car park used by staff working in the Cleanaway Office and at the Erskine Park Landfill.

Construction Overview

A construction overview that includes a construction schedule and proposed hours of work is provided in **Section 2.2** of the CEMP.

Construction Traffic

External plant and equipment coming to the Development site during construction will include delivery vehicles, light vehicles and construction equipment. Machinery and equipment to be used during construction may include:

- Excavators;
- Breakers;
- Dozers;
- Cranes;
- Loaders;
- Concrete trucks;
- Water tanker;
- Trucks;
- Tipping trucks; and
- Dump trucks.

The EIS (SLR 2015a) incorporated a Traffic Impact Assessment (TIA) for operational traffic. A TIA was not completed for the construction stage of the Development; therefore, an estimate of construction traffic volumes was not prepared. However, the TIA did indicate that given the scale of the Development site, it is anticipated that all construction activities would be able to be contained on the site (SLR 2015a). In addition, the TIA indicated that it is expected that construction vehicle manoeuvring would also be accommodated on-site, to enable forward entry to and exit from the site for all construction vehicles (SLR 2015a). Considering this, impacts from heavy vehicles and construction equipment on the immediate road network are anticipated to be minimal.

With 30 to 50 people employed on site during construction, there is anticipated that 60 to 100 light vehicles movements per day will access/leave the site.

If excessive construction traffic occurs during the construction of the Development, and/or parking or queuing of construction traffic inhibits local traffic then Cleanaway Site Management / Principal Contractor will determine appropriate remedial action (i.e. ride sharing program or other).

Traffic Management Activities and Controls

The management measures provided in the below sections aim to reduce the impact of construction traffic.

Drivers' Code of Conduct

The following Code of Conduct must be observed by drivers at all times:

- All vehicles on site will not exceed a speed of 10 kilometres per hour;
- All construction vehicles leaving the site will be cleaned of dirt, sand and other materials before they leave the site, to avoid tracking the materials on public roads;
- Trucks entering and leaving the premises that are carrying loads will be covered at all times;
- Bulk cement and other fine powder materials will be delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery;
- Trucks leaving the site must use the wheel washing system to dislodge accumulated dust and mud, where reasonably practicable;
- All vehicles will turn off their engines when stationary (no idling), where reasonably practicable;
- All drivers must undertake a vehicle pre-start inspection before the start of each shift and ensure the vehicle is functioning properly;
- Trucks must not transport greater than their legal Gross Vehicle Mass (GVM) while hauling to or from the Development, in accordance with the NSW Road Transport (General) Regulation 2005;
- Transportation must be undertaken in accordance with the relevant RMS Standards;
- All incidents must be reported immediately to appropriate persons;
- Driver fatigue must be managed appropriately;
- All RMS speed limits must be observed;
- A safe distance must be maintained behind other trucks, vehicles and plant when driving to, within and when leaving the site;
- Overtaking on any external roadways will only occur in designated overtaking lanes, and only when safe to do so;
- Use of two-way radios must be professional at all times. No obscene language is to be used;
- Persons climbing on or off vehicles must make use of foot and handholds provided and must not jump from moving vehicles;
- Persons in charge of the vehicle must ensure the vehicle is secure and parking brakes are engaged before climbing out of the vehicle;
- Plant and equipment selection for use on the project should consider acoustic performance, and be fitted with silencers, where practical;
- Trucks to limit the use of compression release engine braking, where safe to do so;
- All loading/delivery will be completed within the site;
- No construction vehicles will be permitted to stand on the external public road network;
- All construction light vehicles will be parked within the car park on site;

- For the purpose of oversize vehicles entering and leaving the site appropriate controls and road traffic requirements will be followed;
- All vehicles, trucks and plant are maintained in accordance with the manufacturer's specification to comply with all relevant regulations;
- Ensure that proper consideration is made for pedestrian traffic;
- All vehicles will enter and leave the site in a forward direction and
- All vehicles and plant are operated in a proper and efficient manner.

Construction Traffic Access / Egress and Circulation

Trucks will use approved heavy vehicle routes when accessing and egressing the site.

Construction vehicles will access the site via existing Driveway 1 or Driveway 2 until suitable alternate access is constructed. The Principal Contractor will establish preferred circulation for construction vehicles and will confirm frequency of construction vehicles arrivals and departures, once they are appointed.

Pedestrian Traffic

Pedestrians will be encouraged to use pedestrian crossings and to remain within designated pedestrian access ways as they move to and from, and within the site.

Road Modifications

Modifications to existing on-street car parking arrangements should not be required to accommodate construction activities. If any modifications are required then appropriate approvals will be sought, as required.

Construction and Delivery Traffic Scheduling

Construction traffic and delivery traffic will only be permitted between the hours of 5:00 am and 6:00 pm Monday to Friday, and Saturday 5:00 am to 5:00 pm. Site personnel arriving and leaving the work site will generally be before and after these times.

Where possible, delivery times for large items of plant, equipment or structures will be managed to avoid peak traffic periods.

Adherence to Speed Limits

All drivers will drive at a safe speed relevant to the existing conditions, including location and type of vehicle being driven. Conditions such as reduced visibility, rain, slippery or rough conditions must be taken into account and speeds reduced accordingly. All RMS and construction site speed limits must be observed.

Emergency vehicles may only exceed the posted speed limits in emergency situations provided that:

- A declared emergency situation exists;
- Road conditions permit; and
- Doing so will not endanger anyone.

Safety Procedures

Safety hazards including traffic hazards and driver fatigue will be managed through occupational health and safety procedures. Management of fatigue is outlined in the section below.

Fatigue Management Procedures

The following fatigue management procedures have been outlined in accordance with the *Heavy Vehicle National Law (NSW) 2013*, which is applicable to all heavy trucks that have a GVM of more than 12 tonnes, or when a combination of the GVM is more than 12 tonnes.

The RMS has provided three fatigue management procedures for heavy vehicle drivers:

- Standard hour work options;
- Basic fatigue management (BFM); and
- Advanced fatigue management (AFM).

As recommended by RMS, this procedure applies to all employees and contractors working at the site (not only heavy vehicle operators). All personnel working or contracting at the construction site must comply with at least one of the fatigue management procedures outlined below and take reasonable steps in reducing driver fatigue.

Standard Hour Work Options

Under standard hours, drivers can work for a maximum of 12 hours in any period of 24 hours with no more than 144 hours of work time in 14 days. Unlike BFM and AFM, there are no accreditation requirements. An operator requiring more flexible hours should consider applying for BFM.

Table 10 lists the standard hours worked and rest time required.

Table 10 – Standard Hours

Total Period	Maximum Work Time	Minimum Rest Time
In any period of…	**A driver must not work for more than a total of…**	**And must have at least…**
5 hours and 30 minutes	5 hours and 15 minutes	15 continuous minutes rest
8 hours	7 hours and 30 minutes	30 minutes rest, in blocks of 15 continuous minutes
11 hours	10 hours	60 minutes rest, in blocks of 15 continuous minutes
24 hours	12 hours	7 continuous hours stationary[1] rest
7 days (168 hours)	72 hours	24 continuous hours stationary rest
14 days (336 hours)	144 hours	4 night rests (includes 2 consecutive night[2] rests)

Note: 1 Stationary rest is rest time that a driver spends out of a heavy vehicle or in an approved sleeper berth of a stationary fatigue-regulated heavy vehicle
2. A night's rest means 7 continuous hours taken between 10pm and 8am or 24 continuous hours stationary rest.

Basic Fatigue Management Work Options

BFM gives accredited drivers greater flexibility in managing driver work and rest times, providing risks of working long and night hours are managed. Prior to a driver being able to work BFM they must be inducted into their operator's BFM system and meet the requirements relating to drivers under accreditation.

The 36 hour rule applies to BFM options. A driver can only work up to 36 'long and night' hours in any seven day period.

BFM hours are included in:

Table 11 – Basic Fatigue Management Hours

Total Period	Maximum Work Time	Minimum Rest Time
In any period of	**A driver must not work for more than a total of…**	**And must have at least…**
6 hours and 30 minutes	6 hours	15 continuous minutes rest
9 hours	8 hours and 30 minutes	30 minutes rest, in blocks of 15 continuous minutes
12 hours	11 hours	60 minutes rest, in blocks of 15 continuous minutes
24 hours	14 hours	7 continuous hours Stationary[2] rest
7 days (168 hours)	36 hours long/night1	24 continuous hours stationary rest
14 days (336 hours)	144 hours	2 x 24 continuous hours stationary rest. First 24 hours rest must be taken after no more than 84 hours work. 4 nights off (including 2 consecutive)

Note: [1] Long/night hours means any work time in excess of 12 hours in any 24 hour period or between 12 midnight and 6am.
[2] Stationary rest is rest time that a driver spends out of a heavy vehicle or in an approved sleeper berth of a stationary fatigue regulated heavy vehicle.

Advanced Fatigue Management

AFM hours are more flexible and less prescriptive than BFM and Standard Hours. Drivers can work AFM hours when they have been inducted into their operator's AFM system and meet the requirements relating to drivers under accreditation. Operators must specify the normal operating limits under which their drivers will usually work.

Table 12 provides Advanced Fatigue Management outer limits.

Table 12 – Advanced Fatigue Management Outer Limits

Total Period	Maximum Work Time	Minimum Rest Time
In any period of	**A driver must not work for more than a total of…**	**And must have at least…**
24 hours	15½ hours work time	7 continuous hours stationary* rest time

14 days (336 hours)	154 hours work time	30 continuous hours stationary rest time that includes the periods 12am to 6am on a day and 12am to 6am on the following day, using the time zone of the driver's base.
28 days (672 hours)	288 hours work time	At least 30 continuous hours stationary rest time that includes the periods 12am to 6am on a day and 12am to 6am on the following day, using the time zone of the driver's base.

Note: * Stationary rest is rest time that a driver spends out of a heavy vehicle or in an approved sleeper berth of a stationary regulated heavy vehicle.

Oversized and Overmass Loads

Permits for oversized and overmass loads will be obtained (refer to Section 3). All conditions of permits for oversized and overmass loads will be adhered to, including the requirement for vehicles to escort the loads etc. An RMS Guideline has been prepared for Additional Access Conditions for Oversize and Overmass Heavy Vehicles and Loads (RMS, 2016). Generally, loads over 2.5m wide require a permit but no escort. If loads are 3.5 m or greater an escort will be required.

Where possible, delivery of oversize and overmass loads will be timed so as not to coincide with peak hour traffic.

Management of Public Safety

Public safety is a priority management aspect for Cleanaway. Cleanaway will provide the skills and resources required to minimise the overall effect of construction traffic on road users and the public to keep safety at front of mind. This will be done through the training of staff and contractors in the implementation of this Traffic Management Plan.

Training

A site induction will be required by all construction personnel and will include training in this Traffic Management Plan and Drivers' Code of Conduct.

Weekly Inspections and Site Meetings

Cleanaway site management will undertake formal weekly inspections of the construction site and will also attend weekly project meetings where specific issues, such as traffic and transport related issues, will be raised and/or discussed. If required, actions will then be assigned to the most appropriate responsible person.

4.5 Noise Management

A Construction and Operational Noise Assessment was prepared in accordance with the EPA's *Interim Construction Noise Guideline*, to accompany the EIS (SLR 2015a) and development application. For the purposes of this assessment environmental noise monitoring was conducted at the potentially most affected (representative) noise-sensitive locations, NM1, NM2, NM3 and NM4 (refer to **Figure 4**).

Results of Unattended Noise Monitoring indicated that the Rating Background Levels (RBLs) or background (LA90) noise levels for the noise monitoring locations are provided in the table below.

Table 13 – Summary of Existing LA90(15minute) Rating Background Levels (RBLs) and Existing LAeq(period) Ambient Noise Levels - dBA re 20 µPa

Location	LA90(15minute) Rating Background Level (RBL)			LAeq(period) Existing Ambient Noise Level		
	Daytime 0700-1800 Hours	Evening 1800-2200 Hours	Night-time 2200-0700 Hours	Daytime 0700-1800 Hours	Evening 1800-2200 Hours	Night-time 2200-0700 Hours
NM1 - Mandalong Close	44	45	39	54	54	53
NM2 - Catholic Village	35	38	36	49	43	44
NM3 - Lenore Drive	46	48	44	57	54	53
NM4 - Verdi Glenn	43	41	39	51	53	48

Results of Operator-Attended Noise Monitoring determined the character of the existing background noise levels and are provided in the table below.

Table 14 – Operator-Attended Background Noise Survey Results

Location Start Time Conditions	Measurement Description	Primary Noise Descriptor (dBA re 20 µPa)					Description of Noise Emission and Typical Maximum Levels (LAmax)
		LAeq	LA1	LA10	LA50	LA90	
NM1 - Mandalong Close 24/04/2015 1118 hours Temperature at 10m: 20.80C Humidity: 72% Wind At 10m : 1.7 m/s N No Rain	Ambient	50	58	52	48	46	Trucks turning onto Mamre Road 52-57 Engine braking onto Mamre Road 56-62 Cars on Mamre Road 45-50 Truck accelerating on Mamre 51 Engine braking on Mamre 51-55 Plane 50-56
NM2 - Catholic Village 24/04/2015 1155 hours Temperature at 10m: 22.30C Humidity: 70% Wind At 10m : 0.6 m/s NNE No Rain	Ambient	45	50	47	44	42	Birds 41 Resident 47 Erskine Business Park hum 43-44 Banging 46-54 Plane 48-52 Trucks in Erskine Business Park 47
NM3 - Lenore Drive 24/04/2015 1312 hours Temperature at 10m: 24.40C Humidity: 59% Wind At 10m : 1.9 m/s N No Rain	Ambient	54	62	57	51	47	Traffic on Lenore Drive 47-62 Welding 50 Birds 57-67 Distant Traffic 44 Wiper sniper 51-59 Bikes 66-67

NM4 - Verdi Glenn 24/04/2015 1404 hours Temperature at 10m: 25.20C Humidity: 47% Wind At 10m : 1.7 m/s NNW No Rain	Ambient	48	55	48	44	42	Dog 62-75 Traffic 44-50 Birds 46-52 Erskine Business Park hum 37 Insects continuous 31-35 Plane 47

The attended and unattended noise monitoring indicated that the measured ambient noise levels were dominated by traffic noise and Erskine Business Park activities.

The EIS (SLR, 2015) determined that there would be no unacceptable construction noise impacts as a result of the Development and no specific noise mitigation measures or monitoring is required.

Construction at the Development site will be undertaken in accordance with conditions of SSD 7075, as modified, that relate to noise (refer to **Table 12** below). Noise limits have not been set for the Development site, although vibration limits have been set. The vibrations limits are continuous or impulsive vibration criteria included in EPA's *Assessing Vibration: A Technical Guideline* (February 2006) at residential receivers. These criteria are provided in **Table 15** below.

Table 15 – Preferred and maximum weighted root mean square (rms) values for continuous and impulsive vibration acceleration (m/s2) 1–80 Hz

Location	Assessment period[1]	Preferred values		Maximum values	
		z-axis	x- and y-axes	z-axis	x- and y-axes
Continuous vibration	Day- or night-time	0.0050	0.0036	0.010	0.0072
Critical areas[2]	Daytime	0.010	0.0071	0.020	0.014
Residences	Night-time	0.007	0.005	0.014	0.010
Offices, schools, educational institutions and places of worship	Day- or night-time	0.020	0.014	0.040	0.028
Workshops	Day- or night-time	0.04	0.029	0.080	0.058
Impulsive vibration					
Critical areas[2]	Day- or night-time	0.0050	0.0036	0.010	0.0072
Residences	Daytime	0.30	0.21	0.60	0.42
	Night-time	0.10	0.071	0.20	0.14
Offices, schools, educational institutions and places of worship	Day- or night-time	0.64	0.46	1.28	0.92

Workshops	Day- or night-time	0.64	0.46	1.28	0.92

1 Daytime is 7.00 am to 10.00 pm and night-time is 10.00 pm to 7.00 am
2 Examples include hospital operating theatres and precision laboratories where sensitive operations are occurring. There may be cases where sensitive equipment or delicate tasks require more stringent criteria than the human comfort criteria specified above. Stipulation of such criteria is outside the scope of this policy, and other guidance documents (e.g. relevant standards) should be referred to. Source: BS 6472–1992

While noise limits have not been set for the Development site, EPA's Guideline "*Interim Construction Noise Guideline*" (ICNG or Guideline) (EPA 2009) recommends that the LAeq(15minute) noise levels arising from a construction project, measured within the curtilage of an occupied noise-sensitive premises (i.e. at boundary or within 30 m of the residence, whichever is the lesser) should not exceed the levels indicated in **Table 16**.

Table 16 - Recommended EPA General NMLs for Construction Works

Period of Noise Exposure	LAeq(15minute) Construction NML
Recommended Standard Hours	Noise affected[1] RBL[2] + 10 dBA
	Highly noise affected[3] 75 dBA
Outside Recommended Standard Hours	Noise affected[1] RBL + 5 dBA

[1] The noise affected level represents the point above which there may be some community reaction to noise
[2] Refer to Table 4 and Appendix A of EPA's Guideline
[3] The highly noise affected level represents the point above which there may be strong community reaction to noise.

If excessive noise/vibration levels are experienced at the Development site and/or a noise complaint is received, appropriate remedial actions/additional mitigation measures will be implemented (refer to **Section 6.1**).

A modification application (Mod 4) to extend the construction hours was approved by the DPE on the 25 October 2018. The modification application included a construction noise assessment. The main findings of the construction assessment are detailed below:

The construction noise assessment confirmed that noise emissions from the out of hours construction are predicted to be below the noise management levels (NMLs) at all receiver locations. In relation to the potential for sleep disturbance, the EPA suggest that the LA1(1minute) (or LAmax) noise level from any specific noise (ideally) should not exceed the LA90 background noise level by more than 15 dBA. Experience indicates the construction activities proposed for the LAmax noise levels would be no more than 6 dB above the LAeq(15minute) noise levels, and this has been confirmed by reviewing noise levels of the equipment proposed. Compliance with the LAeq(15minute) criterion will therefore also ensure LAmax noise levels are below the sleep disturbance screening noise level.

In conclusion, the construction activities proposed for the out of hours 5am to 7am early morning shoulder period, and the 1pm to 5pm Saturday afternoon period, comply with the NMLs determined in accordance with the EPA's Interim Construction Noise Guideline.

Environmental controls listed in **Table 17** will be implemented to minimise the potential for adverse noise impacts at the nearest receptor locations during construction of the Development. Additional mitigation measures have been developed to manage construction noise during the extended hours, and these are described in **Table 17**.

Table 17 - Noise Construction Management and Mitigation Measures

Control	Responsibility	Timing / Frequency
*All construction vehicles will be fitted with broadband squawker reversing alarms, checked against appropriate standards, including Australian vehicle standards.**	Cleanaway Site Management / Principal Contractor/ Subcontractors/	On-going
*Noise emissions will be regularly assessed and operations will be relocated, modified and/or stopped to ensure compliance with the relevant conditions of SSD 7075, as modified.**		
*One way traffic flows will be implemented to minimise the need for reversing by construction vehicles.**		During construction
Best management practice will be implemented including all reasonable and feasible noise management and mitigation measures to prevent and minimise operational, low frequency and traffic noise generated by the Development.	Cleanaway Site Management / Principal Contractor/ Subcontractors/ Material Suppliers	On-going
Noise impacts of the Development will be minimised during adverse meteorological conditions.		
Noise suppression equipment on plant will be maintained effectively at all times.		
Defective plant will not be used operationally until fully repaired.		
All Cleanaway owned vehicles operating on the site will be fitted with the High and Low Buzzer system, designed to minimise noise associated with reversing alarms in accordance with the Australian Vehicle Standard (Australian Design Rule 42/04) and Heavy Vehicle National Law Act 2012.		Prior to the commencement of operations
All potentially affected residents will be informed of the nature of the construction works, the expected noise level and duration.		

*Note: Italicised mitigation measures highlight those that respond to new SSD 7075 Condition 2A, as modified.

4.6 Water, Erosion and Sediment Control

An Erosion and Sediment Control Plan (ESCP) has been prepared for the Development and is contained within **Appendix I**. A Stormwater Management Scheme has also been prepared for the site, consistent with the Stormwater Management Plan for the catchment.

In accordance with Condition B20 of Schedule C (Part B), all management and mitigation measures will be implemented in accordance with Landcom's (2004) *Managing Urban Stormwater: Soils and Construction Vol. 1.*

Table 18 Error! Reference source not found. lists the management and mitigation measures that will be implemented during and upon completion of construction of the Development to minimise direct and indirect impacts on water, erosion and sediment control. Cleanaway will also comply with Section 120 of the Environment Operations Act 1997.

Table 18 - Water, Erosion and Sediment Construction Management and Mitigation Measures

Control	Responsibility
During Construction	
Erosion and sediment control measures will be implemented in accordance with *Managing Urban Stormwater: Soils and Construction Vol. 1* (Landcom, 2004).	Cleanaway Site Management / Principal Contractor
Only VENM, or ENM, or other material approved in writing by the EPA is used to fill the site.	
Accurate records of the volume and type of fill to be used will be kept.	
Sediment fences and clean water diversion bunds will be established around stockpiles and earthworks areas to reduce and capture sediments in stormwater runoff. Check dams, temporary ground stabilisation and site regrading will be implemented if appropriate.	
Sediment basins will be provided as needed or by grass-lining the proposed stormwater basin to remove sediment from stormwater prior to discharge offsite.	Cleanaway Site Management / Principal Contractor
Treatment measures will be applied to water collected in the sediment basin(s), including settling of coarse sediments, the use of flocculation for finer sediments and pH correction.	
Exclusion zones will be designated to limit disturbance and promote ground stability.	
Cut and fill slopes will be battered or retained for stability and to reduce the risk of erosion.	
Stockpiles will be placed more than 2 preferably 5) metres from existing vegetation, concentrated water flow, roads and hazard areas.	Cleanaway Site Management / Principal Contractor
Where there is sufficient area, stockpiles should be less than 2 metres in height.	
Upon Completion of Construction	
A stormwater management scheme will be prepared and will be implemented in consultation with the EPA. The scheme will mitigate the impacts of stormwater run-off from and within the premises following the completion of construction activities and will be consistent with the Stormwater Management Plan for the catchment.	Cleanaway Site Management / Principal Contractor
Ground stability will be re-established as soon as practicable following the completion of construction.	

Monitoring of surface water quality will be undertaken during construction at sediment basins (Dam 1 and Dam 2). Dam 1 is the existing sedimentation dam located in the north-west corner of the Development site. Dam 2 will be constructed and used during the construction phase of the Development. The location of these Dams are shown on the Plan in the ESCP (refer to **Appendix I**). The water quality monitoring program for the sediment dams at the Development site is summarised in the table below.

Table 19 – Sediment Dam Water Quality Monitoring Program

Quality Characteristic	Limit	Frequency
Total Suspended Solids (TSS)	50 mg/L	Fortnightly or following significant rainfall event (i.e. >10mm in a 24hr period).
pH	6.5 - 8	
Oil and grease	15 mg/L	

A soil, geology and contamination assessment was undertaken for the 2015 EIS (SLR 2015). A total of nine (9) test pits were excavated. The test pit locations are presented in **Figure 6**. Water inflow was encountered during investigations at depths of approximately 2.6m, 2.8m and 4.5m in TP02, BH01 and BH05, respectively. As groundwater was observed in TP02, BH01 and BH05 during investigation, some seepage through the clay / shale bedrock interface is likely to occur during the earthworks. If this does occur (i.e. after rainfall) it should be controllable using conventional sump and pump methods. Further geotechnical advice will be sought if groundwater is encountered which cannot be controlled using sump and pump methods.

Figure 6 Site Plan Showing Borehole and Test Pit Locations

Monitoring is currently undertaken at 14 groundwater bores surrounding the Erskine Park Landfill in accordance with EPL 4865. Three (3) of the groundwater bores (BH5, BH17D and BH17E) fall within the boundary of the Development site (see **Figure 5**). Average quarterly results from these monitoring bores serve as baseline data (see **Table 20** below) for construction of the Development. Quarterly groundwater monitoring at these bores will be undertaken throughout the construction of the Development. Samples will be analysed for the same parameters as those included in **Table 20,** plus asbestos, Polychlorinated Biphenyls (PCBs) and Organophosphate Pesticides (OPPs)**.**

Table 20 – Average Quarterly Results for Groundwater Monitoring Bores

	BH5	BH17D	BH17E	LOR
Heavy Metals				
Aluminium	<10	<10	70	10

Arsenic	<1	<1	<1	1
Barium	88	14000	2340	1
Beryillium	<1	<1	<1	1
Cadmium	<0.1	<0.1	<0.1	0.1
Cobalt	11	<1	<1	1
Chromium	<1	<1	<1	1
Copper	<1	<1	<1	1
Manganese	225	17	24	1
Nickel	5	1	2	1
Lead	<1	<1	<1	1
Zinc	10	<5	<5	5
Vanadium	<10	<10	<10	10
Mercury	<0.1	<0.1	<0.1	0.1
Chromium	<10	<10	<10	10
Ammonia	0.57	6.81	1.16	0.01
Total Petroleum Hydrocarbons (TPH)				
TPH $C_6 – C_9$	<20	20	<20	20
TPH $C_{10} – C_{14}$	<50	<50	<50	50
TPH $C_{15} – C_{28}$	<100	<100	<100	100
TPH $C_{29} – C_{36}$	<50	<50	<50	50
TPH $C_{10} – C_{36}$	<50	<50	<50	50
BTEX				
Benzene	<1	5	<1	1
Toluene	<5	5	<5	2
Ethylbenzene	<2	<2	<2	2
m&p-xylene	<2	<2	<2	2
o-xylenes	<2	<2	<2	2
Polynuclear Aromatic Hydrocarbons (PAHs)				
Acenaphthene	<1.0	<1.0	<1.0	1.0
Acenaphthylene	<1.0	<1.0	<1.0	1.0
Anthracene	<1.0	<1.0	<1.0	1.0
Benzo(a)pyrene	<1.0	<0.5	<0.5	1.0
Benzo(b+k)fluoranthene	<0.5	<1.0	<1.0	1.0

Benzo(g,h,i)perylene	<1.0	<1.0	<1.0	1.0
Chrysene	<1.0	<1.0	<1.0	1.0
Dibenzo(a,h)anthracene	<1.0	<1.0	<1.0	1.0
Fluoranthene	<1.0	<1.0	<1.0	1.0
Fluorene	<1.0	<1.0	<1.0	1.0
Indeno(1,2,3-c,d)pyrene	<1.0	<1.0	<1.0	1.0
Naphthalene	1.0	<1.0	<1.0	1.0
Phenanthrene	<1.0	<1.0	<1.0	1.0
Pyrene	<1.0	<1.0	<1.0	1.0
Total PAHs	<0.5	<0.5	<0.5	0.5
Organochlorine Pesticides (OCPs)				
Hexachlorobenzene	<0.5	<0.5	<0.5	0.5
Alpha-BHC	<0.5	<0.5	<0.5	0.5
Beta-BHC	<0.5	<0.5	<0.5	0.5
Gamma - BHC	<0.5	<0.5	<0.5	0.5
Delta-BHC	<0.5	<0.5	<0.5	0.5
Heptachlor	<0.5	<0.5	<0.5	0.5
Aldrin	<0.5	<0.5	<0.5	0.5
Heptachlor epoxide	<0.5	<0.5	<0.5	0.5
Trans-Chlordane	<0.5	<0.5	<0.5	0.5
Alpha-Endosulfan	<0.5	<0.5	<0.5	0.5
Cis-chlordane	<0.5	<0.5	<0.5	0.5
Dieldrin	<0.5	<0.5	<0.5	0.5
4, 4-DDE	<0.5	<0.5	<0.5	0.5
Endrin	<0.5	<0.5	<0.5	0.5
Beta-Endosulfan	<0.5	<0.5	<0.5	0.5
4, 4’ – DD D	<0.5	<0.5	<0.5	0.5
Endrin aldehyde	<0.5	<0.5	<0.5	0.5
Endo sulfan sulfate	<0.5	<0.5	<0.5	0.5
4, 4’ - DDT	<2	<2	<2	2
Endrin Ketone	<0.5	<0.5	<0.5	0.5
Methoxychlor	<2	<2	<2	2
Total Phenols				

2, 4, 5- Trichlorophenol	<1	<1	<1	1
2, 4, 6- Trichlorophenol	<1	<1	<1	1
2, 4- Dichlorophenol	<1	<1	<1	1
2, 6- Dichlorophenol	<1	<1	<1	1
2, 4- Dimethylphenol	<1	<1	<1	1
2- Chlorophenol	<1	<1	<1	1
2- Methylphenol	<2	<2	<2	2
2- Nitrophenol	<1	<1	<1	1
3- & 4 - Methylphenol	<2	<2	<2	2
4- Chloro – 3-methylphenol	<1	<1	<1	1
Pentachlorophenol	<2	<2	<2	2
Phenol	<1	<1	<1	1

Groundwater quality criteria/limits have not been set for the site. However, EPL 4865 sets a detection limit for ammonia (15 mg/L). In accordance with EPL 4865, if an ammonia level of 15 mg/L or more is detected, confirmation sampling will occur and a report will be prepared that proposes actions which Cleanaway propose to implement (including timeframes) to prevent the release of contaminated groundwater from the premises.

4.7 Waste Management

Waste construction management and mitigation measures that will be implemented during construction are outlined in **Table 21.**

Table 21 - Waste Management and Mitigation Measures

Control	Responsibility	Timing / Frequency
No materials or waste (as defined by the POEO act) generated outside the Site will be received at the Site for storage, treatment, processing, reprocessing or disposal on the Site, except as expressly permitted by an EPL.	Cleanaway Site Management / Principal Contractor	On-going
Waste Reuse, Recycling and Disposal		
Excavated materials will be re-used on site or disposed of to a suitably licensed site.	Cleanaway Site Management / Principal Contractor	On-going
Green waste will be mulched and re-used in landscaping on site or used off-site.		

Control	Responsibility	Timing / Frequency
Concrete, tiles (where applicable) and bricks will be crushed on offsite, where possible, for reuse or recycled off-site.		
Steel will be recycled off-site; all other metals will be recycled where economically viable.		
Colour bond roof material off cuts to be stockpiled on site for reuse or recycling.		
Framing timber will be reused on site or recycled off-site.		
Windows, doors and joinery will be recycled off-site (where possible).		
Waste oil will be recycled or disposed of in an appropriate manner.		
All used crates will be stored for reuse unless damaged.		
All glass that can be economically recycling will be.		
All solid waste timber, brick, concrete, rock that cannot be reused or recycled will be taken to an appropriate licenced landfill facility and disposed of in an approved manner.		
All asbestos, hazardous and/or intractable wastes are to be disposed of in accordance with WorkCover Authority and EPA requirements.		
Provision for the collection of batteries, fluorescent tubes, smoke detectors and other recyclable resources will be provided on site.		
Container and paper/cardboard recycling will be provided on site for employee use or these items will be sorted recycling at an appropriately licensed facility; all garbage will be disposed of via a council approved system.	Cleanaway Site Management / Principal Contractor	On-going
All other solid waste including bitumen paving, tile, rock and soil will be taken to an appropriate materials recycling facility/landfill site and processed in an approved manner.		
All garbage will be disposed of via a council approved system.		
Waste Storage		
Minimum dedicated waste skips (or stockpiles for materials to be reused on site) will be provided for various waste streams listed above.	Cleanaway Site Management / Principal Contractor	On-going
Separate receptacles for the safe disposal of hazardous waste types (i.e. light bulbs, batteries, etc.) will also be provided where applicable.		

Control	Responsibility	Timing / Frequency
Waste Servicing		
Skips will be checked on a daily basis. If the skips are reaching capacity, removal and replacement will be organised for the next 24 hours.	Cleanaway Site Management / Principal Contractor	On-going
All skips leaving the Site will be suitably covered to avoid waste spillage while in transit.		
All waste collection for construction works are to be conducted between 7am and 6pm.	Cleanaway Site Management / Waste Collection Servicer	
Waste Avoidance		
Site disturbance will be minimised to reduce unnecessary excavation.	Cleanaway Site Management / Principal Contractor	On-going
Where possible, materials will be ordered to size or ordered as pre-cut and prefabricated materials		
Construction materials should be selected in consideration of their lifespan and potential re-use.	Cleanaway Site Management / Principal Contractor	On-going
Where possible, construction formwork will be reused on site		
Subcontractors will be informed of site waste management procedures.		
Packing wastes will be reduced, where possible, by returning packaging to the suppliers (e.g. pallets, reels), purchasing in bulk, and requesting cardboard or metal drums (as opposed to plastics).		
The Construction Principal Contractor will advise on material selection for the reduction of embodied energy and resource depletion.	Principal Contractor	
Liquid Waste		
Any liquid wastes and dangerous goods wastes generated by the demolition and construction will be disposed of by a suitably qualified contractor to an appropriately licensed disposal facility.	Cleanaway Site Management / Principal Contractor	On-going
Equipment/plant/machinery/vehicles will be washed down within an appropriately bunded wash-down bay.		

A Construction Waste Management Plan (WMP) has been prepared for the Development and is contained within the sections below.

4.8 Waste Management Plan

Demolition and construction stages of developments have the greatest potential for waste minimisation.

Waste Streams and Classifications

The construction of the Development is likely to generate the following broad waste streams:

- demolition wastes;
- excavation material;
- construction wastes;
- plant maintenance waste;
- packaging waste;
- work compound (on site employee) waste; and
- wastewater.

Possible waste types along with their waste classification are provided in **Table 22**. For further information on how to determine a waste's classification, refer to the EPA's *Waste Classification Guidelines* (2014).

Table 22 - Potential Waste Generation and EPA Classifications

Waste Types	NSW Classification	Proposed Reuse / Recycling / Disposal Method
Site Preparatory & Excavation / Demolition & Construction		
Concrete (solids and washouts) and asphalt	General solid (non-putrescible) waste	Crush off-site, where possible, and reuse for construction or off-site recycling
Steel reinforcing, other metals (e.g. wire mesh and bulk electrical cabling)	General solid (non-putrescible) waste	Off-site recycling
Conduits and pipes	General solid (non-putrescible) waste	Off-site recycling
Timber formwork	General solid (non-putrescible) waste	Reuse on site or off-site recycling
Plasterboard	General solid (non-putrescible) waste	Off-site recycling or disposal to landfill
Bricks	General solid (non-putrescible) waste	Crush off-site, where possible, and reuse for construction or off-site recycling
Glass	General solid (non-putrescible) waste	Off-site recycling
Plant Maintenance		
Tyres	Special waste	Reuse on site or off-site recycling

Waste Types	NSW Classification	Proposed Reuse / Recycling / Disposal Method
Empty oil and other drums / tins (e.g. fuel, chemicals, paints, spill clean ups)	Hazardous waste if the containers were previously used to store Dangerous Goods (Class 1, 3, 4, 5 or 8) and from which residues have not been removed by washing or vacuuming. General solid (non-putrescible) waste if the containers have been cleaned by washing or vacuuming.	Transport to comply with the transport of Dangerous Goods Code applies in preparation for off-site recycling or disposal at licensed facility. (Note: Discharge to sewer subject to Trade Waste Agreement with Sydney Water.)
Air and oil filters and rags	General solid (non-putrescible) waste	Disposal to landfill
Batteries	Hazardous waste	Off-site recycling
Packaging		
Packaging materials, including wood, plastic (including stretch wrap or LLPE), cardboard and metals	General solid (non-putrescible) waste	Off-site recycling
Wooden crates	General solid (non-putrescible) waste	Reuse for similar Developments, returned to suppliers, or off-site recycling
Work Compound and Associated Offices		
Recyclable beverage containers (glass and plastic bottles, aluminium cans), tin cans	General solid (non-putrescible) waste	Co-mingled recycling at off-site licensed facility
Clean paper and cardboard	General solid (non-putrescible) waste	Paper and cardboard recycling at off-site licensed facility
General domestic waste generated by workers (soiled paper/cardboard, food stuffs, polystyrene)	General solid (non-putrescible) waste mixed with putrescible waste	Disposal at landfill
Pump-out waste and septage (sewage)	Liquid (trade) waste	Off-site disposal at licensed facility or disposal direct to sewer where arranged with Sydney Water

Waste Generation Rates

The Construction Contractor will record the types and quantities (including the volume in cubic metres and weight in tonnes) of wastes produced at the site during the site preparatory and construction stages of the development and on this basis, the numbers and capacity of skips/bins can be determined.

A guide/estimate of the potential waste percentages is provided based on published waste generation rates for construction developments, as indicated in **Table 23.**

Table 23- Guideline to Waste Composition and Volumes - Construction

Material	Estimated Waste %	Conversion Factors (tonne per m^3)
Hard Material (i.e. bricks, tiles)	32%	1.20
Timber	24%	0.34
Plasterboard	6%	0.33
Concrete	9%	1.27
Metals	6%	0.42
Plastics	15%	0.25
Cardboard	4%	0.20
Green waste	3%	0.09
Soil	1%	1.20

Source: UK WRAP

The UK Department of Environment, Food and Rural Affairs (DEFRA) and the UK Building Research Establishment (BRE) have developed a number of benchmark indicators to help determine approximate tonnages of waste produced during various construction Developments including civil engineering and commercial retail works. These indicators have been used as the basis for waste estimation in lieu of suitable Australian alternatives. The benchmarks include Environmental Performance Indicators (EPI) which measure the volume (cubic metres, m^3) of waste produced per 100 square metres (m^2).

The EPI indicators provided in **Table 24** have been used for the purposes of this WMP to estimate the amounts of demolition and construction wastes that could be generated by the development.

Table 24- Environmental Performance Indicator for Waste Volumes from New Developments

Development Type	Average Volume (m^3) of Waste per $100m^2$
Industrial Buildings	14.0

Source: UK BRE

Estimation of Waste Volumes

Construction waste estimates by volume are provided in
and **Table 26**

Table 25 - Estimated Waste Generation – Major Construction Activities

Building	Approximate Area (m2)	Estimated Waste Generation (m3)	Total tonnes waste (t)
Transfer Station Building	4,250	595	408
Total	4,250	595	408

Note: Assumes no waste generated by soft landscaping.

Table 26- Estimated Waste Volumes and Materials for the Development

Material	Split (%)	Waste (m3)	Conversion factor	Waste (tonnes)
Hard Material (i.e. bricks, tiles)	32%	190	1.20	228
Timber	24%	142	0.34	48
Plasterboard	6%	36	0.33	13
Concrete	9%	54	1.27	68
Metals	6%	36	0.42	15
Plastics	15%	89	0.25	22
Cardboard	4%	24	0.20	5
Green waste	3%	18	0.09	2
Soil	1%	6	1.20	7
Total	100%	595	-	408

Note 1: Totals may not add up due to rounding.

It is noted that waste generation rates are estimates only. The amount of materials actually recovered will be influenced by management and employee attitude to recycling and disposal.

Targets for Resource Recovery

Estimated tonnages for both demolition and construction phases demonstrate that a significant proportion of waste (more than 70%) can be diverted from landfill during the proposed development. The recycling and resource recovery performance of each development contributes to overall NSW State recycling targets, which for the commercial and industrial (C&I) sector, is 57% increasing to 70% by 2021-221.

Waste minimisation measures that can be implemented to assist in achieving this resource recovery target are provided in the following sections. Waste audits will determine the actual percentage of wastes that were recycled and disposed of at landfill during the Development.

Waste Avoidance Measures

The Construction Contractor will identify opportunities for waste avoidance by:

- minimising site disturbance and eliminating unnecessary excavation;
- selecting construction materials taking into consideration to their long lifespan and potential for reuse;
- ordering materials to size and ordering pre-cut and prefabricated materials;
- reuse of formwork (where possible);
- planned work staging;
- reducing packaging waste on site by:
    - returning packaging to suppliers where possible
    - purchasing in bulk
    - requesting cardboard or metal drums rather than plastics

[1] NSW Waste and Avoidance Resource Recovery Strategy 2014-21

- requesting metal straps rather than shrink wrap and using returnable packaging such as pallets and reels;

- careful on site storage and source separation;
- subcontractors informed of site waste management procedures; and
- coordination and sequencing of various trades.

The amount of materials used in the construction of a building should also be reduced wherever possible by:

- exposing structures to reduce the use of floor, ceiling and wall cladding and finishes;
- use of naturally ventilating buildings to reduce ductwork; and
- use of prefabricated components for internal fit outs.

The Construction Contractor will advise on material selection for the reduction of embodied energy and resource depletion. This includes:

- the use of recycled concrete and steel;
- the use of bulk insulation products that contain recycled content, such as recycled glass in glass-wool;
- the reduction of PVC use;
- the use of fittings and furnishings that have been recycled or that incorporate recycled content;
- the use of low volatile organic compounds (VOC) paints and adhesives;
- the use of post-consumer reused timber or certified plantation / Forest Stewardship Council (FSC) certified timber; and
- designs enabling disassembly and reuse of materials.

Re-use, Recycling and Disposal

Effective management of construction materials and demolition/construction waste, including options for reuse and recycling where applicable and practicable, will be conducted. Only wastes that can't be cost effectively reused or recycled are to be sent to landfill or appropriate disposal facilities.

Refer to **Table 22** for an outline of the proposed reuse, recycling and disposal methods for potential waste streams generated by the development.

The following procedures are to be implemented:

- concrete, tiles (where applicable) and bricks will be crushed off-site, where possible, for reuse in construction or recycled off-site;
- steel will be recycled off-site, all other metals will be recycled where economically viable;
- colour bond roof material off cuts to be stockpiled on site for reuse or recycling;
- framing timber will be reused on site or recycled off-site;
- windows, doors and joinery will be recycled off-site (where possible);
- waste oil will be recycled or disposed of in an appropriate manner;
- all used crates will be stored for reuse unless damaged;
- all glass that can be economically recycled will be;
- all solid waste timber, brick, concrete, rock that cannot be reused or recycled will be taken to an appropriate licenced landfill facility and disposed of in an approved manner;
- all asbestos, hazardous and/or intractable wastes are to be disposed of in accordance with Safe Work NSW and EPA requirements;

- provision for the collection of batteries, fluorescent tubes, smoke detectors and other recyclable resources will be provided on site; and
- container and paper/cardboard recycling will be provided on site for employee use or these items will be sorted for recycling at an appropriately licensed facility; all other solid waste including bitumen paving, tile, rock and soil will be taken to an appropriate materials recycling facility/landfill site and processed in an approved manner; and
- all garbage will be disposed of via a council approved system.

Waste Storage and Servicing

Waste Segregation

The Development will be managed ensuring effective source separation and appropriate collection of waste during demolition and construction works.

For construction stages, minimum dedicated bins would be used for:

- timber;
- plasterboard/gyprock;
- concrete;
- bricks;
- steel/scrap metal;
- general waste; and
- other waste (i.e. for the collection of materials that may be re-used on future Developments).

Separate receptacles for the safe disposal of hazardous waste types (i.e. light bulbs, batteries, etc) will also be provided where applicable.

Where possible, employee container recycling bins will be provided nearby common areas at work compounds/work sites for plastic and glass bottles, soft drink cans, aluminium and tin cans to ensure these items do not end up at landfill. Specialised bins for cigarette butts should also be provided outside lunchrooms and nearby common areas at work compounds/work sites.

Space and Siting Requirements

Waste storage areas will be accessible and allow sufficient space for storage and servicing requirements. The storage areas will be flexible in order to cater for change of use throughout the development. Where space is restricted, dedicated stockpile areas are to be delineated on the site, with regular transfers to dedicated skip bins for sorting.

The positions of the designated waste holding areas on site will change according to building works and the progression of the development, but must consider visual amenity, OH&S and accessibility in their selection. Appropriate siting of waste stockpile locations will take into account slope and drainage factors to avoid contamination of stormwater drains during rain events.

All waste placed in stockpile areas/skips for disposal or recycling shall be adequately contained to ensure that the waste does not fall, blow, wash or otherwise escape from the site. Waste containers are to be kept clean and in a good state of repair.

Servicing and Transport

The frequency of the waste removal will, in most cases, be dictated by the volume of material being deposited into each of the dedicated skips. Skips are to be checked on a daily basis by Cleanaway or the Principal Contractor's Site Management to ensure that skips do not overflow. If skips and/or bins are reaching capacity, removal and replacement should be organised for the next 24 hours.

All skips/bins leaving the site will be covered with a suitable tarpaulin to ensure that the spillage of wastes from the skips whilst in transit is eliminated.

All waste collection for construction works are to be conducted between 7am and 6pm daily. All site generated building waste collected in the skips and/or bins will leave the site and be deposited in an approved and appropriately licensed recycling centre, transfer station or landfill site.

Contaminated / Hazardous Waste

Demolition and excavation works will be undertaken during the construction of the Development. In the event that any contaminated or hazardous materials are unexpectedly uncovered during construction works, Cleanaway Site Management / Principal Contractor is to stop work immediately and contact the relevant hazardous waste contractor prior to further works being undertaken in the area.

Liquid Waste Management

Any liquid wastes and dangerous goods wastes generated by the demolition and construction activities (e.g. due to damage or leakage of containment) will be disposed of by a suitably qualified contractor to an appropriately licensed disposal facility.

Waste water storage tanks (where applicable) will be carefully monitored to ensure overflow does not occur and no liquid wastes or wash down waters will be disposed of via the stormwater drainage system.

Liquid waste is often produced from the washing down of plant and apparatus. Washdown of equipment/plant/machinery and concrete delivery trucks will take place within a specified, appropriately bunded, washdown bay. It is envisaged that the existing sewer network servicing the current site facilities will be used to dispose of washdown waters. A petrol/oil interceptor may be placed within the washdown area to restrict oil based liquids entering the sewer network. An alternative will be a pumped sump that would allow waste water to be pumped and transferred via road tanker into a local waste water treatment facility or plant.

Refuelling activities will be undertaken in designated areas with appropriate spill containment measures to avoid overspill to sensitive areas.

Spills Management

Spills on the worksite are most likely to involve fuel, hydraulic oil or engine oil spilled from plant items, and paints and solvents.

If a spillage occurs, construction staff will immediately identify the spilled materials and notify the Cleanaway Site Manager / Principal Contractor, then contain the spill as soon as possible so it doesn't spread.

Containment measures for spillages will be provided at appropriate locations and in close proximity to staff car park areas, dangerous goods stores areas and main development work areas (e.g. a spill kit containing non-combustible absorbent material).

Material Safety Data Sheets (MSDS) will also be located nearby spill kit areas for advice on spillage clean-up and disposal.

Fire Incident Management

Waste and litter will be cleaned up from across the site at the end of each day. All fuel and chemicals will be stored in secure, lockable, bunded, sealed and covered areas. Stockpiled materials will be kept to designated areas. Smoking will be restricted to designated areas away from flammable material stockpiles. No cutting, welding, grinding or other activities likely to generate fires will be undertaken in the open on "total fire ban" days.

Fire extinguishers will be made available both on site and nearby waste storage areas. Emergency procedures will be displayed in a prominent position within the site working area and adjacent to the fuel/chemical storage area.

Fire incidents on site will be reported to the EPA in accordance with the POEO Act and Amendment Act, as relevant.

Signage

Standard signage will be posted in all storage/waste collection areas and all skips/drums/bins are required to be labelled correctly and clearly to identify materials stored within (refer to **Figure 7**).

Refer to the EPA's website for construction and demolition waste and recycling signs.

Figure 7 Australian Standard Signs

Source: http://www.epa.nsw.gov.au/wastetools/signs-posters-symbols.htm

Training and Awareness

All staff (including sub-contractors and labourers) employed during the demolition and construction phases of the development must undergo induction training regarding waste management for the development site.

Induction training is to cover, as a minimum, an outline of the WMP including:

- legal obligations;
- emergency response procedures on site;
- waste storage locations and separation of waste;
- litter management in transit and on site;
- the implications of poor waste management practices;
- correct use of general purpose spill kit; and
- responsibility and reporting (including identification of personnel responsible for waste management and individual responsibilities).

Monitoring and Reporting

The following measures will be undertaken to improve demolition and construction waste management and to provide more reliable waste generation figures:

a) Compare projected waste quantities with actual waste quantities produced.

b) Conduct waste audits of current projects (where feasible).

c) Note waste generated and disposal methods.

d) Look at past waste disposal receipts.

e) Record this information to help in waste estimations for future waste management plans.

Records of waste volumes recycled, reused or contractor removed are to be maintained. Additionally, dockets/receipts verifying recycling/disposal in accordance with the WMP must be kept and presented to Council and/or the EPA when required.

Daily visual inspections of waste storage areas will be undertaken by site personnel and inspection checklists/logs recorded for reporting to Cleanaway Site Management on a weekly basis or as required. These inspections will be used to identify and rectify any resource and waste management issues.

Waste audits are to be carried out by the Principal Construction Contractor to gauge the effectiveness and efficiency of waste segregation procedures and recycling/reuse initiatives. Where audits show that the above procedures are not carried out effectively, additional staff training will be undertaken and signage re-examined.

Incident Response

Likely incidents to occur during the construction phase of the Development may involve fuel or chemical spills, seepage or mishandling of hazardous waste, or unlicensed discharge of pollutants to the environment.

All environmental incidents are to be dealt with promptly to minimise potential impacts. An incident register must be maintained on site at all times and include the contact details of the 24 hour EPA Pollution line. Likely incidents to occur during the construction phase of the development may involve fuel or chemical spills, seepage of mishandling of hazardous waste, or unlicensed discharge of pollutants to environment. A waste recycling/disposal proforma (or similar) will be used to track what materials are reused or recycled during the construction phase of the Development.

Roles and Responsibilities

All personnel have a responsibility for their own environmental performance and compliance with all legislation.

It will be the responsibility of the Principal Construction Contractor to implement the WMP, and an employee responsibility to ensure that they comply with the Management Plan at all times.

Where possible, an Environmental Management Representative (EMR) should be appointed for the development. Suggested roles and responsibilities are provided below.

Table 27 - Recommended Roles and Responsibilities

Role	Responsibility
Principal Construction Contractor Manager	Ensuring plant and equipment are well maintained. Ordering only the required amount of materials. Keeping materials segregated to maximise reuse and recycling. Ultimately responsible for routinely checking waste sorting and storage areas for cleanliness, hygiene and OH&S issues, contaminated waste materials, and also ensuring that all monitoring and audit results are well documented and carried out as specified in the WMP.
Environmental Management Representative (EMR)	Approaching and establishing the local commercial reuse of materials where reuse on site is not practical. Establishing separate skips and recycling bins for effective waste segregation and recycling purposes. Training and awareness of the requirements of the WMP and specific waste management strategies adopted for the development. Contaminated waste management and approval of off-site waste transport, disposal locations and checking licensing requirements. Approval of off-site waste disposal locations and checking licensing requirements. Assessment of suspicious potentially contaminated materials, hazardous materials and liquid wastes. Monitoring, inspection and reporting requirements.

Daily visual inspections of waste storage areas may be delegated to other on site staff. All subcontractors will be responsible for ensuring that their work complies with the WMP through the site induction and contract engagement process.

It is the responsibility of the Construction Contractor (or site operative) to notify Council of the appointment of waste removal, transport or disposal contractors (where required).

4.9 Visual Amenity and Landscaping

A Landscape Plan has been prepared for the Development and is contained within **Appendix J**. All landscaping will be conducted prior to the commencement of WTS operations.

Erskine Park is located in Key Precinct E6 - Erskine Business Park, as defined by the Penrith City Council DCP. The Landscape Plan is consistent with the requirements Landscape Design requirements of Key Precinct E6 as it has the following inclusions:

- Existing trees to be removed from site identified on the landscape plans;
- Tree species are selected from locally occurring species. These trees will contribute to wildlife habitat, and the overall character of the locality;
- A framework of endemic trees and shrubs have been used. The property entrance has been highlighted with feature planting. Of particular consideration is the need to preserve the sightlines for trucks entering/ exiting the facility;
- Plants nominated are not weed species; and
- Additional street trees have been nominated.

Other requirements of the DCP that have been achieved by the Landscape Plan include:

- Screening of driveway areas (particularly on the southern boundary where space is limited, and behind the front fence);
- Screening of carpark areas, and tree planting in carpark areas- this will be completed in future stages; and
- Screening of the facility at the front boundary- there is limited space for additional screening behind the front fence due to the below ground OSD tank.

The Landscape Site Plan (Drawing L01) in **Appendix J** illustrates the southern panel screen wall that will act as boundary fencing. **Figure 1** (in this document) also indicates this screen wall, along with the 1.8 m high black palisade fence to be constructed on the western boundary of the Development site, and the retaining walls to be installed on the northern and eastern boundaries of the site. The retaining walls will act as boundary fencing. Images and plans of the boundary fencing and walls are provided in **Appendix K**.

The Landscape Plans (Drawings) in **Appendix J** indicate which trees will be removed and which trees will be planted in the Development area. Note; all existing trees on site will be removed, in accordance with the Landscape Plan. The Plant Schedule (Species List) is also included on the Landscape Plans (L02 to L05). Species to be planted at the Development site include:

- *Corymbia Maculata*;
- *Eucalyptus Tereticornis*;
- *Eucalyptus Fibrosa*;
- *Melaleuca Decora;*
- *Callistemon Viminalis 'Slim'*;
- *Lomandra Multiflora*;
- *Lomandra 'Tanika'*;
- *Elaeocarpus Reticulatus*;

- *Callistemon Salignus*;
- *Doryanthes Excelsa*;
- *Carex Appressa*;
- *Isolepis Nodosa*; *and*
- *Westringia 'Mundi'*.

Table 28 lists the management and mitigation measures that will be implemented during and upon completion of construction of the Development to minimise direct and indirect impacts on the visual amenity and landscaping.

Table 28 - Visual Amenity and Landscaping Construction Management and Mitigation Measures

Control	Responsibility	Timing / Frequency
The Development will be carried out in accordance with the approved Building and Material Schedule and Landscape Plan.	Cleanaway Site Management / Principal Contractor / Subcontractors	On-going
All external lighting will be mounted, screened, and directed in such a manner so as not to create a nuisance to the surrounding environment, properties and roadways. The lighting shall be the minimum level of illumination necessary and shall comply with Australian Standard AS 4282 1997.		
Any new signage will be installed in consultation with Council and shall comply with the State Environmental Planning Policy 64 – Advertising and Signage, as relevant.		Before the installation of any signage
Disturbed areas will be rehabilitated on completion of construction.		Upon completion of construction
Mature trees that are not required to be removed will be fenced and protected for the duration of construction.		During construction
Black palisade fencing will be constructed behind landscaping fronting on to Quarry Road.		During construction
Screen hoarding and/or shade cloth screens will be installed.		During construction
Light spill will be avoided beyond the construction site where temporary lighting is required.		On-going
A 3 metre screen will be installed on the western side of the office.	Cleanaway Site Management / Principal Contractor	During construction
Trees and shrubs will be planted on the western edge of the Development site.		
The office will be painted the same external colour scheme as the main transfer station building.		

4.10 Heritage

Table 29 lists the management and mitigation measures that will be implemented during construction of the Development to minimise potential impacts on heritage.

Table 29 - Heritage Construction Management and Mitigation Measures

Control	Responsibility	Timing / Frequency
Should any Aboriginal cultural object(s) be uncovered during construction all works will stop immediately and the NSW police, OEH and the Aboriginal community will be notified. Works will only recommence when an appropriate and approved management strategy has been agreed to by all of the relevant stakeholders.	Cleanaway Site Management / Principal Contractor	On-going

Unexpected Finds Protocol

The following Unexpected Finds Protocol will be following in the event that any archaeological or Aboriginal objects are uncovered during construction:

f) **Cease work in the area immediately** - employees or contractors to cease work in the area immediately and contact Cleanaway Site Management / Principal Contractor;

g) **Barricade** - Cleanaway Site Management / Principal Contractor to erect temporary barricading around the find to prevent access and/or disturbance;

h) **Notify** - advise the relevant regulatory agencies (see **Table 5** lists the contact details for the regulatory authorities that have an interest in the construction phase of the Development.

i) Table 5) and adhere to any instructions issued by them -

   (i) For archaeological finds notify the OEH Heritage Branch; and

   (ii) For Aboriginal finds notify the OEH Regional Operations Group;

j) **Management strategy** - an appropriate management strategy will be developed in consultation with the relevant stakeholders; and

k) **Recommence works** - works are only to recommence once an appropriate and approved management strategy has been agreed by all relevant stakeholders.

4.11 Energy Efficiency

A Section J Energy Efficiency Assessment has been prepared for the site and is provided in **Appendix L**.

4.12 Contamination

Table 30 lists the management and mitigation measures that will be implemented during construction of the Development to minimise the potential for contamination.

A protocol for the management of unexpected contamination finds will be prepared by the construction contractor, once appointed, prior to any excavation works being undertaken. This protocol will detail procedures for testing, classifying, handling, storing and disposing of contaminated water, soils and/or groundwater, if encountered in excavations, in particular during excavation of the stormwater detention basin.

Table 30 - Contamination Construction Management and Mitigation Measures

Control	Responsibility	Timing / Frequency
All chemicals, fuels and oils used on site will be stored in appropriately bunded areas in accordance with the requirements of all relevant Australian Standards, and/or EPA's *Storing and Handling Liquids: Environmental Protection – Participant's Manual 2007.*	Cleanaway Site Management / Principal Contractor / Subcontractors	On-going

Control	Responsibility	Timing / Frequency
A contamination report will be provided to the DPE detailing any contamination investigation carried out during construction.	Cleanaway Site Management	Upon completion of construction earthworks
Accidental spillage or poor management of fuels, oils, lubricants, hydraulic fluids, solvents and other chemicals during the construction phase will be controlled through spill management actions to prevent water quality and ecological impacts in South Creek.	Cleanaway Site Management / Principal Contractor / Subcontractors	On-going
Dangerous goods will be stored on site according to their respective ADG classes and compatibility.		

5. Community Consultation

In accordance with modified Development Consent SSD 7075 a Community Consultation and Information Strategy has been prepared for the construction phase of the Development and is included in the sub-sections below.

5.1 Consultation Objectives

Based on the IAP2 (International Association of Public Participation) suggested spectrum for consultation, the appropriate level of consultation for the facility at Erskine Park will be to inform and consult. Specifically this will be achieved through: one-to-many briefing sessions the surrounding community; emails and Cleanaway's website.

5.2 Consultation Principles

Consultation will be delivered in a manner which is:

- Accessible;
- Transparent and publicly accountable;
- Equitable for participation and fair in process; and
- Continuously improved.

Interaction with the community will consider the following:

- What information do the community need in order to be informed and consulted;
- Build on information already available and provide information the community is seeking;
- Appropriate consultation – in a manner, time and place that suits the community;
- Do our utmost to make the project real for the people – highlighting the benefits and impacts;
- Continuous improvement through listening, learning, improving;
- Targeted, efficient and cost effective processes that support the project's focussed timeframe;
- Liaison with the client and with the wider project team to ensure timely feedback into decision making processes; and
- Maintaining timely information flow to internal stakeholders who manage external relationships.

5.3 Key Messages

In the implementation of this plan the key message will be that appropriate mitigation measures will be implemented to reduce construction related impacts. Other key messages include:

- Cleanaway is an expert waste management and recycling company operating successfully at this site for many years;
- Cleanaway is an ASX 200 listed company, operating from over 200 sites across Australia;
- This facility is vital to sustainably manage the waste of an extra 1.3 million Sydneysiders by 2031. Over 50% of Sydney's population growth will be in Western Sydney, with nearly 1 million people residing in the region over the next 16 years;

- It will be a state-of-the-art and enclosed transfer and resource recovery facility, inside an existing industrial precinct;
- It gives job certainty to 120 local Cleanaway workers and will provide approximately 30 new jobs in the future;
- Representing an investment of approximately $50m in the Erskine Park area, it will bring other economic benefits to the area like partnerships and supply chain opportunities with local businesses; and
- Waste will be unloaded indoors at the enclosed facility, consolidated and transported out of the area within 24 hours.

5.4 Community Members

Members of the local community include:

- Residents;
- Community Groups;
- Road users.

Residents

The Cleanaway site is part of the Erskine Park industrial area with the nearest residents approximately 700 metres to the north of the site. The residential suburb of St Clair adjoins Erskine Park to the north with the Erskine Park residential area to the north-east. The relatively new estate of Twin Creeks, Orchard Hills is to the west of Mamre Road.

Community Groups

There are a number of community environment groups in the Penrith LGA. The focus of these groups may vary in their geographical focus and specific interest, however, they remain potentially interested stakeholders. Some of the main groups are: Western Sydney Conservation Alliance which opposes development on conservation grounds; and Bushcare which opposes development impacts on the environment.

Road Users

Road users include pedestrians, cyclists, motorists, buses and taxis that use the local road network.

5.5 Consultation Tools

Details on the various consultation tools proposed and resources provided as part of the consultation methodology during construction are provided below.

Project email address

The project email address is: Erskine-park@cleanaway.com.au

Feedback, information or input is welcomed from the community and stakeholders at any time during construction.

Project contact number

The project has a contact number for external enquiries: 1800 213 753.

The number is staffed Monday to Friday, 9am to 5pm (excluding public holidays). Outside of these hours and during busy times, a recorded message will operate. A project team member will call back as soon as possible.

Consultation database

A consultation database has been created and maintained as part of the consultation process to register contact details for ongoing updates and information. The database includes comments, issues and input

received from the community and other stakeholders. This is used to manage input and comments and to contact stakeholders, and ensure issues raised are considered and documented by the project team.

Project web site

Project information will appear on the Cleanaway website, http://www.Cleanaway.com.au/erskine-park

Information about the project made available on the website will be updated as appropriate and include:

- Project objectives;
- All community information published as part of the construction of Stage 1;
- Links to the websites of other agencies associated with this project; and
- Links to privacy documentation.

Media information

Media releases may be developed for issues based on the facility's benefits to the community, advanced design/technologies, project milestones etc, if considered appropriate.

Community communication material

Newsletter

As part of the consultation for the Stage 1 EIS preparation and for the exhibition of the EIS, five community newsletters were prepared to provide information on the project and the briefing sessions. Newsletters invited comment from the community on the proposed facility and provided specific information about benefits and impacts. The newsletters were distributed to residents in the suburbs shown in **Figure 7** which includes the residential suburbs of Erskine Park and St Clair, via letter box drop. All interested persons registered in the consultation database were also sent the newsletter via email or post. The newsletters are also available electronically on the project web page.

Community submissions report

Following exhibition of the EIS, a community submissions report was prepared. This report provided a summary of submissions received on the project, from all consultation methods including face-to-face meetings, community information sessions, the website, email and other correspondence. The report is a key method of transparently documenting community issues and the project team's consideration and response and is published online.

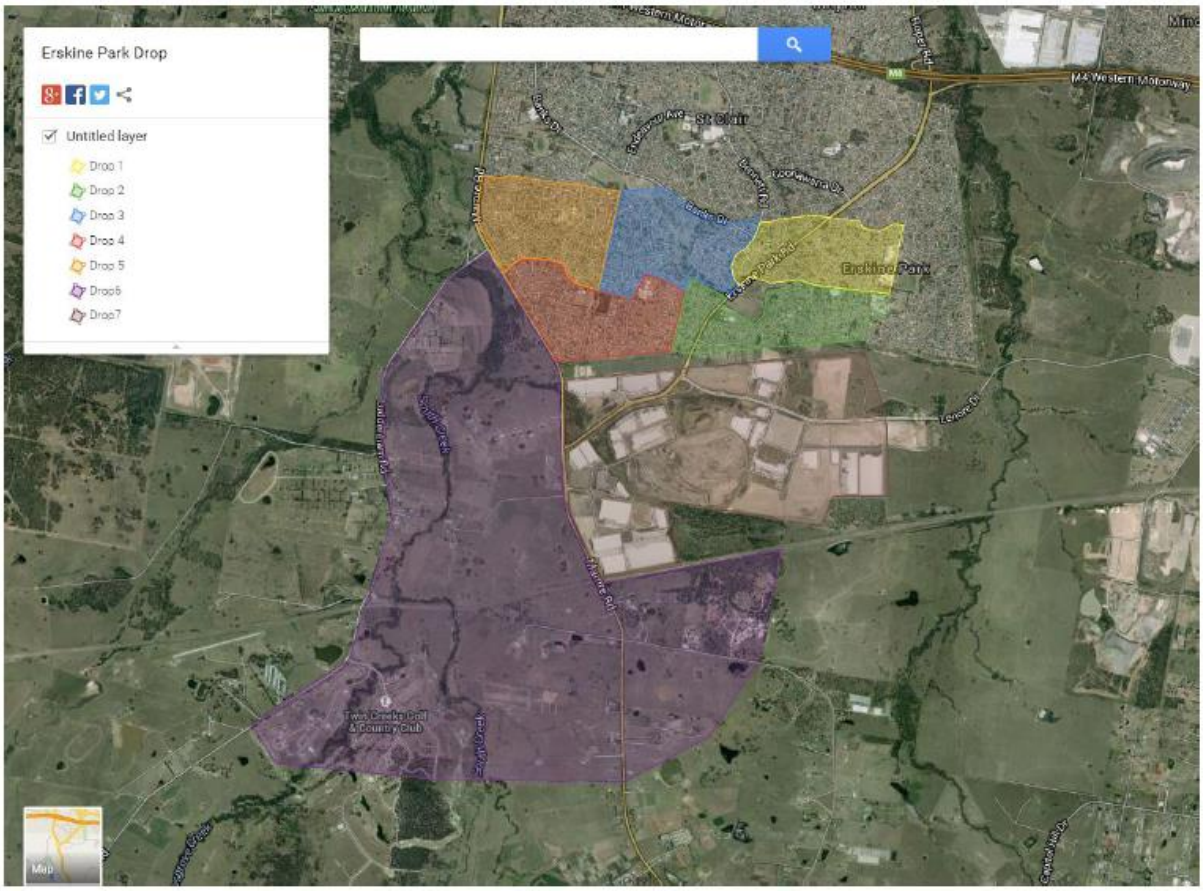
Community Letters

Prior to the commencement of construction, Cleanaway will inform the owners/residents of surrounding dwellings of relevant construction details in writing via a letter. The letter will advise:

- General construction activities and staging;
- The construction hours; and
- Relevant site contact details.

The owners/residents will also be informed of any changes to the construction staging and any other relevant information during the construction phase in writing.

Figure 8 Newsletter Distribution Area



6. Inspections Reporting and Records

6.1 Inspections

There are no specific inspection requirements during the construction phase of the Development. Notwithstanding, various environmental site inspections will be undertaken during the construction phase to ensure on-going implementation and compliance with this CEMP and to identify any adverse impacts and required remedial actions. The environment site inspections to be completed are listed in **Table 31**.

Table 31 - Construction Site Environmental Inspections

Requirement	Responsibility	Timing / Frequency
During Construction		
Inspection of the construction area at the completion of construction (for that day) to ensure all management and mitigation measures are still in place and have not been removed/impacted by construction activities.	Cleanaway Site Management / Principal Contractor	Daily at the completion of construction
Inspection of the erosion and sediment control mitigation measures on a weekly basis and following significant rainfall events to ensure the controls are operating effectively and at design capacity. See the ESCP in **Appendix I** for specific information requirements.		Weekly and following significant rainfall events
Environmental site inspections to assess the implementation of the management and mitigation measures and compliance with Development Consent SSD 7075 as modified and this CEMP.		Monthly
Inspection of rehabilitated areas to: • Assess the success of revegetation; • Identify any required maintenance works (e.g. watering, re-seeding, fertiliser application); and • Remove temporary erosion and sediment controls on completion of the rehabilitation works.		Monthly following completion of disturbance activity until fully rehabilitated (i.e. >70% permanent ground cover excluding weeds)

Note: **There are** no specific inspection requirements during the construction phase of the Development. Notwithstanding, various environmental site inspections will be undertaken during the construction phase to ensure on-going implementation and compliance with this CEMP and to identify any adverse impacts and required remedial actions. The environment site inspections to be completed are listed in **Table 31.**

Table 31 does not include inspections required for engineering and geotechnical aspects during construction.

All environmental management and mitigation measures will be maintained in a functioning condition by Cleanaway Site Management / Principal Contractor until individual construction/disturbance areas have been deemed complete and successfully rehabilitated (i.e. greater than 70% permanent ground cover, excluding weeds). Where any of the controls are observed to be not functioning correctly and/or adverse environmental impact/risk is observed, appropriate remedial actions and/or additional mitigation measures will be promptly implemented. Remedial actions/additional mitigation measures may include:

- Clean-up spills;
- Implementation of the unexpected finds protocol in the event that any archaeological or Aboriginal objects are uncovered during construction;

- Implementation of contaminated finds protocol if unexpected contamination is found on site;
- Apply for water licence from DPI Water if the local groundwater table is intercepted;
- Undertake maintenance works where revegetation has failed;
- Construction of additional erosion and sediment controls (i.e. construct additional sediment basin(s)) if the controls are not operating effectively;
- Undertake specific maintenance works for erosion and sediment controls (refer to **Appendix I)**;
- Undertake additional or alternative dust control mitigation measures (i.e. applying more water, use alternative tackifier);
- Undertake additional noise mitigation measures (i.e. reduce construction activity);
- Provide additional training to construction personnel;
- Treat water in sediment basins if water quality is poor (i.e. settling of coarse sediments, the use of flocculation for finer sediments and pH correction);
- Undertake housekeeping (general clean-up) of construction site;
- Bring in outside resources such as specialist contractors/consultants (i.e. for management of contaminated material); and
- Implement additional weed control to control declared noxious weeds (i.e. spraying).

Where considered necessary, the relevant government agencies will be consulted and any additional instructions will be adhered to. Once the impact/risk has been suitably addressed, appropriate preventative measures will be identified and implemented to negate the possibility of re-occurrence.

6.2 Reporting

Annual Review

In accordance with Condition C10 of Development Consent SSD 7075 as modified, Cleanaway will prepare and submit an Annual Review to the NSW Department of Planning & Environment (DPE) that reviews the environmental performance of the Development (including construction) over the previous year. The first Annual Review will be submitted to DPE within 1 year of commencement of construction of the WTS.

In accordance with Condition C13, the Annual Review will be made publicly available on Cleanaway's website.

Annual Return

Cleanaway will complete and supply to the EPA an Annual Return comprising:

- A Statement of Compliance;
- A Monitoring and Complaints Summary;
- A Statement of Compliance – Licence Conditions;
- A Statement of Compliance – Load Based Fee;
- A Statement of Compliance – Requirement to Prepare Pollution Incident Response Management Plan;
- A Statement of Compliance – Requirement to Publish Pollution Monitoring Data; and
- A Statement of Compliance – Environmental Management Systems and Practices,

Incident Reporting

In accordance with Condition C6 of Development Consent SSD 7075 as modified, Cleanaway Site Management will:

- Notify, at the earliest opportunity, the Secretary and any other relevant agencies including the EPA and Penrith City Council of any incident that has caused, or threatens to cause, material harm to the environment or result in offensive odour at sensitive receivers; and
- Within 7 days of the date of the incident, Cleanaway will provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.

The environment incident management system is outlined in **Section 8**.

Regular Reporting

In accordance with Condition C7 of Development Consent SSD 7075 as modified, Cleanaway Site Management will provide regular reporting on the environmental performance of the Development on the Cleanaway website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of Development Consent SSD 7075 as modified.

6.3 Records

Monitoring records required by EPA will be kept in a legible form for at least 4 years after the monitoring event.

7. Complaints Management Strategy

7.1 Performance Objective

To ensure all environmental complaints regarding the construction of the Development are promptly and effectively received, handled and addressed.

7.2 Responsibility

Cleanaway Site Management is responsible for ensuring that the appropriate management response and handling procedures are instigated and carried through in the event of a complaint.

All employees and contractors who receive a complaint, either verbal or written, are to immediately notify Site Management.

7.3 Receipt of Complaints

Complaints in relation to the construction activities may be received via any of the following ways:

- Any Cleanaway company or site office;
- Cleanaway Complaints and Feedback number - 1800 213 753;
- Cleanaway Internet enquiry – http://www.cleanaway.com.au/contact-us/; and/or
- Through a government agency (i.e. Council or EPA).

7.4 Handling Procedure

Upon becoming aware of a complaint, Cleanaway Site Management is to undertake the following:

1 Receive

In the normal course of events, the first contact for complaints will usually be made in person or by telephone. While this should instigate investigative action, a formal written complaint should be requested.

Where the initial contact reaches an employee or contractor who is not a representative of Site Management, the call should be directed to Site Management. If unavailable, the complainant's details should be taken with a view to returning the contact once Site Management is in a position to discuss the matter.

The complainant's name, address and contact details, along with the nature of the complaint, must be requested. If the complainant refuses to supply the requested information, a note should be made on the form and complainant advised of same. The date and time of the complaint will also be recorded along with the method the complaint was made.

2 Assistance

Where assistance is required handling the situation, Cleanaway's Site Manager should be contacted.

Where the complaint is reported via a government agency (i.e. Council or the EPA), Cleanaway's National Manager must be notified immediately (even if outside of normal business hours).

Relevant contact details are listed in **Table** 4.

3 Investigate

A field investigation should be initiated in an attempt to establish the legitimacy of the complaint and the cause of the problem. Cleanaway Site Management and/or the Principal Contractor should be consulted to identify

any abnormality or incident that may have resulted in the complaint. Details may include heavy vehicle activity, equipment and machinery activities, etc.

If the complaint is due to an environmental incident, the management system outlined in **Section 8** should be followed, and if the incident has caused or threatens to cause material harm to the environment each of the relevant regulatory agencies must be immediately notified.

4 Action

Once the legitimacy and cause of the complaint has been established, every possible effort must be made to undertake appropriate remedial action(s) to fix the cause of the complaint and mitigate any further impact.

5 Inform

The investigative work and remedial action should be reported back to the complainant and, if necessary, the relevant regulatory agencies.

6 Record

Every complaint received is to be recorded within the complaints register located in Cleanaway's electronic record system, "the Vault". If "the Vault" system is unavailable, then the complaint is to be recorded on Cleanaway's Incident Non Conformance Report Form contained within **Appendix M.** The complaints register will be updated on a monthly basis, as per Condition C13 of Development Consent SSD 7075 as modified. A copy of complaints any completed forms should be maintained for at least four years. The complaints register will record the action taken by Cleanaway in relation to the complaint or if no action taken the reason why no action was taken. Complaint records will be kept for at least 4 years after the complaint was made.

7.5 Preventative Action

Once the complaint has been suitably handled, appropriate preventative measures should be identified and implemented to negate the possibility of re-occurrence.

8. Environmental Incidents Management Strategy

For the purpose of this CEMP, an environmental incident is defined as any event that causes, or has the potential to cause, material harm to the environment.

8.1 Performance Objective

To ensure that any environmental incident caused by or relating to the construction of the Development is effectively responded to, and any resulting adverse environmental and/or community impact is promptly prevented or effectively managed.

8.2 Responsibility

Cleanaway Site Management is responsible for ensuring that the appropriate management response and handling procedures are instigated and carried through in the event of an environmental incident.

All employees and contractors are to:

- Take immediate action to notify Cleanaway Site Management of any environmental incident; and
- Take immediate action (where it is safe to do so) to prevent, stop, contain and/or minimise the environmental impact of the incident.

8.3 Handling Procedure

Upon becoming aware of an environmental incident, Cleanaway Site Management is to undertake the following:

1 Preventative Action

Where possible and it is safe to do so, immediate action should be taken to prevent, stop, contain and/or minimise the environmental impact of the incident.

In the unlikely event that a pollution incident requires the evacuation of the Site, actions will be completed in accordance with the Site Emergency Plan. All employees and contractors are informed of the location of emergency assembly areas through site inductions, signage and toolbox talks.

2 Notify

Under the provisions of the POEO Act, there is a duty to notify any incident that has caused or threatens to cause material harm to the environment and all relevant information about the incident. This duty extends to the following:

a) A person engaged as an employee or contractor must, immediately after becoming aware of the incident, notify the employer of the incident and all relevant information. If the employer cannot be contacted, the person is required to notify each relevant authority and provide all relevant information; and

b) An employer who is notified of an incident or who otherwise becomes aware of an incident must, immediately after becoming aware of the incident, notify each relevant authority and provide all relevant information.

Under the POEO Act, the “relevant authority” means any of the following:

- The appropriate regulatory authority;
- If the EPA is the appropriate regulatory authority - the EPA;
- If the EPA is not the appropriate regulatory authority - the local authority for the area in which the pollution incident occurs (i.e. Council);
- NSW Health;
- WorkCover NSW; and
- Fire and Rescue NSW.

Relevant contact details are listed in **Table 5** lists the contact details for the regulatory authorities that have an interest in the construction phase of the Development.

Cleanaway will provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

In the event of a serious incident or emergency, it is more than likely that the Fire and Rescue NSW and/or the EPA will take control and manage the required investigation and remedial activities. Any instructions issued must be strictly adhered to.

3 Assistance

Where assistance is required handling the situation, Cleanaway's Site Manager should be contacted.

Where the incident is reported via a government agency (i.e. Council or the EPA), Cleanaway's National Manager must be notified immediately (even if outside of normal business hours).

If adequate resources are not available and the incident threatens public health, property or the environment, it is essential that Fire and Rescue Service NSW and/or the EPA be contacted. Relevant contact details are listed in **Table 5** lists the contact details for the regulatory authorities that have an interest in the construction phase of the Development.

4 Investigate

Undertake immediate investigative work to determine the cause of the incident.

5 Remedial Action

Undertake appropriate remedial action to address the cause of the incident and mitigate any further environmental impact. In some instances, outside resources such as specialist contractors/consultants may be required.

6 Record

An assessment of the incident will be conducted and documented to minimise the potential for similar events in the future. Every environmental incident will be recorded in Cleanaway's electronic record system "the Vault". If "the Vault" is unavailable, then the incident will be recorded on Cleanaway's Non Conformance Report Form included within **Appendix M**. A copy of all completed forms should be maintained for at least four years.

7 Review

In the instance an incident report is submitted, the Environmental Incident Management Strategy will be reviewed within 3 months of the submission, as per Condition C11 of Development Consent SSD 7075 as modified.

8.4 Preventative Action

Once the incident has been suitably handled, appropriate preventative measures should be identified and implemented to negate the possibility of re-occurrence.

9. CEMP Review

This CEMP will be reviewed and, if necessary, revised within 3 months (as per Condition C11 of Development Consent SSD 7075 as modified) in the following circumstances:

- Following any significant environmental incident or impact;
- Where there is any change to the scope of the Development's construction activities and/or disturbance footprint;
- Where it is identified that the environmental performance of the Development is not meeting the objectives of the CEMP; and/or
- At the request of a relevant regulatory authority.

All employees and contractors will be informed of any revisions to the CEMP by Cleanaway Site Management during a toolbox talk.

10. References

DPE (2004) Guideline for the Preparation of Environmental Management Plans.

EPA (2006) Assessing Vibration: A Technical Guideline.

EPA (2009) Interim Construction Noise Guideline (ICNG or Guideline)

EPA (2014) Waste Classification Guidelines.

SLR (2015a) Erskine Park Resource Management Facility. Staged SSD (SSD – 7075) Concept Plan and Stage 1 Waste Transfer Station. Environmental Impact Statement (EIS).

SLR (2015b) Erskine Park Resource Management Facility. Staged SSD (SSD – 7075) Concept Plan and Stage 1 Waste Transfer Station. Response to Submissions (RTS)

SLR (2017) Environmental Assessment (EA) – Proposed minor changes to approved Erskine Park Resource Management Facility (SSD 7075) Stage 1 Waste Transfer Station.

EME (2018) Erskine Park Waste and Resource Management Facility Modification to approved SSD 7075 (Modification 2) Environmental Assessment Report.

EME (2018) Erskine Park Waste and Resource Management Facility Modification to approved SSD 7075 (Modification 3) Environmental Assessment Report.

EME (2018) Erskine Park Waste and Resource Management Facility Modification to approved SSD 7075 (Modification 4) Environmental Assessment Report

End of Document

Appendix A - Development Consents

Appendix B – Qualifications

Appendix C – Consultation Register & Evidence

Appendix D - Building and Material Schedule

Appendix E – Construction Schedule

Appendix F – Construction EPL

Appendix G –Sydney Water Approvals

Appendix H - Odour Management Plan

Appendix I - Erosion and Sediment Control Plan

Appendix J - Landscape Plan

Appendix K - Boundary Fencing and Walls Images

Appendix L - Section J Energy Efficiency Assessment

Appendix M - Incident Non-Conformance Report Form