



225-245 Martin Road, Bradfield - Earthworks and Remediation and Quarrying SSD-97711727

Waste Management Plan

Goodman Property Services (Aust) Pty Ltd

The Hayesbery
1-11 Hayes Road
Rosebery NSW 2018

Prepared by:

SLR Consulting Australia Pty Ltd

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Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
0.4	11 March 2026	Andrew Quinn/ Chris Newland	Gavin Hull/ Miles Mason/Rachel McNeil	Andrew Quinn

Basis of Report

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Goodman Property Services (Aust) Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.



Executive Summary

This waste management plan (WMP) has been prepared by SLR Consulting Australia (SLR) to address the site-specific Secretary's Environmental Assessment Requirements (SEARs) received for proposed State Significant Development Application (SSDA) number 97711727. The proposed development includes rehabilitation, quarrying and bulk earthworks and is being undertaken by Goodman Property Services (Aust) Pty Ltd (Applicant) on behalf of Goodman Western Sydney Pty Limited as trustee for the Goodman Western Sydney Trust (Owner). The development is located at 225 – 245 Martin Road, Bradfield, NSW (the Site).

This report concludes that the proposed earthworks are suitable and warrant approval subject to the implementation of the following mitigation measures.

- Separation of waste and recyclables and recovery of recyclables as described.

Following the implementation of the above mitigation measures, the remaining impacts are appropriate.



Table of Contents

Basis of Report	i
1.0 Introduction	1
1.1 Overview	1
1.2 Related Applications and Activities	2
1.3 The Site.....	3
1.4 Secretary's Environmental Assessment Requirements.....	4
1.5 Agency Feedback.....	5
1.5.1 NSW EPA.....	5
1.5.2 Liverpool City Council.....	6
1.6 Stakeholder Engagement.....	6
1.7 Review of WMP.....	6
2.0 Better Practice for Waste Management and Recycling	7
2.1 Waste Management Hierarchy	7
2.2 Benefits of Adopting Better Practice	8
3.0 Waste Legislation and Guidance.....	8
3.1 Statutory requirements	8
3.2 Western Sydney Aerotropolis DCP 2022	9
3.2.1 2.16 Waste Management and Circular Economy.....	9
3.3 Aviation Safeguarding Guidelines – Western Sydney Aerotropolis and surrounding areas. November 2022.....	12
3.4 Western Sydney Aerotropolis Precinct Plan	12
3.5 Liverpool Development Control Plan 2008.....	13
3.6 Other Legislation and Guidance	14
4.0 Earthworks.....	16
4.1 Targets for Resource Recovery.....	16
4.2 Waste Streams and Classifications	16
4.3 Demolition Waste	18
4.3.1 Infrastructure for Demolition	18
4.3.2 Demolition Waste Quantities	19
4.4 Earthworks	20
4.4.1 Overall Cut and Fill.....	20
4.5 Waste Avoidance	21
4.6 Reuse, Recycling and Disposal.....	21
4.7 Waste Storage and Servicing	22



4.7.1 Waste Segregation and Storage.....	22
4.7.2 Waste Storage Areas	23
4.7.3 Waste Servicing and Record Keeping	23
4.8 Site Inductions.....	24
4.9 Signage.....	24
4.10 Monitoring and Reporting	25
4.11 Roles and Responsibilities	25
5.0 Beneficial Use.....	26
5.1 Overview	26
5.2 Beneficial use as VENM	27
5.3 Beneficial use as ENM	27
5.4 Beneficial use as Reclaimed Asphalt Pavement.....	30
5.5 Beneficial use as Recovered Aggregate	30
5.6 Waste Classification and Off-site Disposal	32
6.0 Beneficial Use and Import	33
6.1 Overview	33
6.2 Off-site Material Management	34
6.2.1 Transportation requirements.....	34
6.2.2 Material tracking records	34
6.2.3 Disposal register.....	34
6.2.4 Record keeping	35
7.0 Unexpected Findings Protocol.....	35
8.1 Findings	36
8.2 Non-compliance	36
8.3 Cumulative impacts	36
8.4 Waste Classification and Beneficial Reuse.....	37
8.5 Mitigation measures	37

Tables

Table 1	Site Description	3
Table 2	SEARs.....	5
Table 3	Relevant waste legislation and guidance	14
Table 4	Potential demolition and construction waste types, classifications and management methods	16
Table 5	Resource recovery and waste management facilities	18



Table 6	Demolition waste generation rates.....	19
Table 7	Estimated demolition waste types and quantities.....	20
Table 8	Cut and fill quantities	21
Table 9	Suggested site preparation and construction waste management roles and responsibilities	25
Table 10	ENM Sampling for Stockpiled Material.....	28
Table 11	ENM Sampling for In Situ Material	28
Table 12	ENM Chemical and Material Requirements	29
Table 13	Recovered Aggregate Material Requirements	31

Figures

Figure 1	Proposed Earthworks (Source: Arcadis)	4
Figure 2	Waste Management Hierarchy.....	7
Figure 3	Site layout of existing conditions and demolition areas	19
Figure 4	Overall cut and fill	20
Figure 5	Examples of NSW EPA labels for waste skips and bins.....	24



1.0 Introduction

1.1 Overview

This Waste Management Plan (WMP) has been prepared by SLR Consulting Australia (SLR) to address the site-specific Secretary's Environmental Assessment Requirements (SEARs) received for proposed State Significant Development Application (SSDA) No. 97711727. The proposed development includes rehabilitation, quarrying and bulk earthworks and is being undertaken by Goodman Property Services (Aust) Pty Ltd (Applicant) on behalf of Goodman Western Sydney Pty Limited as trustee for the Goodman Western Sydney Trust (Owner). The development is located at 225 – 245 Martin Road, Bradfield, NSW (the Site).

This SSDA seeks approval for the following:

- Site preparation works only, that is, no buildings, retaining walls or other infrastructure works
- Rehabilitation of areas disturbed by historic mining and brick-making operations under major project approval MP10_0014 and MP10_0033.
- Bulk Earthworks to the site to align with the Connecting to Country and Precinct Plan principles including both the disturbed and undisturbed portions to capture the following proposed Works:
 - o Rehabilitation of Pits 1 and 2 using predominantly on-site fill. Engineered fill import is required.
 - o Preparation of the remaining site area to bulk earthwork levels, not including detailed trimming, for the proposed industrial development as considered under SSDA 97688711.
- Quarrying and export of Bringelly Shale and clay from select areas of Pit 1 and 2 to rectify the previous approved pit designs to ensure they are geotechnically stable to suit the proposed industrial masterplan.
- Vegetation Removal of 6.97 ha over land that is not certified under the Growth Centre SEPP.
 - o Species being cleared involve species protected under both the NSW *Biodiversity Conservation Act 2016* and Commonwealth *Environment Protection and Conservation Act 1999* (EPBC Act).
 - o EPBC Act Referral completed on a precautionary measure given small amount of EPBC listed communities.
- Demolition of any remaining structures on the site.
- Rehabilitation of identified and unidentified contamination and, if required, the construction of a containment cell in the proposed northeastern corner of the site, currently identified as Lot 55 of DP 3050. The containment cell is proposed to trigger designated development threshold due to the proposed upper limit storage volume of 100,000 m³.
- Relocation of the Jemena Gas main predominantly burdening Lot 3 of DP127878.0
- If required through an aboriginal cultural heritage assessment report, relocation and reburial of artefacts.



Additionally, this SSDA application seeks to rely on already existing authority approvals issued under MP10_0014, subject to any applicable modifications. These are as follows:

- Mining Lease 1771
- Environmental Protection Licence 684
- Ground Water Access Licence WAL24346
- Ground Water Supply Works Approval No. 10WA109463.

It is important to note that a number of the proposed activities being sought for approval under this SSDA have previously been assessed and approved under MP10_0014. The existing DA relates to approximately 70 ha of net developable area (NDA), with the new portion of site approximately 36 ha NDA. Cumulatively the area is approximately 116 ha NDA.

This report further outlines this in Section 1.2.

1.2 Related Applications and Activities

SSDA 97688711 – 14 warehouse buildings, Active Open Space and amenities precinct, including a café, and internal site infrastructure works

The SSDA seeks approval for the construction, fit-out, including office and standard warehouse racking, and operation of 14 warehouse buildings, active open space and amenities precinct, including a café, and internal site infrastructure works.

This application assumes the bulk earthworks are completed under SSDA 97711727.

Part 5 Activity – External Works Lead in Roads and Services

The Applicant is proposing access to the Site via the following route which will be upgraded to be in accordance with the Precinct Plan.

Part 1 - Martin Road and Elizabeth Drive intersection upgrades:

- It is expected that these Works will be approved by way of amendment to the existing Part 5 approval by Transport for New South Wales (TfNSW)
- It is understood that TfNSW will construct the work with a target completion date of December 2029

Part 2 -4 - Martin Road, East West Collector Road and Lawson Road Upgrades:

- Further to Part 1, access to the site is proposed to be constructed concurrently as follows:
 - o Part 2 – Access from the Martin Road and Elizabeth Drive intersection will continue down Martin Road and join the future East/West Collector Road identified within the Precinct Plan through Lot 36 DP 3050:
 - The portion of road between the Intersection and future East/West Collector Road will be upgraded with a temporary access strategy that is consistent with Condition DS5 of the Precinct Plan.
 - o Part 3 – The East/West Collector Road through Lot 36 DP 3050 is proposed to be delivered in ultimate form consistent with the Precinct Plan, connecting Martin Road and Lawson Road



- o Part 4 – From the East/West Collector Road connection on Lawson Road, the portion of Lawson Road south through to the Site will be upgraded in ultimate form consistent with the Precinct Plan.
- It is expected that these Works will be completed by December 2029, based on a commencement date of June 2028.

It is the Applicant's expectation that the above-mentioned Works (Part 1-4) are completed prior to the receipt of the first building occupation certificate (expected December 2029).

Notwithstanding the above, the Applicant notes that access to the site under SSD 97711727 will continue to be via Martin Road based on the intersection upgrades completed under MP10_0014.

1.3 The Site

The key features of the Site are shown in Table 1 below.

Table 1 Site Description

Description	Site Detail
Land Configuration	• Lot 1 DP 1278780 • Lot 2 DP 1278780 • Lot 3 DP 1278780 • Lot 55 DP 3050 • Lot 56 DP 3050
Existing land use(s)	The Site is currently an operational quarry and historically had a brickmaking facility. The structures and hardstand areas used for the quarry operations are located in the central portion of the Site, connected by an internal road network. In addition, three pits are located along the southern and southeast portion of the Site.
Surrounding Land Use	Surrounding land uses include: • North: Land to the north is predominantly characterised by a mix of rural, agricultural, landscape industries and residential properties accessed by Lawson and Martin Roads. It is noted that several sites are subject to existing SSDAs for industrial and warehouse developments. Both Martin and Lawson Roads intersect with Elizabeth Drive, a major arterial road that provides access to the Western Sydney International Airport (WSI) site and the broader regional road network including the M7, Northern Road and the future M12. • South: The land to the south is currently rural however, is subject to the IPG Master Plan which was approved on 11 July 2025. The approved master plan covers 184 ha and aims to support over 12,400 jobs. Inghams Property Group has allocated around 625,467 m² for employment space, focusing on advanced manufacturing, logistics, and community services. The plan includes a mix of industrial and commercial zones, a local centre, and accessible public green spaces near the Western Sydney International Airport. • Further to the south-west of the, is Bradfield City Centre, a 114-hectare planned urban development adjacent to WSI. Designed to be a hub for innovation, advanced industries, and economic growth, it has the



Description	Site Detail
	potential to create 20,000 jobs and provide 10,000 homes, including affordable housing. The Bradfield City Master Plan prioritises sustainability, integrating green spaces, climate-resilient infrastructure, and a commitment to achieving net-zero emissions. • East: Further east of the Wianamatta-South Creek which bounds the site, is the suburb of Kemps Creek. This land is characterised by a mix of open space, rural, agricultural, emerging urban development, and residential properties that are non-initial precincts under the WSAP but intended for employment generating uses • West: To the immediate west of the Site, bound by Badgerys Creek, is WSI. Located in Badgerys Creek, WSI is a major federal infrastructure project designed to accommodate Sydney's future aviation needs. Set to commence operations in 2026, WSI will initially handle 10 million passengers annually and operate 24 hours per day seven days per week. Badgerys Creek Road also travels in a north-south direction to the west of the site. It provides a north-south connection between Elizabeth Drive and the Northern Road.
Site Access and road network	The Site is currently accessible from Martin Road which is located at the north-eastern boundary.

An aerial image of the site and proposed earthworks is shown in Figure 1 below.

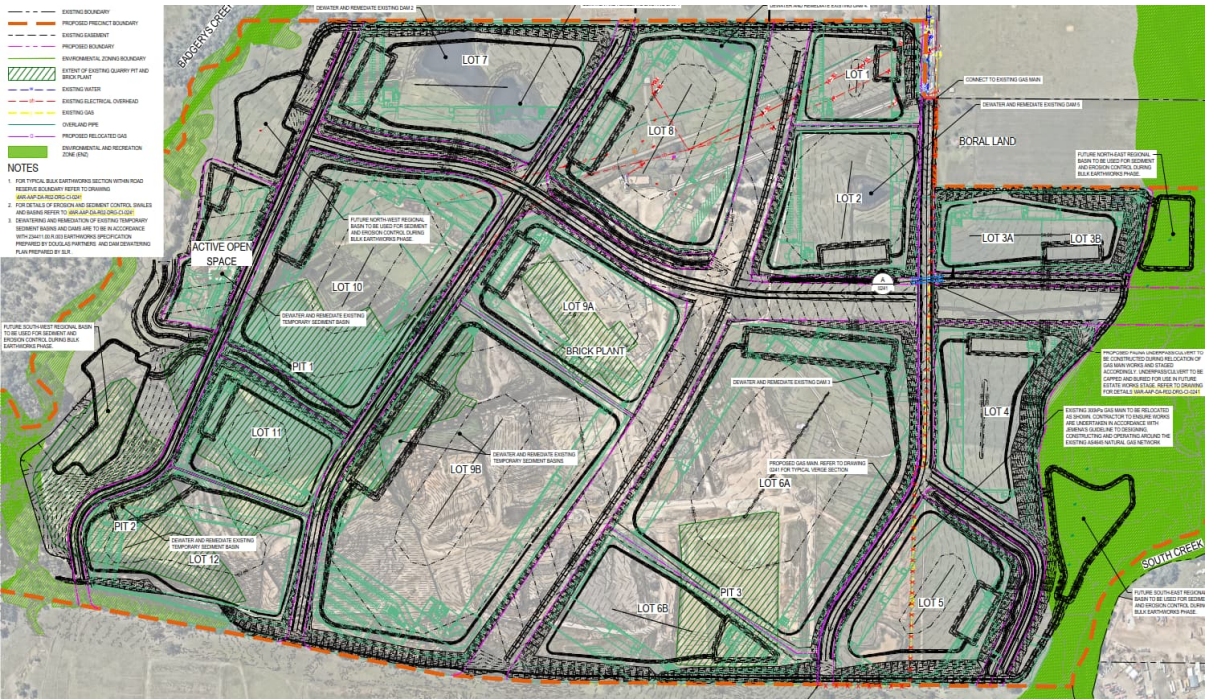


Figure 1 Proposed Earthworks (Source: Arcadis)

1.4 Secretary’s Environmental Assessment Requirements

The SEARs for this application have been issued. In this waste management plan the relevant requirements of the SEARs have been addressed as shown in Table 2 below.



Table 2 SEARs

Description of requirement	Section reference
Waste – including: Estimates of the quantity and nature of the waste streams, that would be generated and any measures that would be implemented to minimise, manage, reuse or dispose of these waste streams	Please refer to: - Section 4.2 Waste Streams and Classifications - Section 4.3.2 Demolition Waste Quantities - Section 4.4.1 Overall Cut and Fill
Measures to verify that material received at the site is appropriate for emplacement and unauthorised waste is not inappropriately emplaced at the site	Please refer to: - Section 5.0 Beneficial Use - Section 6.0 Beneficial Use and Import - Section 7.0 Unexpected Findings Protocol

1.5 Agency Feedback

1.5.1 NSW EPA

The NSW EPA made the following recommendations on the SEARs for waste management

Comments	Where addressed in this WMP
3. Construction Works 3.1. The EIS must include detail of the construction works including: a. any earthworks or site clearing; re-use and disposal of cleared material (including use of spoil on-site).	See Section 5.0 Beneficial Use
b. Identify, characterise and classify the following in accordance with the EPA's Waste Classification Guidelines (2014): i. all waste that will be generated onsite through excavation, demolition or construction activities, including proposed quantities of the waste; ii. all waste that is to be removed to an offsite location, including proposed quantities. Include the commitment to ensure this waste is taken to a facility that can lawfully receive it.	See: Section 5.0 Beneficial Use Section 4.7.3 Waste Servicing and Record Keeping Section 6.2.3 Disposal register
6. Waste, chemicals and hazardous materials and radiation The EIS must assess the following waste, chemical and hazardous materials related aspects of the proposed development: 6.1. Assess and describe all aspects of waste generation, management and disposal associated with the proposed development.	See Section 4.0 Earthworks where all these requirements are covered.
6.2. Demonstrate compliance with all regulatory requirements outlined in the POEO Act and associated waste regulations.	Compliance with the POEO Act will be a matter for earthworks contractors carrying out the Works. The Waste Management Plans assume contractors will undertake lawful operations at all times.



Comments	Where addressed in this WMP
6.7. Identify the measures that would be implemented to ensure that the development is consistent with the aims, objectives and guidance in the NSW Waste and Sustainable Materials Strategy 2041 Stage 1: 2021-2027.	See Section 4.1 Targets for Resource Recovery.

1.5.2 Liverpool City Council

Comments	Where addressed in this WMP
3. Environmental Health To mitigate potential risks to human health and the environment, it is requested that the Department takes the following matters into consideration when preparing the SEARs for the proposed development: - Construction Environmental Management Plan (CEMP). Prior to issue of a construction certificate, a Construction Environmental Management Plan (CEMP) for the development must be provided to the Principal Certifying Authority for approval. The CEMP must address all environmental aspects of the development's construction phases, and include (where relevant), but not be limited to, the following: - Waste Management Plan;	This waste management plan can be used in the preparation of the CEMP.

1.6 Stakeholder Engagement

No stakeholder engagement was undertaken in the preparation of this WMP.

1.7 Review of WMP

This WMP will be reviewed and updated:

- To remain consistent with waste and landfill regulations and guidelines.
- If changes are made to site waste and recycling management, or
- To take advantage of new technologies, innovations and methodologies for waste or recycling management.

Copies of the original WMP and its future versions should be retained by the site manager. Changes made to the WMP, as well as the reasons for the changes made, should be documented by the site manager as part of the review process.



2.0 Better Practice for Waste Management and Recycling

2.1 Waste Management Hierarchy

This WMP has been prepared in line with the waste management hierarchy shown in Figure 2. The hierarchy summarises the objectives of the *Waste Avoidance and Resource Recovery Act 2001*.

The waste management hierarchy comprises the following principles, from most to least preferable:

- Waste **avoidance**, prevention or reduction of waste generation. Achievable through better design and purchasing choices.
- Waste **reuse**, reuse without substantially changing the form of the waste.
- Waste **recycling**, treatment of waste that is no longer usable in its current form to produce new products.
- Energy **recovery**, processing of residual waste materials to recover energy.
- Waste **treatment**, reduce potential environmental, health and safety risks.
- Waste **disposal**, in a manner that causes the least harm to the natural environment.

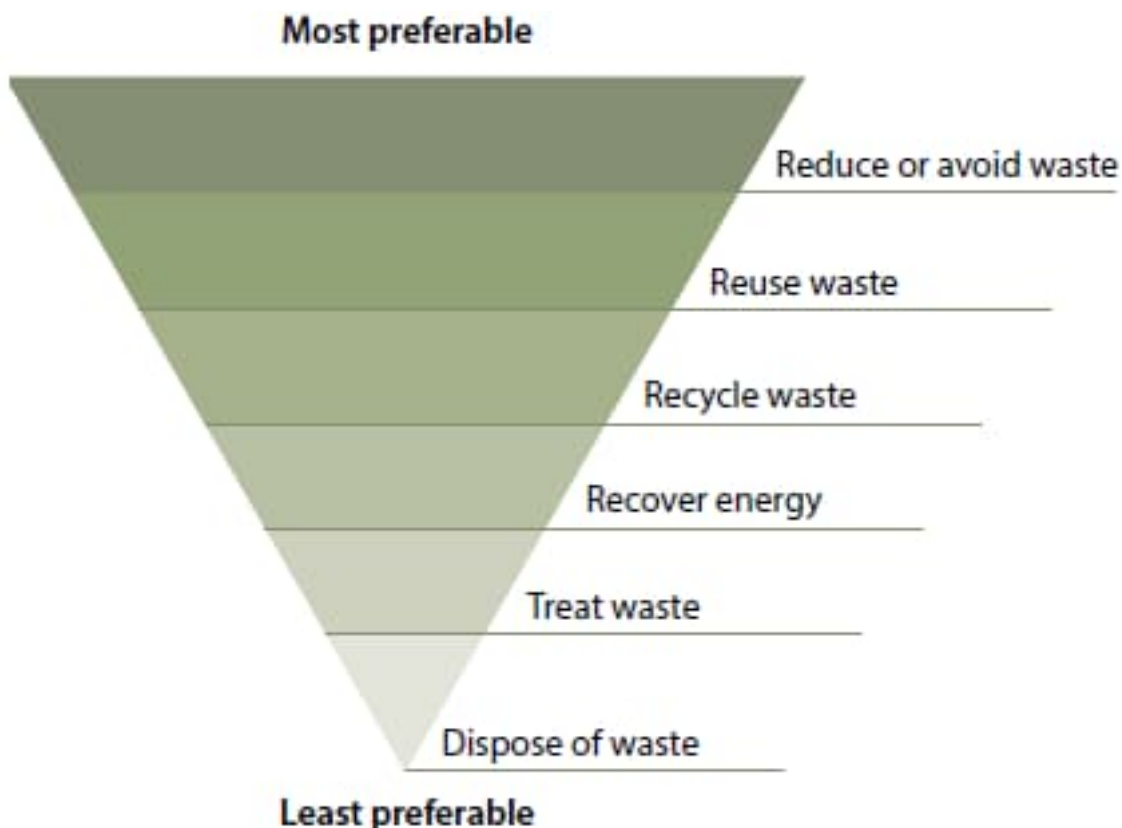


Figure 2 Waste Management Hierarchy



2.2 Benefits of Adopting Better Practice

Adopting better practice principles in waste minimisation offers significant benefits for organisations, stakeholders and the wider community. Benefits from better practice waste minimisation include:

- Improved reputation of an organisation due to social and environmental responsibility.
- Lowered consumption of non-renewable resources.
- Reduced environmental impact, for example, pollution from materials manufacturing and waste treatment.
- Reduced expenses from lower waste disposal.
- Providing opportunities for additional revenue streams through beneficial reuse.

3.0 Waste Legislation and Guidance

Only the legislative and guidance provisions relating to the proposed earthworks are applicable. Permanent built form and operational waste will be addressed as part of the separate Internal Works SSDA.

3.1 Statutory requirements

Relevant legislation, plans, policies and guidelines addressed in this WMP are as follows:

- Project SEARs – Section 1.4
- Western Sydney Aerotropolis DCP 2022 – Section 3.2
- Aviation Safeguarding Guidelines – Western Sydney Aerotropolis and surrounding areas. November 2022 – Section 3.3
- Western Sydney Aerotropolis Precinct Plan – Section 3.4
- Liverpool Development Control Plan 2008 – Section 3.5.
- NSW EPA 2013. *Certification: Virgin Excavated Natural Material* (ref: EPA 2013/0693; September 2013).
- NSW EPA 2014. *Waste Classification Guidelines Part 1: Classifying Waste*
- NSW EPA 2016. *Addendum to the Waste Classification Guidelines (2014) - Part 1: Classifying Waste (PFAS Addendum)*
- NSW EPA 2022. *Contaminated Land Guidelines – Sampling Design Part 1: Application.*
- The Hills Development Control Plan 2012 - for estimating the types and quantities of waste generated from demolition of existing buildings
- Australian Asphalt Pavement Association *Light Duty Asphalt Pavements - Design, Specification and Construction 2002* - for estimating the types and quantities of waste generated from demolition of existing buildings.
- Resource Recovery Orders under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014:
 - o The Excavated Natural Material Order 2014.



- o The Excavated Public Road Material Order 2014.
- o The Reclaimed Asphalt Pavement Order 2014.
- o The Recovered Aggregate Order 2014.
- Resource Recovery Exemptions under Part 9, Clauses 91 and 92 of the Protection of the Environment Operations (Waste) Regulation 2014:
 - o The Excavated Natural Material Exemption 2014.
 - o The Excavated Public Road Material Exemption 2014.
 - o The Reclaimed Asphalt Pavement Exemption 2014.
 - o The Recovered Aggregate Exemption 2014.

3.2 Western Sydney Aerotropolis DCP 2022

Western Sydney Aerotropolis DCP (WSADCP) makes a number of references to waste management. Only those most relevant are detailed below, for example, references to residential developments are omitted. Where necessary, commentary is also provided on their application in this Site.

2.7 Parking design and access

PO7 Vehicle access arrangements and queuing areas on a site shall minimise any adverse impact on infrastructure, road networks, safety, adjoining properties, amenity, and street trees.

5. *Where the entry to a parking space is also the entry to a waste collection area, access should be possible via a PIN pad and code, to avoid the need for waste truck drivers to carry keys or access cards/fobs with them.*

2.9 Service and loading design

PO1 Provide on-site loading and servicing that meets the demand generated by the development.

2. *All servicing, including waste and recycling collection, to be carried out wholly within the site with collection points at convenient locations.*

2.10.3 Wildlife Hazards

PO1 Development does not attract wildlife which would create a safety hazard to the operations of the Airport.

1. *All waste bins are designed and installed with fixed lids.*
2. *Any bulk waste receptacle or communal waste storage area is contained within enclosures that cannot be accessed by birds or flying foxes.*

3.2.1 2.16 Waste Management and Circular Economy

PO1 Waste management measures are implemented at lot and neighbourhood scale to support circular economy activities.

1. *Submit a waste management plan to support circular economy activities that also details the quantity and type of waste generated and how this will be managed, reused and recycled. Where possible, incorporate technologies such as vacuum extraction or on-site food processing.*



3. *Demonstrate that organic waste can be managed in the building through measures such as:*
 - a. *Multiple options for on-site organic waste to maximise recovery (e.g. communal composting, worm farms, individual composting, dehydrators);*
 - c. *Energy generation from organic waste (anaerobic digestion) at lot and precinct scale.*

PO2 Waste and recycling facilities promote waste separation and reduce contamination. Materials are separated at source to achieve higher value recovery.

1. *Collection points (including but not limited to reverse vending machines and e-waste drop-off) must be located with adequate space for servicing, ease of use and to encourage the separation of waste material. Collection points are documented in the waste management plan and are easily accessible.*
2. *Provide separate and enclosed storage for liquid, chemicals, and hazardous waste.*
4. *Consolidated organic waste drop off points are designed to minimise any potential odour and vermin risks. This includes the provision of rooms that are temperature controlled and suitably ventilated.*

PO3 The location of waste management is clearly indicated for each site and neighbourhood.

1. *Provide uniform waste management design and colour coding in accordance with AS 4123 across residential and commercial developments.*
2. *Waste management systems and rooms are located inside buildings to support a heightened amenity and urban design outcome. Waste must not be left outside (excluding during collection) to avoid attracting animals.*

PO4 Waste bins are provided to a level commensurate with waste produced for each development as outlined in Council's waste and recycling service.

1. *Waste storage areas are designed to:*
 - a. *Accommodate the required number and size of waste bins;*
 - b. *Provide space for the bins to be accessed, rotated and manoeuvred for emptying;*
 - c. *Allow for future waste separation practices; and*
 - d. *Account for different uses in mixed use development through the provision of separate and enclosed collection rooms for both residential and commercial uses.*

PO5 Implement innovative waste management storage systems that are safe, healthy, and efficient.

1. *Waste storage areas are to:*
 - a. *Be well-lit and ventilated;*
 - b. *Include water and drainage facilities for cleaning the bins and bin storage area;*
 - c. *Be easily and conveniently accessible for all users and collection contractors;*
 - e. *Comply with Local Council Policy and contractual service provisions.*



2. *Collection and loading points are to be:*
 - a. *Level;*
 - b. *Free of obstructions;*
 - c. *Easily accessible from the nominated waste and recycling storage area;*
 - d. *Be integrated wholly within the built form to support a heightened amenity outcome;*
 - e. *Be accessible by heavy rigid collection vehicles to permit entry and exit of the site in a forward direction;*
 - f. *Comply with the Building Code of Australia and Relevant Australian Standards; and*
 - g. *Comply with Local Council Policy and contractual service provisions.*
3. *Provide safe and easy access to waste and resource recovery areas for residents, building managers and collection contractors.*
4. *Ensure waste and recycling areas flexibly adapt to other types of waste and materials storage over time.*
5. *Design waste and recycling facilities to prevent litter and contamination of the stormwater drainage system.*

PO6 Waste management storage systems minimise negative impacts on the streetscape, public domain, building presentation or amenity of pedestrians, occupants, and neighbouring sites.

1. *Waste storage and collection areas are to:*
 - a. *Where possible, be integrated wholly within the developments built form;*
 - b. *Not be visible from the street or public domain;*
 - c. *Not adjoin private open space, windows, habitable rooms, or clothes drying areas;*
 - d. *Not be located within front setbacks; and*
 - e. *Comply with Local Council Policy and contractual service provisions.*
2. *Collection points and systems are designed to minimise noise for occupants and neighbours during operation and collection.*

PO7 Recognise waste types, generation rates and separation needs may change during the useful life of a building.

1. *Waste and resource recovery facilities are sited to enable possible future expanded floor area.*
2. *Design waste and resource recovery facilities to enable installation of new, potentially larger equipment*

3.2 Parking and travel management

PO2 To promote efficient and safe vehicle circulation, manoeuvring and parking (including service vehicles and bicycles).

6. *All loading and unloading areas are to be:*
 - b. *Separated from car parking and waste storage and collection areas.*



3.3 Aviation Safeguarding Guidelines – Western Sydney Aerotropolis and surrounding areas. November 2022

This document states that:

Under the Western Parkland City SEPP and the Aerotropolis DCP:

3. *development applications for specified uses on land within the 13 km buffer zone must be accompanied by a waste management plan for the operation of the use of the land.*¹

3.4 Western Sydney Aerotropolis Precinct Plan

The Western Sydney Aerotropolis Precinct Plan September 2024 has been prepared by DPHI. *It provides the place-based objectives and requirements to guide development in the Aerotropolis in a consistent and sustainable manner over time. This Plan sets out the finer grain detail to support the land use zoning and other provisions of the Aerotropolis SEPP.*²

The Plan makes a number of references to waste, which are detailed below, although these are general in nature and do not assist with the design of waste facilities at the Site.

2.1 Precinct Plan objectives

The following objectives apply to all land to which this Precinct Plan applies.

015 Facilitate the establishment of circular economy industries to reduce waste, leverage synergies between industries and circulate resources within and beyond the industrial supply and materials chains of the Aerotropolis.

4.7 Sustainability and Resilience

Objectives

SRO1 Development is to support the transitioning to a net zero or net positive outcome over the medium to long term. This will be measured around performance regarding waste management, water management and carbon consumption benchmarks that are provided in the DCP or other relevant legislation.

SRO5 Facilitate the design, construction and operation of environmentally sustainable buildings and precincts, including energy efficiency, renewable energy, efficient resource and energy use and reduced emissions and waste.

SRO6 Effectively uses waste as a resource through its collection, transport and recycling in a manner that is safe, efficient, cost effective and does provide a positive impact on liveability and the environment.

Requirements

SR1 Energy, water and waste systems are to use a circular economy approach to improve efficiency and result in low-carbon developments.

SR3 Plan for, and achieve, leading industry targets by 2025 and from 2026 beyond to achieve sustainable regenerative targets:

¹ Page 17

² Page 5



Description	Leading industry practice	Sustainable regenerative
	Target 2020 and 2025	Target 2026 and beyond
Non-residential uses (subject to final modelling)	Green Star Communities – 5+ stars Green Star – 5+ stars	Green Star Communities – 6+ stars Green Star – 6+ stars
Circular economy targets	10% reduction of waste generation 85% reduction in construction waste	100% recovery and re-use of organic waste 90% reduction in construction waste

SR4 Circular economy activities must be located with consideration of:

- e. proximity to major transportation routes, considering safe transportation of extractive and waste materials.

3.5 Liverpool Development Control Plan 2008

The relevant sections of the Liverpool Development Control Plan (LDCP) are provided below.

Part 1 General Controls for all Development

14. Demolition of Existing Developments

Section 14 of Part 1 of the DCP relates to demolition of existing developments. The relevant sections state that:

Demolition

6. Asbestos, if identified in the building, must be removed and disposed of in accordance with the requirements of Work Cover. Where the amount or type of asbestos materials to be removed requires a licensed asbestos contractor to undertake the removal and disposal, both Council and the Principle Certifying Authority must be advised in writing of the name, address and asbestos license details of the contractor undertaking that work and the name and address of the facility to which the materials will be taken.
11. A Waste Management Plan (WMP) is to be submitted with the Development Application. The WMP must include realistic estimates of the volume or area of all types of waste material to be generated from the demolition and excavation activities. Details of how each of those materials will be re-used, recycled or disposed of is to be provided, including the locations to which the materials will be taken.
12. The waste management plan together with proof of lawful disposal for all waste that is disposed of, or otherwise recycled from the site must be retained on site. Proof is to include a log book with associated receipt/invoices, waste classification, and site validation certificate. All entries must include:
 - Time and Date
 - Description and size of waste
 - Waste facility used
 - Vehicle registration and company name



Both the log book and the associated receipts must be made available for inspection by authorised Council Officer at any time during site works.

16. *All construction and demolition waste must be inspected, graded and sorted in accordance with current EPA standards. Once sorted, it must be either recycled or disposed of according to its classification.*

25. Waste Disposal and Re-use Facilities

Section 25 covers waste storage facilities in new developments. The relevant sections state:

This section applies to all applications that propose:

2. *Demolition of an existing building.*

Non-residential development

Note: Council does not provide waste services to non-residential premises. Owners and operators of non-residential premises must engage a private commercial waste contractor to remove and legally dispose of the waste their premises generates.

1. *Development applications for all non-residential development must be accompanied by a waste management plan that addresses:*
 - *best practice recycling and reuse of construction and demolition materials,*
 - *use of sustainable building materials that can be reused or recycled at the end of their life,*

3.6 Other Legislation and Guidance

The waste legislation and guidance outlined in Table 3 below should be referred to during the operation of the Works.

Table 3 Relevant waste legislation and guidance

Legislation and Guidance	Objectives
Building Code of Australia (BCA) and relevant Australian Standards	The BCA has the aim of achieving nationally consistent, minimum necessary standards of relevant health and safety, amenity and sustainability objectives efficiently.
Council of Australian Governments National Construction Code 2019	The National Construction Code 2019 sets the minimum requirements for the design, construction and performance of buildings throughout Australia.
NSW EPA's Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities 2012	These better practice guidelines present information on waste minimisation and resource recovery as well as information on commonly used waste management provisions. The guidelines also provide benchmarks for assessing waste production rates in Australia.
NSW Waste and Sustainable Materials Strategy 2041: Stage 1 – 2021-2027	Replacing the <i>NSW Waste Avoidance and Resource Recovery Strategy (2014-21)</i> , the NSW Waste and Sustainable Materials Strategy 2041 focuses on the transition of NSW to a circular economy. The strategy focuses on minimising what is thrown away, and to use and reuse resources more efficiently, making them as productive as possible. The strategy identifies the need to identify infrastructure



Legislation and Guidance	Objectives
	needs, the mandating of separation of some organic waste streams, and incentivising biogas generation from waste materials.
NSW EPA Resource Recovery Orders and Resource Recovery Exemptions	The NSW EPA has issued a number of resource recovery orders (RROs) and resource recovery exemptions (RREs) under the POEO (Waste) Regulation 2014 for a range of wastes that may be recovered for beneficial re-use. These wastes typically include those from demolition and construction works, as well as ongoing wastes such as food waste. • RROs present conditions which generators and processors of waste must meet to supply the waste material for beneficial re-use. • RREs contain the conditions which consumers must meet to use waste for beneficial re-use.
NSW EPA (2014) Waste Classification Guidelines 2014, and Addendum (2016)	The NSW EPA Waste Classification Guidelines assists waste generators to effectively manage, treat and dispose of waste to ensure the environmental and human health risks associated with waste are managed appropriately and in accordance with the <i>POEO Act 1997</i> and is associated regulations.
<i>Protection of the Environment Operations Act (POEO) 1997 and Amendment Act 2011</i>	The POEO Act 1997 and POEO Amendment Act 2011 are administered by the NSW EPA to enable the NSW Government to establish instruments for setting environmental standards, goals, protocols and guidelines. They outline the regulatory requirements for lawful disposal of wastes generated during the demolition, construction and operational phases of a development, as well as the system for licencing waste transport and disposal.
The Work Health and Safety Regulation 2017	The Work Health and Safety Regulation 2017 provides detailed actions and guidance associated with the topics discussed in the Work Health and Safety Act 2011. The primary aim of the regulation is to protect the health and safety of workers and ensure that risks are minimised in work environments. Workplaces are to ensure that they are compliant with the requirements specified in the regulations. The regulations discuss items such as actions that are prohibited or obligated in work environments, the requirements for obtaining licences and registrations, and the roles and responsibilities of staff in workplaces.
<i>Waste Avoidance and Resource Recovery Act 2001</i>	The <i>Waste Avoidance and Resource Recovery Act 2001</i> aims to promote waste avoidance and resource recovery and repeals the <i>Waste Minimisation and Management Act 1995</i>. Specific objectives of the <i>Waste Avoidance and Resource Recovery Act 2001</i> include: • Encouraging efficient use of resources • Minimising the consumption of natural resources and the final disposal of waste by encouraging the avoidance of waste and the reuse and recycling of waste • Ensuring industry and the community share responsibility in reducing/dealing with waste, and • Efficiently funding of waste and resource management planning, programs and service delivery. As of 2016, the addition to the Act of Part 5 defines the legislative framework for the 'Return and Earn Container Deposit Scheme' whereby selected beverage containers can be returned to State Government authorities for a monetary refund.



4.0 Earthworks

4.1 Targets for Resource Recovery

Targets for new development are expected to contribute to state-specific targets. The NSW Waste and Sustainable Materials Strategy 2041 (DPHI, 2021) sets a target of 80% average recovery rate from all waste streams by 2030. Analysis by DPHI (2023-2024) indicates that construction and demolition waste recovery rates in 2023-2024 were 78%.

It is anticipated that the waste minimisation measures in the following sections will assist the Site to meet these targets. Waste reporting and audits can be used to determine the actual percentage of wastes that are being, or have been, recycled during the site preparation and construction stages of the Works.

4.2 Waste Streams and Classifications

The earthworks task for the Site is likely to generate the following broad waste streams:

- Soil
- Solid waste (non-putrescible)
- Demolition waste
- Plant maintenance waste
- Packaging waste, and
- Work compound waste from on-site employees.

A summary of likely waste types generated from site preparation and construction activities, along with their waste classifications and proposed management methods, is provided in Table 4.

Table 4 Potential demolition and construction waste types, classifications and management methods

Waste Types	NSW EPA Waste Classification	Proposed Management Method
Demolition and Construction		
Sediment fencing, geotextile materials	General solid waste (non-putrescible)	Reuse at other sites where possible or disposal to landfill
Concrete	General solid waste (non-putrescible)	Off-site recycling for filling, levelling or road base
Sand or soil	General solid waste (non-putrescible)	Off-site recycling
Timber – treated	General solid waste (non-putrescible)	Reused for formwork, bridging, blocking, propping or second-hand supplier
Timber - untreated		Off-site recycling, chip for landscaping, sell for firewood, reused for floorboards, fencing, furniture, mulched second-hand supplier and remainder to landscape supplies.



Waste Types	NSW EPA Waste Classification	Proposed Management Method
Asbestos	Special waste	Off-site disposal to a licensed landfill facility.
Plant Maintenance		
Empty oil and other drums or containers, such as fuel, chemicals, paints, spill clean ups	Hazardous waste: Containers were previously used to store Dangerous Goods (Class 1, 3, 4, 5 or 8) and residues have not been removed by washing or vacuuming. General solid waste (non-putrescible): 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.
Air filters and rags	General solid waste (non-putrescible)	Off-site disposal
Oil filters	Hazardous waste	Off-site recycling
Batteries	Hazardous waste	Off-site recycling, Contact the Australian Battery Recycling Initiative ³ for more information
Packaging		
Packaging materials, including wood, plastic, including stretch wrap or LDPE, cardboard and metals	General solid waste (non-putrescible)	Off-site recycling
Wooden or plastic crates and pallets	General solid waste (non-putrescible)	Reused for similar projects, returned to suppliers, or off-site recycling. Contact <i>Business Recycling</i> for more information ⁴
Work Compound and Associated Offices		
Food Waste	General solid (putrescible) waste	Dispose to landfill with general garbage
Recyclable beverage containers, such as glass and plastic bottles, aluminium cans and steel cans	General solid waste (non-putrescible)	Recycling at off-site licensed facility or at NSW container deposit scheme 'Return and Earn' facility ⁵
Clean paper and cardboard	General solid waste (non-putrescible)	Paper and cardboard recycling at off-site licensed facility

³ <http://www.batteryrecycling.org.au/home>

⁴ Available online from <https://businessrecycling.com.au/>

⁵ Available online from <http://returnandearn.org.au/>



Waste Types	NSW EPA Waste Classification	Proposed Management Method
General domestic waste generated by workers such as soiled paper and cardboard, food and polystyrene	General solid waste (non-putrescible) mixed with putrescible waste	Disposal at landfill

For further information on how to classify a waste type refer to the NSW EPA (2014) *Waste Classification Guidelines*⁶. Further information on managing site preparation and construction waste is available from the NSW EPA website⁷.

Waste generated during the earthworks phase could be sent to one of a number of licensed waste management facilities located in Western Sydney. Examples of potential destinations are listed in Table 5 below. The precise destination will be a matter for the waste contractor or earthworks contractor.

Table 5 Resource recovery and waste management facilities

Facility Name	Resource Type
Eastern Creek Resource Recovery Park	General solid waste (putrescible and non-putrescible) and organics, Garden waste, Sand and timber (VENM)
Kemps Creek Resource Recovery Park	General solid waste (putrescible), White goods and scrap metal
Recycling and recovery facilities licenced to accept construction and demolition waste	
Alexandria Recycling Centre	C&D waste including asphalt, vegetation, brick, concrete, timber/wood waste, insulation
Banksmeadow Recycling Centre	C&D waste including concrete, ceramics, bricks, plasterboard, sand, soil
Ryde Resource Recovery Centre	C&D waste including concrete, timber, pallets, bricks, sand and soil
Lucas Heights Resource Recovery Park	C&D waste, e-waste, recyclables including food and beverage packaging, furniture and fittings, garden organics, scrap metal,

4.3 Demolition Waste

4.3.1 Infrastructure for Demolition

The Site is currently an operational quarry and historically had a brickmaking facility. The structures and hardstand areas used for the quarry operations are located in the central portion of the Site, connected by an internal road network. In addition, three pits are located along the southern and southeast portion of the Site.

Figure 3 below shows the existing conditions and demolition areas. Images from Six Maps and Google Earth also shows the types of infrastructure. This image showing the current site

⁶ Available online from <https://www.epa.nsw.gov.au/your-environment/waste/classifying-waste/waste-classification-guidelines>

⁷ <http://www.epa.nsw.gov.au/your-environment/waste/industrial-waste/construction-demolition>



layout with boundary has been used to calculate the areas of existing building, hardstand and vegetation areas for clearance and demolition.



Figure 3 Site layout of existing conditions and demolition areas

4.3.2 Demolition Waste Quantities

Neither the WSADCP nor Liverpool DCP provide any advice on demolition waste generation rates. As an alternative, SLR has adopted the 'factory' and 'office' waste generation rates from Appendix A of *The Hills Development Control Plan 2012* for estimating the type and quantities of waste generated from demolition of the existing buildings. We have also referred to *Light Duty Asphalt Pavements - Design, Specification and Construction 2002* published by the Australian Asphalt Pavement Association in calculating car park waste demolition quantities.

The demolition waste generation rates used are shown in Table 6 below.

Table 6 Demolition waste generation rates

Rate Type	Area (m ²)	Waste types and quantities (m ³)						
		Concrete	Bricks	Timber / Gyprock	Metal	Other	Sand / Soil	Vegetation
Factory	1,000	448	205	4	23	18	-	-
Grassed area	1,000	-	-	-	-	-	300	100
Hardstand	1	0.3	-	-	0.06	0.05	-	-

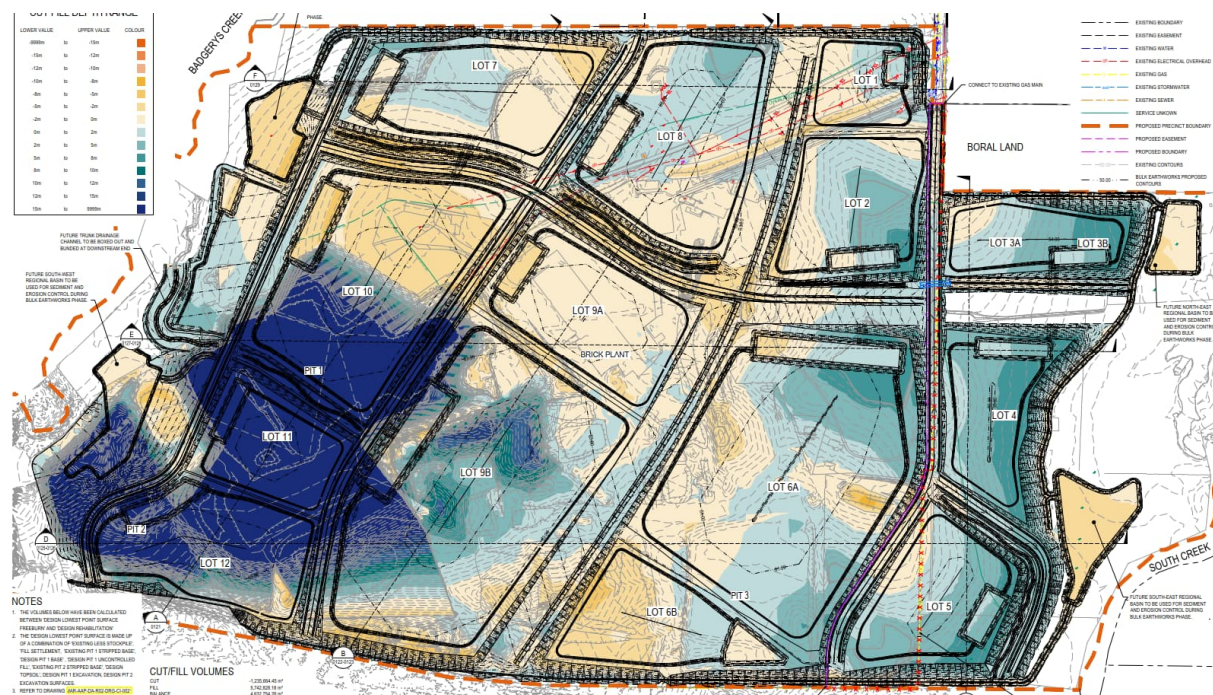
The demolition areas are shown in Table 7 below along with estimates of the quantities of demolition waste that may be generated.



Rate Type	Area (m²)	Waste types and quantities (m³)						
		Concrete	Bricks	Timber / Gyrock	Metal	Other	Sand / Soil	Vegetation
Warehouses	19,070	8,543	3,909	76	439	343	-	-
Vegetation	971,280	-	-	-	-	-	291,384	97,128
Hardstand	548,610	164,583	-	-	32,917	27,431	-	-
Total	1,538,960	173,126	3,909	76	33,355	27,774	291,384	97,128

4.4 Earthworks

A cut and fill plan, drawing MAR-AAP-DA-R02-DRG-CI-0101 Rev B, has been prepared by Arcadis and is shown in Figure 4.



This estimates from the cut and fill plan of the overall cut and fill quantities are shown in Table 8 below.

Table 8 Cut and fill quantities

Cut or Fill	Cubic Metres
Cut	-4,636,020.12
Fill	6,502,201.34
Balance	1,866,181.21

The table shows that there is a net requirement for about 1.87 million cubic metres of fill to be brought to the site. No fill is expected to be leaving the site and requiring disposal.

4.5 Waste Avoidance

In accordance with better practice waste management, the Earthworks Contractor and/or equivalent roles should:

- Civil work has been designed to negate the need for equipment for off site fill export and requires only minor import. This reduces the quantity of bulk earthworks spoil material
- Develop a purchasing policy based on the approximate quantities of materials to be used so that the correct quantities are purchased.
- Arrange for delivery of materials on an 'as needed' basis to avoid material degradation through weathering and moisture damage.
- Communicate strategies to handle and store waste to minimise environmental, health and amenity impacts.
- Use leased equipment rather than purchase and disposal.
- Minimise site disturbance and unnecessary excavation.
- Reduce packaging waste by:
 - o Returning packaging to suppliers where practicable to reduce waste further along the supply chain
 - o Purchasing in bulk
 - o Requesting cardboard or metal drums rather than plastics
 - o Requesting metal straps rather than shrink wrap, and
 - o Using returnable packaging such as pallets and reels.
- Implement measures to prevent the occurrence of windblown litter, dust and stormwater pollution.
- Ensure subcontractors are informed of and implement site waste minimisation and management procedures.

4.6 Reuse, Recycling and Disposal

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



Refer to Table 4 for an outline of the proposed reuse, recycling and disposal methods for potential site preparation and construction waste streams generated by the Site.

In accordance with best practice waste management, the following specific procedures should be implemented:

- Ensure management of the site includes minimising waste generation, requiring the appropriate storage and timely collection of waste materials, and maximising re-use or recycling of materials.
- Store wastes on site appropriately to prevent cross-contamination and guarantee the highest possible re-use value.
- Recycle cardboard, glass and metal wastes.
- Recycle or dispose of solid waste timber, brick, concrete, asphalt and rock, where such waste cannot be re-used on site, to an appropriately licenced construction and demolition waste recycling facility or an appropriately licenced landfill.
- Dispose of all asbestos and/or hazardous wastes in accordance with SafeWork NSW and NSW EPA requirements.
- Deliver batteries and fluorescent lights to drop off-site recycling facility.
- Return excess materials and packaging to the supplier or manufacturer.

4.7 Waste Storage and Servicing

4.7.1 Waste Segregation and Storage

Waste materials produced from earthworks activities should be separated at the source and stored separately on-site. It is anticipated that the Site will provide enough space on-site for separate storage, for example, separate bins or appropriately managed stockpiles, of the following waste types:

- Bricks, concrete and scrap metal
- Metal and steel, in a condition suitable for recycling at metal recycling facilities
- Timber
- Uncontaminated excavation spoil
- Contaminated excavation spoil, if present
- Hazardous waste, if present
- Paper and cardboard
- General co-mingled recycling waste, and
- Non-recyclable general waste.

If there is insufficient space on-site for full segregation of waste types, the Site Manager, or equivalent role, should consult with the waste and recycling collection contractor to confirm which waste types may be co-mingled prior to removal from the site.



4.7.2 Waste Storage Areas

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

All waste placed in bins for disposal or recycling will be adequately contained to ensure that the waste does not fall, blow, wash or otherwise escape from the site. Waste containers and storage areas are to be kept clean and in a good state of repair. All bins proposed to contain putrescible waste will have fixed lids.

Areas designated for waste storage should:

- Allow unimpeded access by site personnel and waste disposal contractors.
- Consider environmental factors which could potentially cause an impact to the waste storage, such as slope, drainage and the location of watercourses and native vegetation.
- Allow enough space for the storage of garden waste and other waste materials on-site.
- Employ adequate environmental management controls to prevent off-site migration of waste materials and contamination from the waste. For example, consideration of slope, drainage, proximity relative to waterways, stormwater outlets and vegetation.
- Consider visual amenity, safety, accessibility and convenience in their selection, and
- Not present hazards to human health or the environment.

4.7.3 Waste Servicing and Record Keeping

The Site Manager or equivalent role is to:

- Arrange for suitable waste collection contractors to remove any waste from the site.
- Ensure waste bins are not filled beyond recommended filling levels.
- Ensure that all bins and loads of waste materials leaving site are covered.
- Maintain waste disposal documentation detailing, at a minimum:
 - o Descriptions and estimated amounts of all waste materials removed from site.
 - o Details of the waste and recycling collection contractors and facilities receiving the waste and recyclables.
 - o Records of waste and recycling collection vehicle movements, for example, date and time of loads removed, licence plate of collection vehicles, tip dockets from receiving facility, and
 - o Waste classification documentation for materials disposed to off-site recycling or landfill facilities.
- Ensure lawful waste disposal records are readily accessible for inspection by regulatory authorities such as SafeWork NSW or NSW EPA, and
- Remove waste during approved hours.

If bins are reaching capacity, removal and replacement should be organised as soon as possible. All site generated building waste collected in the bins will leave the site and be deposited in the approved site lawfully able to accept them.



4.8 Site Inductions

All staff, including sub-contractors and labourers, employed during the site preparation and construction phases of the Works must undergo induction training regarding waste management for the Site.

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

- Legal obligations and targets.
- Emergency response procedures on-site.
- Waste priorities and opportunities for reduction, reuse and recycling.
- Waste storage locations and separation of waste.
- Procedures for suspected contaminated and hazardous wastes.
- Waste related signage.
- The implications of poor waste management practices, and
- Responsibilities and reporting, including identification of personnel responsible for waste management and individual responsibilities.

4.9 Signage

Standard signage is to be posted in all waste storage and collection areas. All waste containers should be labelled correctly and clearly to identify stored materials.

Signs approved by the NSW EPA for labelling of waste materials are available online⁸ and should be used where applicable. A selection of signs prepared by NSW EPA is provided in Figure 5 below.



Figure 5 Examples of NSW EPA labels for waste skips and bins

⁸ NSW EPA approved waste materials signage <https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/business-government-recycling/standard-recycling-signs>



4.10 Monitoring and Reporting

The following monitoring practices are to be undertaken to improve site preparation and construction waste management and to obtain accurate waste generation figures:

- Conduct waste audits of current projects where feasible.
- Note waste generated and disposal methods.
- Review past waste disposal receipts.
- Record this information to track waste avoidance, reuse and recycling performance and to help in waste estimations for future resource recovery management plans.

Records of waste quantities recycled, reused or contractor removed should be maintained. This can include dockets or receipts verifying recycling and disposal in accordance with this WMP. This evidence should also be presented to regulatory bodies when required.

Visual inspections of waste storage areas will be undertaken by site personnel and inspection checklists and logs recorded for reporting to the Site Manager as required. These inspections will be used to identify and rectify any resource and waste management issues.

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

4.11 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 Earthworks Contractor to implement the WMP, and an employee and subcontractor responsibility to ensure that they always comply with the WMP.

Where possible, an Environmental Management Representative should be appointed for the Site. Suggested roles and responsibilities are provided in Table 9.

Table 9 Suggested site preparation and construction waste management roles and responsibilities

Responsible Person	General Tasks
Earthworks Contractor Manager	Ensuring plant and equipment are well maintained.
	Ordering only the required amounts of materials.
	Keeping materials segregated to maximise reuse and recycling.
	Ultimately responsible for routinely checking waste sorting and storage areas for cleanliness, hygiene and safety issues, contaminated waste materials, and also ensuring that all monitoring and audit results are well documented and carried out as specified in the WMP.
Earthworks Environmental Manager or equivalent	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.
	Ensuring staff and contractors are aware of site requirements.



Responsible Person	General Tasks
	Provision of training of the requirements of the WMP and specific waste management strategies adopted for the Site.
	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.

5.0 Beneficial Use

5.1 Overview

With regard to site activities the Site operated under environment protection licence (EPL) No.684 issued by the NSW EPA, with this addressing the management and implementation of filling activities consistent with the Fill Management Plan (ERM 2025), importation of materials as either virgin excavated natural material (VENM), or material covered by a NSW EPA issued resource recovery order (RRO), inclusive of excavated natural material (ENM), tunnel spoil material, etc.

At the time of preparing this plan, the following draft version remediation action plan (RAP) was in preparation which documented procedures for the management of specifically identified areas of known contamination onsite, and requirements for lawful management of imported / exported materials including VENM and ENM:

- JBS&G Australia Pty Ltd (JBS&G) (2026), *Site Wide Remediation Action Plan SSD-97711727, Bradfield Quarry, 225-245 Martin Road, Bradfield*. Report for Goodman Property Services (Aust) Pty Ltd on behalf of Goodman Western Sydney Pty Limited as trustee for the Goodman Western Sydney Trust (ref: 70609; 173,973; Rev A; 24 February 2026) (the RAP).

Waste management procedures documented in the following subsections are meant to support (not supersede) those in either the RAP or current EPL.

The beneficial reuse of the waste must be genuine, fit-for-purpose, and cause no harm to the environment or human health. The EPA grants this permission subject to strict conditions under the Protection of the Environment Operations (Waste) Regulation 2014 (Waste Regulation 2014). Material that is considered surplus to requirements can be managed off-site in the following ways:

- Characterisation should consider all historical datapoints that still exist, and/or consider collection of new datapoints to satisfy minimum sample frequency requirements per volume or area in accordance with the NSW EPA (2022) *Sample Design Guidelines: Part 1 - Application*.
- Beneficial reuse as virgin excavated natural material (VENM) in accordance with the definition set in Schedule 1 of POEO Act (refer to Section 5.2) or
- Beneficial reuse of materials typically associated with site preparation and excavation works with the following RROs under Part 9, Clause 93 and RREs under Part 9 Clauses 91 and 92 of the Waste Regulation 2014:



- o Excavated Natural Material Order and Exemption 2014 (ENM) (refer to Section 5.3).
- o Reclaimed Asphalt Pavement Order and Exemption 2014 (refer to Section 5.4)
- o Recovered Aggregate Order and Exemption 2014 (refer to Section 5.5)
- Disposal off-site as solid waste material to a suitably licensed landfill or disposal facility in accordance with:
 - o NSW EPA (2014) *Waste Classification Guidelines*.
 - o NSW EPA (2016) *Addendum to the NSW Classification Guidelines (2014): Part 1 – Classifying Waste* (PFAS Addendum).

5.2 Beneficial use as VENM

For VENM, classification requires certainty that all aspects of the definition in Schedule 1 of the POEO Act are met. Chemical testing may be required to ascertain whether an excavated material is contaminated with manufactured chemicals or process residues, or whether it contains sulfidic ores or soils. VENM is defined as:

- Natural material, such as clay, gravel, sand, soil or rock fines:
 - o That has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues because of industrial, commercial, mining or agricultural activities.
 - o That does not contain naturally occurring asbestos.
 - o That does not contain any sulfidic ores or soils or any other waste.
 - o Including ENM that meets such criteria for VENM as may be approved for the time being pursuant to any NSW EPA Gazettal notice.
 - o Sampling density and frequency should initially refer to requirements for areas and volumes presented in the Sample Design Guidelines (NSW EPA, 2022).
 - o Suite of analysis proposed for any VENM classification (import or export) should consider any contaminants of concern typically associated with the past use of a property.
 - o Expectation for appropriate certification as VENM will see any confirmatory laboratory results consistent and within background concentrations for heavy metals, and less than the laboratory limit of reporting for all other analytes.
 - o VENM is also considered a waste that has been pre-classified as general solid waste (non-putrescible) for the option of straight disposal.

Assessment and characterisation of subject material as VENM must be undertaken by a suitably qualified person. Any NSW EPA VENM certificate must be filled-out to accompany subject material to detail the determination as VENM. The NSW EPA provides a template VENM certification proforma.

5.3 Beneficial use as ENM

Where it can be demonstrated that a specific type of waste can safely be used for another purpose, rather than being disposed of in accordance with the waste regulations, the NSW EPA may grant permission for that waste to be used for the specified purpose, subject to strict conditions.



The ENM Order applies to natural material that has already been excavated from its original setting. In this order, ENM is defined as naturally occurring rock and soil (including but not limited to materials such as sandstone, shale, clay and soil) that has been excavated from the ground and contains at least 98% by weight natural material.

Stockpile sampling for ENM requirements is communicated in the ENM Order and summarised in Table 10 below.

Table 10 ENM Sampling for Stockpiled Material

Quantity (ex-situ tonnes)	Number of Samples
< 500	3
500 – 1,000	4
1,000 – 2,000	5
2,000 – 3,000	7
3,000 – 4,000	10

Systematic in-situ sampling at the surface can be undertaken using a minimum sampling frequency based upon the diameter of the hot spot that can be detected with 95% confidence in accordance with the NSW EPA (2022) *Sample Design Guidelines – Part 1 Application*. The minimum sampling points required for characterisation of an area are detailed in Table 11 below.

Table 11 ENM Sampling for In Situ Material

Example Size of Area (m ²)	Number of Sample Points	Distance between two sampling points (m)	Diameter of the hot spot that can be detected with 95% confidence (m)
500	5	10.0	11.8
1,000	6	12.9	15.2
2,000	7	16.9	19.9
3,000	9	18.2	21.5
4,000	11	19.1	22.5
5,000	13	19.6	23.1
6,000	15	20.0	23.6
7,000	17	20.3	23.9
8,000	19	20.5	24.2
9,000	20	21.2	25.0
10,000	21	21.8	25.7
15,000	25	25.0	28.9
20,000	30	25.8	30.5
25,000	35	26.7	31.5
30,000	40	27.5	32.4
35,000	45	27.9	32.9
40,000	50	28.3	33.4



Example Size of Area (m ²)	Number of Sample Points	Distance between two sampling points (m)	Diameter of the hot spot that can be detected with 95% confidence (m)
45,000	52	29.3	34.6
50,000	55	30.2	35.6

For in-situ sampling at depth, surface samples between 0.0 - 0.15 m should be collected at the frequencies mentioned above with one sample collected beneath each location at 1 mBGL. This is to be followed by one sample point every 1 m intervals, thereafter, followed by one sample point at the base of the excavation.

The chemical concentration or other attribute of any sample collected and tested as part of the characterisation for ENM must not exceed the absolute maximum concentration or other value listed in **Table 12** below as specified in the ENM Order.

Table 12 ENM Chemical and Material Requirements

Chemical	Maximum average concentration for characterisation (mg/kg 'dry weight' unless otherwise specified)	Absolute maximum concentration (mg/kg 'dry weight' unless otherwise specified)
Mercury	0.5	1
Cadmium	0.5	1
Lead	50	100
Arsenic	20	40
Chromium (total)	75	150
Copper	100	200
Nickel	30	60
Zinc	150	300
Electrical Conductivity (EC)	1.5 dS/m	3 dS/m
pH	5 - 9	4.5 - 10
Total PAH	20	40
Benzo(a)pyrene	0.5	1
Benzene	N/A	0.5
Toluene	N/A	65
Ethylbenzene	N/A	25
Total Xylenes	N/A	15
Total Petroleum Hydrocarbons C10 – C36	250	500
Foreign Materials Testing (FMT) Rubber, plastic, bitumen, paper, cloth, paint and wood	0.05%	0.1%
Notes: N/A - not applicable as classification based on total concentration dS/m – Decisemens per metre Values derived from the RRO under Part 9, Clause 93 of the Waste Regulation 2014 - the ENM Order		



5.4 Beneficial use as Reclaimed Asphalt Pavement

This order and exemption apply to reclaimed asphalt pavement. In this order, reclaimed asphalt pavement means an asphalt matrix which was previously used as an engineering material, and which must not contain a detectable quantity of coal tar or asbestos.

The requirements in this order apply in relation to the supply of reclaimed asphalt pavement for application to land for road maintenance activities, being use as a road base and sub-base, applied as a surface layer on road shoulders and unsealed roads, and use as an engineering fill. The requirements in this order also apply to the supply of reclaimed asphalt pavement for use as an alternative raw material in the manufacture of asphalt.

The requirements in this order apply, as relevant, to any person who supplies reclaimed asphalt pavement that has been generated, processed or recovered by the person.

This order does not apply to the supply of reclaimed asphalt pavement to a consumer for land application or in connection with a process involving thermal treatment at a premises for which the consumer holds a licence under the POEO Act that authorises the carrying out of the scheduled activities on the premises under clause 39 'waste disposal (application to land)' or clause 40 'waste disposal (thermal treatment)' of Schedule 1 of the POEO Act

Material must be assessed for the presence of potential coal tar, which was a constituent in older road pavements. Coal tar is the by-product of the thermal processing of coal and means material that has or reasonably is suspected to have present volatile organic contaminants, such as phenols, as well as other toxic materials such as PAHs.

A detectable quantity of coal tar means the coal tar deemed to be present in an asphalt matrix when it gives a positive red colour result when tested using RTA Test Method T542.

5.5 Beneficial use as Recovered Aggregate

The Recovered Aggregate Order and Exemption are EPA regulations allowing safe reuse of processed waste (concrete, brick, rock, asphalt) as construction material, bypassing strict waste laws if it meets specific quality, testing, and contamination standards, ensuring it's fit for purpose in roads, building, or landscaping without being landfill. Suppliers must sample, test materials to EPA criteria, and provide documentation, ensuring beneficial reuse instead of disposal.

This order applies to recovered aggregate. In this order, recovered aggregate means material comprising of concrete, brick, ceramics, natural rock and asphalt processed into an engineered material. This does not include refractory bricks or associated refractory materials, or asphalt that contains coal tar.

Where the recovered aggregate is generated as part of a continuous process, the processor must undertake the following sampling:

- Characterisation of the recovered aggregate by collecting 20 composite samples of the waste and testing each sample for the chemicals and other attributes listed in Column 1 of Table 13.
- Each composite sample must be taken from a batch, truckload or stockpile that has not been previously sampled for the purposes of characterisation.
- Characterisation must be conducted for recovered aggregate generated and processed every year following the commencement of the continuous process.



Where routine sampling of the recovered aggregate is required, the generator must facilitate collection of either the following with testing each sample for the chemicals and other attributes listed in Column 1 of Table 13 other than those listed as 'N/A' in Column 3:

- Five composite samples from every 4,000 tonnes (or part thereof) processed or
- Five composite samples every three months, whichever is the lesser.

Each composite sample must be taken from a batch, truckload or stockpile that has not been previously sampled for the purposes of routine sampling. However, if characterisation sampling occurs at the same frequency as routine sampling, any sample collected and tested for the purposes of characterisation may be treated as a sample collected and tested for the purposes of routine sampling.

Where the recovered aggregate is not generated as part of a continuous process, the processor must undertake one-off sampling of a batch, truckload or stockpile of the recovered aggregate, by collecting 10 composite samples from every 4,000 tonnes (or part thereof) processed and testing each sample for the chemicals and other attributes listed in Column 1 of Table 13. The test results for each composite sample must be validated as compliant with the maximum average concentration or other value listed in Column 2 of Table 13 and the absolute maximum concentration or other value listed in Column 4 of Table 13 prior to the supply of the recovered aggregate.

The chemical and physical characteristics of materials must be determined different with regard to whether it derives from a continuous or non-continuous process. The chemical concentration or other attribute of any sample collected and tested as part of the characterisation for the Recovered Aggregate Material Order 2014 (RAM Order) must not exceed the absolute maximum concentration or other value listed in Table 13 as specified in the RAM Order.

Table 13 Recovered Aggregate Material Requirements

Column 1	Column 2	Column 3	Column 4
Chemical	Maximum average concentration for characterisation (mg/kg 'dry weight' unless otherwise specified)	Maximum average concentration for routine testing (mg/kg 'dry weight' unless otherwise specified)	Absolute maximum concentration (mg/kg 'dry weight' unless otherwise specified)
Mercury	0.5	N/A	1
Cadmium	0.5	0.5	1.5
Lead	75	75	150
Arsenic	20	N/A	40
Chromium (total)	60	60	120
Copper	60	60	150
Nickel	40	N/A	80
Zinc	200	200	350
Electrical Conductivity (EC)	1.5 dS/m	1.5 dS/m	3 dS/m
Metal	1%	1%	2%
Plaster	0.25%	0.25%	0.5%



Column 1	Column 2	Column 3	Column 4
Foreign Materials Testing (FMT) Rubber, plastic, paper, paper, cloth, paint, wood and other vegetable matter	0.2%	0.2%	0.5%
Notes: N/A - not applicable as classification based on total concentration (TC) dS/m – Decisemens per metre Values derived from the RRO under Part 9, Clause 93 of the Waste Regulation 2014 - the RAM Order			

5.6 Waste Classification and Off-site Disposal

Material which is intended for disposal off-site as waste to a suitably licensed landfill or disposal site must be appropriately assessed in accordance with the Waste Guidelines, and for soils requiring off-site disposal need to achieve one of the following classifications:

- General solid waste (GSW) or
- Restricted solid waste (RSW) or
- Hazardous waste (HAZ) or
- Special waste, for instances where asbestos is present.

The process of classification requires that should any one analyte exceed the GSW criteria, but remain beneath the RSW criteria, then the waste would be classified as RSW.

Conversely, if all analytes are below the general solid waste criteria, then the waste can be classified as GSW.

The minimum number of samples recommended by the National Environment Protection (Assessment of Site Contamination) Measure 2013 (ASC NEPM) for characterisation of stockpiles up to 2,500 m³ is 10 samples comprising similar materials. A greater number of samples may be required if there is a large range in contaminant concentrations or soil types.

If soil is characterised using the 95% upper confidence limit of the arithmetic mean, the ASC NEPM allows collection of fewer samples and can defer to the Sample Design Guidelines (NSW EPA 2022).

If only the minimum number of samples is collected and there is a large range in contaminant concentration, then either the maximum concentration should be assumed for disposal purposes or additional samples collected and analysed and the situation re-evaluated.

The suspected contaminants of concern derived for the Site should be tested for in soil, otherwise the following standard suite for typical contaminants in urban areas should be considered for appropriate characterisation of solid waste:

- Total Petroleum Hydrocarbons - fractions C6 – C36.
- Benzene, toluene, ethylbenzene, total xylenes and naphthalene.
- PAH.
- Metals - As, Cd, CrVI, Hg, Pb and Ni.
- Pesticides.
- Per- and polyfluoroalkyl substances (PFAS).



- Asbestos in soil and/or materials (presence or absence).

To demonstrate the potential for leachability of PAH, PFAS and metals, additional analyses using the Toxicity Characteristic Leaching Procedure (TCLP) is recommended to be undertaken for potentially revising-down an initially high waste classification.

The waste criteria for the chemicals of potential concern recommended to be sampled to derive a waste classification are presented below:

- Total concentration and contaminant threshold only (refer to *Table 1* of Waste Guidelines) or
- Total concentration and specific contaminant concentration with TCLP testing (refer to *Table 2* of Waste Guidelines).

Once a waste classification is derived, advice must be prepared to detail the following information, with reference made to the *NSW Waste Classification Guidelines*:

- General material description.
- Material volume.
- Laboratory results with comparison to GSW, RSW and HAZ criteria.
- Concluding statement of waste class for subject material.

An application must then be submitted to the selected landfill or disposal site based upon the waste classification advice. On receipt of approval from the landfill or disposal site that subject material is suitable, it can then be transported off-site in haulage vehicles appropriately designed and licensed to transport specific classes of waste soil.

No subject waste material is to be removed from site prior to obtaining appropriate classification advice.

No subject material is to be transported from site prior to acceptance by the receiving facility.

6.0 Beneficial Use and Import

6.1 Overview

If this is required, any such material proposed to be imported to site must be suitably characterised by an environmental consultant or geotechnical engineer prior to receiving approval to import. The evaluation of the material should ensure that the fill material:

- Provides no unacceptable risks to human health and the environment.
- Is free of contaminants or contaminant concentrations are below acceptable levels.
- Is suitable for its intended purpose and land use.
- Has been lawfully obtained.

All development must incorporate soil conservation measures to minimise soil erosion and siltation during construction and following completion of Works. All sediment and erosion controls are to be installed prior to the commencement of any construction works and maintained throughout the course of construction until disturbed areas have been revegetated/ established. Under the POEO Act, the following fill types are anticipated to be required at the Site as suitable for filling purposes:

- Material that meets the definition of VENM (refer to Section 5.1).
- Material that meets the definition of ENM Order and Exemption (refer to Section 5.2).



- Material that meets the definition of the Excavated Public Road Material Order and Exemption (refer to Section 5.3).
- Material that meets the definition of the Reclaimed Asphalt Pavement Order and Exemption (refer to Section 1.1).
- Material that meets the definition of the Recovered Aggregate Order and Exemption (refer to Section 5.4).

Imported materials do not only include those listed above, but can also include commercial aggregates, such as pavement sub-base, and growing media, for example, composites, mixed soils and organic material such as mulch. It is prudent to conduct an inspection and assessment of the physical and chemical suitability for all materials that are to be imported to site. This could include:

- Additional inspections of ENM, VENM, recovered aggregate or growing media material at the source site or commercial premises.
- Confirmatory assessment and sampling with laboratory analyses for chemical and physical parameters for appropriate validation.
- Confirmatory inspection and testing of individual composited materials from VENM source locations.

6.2 Off-site Material Management

6.2.1 Transportation requirements

All vehicles carting material off-site must be licensed to transport any waste materials as required by the POEO Act. Containers or truck bodies used in the transport of non-liquid waste materials should be equipped with close-fitting and secured covers and with seals around doors such that no soil or dust can escape during transport. All vehicle movements within the site should follow established haulage routes and comply with the prevailing traffic regulations, including speed limits.

6.2.2 Material tracking records

As a minimum, supporting documentation of estimated quantities of material excavated, its origin, stockpile location and fate should be recorded. All truck movements involving soil material should also be documented in records and record as a minimum the date, time, truck registration number, quantity of fill, origin of fill and type of fill.

Records and documentation should be maintained in accordance with regulatory requirements and should be suitable for the purposes of tracking any imported or exported soil materials. These records should be provided by the construction project manager (CPM), or their contracting representative, and be available upon request by the Client, the NSW EPA or the soil receiving facility.

6.2.3 Disposal register

A register of all material disposed from site should be maintained by the CPM. All waste materials removed from site must be disposed to a licensed landfill facility that can lawfully accept the waste. Disposal receipts or dockets must be obtained by the CPM, or their contracting representative, within 24-hours, or the timeframe stipulated by the disposal permit.



6.2.4 Record keeping

Details of any imported or exported material must be appropriately recorded, including but not limiting the following details:

- Confirm material suitability:
 - o Waste type or media, for example, soil, aggregate, mulch, recycled material.
 - o Source location.
 - o Quantities managed by weight and/or volume.
- Beneficial reuse advice, for example review of ENM/VENM certification reports and assessment with applicable threshold criteria.
- Analytical results for blended products or materials produced under a RRO or RRE.
- Review of commercial product or growing media information, for example, specifications or composition details.
- Pre-import material inspection check to confirm consistency with advice (highly recommended).
- Material transport details and tracking, including:
 - o Weighbridge information dockets or volume estimates for ENM/VENM.
 - o Truck type and licence plate.
 - o Times at source and destination.
- On-site gate inspection and checks to confirm material ordered or documented is consistent with that supplied prior to unloading.
- Record of temporary stockpiling and final material placement on-site.

7.0 Unexpected Findings Protocol

An unexpected findings protocol (UFP) has been developed for implementation during earthworks activities associated with the project. It has been prepared to ensure appropriate management of soil or fill contaminated with hazardous materials should they be encountered during site works that were not expected from the available information.

Any material that is uncovered deemed to be foreign, be that imported fill material or building waste, should be scrutinised further to determine if asbestos or other contaminants are potentially present. Typical unexpected features to look for are:

- Soil or fill material that differs from the previously identified materials on-site.
- Material containing anthropogenic artefacts such as rubble, plastics, metal among others.
- Asbestos or suspected asbestos containing material.
- Material with fibres visible.
- Material with an obvious unnatural odour, such as fuel, solvent, burnt odour.
- Material that is noticeably stained in colour.
- Archaeological artefacts.
- Any material that has evidently been dumped on site.



These materials may require additional assessment or management. Before commencement of works on-site, a site induction should be undertaken for all staff, contractors and sub-contractors. The aim and importance of the UFP and how it is to be implemented should be discussed at this time.

Monitoring of site activities that have potential to cause environmental harm should be undertaken on routine basis. If an unexpected finding is revealed during site works, the following protocol is to be followed:

- Cease disturbance of the affected area and assess the potential risk of the unexpected find.
- Secure affected area and install appropriate controls as required.
- Contact the environmental consultant, if required.
- Contact the site auditor to provide update and discuss planned actions or management for handling.
- Further investigation and management may be required.
- Following clearance of the unexpected findings, areas can be reopened for work.

If potential hazardous material or contamination are suspected the Unexpected Findings Protocol Proforma should be completed, a brief description of the material reported, and the location of the material identified on a site map.

8.0 Assessment

8.1 Findings

The WMP establishes that some warehouses will be demolished as part of the preparation of the site and that vegetation will be cleared and about 475,500 m² of soil excavated. This will be used on site along with another 3.66 million cubic metres of soil to be brought to the site.

Procedures for the lawful management of solid waste materials have been provided in this WMP, including characterisation for waste classification and onsite use where possible with some offsite disposal, along with procedures for characterisation and beneficial reuse of VENM and common natural material types under general orders and exemptions regulated under the POEO Act.

8.2 Non-compliance

There are no non-compliances with any regulations, DCPs or guidelines applying to this project.

8.3 Cumulative impacts

The projected quantities of waste likely to be taken off site are insignificant compared to the quantities of soil to be brought to the site for filling. Most waste generated on site will also be used for filling.



8.4 Waste Classification and Beneficial Reuse

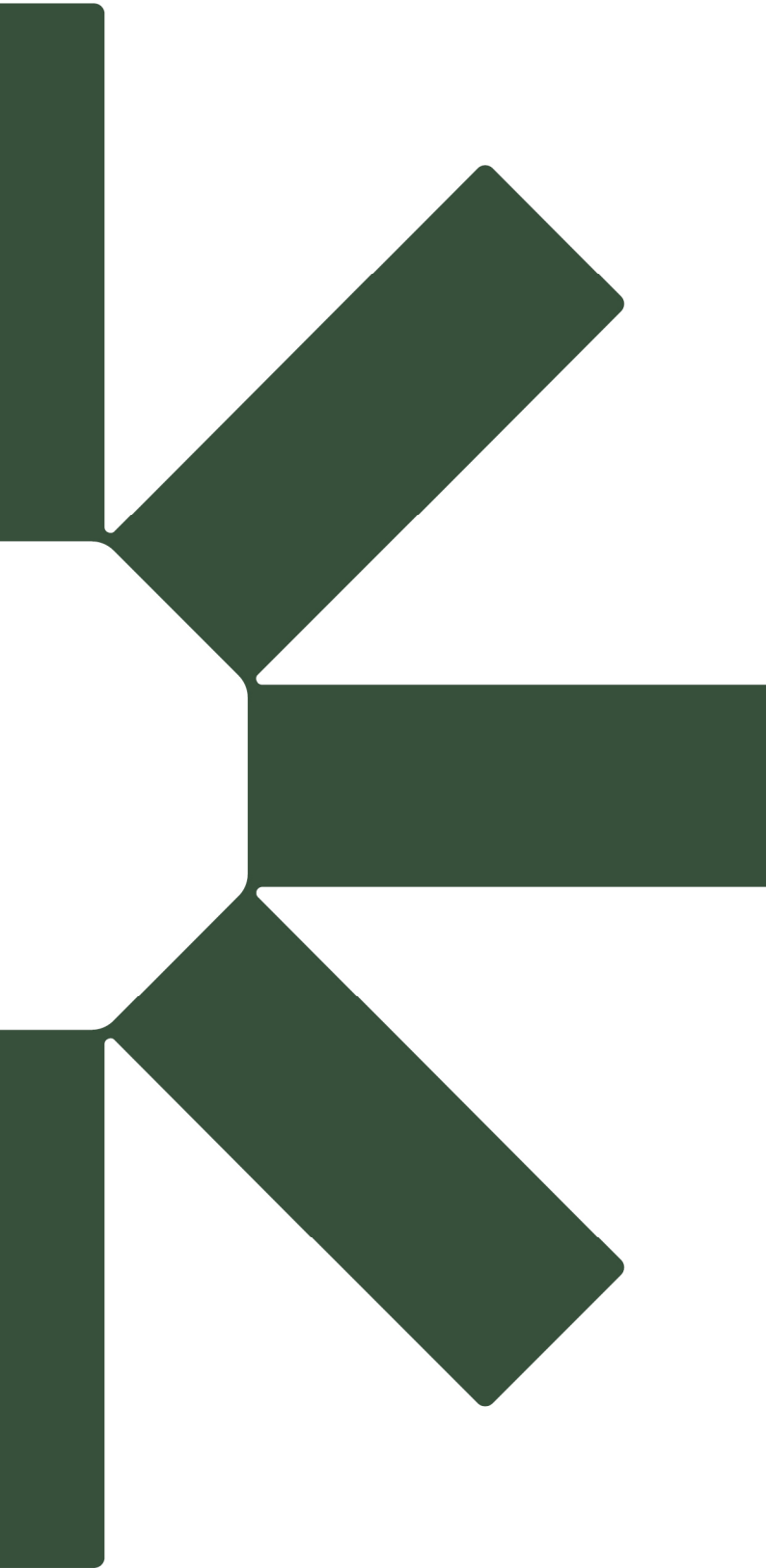
This WMP documents general procedures that will allow for the lawful management of solid waste materials, including characterisation for:

- Waste classification of solid waste to support offsite disposal at appropriately licensed facilities.
- Beneficial reuse of VENM per definition in Schedule 1 of the POEO Act.
- Beneficial reuse of common natural material / aggregate types under general orders and exemptions regulated under the POEO Act.

8.5 Mitigation measures

Mitigating measures proposed include the reuse of soil on site and the lawful recovery of waste off site or disposal of waste off-site that cannot be recovered. As a result, the waste-related impact of the earthworks is negligible.





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