



Waste Management Plan

Woolworths Two Rocks

Prepared for Fabcot Pty Ltd

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Executive Summary

Fabcot Pty Ltd is seeking development approval for the proposed Woolworths Two Rocks development (the Proposal).

To satisfy the conditions of the development application the City of Wanneroo (the City) 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 City'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
Café and Speciality Tenancies Bin Storage Area					
Refuse	3,682	660	Six	Once each week	Private Contractor
Recycling	2,755	660	Five	Once each week	Private Contractor
Retail / Commercial Bin Storage Area					
Refuse	517	660	One	Once each week	Private Contractor
Recycling	517	660	One	Once each week	Private Contractor

A private contractor will service the tenancies onsite, directly from the respective Bin Storage Area. The private contractor's waste collection vehicle will enter and exit the Proposal in forward gear via Future Road 3 or Azzurra Street.

Building management will oversee the relevant aspects of waste management at the Proposal.

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1 Introduction

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The Proposal is bordered by vacant land to the north (future Azzurra Street), south (Future Road 3) and west (future commercial) and Lisford Avenue to the east, 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 adequately sized Bin Storage Areas, 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 floor area (m²) of the tenancies at the Proposal. The Proposal consists of the following:

- Supermarket (Woolworths) – 2,939m²;
- Café – 85m²;
- Spec 1 (Liquor) – 201m²;
- Spec 2 – 82m²;
- Spec 3 – 108m²;
- Spec 4 – 68m²;
- Spec 5 – 67m²;
- Spec 6 – 61m²; and
- Retail / Commercial – 738m².

Note, the Woolworths Supermarket has their own back of house and manages waste through their own internal processes governed by national waste collections contracts, and therefore has not been included as part of this report.

2.2 Waste Generation Rates

The estimated amount of refuse and recyclables to be generated by the Proposal is based on the Western Australian Local Government Association's (WALGA) *Commercial and Industrial Waste Management Plan Guidelines (2014)* and the City of Melbourne's *Guidelines for Preparing a Waste Management Plan (2014)*.

It should also be noted that a conservative approach has been taken with regards to waste generation across the Proposal by overestimating the potential waste volumes by assuming seven days of operation for all tenancies.

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
Café	Melbourne – Café	300L/100m ² /day	200L/100m ² /day
Spec 1 (Liquor)	WALGA – Retail Shop > 100m ²	50L/100m ² /day	50L/100m ² /day
Spec 2	WALGA – Retail Shop < 100m ²	50L/100m ² /day	25L/100m ² /day
Spec 3	WALGA – Retail Shop < 100m ²	50L/100m ² /day	25L/100m ² /day
Spec 4	WALGA – Retail Shop < 100m ²	50L/100m ² /day	25L/100m ² /day
Spec 5	WALGA – Retail Shop < 100m ²	50L/100m ² /day	25L/100m ² /day

Tenancy Use Type	Guideline Reference	Refuse Generation Rate	Recycling Generation Rate
Spec 6	WALGA – Retail Shop < 100m ²	50L/100m ² /day	25L/100m ² /day
Retail / Commercial	WALGA – Offices	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 Table 2-2. It is estimated that the tenancies at the Proposal will generate 4,356L of refuse and 3,276L of recyclables each week.

Table 2-2: Estimated Waste Generation

Tenancies	Area (m ²)	Waste Generation Rate (L/100m ² /day)	Waste Generation (L/week)
Refuse			
Café	85	300	1,785
Spec 1 (Liquor)	201	50	704
Spec 2	82	50	287
Spec 3	108	50	378
Spec 4	68	50	238
Spec 5	67	50	235
Spec 6	61	50	214
Retail / Commercial	738	10	517
Total			4,358
Recyclables			
Café	85	200	1,190
Spec 1 (Liquor)	201	50	704
Spec 2	82	25	144
Spec 3	108	25	378
Spec 4	68	25	119
Spec 5	67	25	117
Spec 6	61	25	107
Retail / Commercial	738	10	517
Total			3,276

3 Waste Storage

Waste materials generated within the Proposal will be collected in the bins located in the Bin Storage Areas, as shown in Diagram 1 and Diagram 2, and discussed in the following sub-sections.

3.1 Internal Bins

To promote positive recycling behaviour and maximise diversion from landfill, the café, each speciality tenancy and the retail/commercial tenancy will have two internal bins for the separate disposal of refuse and recyclables. Waste from these internal bins will be transferred by the tenant, staff or cleaners to the respective Bin Storage Area and be deposited into the appropriate refuse and recycling bins.

Tenants, staff or cleaners will transfer waste to the respective Bin Storage Areas outside of normal operating hours to minimise disturbance to customers and visitors at the Proposal.

The Supermarket will have their own internal bins for the collection of refuse and recyclables. Staff/cleaners will transfer the contents of these bins to the dedicated Supermarket Bin Storage Area as required outside of normal operational hours to minimise disturbance to customers and visitors at the Proposal. Staff/cleaners will be required to empty their internal bins daily and will be responsible for the cleaning and maintenance of the Supermarket internal 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	Bin Sizes			
	240L	360L	660L	1,100L
Depth (mm)	730	848	780	1,070
Width (mm)	585	680	1,260	1,240
Height (mm)	1,060	1,100	1,200	1,300
Area (mm ²)	427	577	983	1,327

Reference: SULO Bin Specification Data Sheets

3.3 Café and Speciality Tenancies Bin Storage Area Size

To ensure sufficient area is available for storage of the café and speciality tenancies bins, the amount of bins required for the Café and Specialty Tenancies 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 once each week.

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

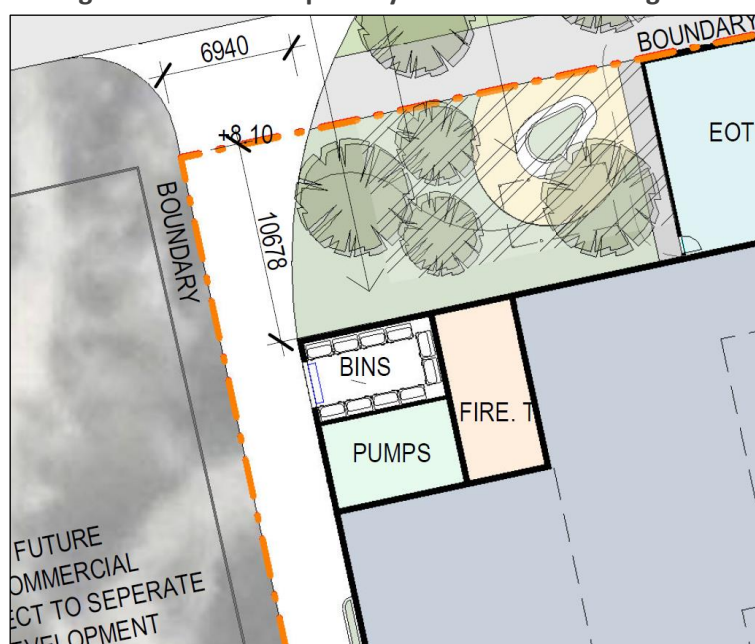
- Six 660L refuse bins; and
- Five 660L recycling bins.

Table 3-2: Bin Requirements for Bin Storage Area – Café and Specialty Tenancies

Waste Stream	Waste Generation (L/week)	Number of Bins Required			
		240L	360L	660L	1,100L
Refuse	3,574	15	10	6	4
Recycling	2,700	12	8	5	3

The configuration of these bins within the Café and Specialty Tenancies Bin Storage Area is shown in Diagram 1. It is worth noting that the number of bins and corresponding placement of bins shown in Diagram 1 represents the maximum requirements assuming collections once each week of refuse and recyclables. Increased collection frequencies would reduce the required number of bins.

Diagram 1: Café and Specialty Tenancies Bin Storage Area



3.4 Retail / Commercial Bin Storage Area Size

To ensure sufficient area is available for storage of the retail / commercial bins, the amount of bins required for the Retail / Commercial 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 once each week.

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

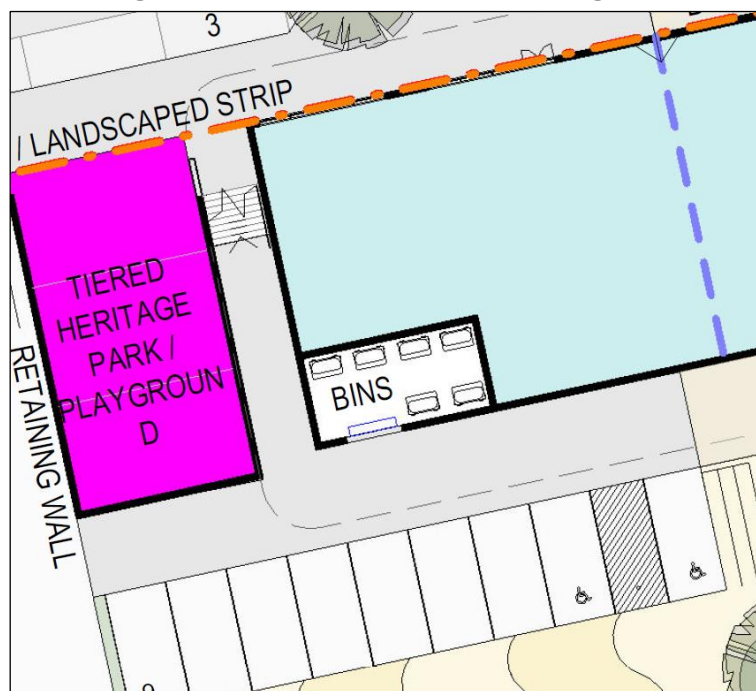
- One 660L refuse bins; and
- One 660L recycling bins.

Table 3-3: Bin Requirements for Bin Storage Area – Retail / Commercial

Waste Stream	Waste Generation (L/week)	Number of Bins Required			
		240L	360L	660L	1,100L
Refuse	417	2	2	1	1
Recycling	417	2	2	1	1

The configuration of these bins within the Retail / Commercial Bin Storage Area is shown in Diagram 2. It is worth noting that the number of bins and corresponding placement of bins shown in Diagram 2 represents the maximum requirements assuming collections once each week of refuse and recyclables (with space to cater for additional waste volumes and waste streams should this be required in the future).

Diagram 2: Retail / Commercial Bin Storage Area



3.5 Bin Storage Area Design

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

- Smooth impervious floor sloped to a drain connected to the sewer system;
- Taps for washing of bins and Bin Storage Areas;
- Adequate aisle width for easy manoeuvring of bins;
- No double stacking of bins;
- Doors to the Bin Storage Areas self-closing and vermin proof;
- Doors to the Bin Storage Areas 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 into 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 Areas will be monitored by building management 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 utilising a rear loader waste collection vehicle as follows:

Café and Speciality Tenancies:

- Six 660L refuse bins, collected once each week; and
- Five 660L recycling bins, collected once each week.

Retail / Commercial

- One 660L refuse bin, collected once each week; and
- One 660L recycling bin, collected once each week.

The private contractor's rear loader waste collection vehicle will service the bins onsite, directly from the respective Bin Storage Area. The private contractor's rear loader waste collection vehicle will travel with left hand lane traffic flow and turn into the Proposal in forward gear and pull up adjacent to the respective Bin Storage Area for servicing.

Servicing may be conducted outside of normal operating hours to allow the waste collection vehicle to utilise the empty carpark for manoeuvring and mitigate impacts on local traffic movements during peak traffic hours.

Private contractor's staff will ferry bins to and from the rear loader waste collection vehicle and the respective Bin Storage Area during servicing. The private contractor will be provided with key/PIN code access to the Bin Storage Areas 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 Future Road 3 or Azzurra Street moving with traffic flow.

4.1 Bulk and Speciality Waste

Bulk and speciality waste materials will be removed from the Proposal as they are generated on an 'as required' basis. A temporary skip bin could be utilised for collections, if required.

Adequate space may 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 respective Bin Storage Areas. 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 bulk and specialty wastes will be removed from the Proposal as sufficient volumes have been accumulated to warrant disposal. Bulk and specialty waste collection will be monitored by building management who will organise their transport to the appropriate waste facility, as required.

5 Waste Management

Building management will be engaged to complete the following tasks:

- Monitoring and maintenance of bins and the Bin Storage Areas;
- Cleaning of bins and Bin Storage Areas, when required;
- Ensure all staff and tenants at the Proposal are made aware of this WMP and their responsibilities thereunder;
- Monitor staff and tenant 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 and tenants 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 sufficiently sized Bin Storage Areas for the storage of refuse and recyclables, based on the estimated waste generation volumes and suitable configuration of bins. This indicates that adequately designed Bin Storage Areas have been provided, and collection of refuse and recyclables can be completed from the Proposal.

The above is achieved as follows:

Café and Speciality Tenancies:

- Six 660L refuse bins, collected once each week; and
- Five 660L recycling bins, collected once each week.

Retail / Commercial:

- One 660L refuse bin, collected once each week; and
- One 660L recycling bin, collected once each week.

A private contractor will service the tenancies onsite, directly from the respective Bin Storage Area. The private contractor's waste collection vehicle will enter and exit the Proposal in forward gear via Future Road 3 or Azzurra Street.

Building management will oversee the relevant aspects of waste management at the Proposal.

Figures

Figure 1: Locality Plan



LEGEND

- Site Boundary
- Cadastre

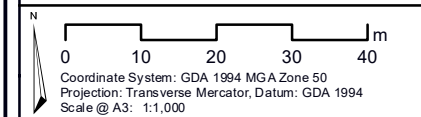
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LOCALITY

Woolworths Two Rocks
Two Rocks, WA 6037

Fabcot Pty Ltd



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Figure 01

Data source: Roads, Cadastre - Landgate, 2021. Imagery: Landgate, 2021.



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