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Frasers & Altis

Waste Management Plan
Warehouse/Logistics Hub Facility
(SSD 9522)

657–769 Mamre Road
Kemps Creek, NSW

16 May 2019

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Contents

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1. Introduction

1.1 Background

Land & Groundwater Consulting Pty Ltd (LG) has been engaged by Frasers Industrial Constructions Pty Ltd (Frasers) and Altis Property Partners Pty Ltd (Altis) to prepare a waste management plan (WMP) for the proposed construction of a Warehouse/Logistics Hub Facility (SSD 9522) located at 657–769 Mamre Road, Kemps Creek, NSW (hereafter referred as 'the site').

The site location plan is shown in **Figure 1**.

LG understands that the WMP is required to support an application with the NSW Department of Planning and Environment (DoP&E) for a proposed development, which will comprise the construction of a warehouse/logistics hub facility comprising 9 warehouses with ancillary offices in a total building area of approximately 163,671 m^2. The site layout is shown in **Figure 2**.

1.2 Objectives

As specified in the Secretary's Environmental Assessment Requirements (SEARs) for the proposed development, the objectives of the WMP are:

- To document the procedures that will be undertaken to manage the wastes generated as part of the development works;
- To provide details of the quantities and classification of waste and wastewater (if any) to be generated onsite;
- To provide details on waste storage, handling and disposal (including the location of waste storage and management facilities); and
- To provide details of the measures that would be implemented to ensure that the development is consistent with the aims, objectives and guidance in the *NSW Waste Avoidance and Resource Recovery Strategy 2014-2021*.

2. Project Summary

2.1 Project Overview

The proposed development will be on land that has been previously used for low intensity purposes within the broader Western Sydney Parklands. The proposed use of the site will be for warehousing, distribution and industry on a 24 hour, 7 day basis, consistent with surrounding land uses. The State Significant Development (SSD) will comprise the following areas (refer **Figure 2**):

Stage 1

- Total Area of 163,671 m^2.
- Nine (9) warehouses on the eastern site boundary.
- Nine (9) offices attached to the façade of each warehouse.
- An access road (Southern Link Road) and access lane (Bakers Lane) linked to Mamre Road.

2.2 Project Schedule

It is anticipated that the proposed development will comprise the following bulk and detailed earthworks volumes to create building pads:

Early Earthworks Volumes (Topsoil Whole Site)

- Cut = - 230,000 m^3.

Detailed Earthworks Volumes

- Cut = - 86,700 m^3.
- Fill = + 2,620,800 m^3.
- Allowance for Detailed Excavation (1,250 m^3/Ha) = -135,000 m^3.
- Balance = + 2,399,100 m^3.

Other significant waste to be generated by the development is anticipated to be construction waste, which will be generated during the following development construction stages:

- Construction of warehouse/office structures and related amenities across the site; and

- Construction of lead-in services including electricity, sewer and potable water.

All operational waste producing activities such as packaging material, servicing of equipment and employee amenities will be located within each respective Warehouse Facilities (refer **Figure 2**). Waste storage and management facilities will comprise colour coded recycling bins, which will be utilised to dispose off any packaging waste. The recycling bins will be located within the Loading Dock Area (allocated for each Warehouse Facility) and collected by a regulated waste contractor.

3. Waste Regulatory Framework

3.1 Protection of the Environment Operations Act 1997

Wastes in NSW are classified for disposal or transport into categories. It is the responsibility of those who generate the waste to classify it into groups that pose risks to the environment and human health facilitates their management and appropriate disposal.

All material to be removed from the site (including associated activities such as classification) will be undertaken in strict accordance with the requirements of the POEO Act 1997. Such requirements include:

- Ensuring waste is classified appropriately and in accordance with relevant guidelines;
- Waste materials are disposed of to appropriately licensed facilities; and
- Other materials are removed to facilities lawfully able to accept such materials.

3.2 Waste Avoidance and Resource Recovery Act 2001

The Waste Avoidance and Resource Recovery (WARR) Act 2001 establishes the waste hierarchy to ensure that resource management options are considered against the following priorities:

1. Avoidance – actions to reduce the amount of waste generated and undertaking activities;
2. Resource Recovery – which includes reuse, reprocessing, recycling and energy recovery, consistent with the most efficient use of the recovered resources; and
3. Disposal – an "end-of-pipe" option that must be carefully undertaken to minimise any negative environmental outcomes.

The objectives of the WARR Act 2001 include:

- To encourage the most efficient use of resources;
- To minimise the consumption of natural resources and the final disposal of waste by encouraging the avoidance of waste and the reuse and recycling of waste;

- To ensure that industry shares with the community the responsibility for reducing; and
- To ensure the efficient funding of waste and resource management planning, programs and service delivery.

3.3 Protection of the Environment Operations (Waste) Regulation 2005

The Regulation encourages the recovery of resources from waste by issuing both general and specific resource recovery exemptions. Where no general exemption is available for the intended use, a specific exemption may be issued after an application is made to the NSW EPA. Specific exemptions are not publicly available.

The Regulation makes requirements relating to non-licensed waste activities and waste transporting. The proposed works on the site will not require to be licensed. Section 48 of the Regulation requires that wastes are stored in an environmentally safe manner. It also stipulates that vehicles used to transport waste must be covered when loaded.

The Regulation exempts certain waste streams from the full waste tracking and record keeping requirements. Waste tracking is required only for industrial and hazardous wastes. However, these are not anticipated to be present on the site based on the use of the immobilisation approval. Provision is provided in the Regulation for the NSW EPA to approve the immobilisation of contaminants in waste.

3.4 Better Practice Guidelines 2012

The NSW EPA (2012) *Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities 2012* promotes efficient waste minimisation and resource recovery for commercial and industrial facilities and is used as a benchmark document when assessing waste production rates within Australia.

Better practice waste management systems in commercial buildings may incorporate any, or all, of the following:

- Garbage services to manage residual wastes (those not collected by a dedicated recycling or organics collection service).
- Recycling services to manage dry recyclable materials. These materials may vary

from building to building, but generally cover recyclable materials generated in a typical business, including office paper, cardboard, plastic film, metals and recyclable containers.

- Organics services to manage garden and food organics, which may include a bin-based collection system or onsite composting.
- Bulky waste services to manage bulky items, such as furniture and fit-out materials.
- Special waste services for items such as toner cartridges, batteries, fluorescent lights, mobile phones and chemicals.

3.5 Waste Avoidance and Resource Recovery Strategy 2014 - 2021

The NSW Government's priority areas and actions for waste avoidance and resource recovery is outlined in the Waste Strategy 2014-2021.

The six identified "key result areas" in the Strategy are:

- Key Result Area 1: Avoid and reduce waste generation (for assessment of proposed measures refer Sections 5.1 and 6.1 of this report).
- Key Result Area 2: Increase recycling (for assessment of proposed measures refer Sections 5.2 and 6.2 of this report).
- Key Result Area 3: Divert more waste from landfill (for assessment of proposed measures refer Sections 5.2 and 6.2 of this report).
- Key Result Area 4: Manage problem wastes better (for assessment of proposed measures refer Sections 5.1 and 6.1 of this report).
- Key Result Area 5: Reduce litter (for assessment of proposed measures refer Sections 5.1 and 6.1 of this report).
- Key Result Area 6: Reduce illegal dumping (for assessment of proposed measures refer Sections 5.2 and 6.2 of this report).

The Strategy also includes the following recycling targets (as relevant to the proposed works at the site)[1]:

- Increased recycling of commercial and industrial waste from 57% (in 2010-11) to 70% by 2021-21; and
- Increased recycling of construction and demolition waste from 75% (in 2010-11) to 80% by 2021-21.

3.6 Waste Classification Guidelines 2014

All wastes generated and proposed to be disposed offsite shall be assessed, classified and managed in accordance with the NSW EPA (2014) *Waste Classification Guidelines, Part 1: Classifying Waste*.

[1] *NSW Waste Avoidance and Resource Recovery Strategy 2014–21*, NSW EPA, December 2014.

4. Estimated Waste

4.1 Construction Waste

The estimated construction waste quantities are summarised in **Table 1**. These estimates are based on other similar sized facilities constructed in the local area.

Table 1 – Estimated Construction Waste

Project	Site Area (m^2)	Bin Capacity (m^3)	Total No. of Bins	Total Waste (m^3)
Lend Lease	37,216	12	42	504
DB Schenker	48,682	9.5	49	465.5
Martin Brower	57,569	10	150	1,500
Nick Scali	42,410	12	44	528
Total (Average)	***46,469***	***11***	***71***	***749***
SSD Total	**163,671**	**11**	**249**	**2,734**

4.2 Operational Waste

The estimated weekly operational waste quantities are summarised in **Table 2**. These estimates are based on other similar sized facilities constructed in the local area.

Table 2 – Estimated Weekly Operational Waste

Area Description	Waste (tonnes)	Conversion Factor	Total Waste (m^3)
Garbage Waste	28	0.15	187
Cardboard	14	0.13	108
Paper	14	0.1	140
Plastic	28	0.156	180
Pallets	210	0.156	1,346
SSD Total	**294**	**-**	**1,961**

5. Construction Waste Reduction Plan

5.1 Waste Reduction Measures

Waste-type-specific reduction measures will be employed during development construction stages, with the following specific procedures:

- Applying practical building designs and construction techniques;
- Appropriate sorting and segregation of demolition and construction wastes to ensure efficient recycling of wastes;
- 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, 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.

5.2 Beneficial Reuses

The anticipated beneficial reuses of construction waste are summarised as follows:

- Concrete, tiles and bricks will be reused onsite or reused/recycled offsite;
- Waste oil will be recycled onsite or disposed offsite of in an appropriate manner;
- All solid waste timber, brick, concrete, tiles and rock that cannot be reused or recycled will be taken to an appropriate facility for treatment to recover further resources or for disposal to landfill in an approved manner;

- All asbestos, hazardous and/or intractable wastes are to be disposed of in accordance with Workcover Authority and EPA requirements;
- Portable, self-contained toilet and washroom facilities will be provided at the site and will be regularly emptied and serviced by a suitably qualified contractor;
- Provision for the collection of batteries, fluorescent tubes and other recyclable resources will be provided onsite to enable offsite recycling;
- Drink container recycling should be provided onsite or these items sorted offsite for recycling at an appropriately licensed facility;
- All garbage will be disposed of via a council approved system; and
- Opportunities for materials exportation and reuse with other local construction operations will be investigated.

5.3 Waste Storage Locations

Waste storage locations will be accessible and allow sufficient space for storage and servicing requirements. These locations will also be flexible in order to cater for change of use throughout the development construction stages.

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.

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. Appropriate siting of waste stockpile locations will take into account slope and drainage factors to avoid contamination of stormwater drains during rain events.

Waste containers are to be kept clean and in a good state of repair.

6. Operational Waste Reduction Plan

6.1 Waste Reduction Measures

Waste-type-specific reduction measures will be employed during development operation, with the following specific procedures:

- Provision of take back services to clients to reduce waste further along the supply chain;
- Re-work/re-packaging of products prior to local distribution to reduce waste arising;
- Review of packaging design to reduce waste but maintain 'fit for purpose';
- Investigating leased office equipment and machinery rather than purchase and disposal;
- Establish systems with in-house and with supply chain stakeholders to transport products in re-useable packaging where possible;
- Development of 'buy recycled' purchasing policy;
- Flatten or bale cardboard to reduce number of bin lifts required; and
- Providing recycling collections within each of the offices and tearooms (e.g. plastics, cans and glass).

6.2 Beneficial Reuses

The anticipated beneficial reuses of operational waste are summarised as follows:

- Cardboard, paper, plastic, glass, cans and pallets and containers will be reused/recycled offsite;
- Provision for the collection of batteries, fluorescent tubes and other recyclable resources will be provided on site to enable offsite recycling;
- All waste materials that cannot be reused or recycled will be taken to an appropriate facility for treatment to recover further resources or for disposal to landfill in an approved manner;

- Waste oil (if any) used in equipment maintenance will be recycled or disposed of in an appropriate manner; and
- Opportunities for materials exportation and reuse with other local industrial operations will be investigated. This will have two benefits: minimising energy through reduction of material reprocessing, encouraging material reuse.

6.3 Waste Storage Locations

Waste storage locations will be provided within loading dock areas (refer **Figure 2**) where the recycling bins, garbage skips, and cardboard and plastic bales will be stored prior to collection. Sufficient clearance will be necessary to enable collection vehicles to access the locations of bin storage. Where possible collection times should not coincide with peak operational delivery schedules however all areas identified will not interfere with operational truck movements.

The construction of locations for garbage storage are to comply with BCA (Building Code of Australia) requirements and Australian Standards.

Waste/recycling storage locations will be constructed of an adequate size to accommodate all waste bins and receptacles (up to 20 x 1,000 L bins or equivalent receptacles) and recycling bales associated with the development. Recycling bins must be accessible to all employees and must be clearly sign posted and colour coded to ensure segregation of waste and recycling is effective.

Sufficient space will be provided for the segregation and storage of varying waste types including provision for the collection of fluorescent tubes, smoke detectors, e-wastes and other recyclable resources.

Sufficient space will also be provided for reuse items such as crates and pallets for occupational safety purposes.

Doors/gates to the waste storage locations will be able to be opened from the outside and wide enough to allow for easy passage of waste/recycling containers.

7. Waste Removal

It is anticipated that there may be minor quantities of general solid waste (i.e. demolition of existing structures or excess topsoil) and/or contaminated waste requiring offsite disposal. These materials should be managed in general accordance with the methodologies described in Sections 7.1 and 7.2 below.

7.1 Waste Classification

All liquid and non-liquid wastes generated during development construction works (if any) shall be classified in accordance with the requirements of NSW EPA (2014) *Waste Classification Guidelines, Part 1: Classifying Waste*.

Samples shall be collected by appropriately trained and experienced personnel from stockpiled or in-situ waste materials by the use of a hand trowel. The hand trowel shall be thoroughly decontaminated using phosphate free detergent and distilled water between each sampling location.

During the collection of soil samples, features such as seepage, discolouration, staining, odours and other indications of contamination should be noted on the field documentation.

Collected soil samples shall be immediately transferred to sample containers of appropriate composition (glass jars). Sample labels shall record job number; sample identification number; and date and time of sampling.

Sample containers shall be transferred to a chilled ice box for sample preservation prior to and during shipment to the testing laboratory. A chain-of-custody form should be completed and forwarded with the samples to the testing laboratory.

Soil samples shall be analysed by both a primary and secondary (independent check) laboratory, both of which shall be NATA accredited for the required analyses. In addition, the laboratories will also be required to meet the environmental consultant's own internal quality assurance requirements.

The analytical data shall be compared against the waste criteria contained in NSW EPA (2014) *Waste Classification Guidelines, Part 1: Classifying Waste* for heavy metals, TRHs, BTEX, PAHs, total pesticides (OCPs and OPPs), PCBs and TCLP in benzo(a)pyrene, lead and nickel. A summary of the criteria is provided in **Table 3**.

Table 3 – Summary of Waste Classification Criteria

Contaminant	General [1]	Restricted [1]	General [2]	Restricted [2]	General [3]	Restricted [3]
	CT1	CT2	SCC1	SCC2	TCLP1	TCLP2
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(µg/L)	(µg/L)
Heavy metals						
Arsenic	100	400	500	2000	5.0	20
Cadmium	20	80	100	400	1.0	4
Lead	100	400	1500	6000	5	20
Mercury	4	16	50	200	0.2	0.8
Nickel	40	160	1050	4200	2	8
BTEX						
Benzene	10	40	18	72	0.5	2
Toluene	288	1152	518	2073	14.4	57.6
Ethylbenzene	600	2400	1080	4320	30	120
Xylenes (total)	1000	4000	1800	7200	50	200
Petroleum Hydrocarbons						
C_6-C_9	N/A	N/A	650	2600	N/A	N/A
C_{10}-C_{36}	N/A	N/A	10000	40000	N/A	N/A
PAHs						
Benzo(a)pyrene	0.8	3.2	10	23	0.04	0.16
PAHs (total)	N/A	N/A	200	800	N/A	N/A
Pesticides (total)	N/A	N/A	250	1000	N/A	N/A
PCBs (total)	N/A	N/A	<50	<50	N/A	N/A

Notes:

1. Contaminant threshold values for classifying waste by chemical assessment without the leaching (TCLP) test (Table 1) – NSW EPA (2014) *Waste Classification Guidelines, Part 1: Classifying Waste*.

2. Specific contaminant concentration (SCC) values for classifying waste by chemical assessment (Table 2) – NSW EPA (2014) *Waste Classification Guidelines, Part 1: Classifying Waste*.

3. Leachable concentration (TCLP) values for classifying waste by chemical assessment (Table 2) – NSW EPA (2014) *Waste Classification Guidelines, Part 1: Classifying Waste*.

7.2 Waste Transporting

All wastes removed from the site shall be transported in accordance with relevant road and transportation regulatory requirements. Where required (depending on the classification of the wastes), appropriately licensed transport contractors shall be used.

The appointed transporters shall be responsible for ensuring they are appropriately licensed to:

- Carry the particular type of waste; and
- Transport the materials to an appropriately licensed facility.

Where the waste is classified as Restricted Waste or Hazardous Waste, the transporter is required to carry (subject to a number of exceptions) appropriately completed waste data forms with each load, and provide a copy to the waste facility to which the waste is taken.

8. Limitation Statement

This report has been prepared for use by Frasers Industrial Constructions Pty Ltd and Altis Property Partners Pty Ltd who commissioned the works in accordance with the project brief only and has been based in part on information obtained from other parties. The advice herein relates only to this project and all information provided should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose. Additionally, this report has been based on data documented by other parties in previous reports.

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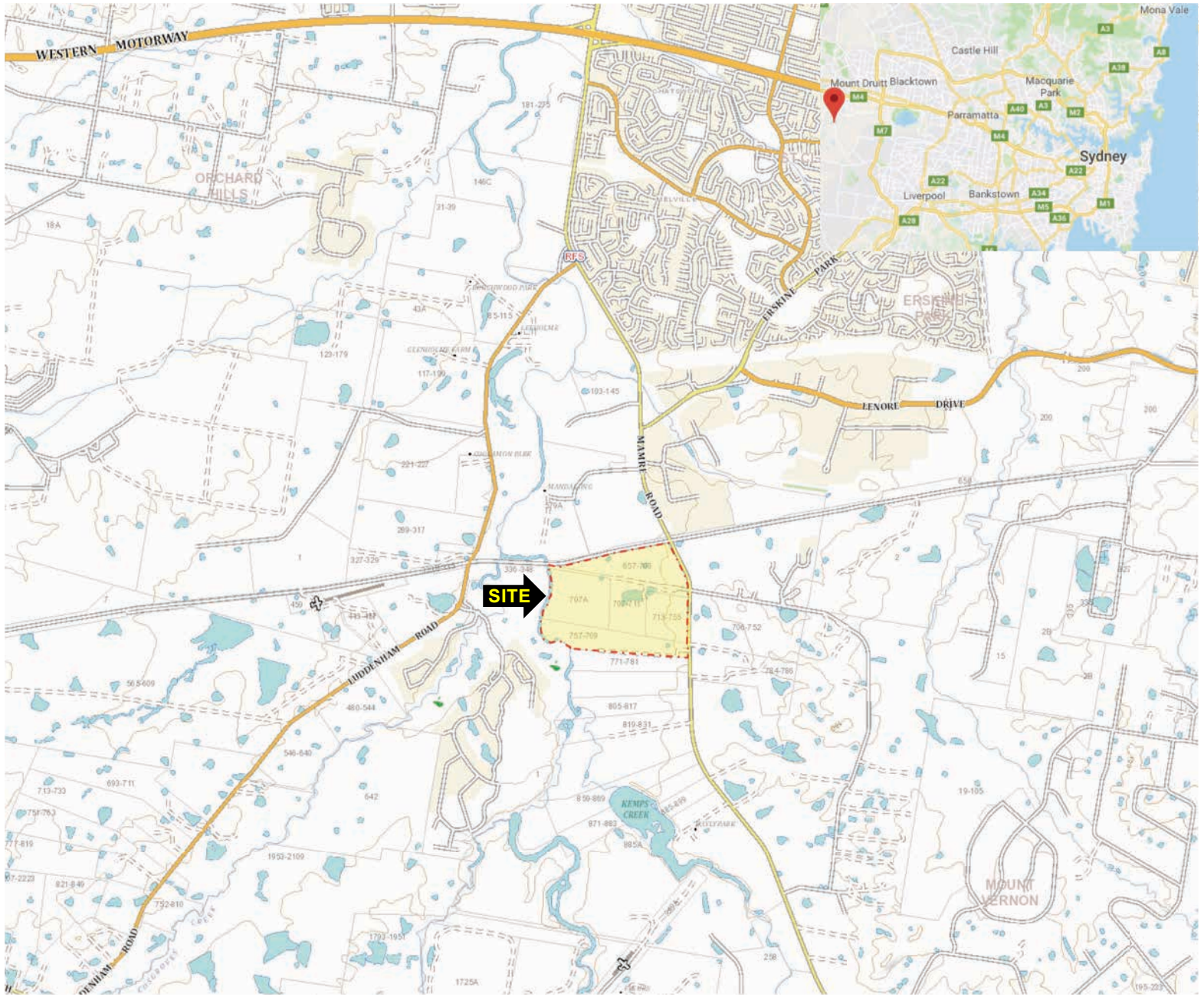
Waste quantities and sources are based on documents made available to LG consult by Frasers Industrial Constructions Pty Ltd and Altis Property Partners Pty Ltd.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein.

Figures



SCALE: **DRAWN TO SCALE AS SHOWN**

Not To Scale

NORTH

LEGEND:

Site Boundary

Image courtesy of Google & Six Maps

REV:	A
DATE:	05/07/2018
DRAWN:	GP
APPROVED:	GP
STATUS:	Final
DWG NO:	

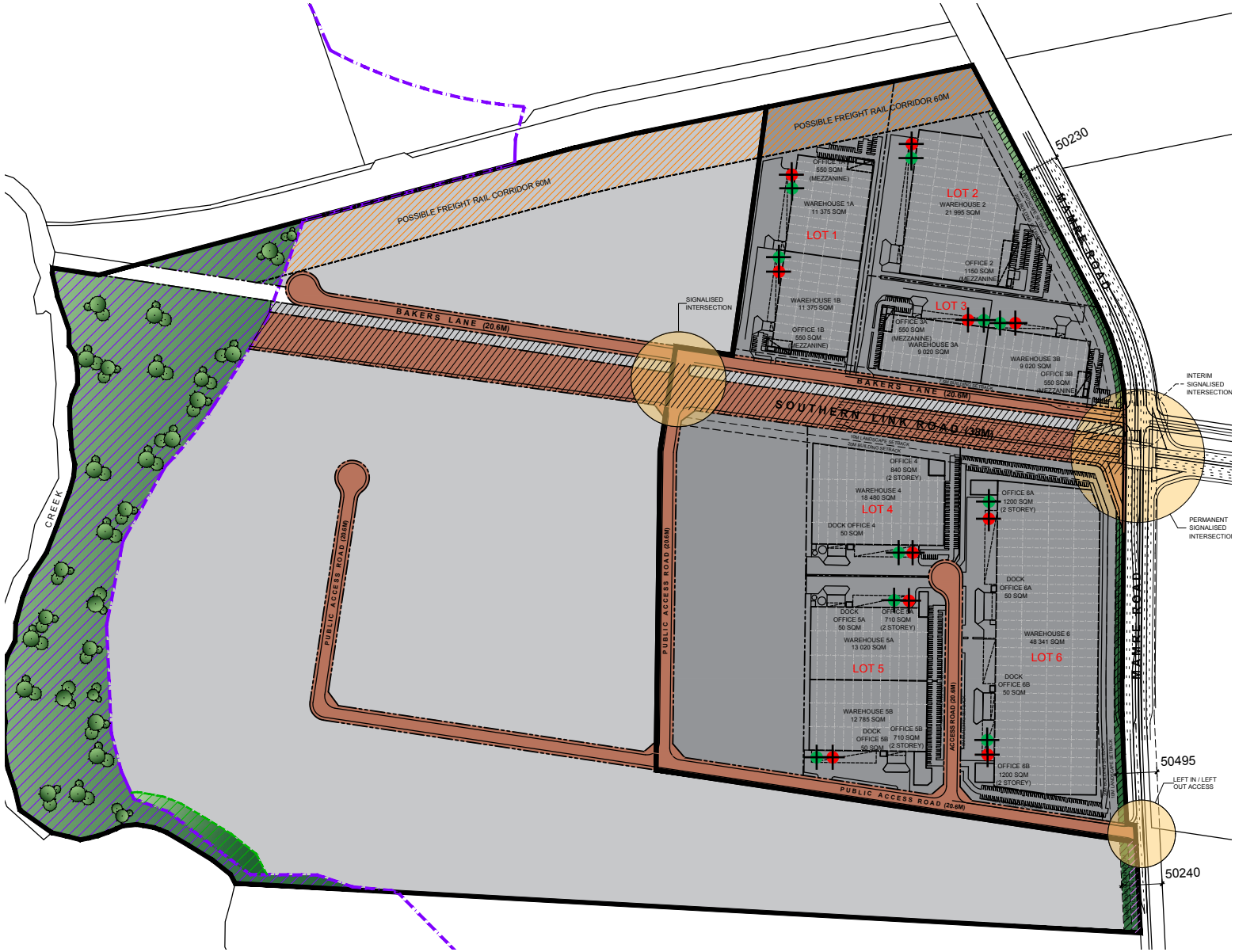
CLIENT: **Frasers & Altis**

PROJECT: **657–769 Mamre Road Kemps Creek, NSW**

PROJECT NUMBER: LG1847.01

TITLE: **Site Location Plan**

FIGURE: **1** A4



SCALE: **DRAWN TO SCALE AS SHOWN**

Not To Scale

NORTH

LEGEND:

- 1000 L Mobile Garbage Bin (MGB) for General Garbage
- 1000 L MGB for Recycling

Image courtesy of Frasers & Altis

LG CONSULT

REV:	A
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CLIENT: **Frasers & Altis**

PROJECT: **657–769 Mamre Road Kemps Creek, NSW**

PROJECT NUMBER: LG1847.01

TITLE: **SSD Plan**

FIGURE: **2** A4