Waste Management Plan

Lockyer Village

Prepared for Mineral Resources c/- Planning Solutions

29 February 2024

Project Number: WMP23089

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Name	Position	File Reference
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Signature	Ann Brouwer Digitally signed by Ann Brouwer Date: 2024-02-29 11:06:54	

Executive Summary

Mineral Resources is seeking development approval for the proposed gas plant and workers accommodation development, located on Strawberry North-East Road, Lockier (the Proposal).

To satisfy the conditions of the development application the Shire of Irwin (the Shire) requires the submission of a Waste Management Plan (WMP) that will identify how waste is to be stored and collected from the Proposal. Talis Consultants has been engaged to prepare this WMP to satisfy the Shire's requirements.

A summary of the bin size, numbers, collection frequency and collection method is provided in the below table.

Proposed Waste Collection Summary

Waste Type	Generation (L/week)	Bin Size (L)	Number of Bins	Collection Frequency	Collection
Refuse	9,466	1,100	Five	Twice each week	Private Contractor
Recycling	1,722	1,100	One	Twice each week	Private Contractor

A private contractor will service the Proposal onsite, directly from the Bin Storage Area. The private contractor's waste collection vehicle will enter and exit the Proposal in forward gear via the vehicle entry/exit.

A site manager will oversee the relevant aspects of waste management at the Proposal.

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1 Introduction

Mineral Resources is seeking development approval for the proposed gas plant and worker accommodation development, located in the Shire of Irwin (the Proposal).

To satisfy the conditions of the development application the Shire of Irwin (the Shire) requires the submission of a Waste Management Plan (WMP) that will identify how waste is to be stored and collected from the Proposal. Talis Consultants has been engaged to prepare this WMP to satisfy the Shire's requirements.

The Proposal is bordered by vacant land to the north, east, south and west, as shown in Figure 1.

1.1 Objectives and Scope

The objective of this WMP is to outline the equipment and procedures that will be adopted to manage waste (refuse and recyclables) at the Proposal. Specifically, the WMP demonstrates that the Proposal is designed to:

- Adequately cater for the anticipated volume of waste to be generated;
- Provide an adequately sized Bin Storage Area, including appropriate bins; and
- Allow for efficient collection of bins by appropriate waste collection vehicles.

To achieve the objective, the scope of the WMP comprises:

- Section 2: Waste Generation;
- Section 3: Waste Storage;
- Section 4: Waste Collection;
- Section 5: Waste Management; and
- Section 6: Conclusion.

2 Waste Generation

The following section shows the waste generation rates used and the estimated waste volumes to be generated at the Proposal.

2.1 Proposed Tenancies

The anticipated volume of refuse and recyclables is based on the number of accommodation rooms and associated tenancies at the Proposal. The Proposal consists of the following:

- Rooms – 24;
- Indoor Dining – 125m^2;
- Bakery – 17m^2;
- Kitchen – 52m^2;
- Office – 26m^2;
- Gym – 115m^2; and
- Recreation – 157m^2.

2.2 Waste Generation Rates

In order to achieve an accurate projection of waste volumes for the Proposal, consideration was given to the City of Melbourne's *Waste Guidelines for Waste Management Plans* (2021) and the City of Perth's *Waste Guidelines for New Developments* (Revision 5, effective from June 2019).

Table 2-1 shows the waste generation rates which have been applied to the Proposal.

Table 2-1: Waste Generation Rates

Tenancy Use Type	Guideline Reference	Refuse Generation Rate	Recycling Generation Rate
Rooms	Perth - Hotel/Motel	5L/bed/day	1L/bed/day
Indoor Dining	Perth – Hotel/Motel – Dining Area	667L/100m^2/day	50L/100m^2/day
Bakery	Melbourne – Takeaway/Café	150L/100m^2/day	150L/100m^2/day
Kitchen	Melbourne – Restaurant	660L/100m^2/day	200L/100m^2/day
Office	Melbourne – Office	10L/100m^2/day	10L/100m^2/day
Gym	Melbourne – Office	10L/100m^2/day	10L/100m^2/day
Recreation	Melbourne – Office	10L/100m^2/day	10L/100m^2/day

2.3 Waste Generation Volumes

Waste generation is estimated by volume in litres (L) as this is generally the influencing factor when considering bin size, numbers and storage space required.

Waste generation volumes in litres per week (L/week) adopted for this waste assessment are shown in Table 2-2. It is estimated that the rooms and associated tenancies at the Proposal will generate 9,466L of refuse and 1,722L of recyclables each week.

Table 2-2: Estimated Waste Generation

Tenancy Use Type	Number of Rooms / Floor Area (m^2)	Waste Generation Rate	Waste Generation (L/week)
Refuse			
Rooms	24 Rooms	5L/bed/day	840
Indoor Dining	125m^2	667L/100m^2/day	5,836
Bakery	17m^2	150L/100m^2/day	179
Kitchen	52m^2	660L/100m^2/day	2,402
Office	26m^2	10L/100m^2/day	18
Gym	115m^2	10L/100m^2/day	81
Recreation	157m^2	10L/100m^2/day	110
		Total	**9,466**
Recyclables			
Rooms	24 Rooms	1L/bed/day	168
Indoor Dining	125m^2	50L/100m^2/day	438
Bakery	17m^2	150L/100m^2/day	179
Kitchen	52m^2	200L/100m^2/day	728
Office	17m^2	10L/100m^2/day	18
Gym	115m^2	10L/100m^2/day	81
Recreation	157m^2	10L/100m^2/day	110
		Total	**1,722**

3 Waste Storage

Waste materials generated within the Proposal will be collected in the bins located in the Bin Storage Area, as shown in Diagram 1, and discussed in the following sub-sections.

Note: the waste generation volumes are best practice estimates and the number of bins to be utilised represents the maximum requirements once the Proposal is fully operational. Bin requirements may be impacted as the development becomes operational and the nature of the tenants and waste management requirements are known.

3.1 Internal Transfer of Waste

To promote positive recycling behaviour and maximise diversion from landfill, internal bins will be available throughout the Proposal for the source separation of refuse and recycling.

These internal bins will be collected by the staff/cleaners at least once each day and transferred to the Bin Storage Area for consolidation into the appropriate bins. This internal servicing method may be conducted outside of main operational hours to mitigate disturbances to visitors.

All bins will be colour coded and labelled in accordance with Australian Standards (AS 4123.7) to assist staff and cleaners to dispose of their separate waste materials in the correct bins.

3.2 Bin Sizes

Table 3-1 gives the typical dimensions of standard bins sizes that may be utilised at the Proposal. It should be noted that these bin dimensions are approximate and can vary slightly between suppliers.

Table 3-1: Typical Bin Dimensions

Dimensions (m)	Bin Sizes		
	240L	660L	1,100L
Depth	0.730	0.780	1.070
Width	0.585	1.260	1.240
Height	1.060	1.200	1.330
Floor area (m^2)	0.427	0.983	1.327

Reference: SULO Bin Specification Data Sheets

3.3 Bin Storage Area Size

To ensure sufficient area is available for storage of the bins, the amount of bins required for the Bin Storage Area was modelled utilising the estimated waste generation in Table 2-2, bin sizes in Table 3-1 and based on collection of refuse and recyclables twice each week.

Based on the results shown in Table 3-2 the Bin Storage Area has been sized to accommodate:

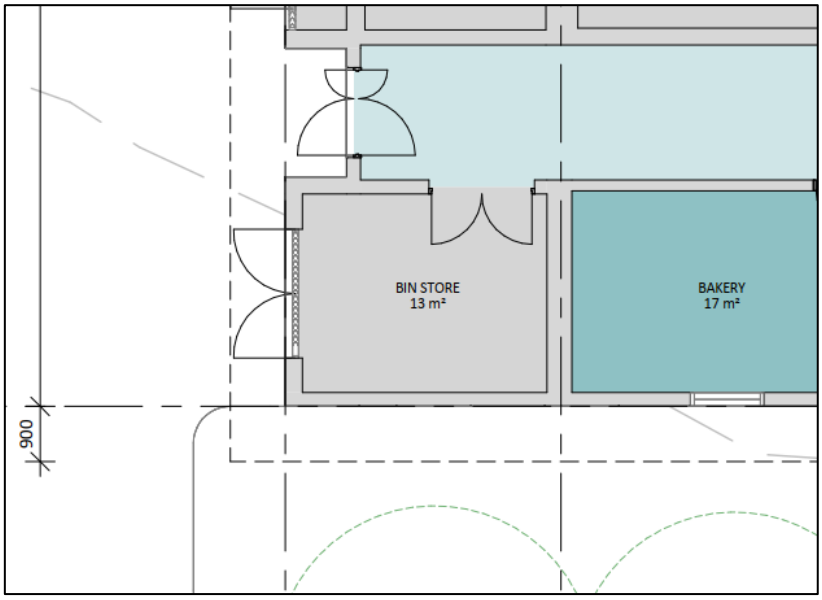
- Five 1,100L refuse bins; and
- One 1,100L recycling bin.

Table 3-2: Bin Requirements for Bin Storage Area

Waste Stream	Waste Generation (L/week)	Number of Bins Required		
		240L	660L	1,100L
Refuse	9,466	20	8	5
Recycling	1,722	4	2	1

The location of the Bin Storage Area is shown in Diagram 1.

Diagram 1: Bin Storage Area



3.4 Bin Storage Area Design

The design of the Bin Storage Area will take into consideration:

- Smooth impervious floor sloped to a drain connected to the sewer system;
- Taps for washing of bins and Bin Storage Area;
- Adequate aisle width for easy manoeuvring of bins;
- No double stacking of bins;
- Doors to the Bin Storage Area self-closing and vermin proof;
- Doors to the Bin Storage Area wide enough to fit bins through;
- Ventilated to a suitable standard;
- Appropriate signage;
- Undercover where possible and be designed to not permit stormwater to enter the drain;
- Located behind the building setback line;
- Bins not to be visible from the property boundary or areas trafficable by the public; and
- Bins are reasonably secured from theft and vandalism.

Bin numbers and storage space within the Bin Storage Area will be monitored by the site manager during the operation of the Proposal to ensure that the number of bins and collection frequency is sufficient.

4 Waste Collection

A private waste collection contractor will service the Proposal and provide five 1,100L bins for refuse and one 1,100L bin for recyclables.

The private contractor will collect refuse and recyclables twice each week utilising a rear loader waste collection vehicle.

The private contractor's rear loader waste collection vehicle will service the bins onsite, directly from the Bin Storage Area. The private contractor's rear loader waste collection vehicle will travel with left hand lane traffic flow on the vehicle entry/exit road and turn into the Proposal in forward gear, complete a multipoint turn within the Proposals carpark and pull up directly opposite the Bin Storage Area for servicing.

Private contractor's staff will ferry bins to and from the rear loader waste collection vehicle and the Bin Storage Area during servicing. The private contractor will be provided with key/PIN code access to the Bin Storage Area and security access gates to facilitate servicing, if required.

Once servicing is complete the private contractor's rear loader waste collection vehicle will exit in a forward motion, turning onto the vehicle entry/exit road and moving with traffic flow.

The above servicing method will preserve the amenity of the area by removing the requirement for bins to be presented to the street on collection days. In addition, servicing of bins onsite will reduce the noise generated in the area during collection. Noise from waste vehicles must comply with the Environmental Protection (Noise) Regulations and such vehicles should not service the site before 7.00am or after 7.00pm Monday to Saturday, or before 9.00am or after 7.00pm on Sundays and Public Holidays.

4.1 Bulk and Speciality Waste

Adequate space will also be allocated throughout the Proposal for placement of cabinets/containers for collection and storage of bulk and specialty wastes that are unable to be disposed of within the bins in the Bin Storage Area. These may include items such as:

- Refurbishment wastes from fit outs;
- Batteries and E-wastes;
- White goods/appliances;
- Used Cooking Oil;
- Cleaning chemicals; and
- Commercial Light globes.

These materials will be removed from the Proposal once sufficient volumes have been accumulated to warrant disposal. A temporary skip bin could be utilised for collections, if required. Collection will be monitored by the site manager who will organise their transport to the appropriate waste facility, as required.

5 Waste Management

A site manager will be engaged to complete the following tasks:

- Monitoring and maintenance of bins and the Bin Storage Area;
- Cleaning of bins and Bin Storage Area, when required;
- Ensure all staff/cleaners at the Proposal are made aware of this WMP and their responsibilities thereunder;
- Monitor staff/cleaner behaviour and identify requirements for further education and/or signage;
- Monitor bulk and speciality waste accumulation and assist with its removal, as required;
- Regularly engage with staff/cleaners to develop opportunities to reduce waste volumes and increase resource recovery; and
- Regularly engage with the private contractors to ensure efficient and effective waste service is maintained.

6 Conclusion

As demonstrated within this WMP, the Proposal provides a sufficiently sized Bin Storage Area for storage of refuse and recyclables based on the estimated waste generation volumes and suitable configuration of bins. This indicates that an adequately designed Bin Storage Area has been provided, and collection of refuse and recyclables can be completed from the Proposal.

The above is achieved using:

- Five 1,100L refuse bins, collected twice each week; and
- One 1,100L recycling bin, collected twice each week.

A private contractor will service the Proposal onsite, directly from the Bin Storage Area. The private contractor's waste collection vehicle will enter and exit the Proposal in forward gear via the vehicle entry/exit.

A site manager will oversee the relevant aspects of waste management at the Proposal.

Figures

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LEGEND

Site Boundary

Cadastre

Crown Allotment

Road

LOCALITY

Lots 3558 & 3561
Mount Horner WA 6525

Planning Solutions

N
0
100
200
300
m

Coordinate System: GDA2020 MGA Zone 50
Scale @ A3: 1:8,000

Prepared:	T Daymond	Date:	8/12/2023
Reviewed:	A Brouwer	Revision:	A
Project:	WMP23089		

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Figure 01

Data source: Roads, Cadastre - Landgate, 2023. Imagery: ESRI, 2022.

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Assets | Engineering | Environment | Noise | Spatial | Waste

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