

Appendix F Waste Management Plan



Waste Management Plan

3 Bragor Place and 17 & 19 Almondbury Road, Ardross

Prepared for Scentre Group

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Executive Summary

Scentre Group is seeking development approval for the proposed residential development located at 3 Bragor Place and 17 & 19 Almondbury Road, Ardross (the Proposal).

To satisfy the conditions of the development application the City of Melville (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
Townhouse Bin Storage Areas (Each)					
Refuse	-	140	One	Fortnightly	City of Melville
Recycling	-	240	One	Fortnightly	City of Melville
FOGO	-	240	One	Once each week	City of Melville
Apartment Bin Storage Area					
Refuse	3,310	660	Six	Once each week	Private Contractor
Recycling	4,840	660	Eight	Once each week	Private Contractor
FOGO	1,150	240	Five	Once each week	Private Contractor

The City will collect refuse, recyclables and FOGO from the townhouses utilising its kerbside collection service. The City's waste collection vehicle will service these bins from the Bin Presentation Area on Bragor Place.

A private contractor will collect refuse, recyclables and FOGO from the apartments onsite, directly from the Apartment Bin Storage Area. The private contractor's waste collection vehicle will enter the Proposal in reverse and exit in forward gear via Bragor Place.

A strata manager/caretaker will oversee the relevant aspects of waste management at the Proposal.

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1 Introduction

Scentre Group is seeking development approval for the proposed residential development located at 3 Bragor Place and 17 & 19 Almondbury Road, Ardross (the Proposal).

To satisfy the conditions of the development application the City of Melville (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.

The Proposal is bordered by residential properties to the north and west, Almondbury Road to the south and Bragor Place 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, recyclables, and FOGO) 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, recyclables and FOGO is based on the number of townhouses and apartments at the Proposal. The Proposal consists of the following:

- Three Bedroom Townhouses – 3;
- One Bedroom Apartments – 12;
- Two Bedroom Apartments – 32; and
- Three Bedroom Apartments – 13.

The townhouses will each have a 140L refuse bin, 240L recycling bin and a 240L FOGO bin stored within their individual garages.

The apartments will utilise the shared Apartment Bin Storage Area.

2.2 Waste Generation Rates

In order to achieve an accurate projection of waste volumes for the apartments at the Proposal, consideration was given to the City of Melville's *Waste and Recyclables Collection for Multiple Dwellings, Mixed Use Developments and Non-Residential Developments Policy LPP1.3* (2016).

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

Table 2-1: Waste Generation Rates

Tenancy Use Type	City's Guideline Reference	Refuse Generation Rate	Recycling Generation Rate	FOGO Generation Rate
One Bedroom Apartments	1 Bedroom	40L/week	60L/week	10L/week
Two Bedroom Apartments	2 Bedrooms	60L/week	80L/week	20L/week
Three Bedroom Apartments	3 Bedrooms or greater	70L/week	120L/week	30L/week

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 apartments at the Proposal will generate 3,310L of refuse, 4,840L of recyclables and 1,150L of FOGO each week.

Table 2-2: Estimated Waste Generation - Apartments

Residential Apartments	Number of Apartments	Waste Generation Rate (L/week)	Waste Generation (L/week)
Refuse			
One Bedroom Apartments	12	40	480
Two Bedroom Apartments	32	60	1,920
Three Bedroom Apartments	13	70	910
Total			3,310
Recyclables			
One Bedroom Apartments	12	60	720
Two Bedroom Apartments	32	80	2,560
Three Bedroom Apartments	13	120	1,560
Total			4,840
FOGO			
One Bedroom Apartments	12	28	120
Two Bedroom Apartments	32	28	640
Three Bedroom Apartments	12	28	390
Total			1,150

3 Waste Storage

Waste materials generated within the Proposal will be collected in the bins located in the townhouse garages/carports and Apartment Bin Storage Area, as shown in Diagram 1 and Diagram 2, and discussed in the following sub-sections.

3.1 Internal Transfer of Waste

To promote positive recycling behaviour and maximise diversion from landfill, the townhouses and apartments will have room to accommodate two under counter/kitchen bins for the separate disposal of refuse and recyclables and a kitchen caddy for the separation of FOGO.

Waste from these internal bins will be transferred by residents directly to their individual townhouse bins or to the Apartment Bin Storage Area and deposited into appropriate bins.

All bins will be colour coded and labelled in accordance with Australian Standards (AS 4123.7) to assist residents 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	0.735	0.850	1.245
Width	0.580	1.370	1.370
Height	1.080	1.250	1.470

Reference: City of Melville's Waste, Recycling and FOGO Collections for Multiple Dwellings, Mixed Use Developments and Non-Residential Developments Policy LPP1.3 (2023).

3.3 Bin Storage Area Size

3.3.1 Townhouse Bin Storage Area Size

Each townhouse will be provided with one 140L refuse bin, one 240L recycling bin and one 240L FOGO bin. Refuse and recycling will be collected on alternating fortnights and FOGO will be collected weekly from the kerbside.

Table 3-2 shows the total bin numbers required for the townhouses.

Table 3-2: Bin Requirements for Townhouse Bin Storage Areas

Waste Stream	Number of Bins Required	
	140L	240L
Refuse	3	-
Recycling	-	3
FOGO	-	3

The space for these bins within a townhouse garage/carport is shown in Diagram 1.

Diagram 1: Townhouse Bin Storage Area



3.3.2 Apartment Bin Storage Area Size

To ensure sufficient area is available for storage of the bins, the number of bins required for the Apartment 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, recyclables, and FOGO once each week.

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

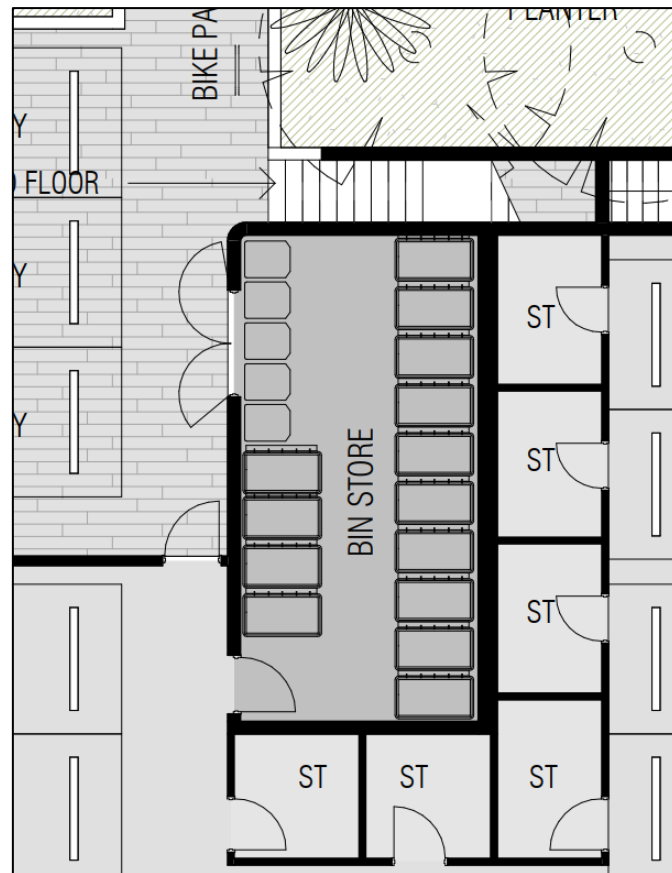
- Six 660L refuse bins;
- Eight 660L recycling bins; and
- Five 240L FOGO bins.

Table 3-3: Bin Requirements for Apartment Bin Storage Area

Waste Stream	Waste Generation (L/week)	Number of Bins Required		
		240L	660L	1,100L
Refuse	3,310	14	6	4
Recycling	4,840	21	8	5
FOGO	1,150	5	-	-

The configuration of these bins within the Apartment 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 one collection each week of refuse, recyclables and FOGO.

Diagram 2: Apartment Bin Storage Area



3.4 Apartment Bin Storage Area Design

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

- Tap connected to an adequate supply of water for washing bins and the Bin Storage Area;
- Constructed of brick, concrete, corrugated compressed fibre cement sheet or other material of suitable thickness;
- Sufficient area to walk around and manoeuvre bins;
- Having walls not less than 1.8m in height with an access point of not less than 1m in width and fitted with a self-closing gate;
- Smooth and impervious floor of not less than 75mm in thickness;
- Ventilated in accordance with Australian Standard 1668.2: The Use of Ventilation and Air Conditioning in Buildings;
- Not readily accessible by the public;
- Appropriate signage that identifies what items are and are not accepted in the refuse and recycling, any hazards or potential dangers, and any relevant points of contact for the waste system; and
- Located behind the building setback line.

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

4 Waste Collection

The following sections describe the waste collection methodologies for the development.

4.1 Townhouses

The City will service the townhouses at the Proposal and provide each of them (3 townhouses) with a set of 140L refuse, 240L recycling and 240L FOGO bins.

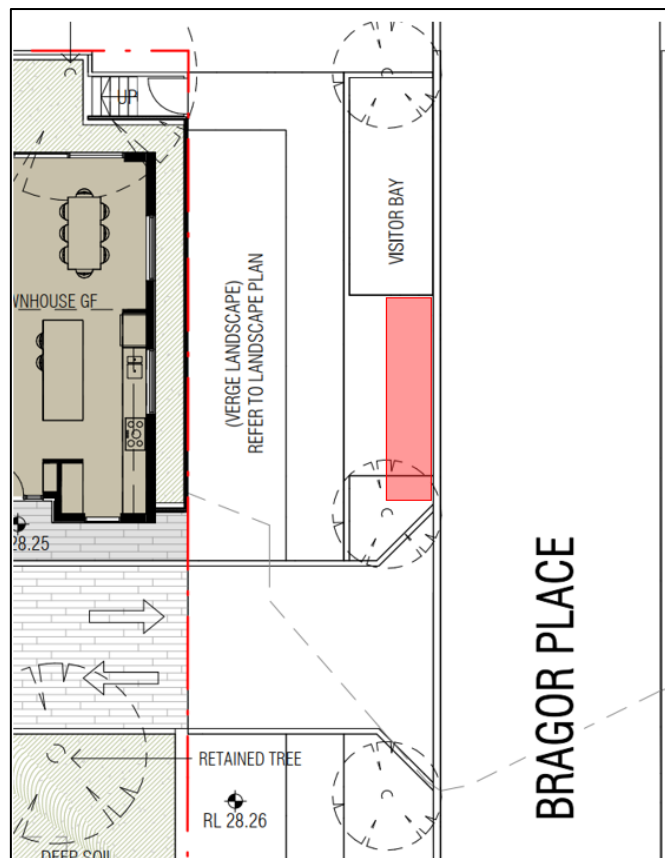
The City will collect FOGO once each week and refuse and recyclables on alternating fortnights utilising its side arm waste collection vehicle.

The City will service bins from the Bin Presentation Area on the verge on Bragor Place at the front of the Proposal, as shown in Diagram 3.

Bins will be presented for collection 1m from the verge with the wheels and handles facing away from the street. The bins will remain clear of obstructions such as power poles, signs and street trees, and will be placed so as not to obstruct pedestrians, footpaths or bike lanes. Bins will be lined up neatly and in a single row along the verge, with sufficient space between each bin to facilitate collection by the City's side arm waste collection vehicle.

The townhouse residents will ferry the bins to and from the Bin Presentation Area on collection days. The travel path between the townhouse garages/carports and the Bin Presentation Area will be of flat surface and kept free of obstacles. The residents will return the bins to their garage/carport as soon as possible on the same day following collection.

Diagram 3: Bin Presentation Area



4.2 Apartments

A private contractor will service the apartments at the Proposal and provide six 660L bins for refuse, four 660L bins for recycling and seven 240L bins for FOGO.

The private contractor will collect refuse, recyclables and FOGO once 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 Apartment Bin Storage Area. The private contractor's rear loader waste collection vehicle will travel with left hand lane traffic flow on Bragor Place, reverse into the Proposal, and pull up directly opposite the Apartment Bin Storage Area for servicing, as shown in Diagram 4.

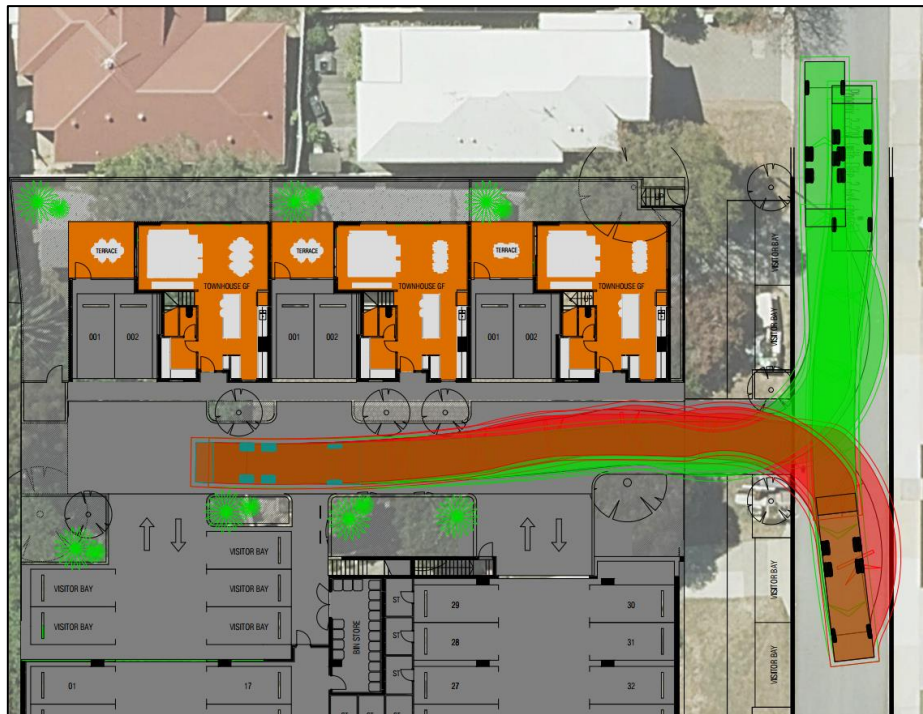
Private contractor staff will ferry bins to and from the rear loader waste collection vehicle and the Apartment Bin Storage Area during servicing. The private contractor will be provided with key/PIN code access to the Apartment Bin Storage Area and security access gates to facilitate servicing, if required.

Once servicing is complete the private contractor's rear loader waste collection vehicle will exit in a forward motion, turning left onto Bragor Place moving with traffic flow, as shown in Diagram 4.

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.

The ability for the private contractor's rear loader waste collection vehicle to access the Proposal in a safe manner has been assessed by Shawmac and further information will be included within their traffic impact statement.

Diagram 4: Swept Path Analysis



4.3 Residential Garden Organics and Bulk Verge Collections

Each townhouse/apartment has an allocated storeroom which could be used for the temporary storage of bulk waste.

The City offers the following on demand services for residents:

- Two (2) Garden Organics Verge Collections; and
- One (1) Bulk Waste Verge Collection.

The strata manager/caretaker will liaise with residents on procedures for bulky waste disposal within the Proposal, as required.

5 Waste Management

A strata manager/caretaker will be engaged to complete the following tasks:

- Monitoring and maintenance of bins and the Apartment Bin Storage Area;
- Cleaning of bins and the Apartment Bin Storage Area, when required;
- Ensure all residents at the Proposal are made aware of this WMP and their responsibilities thereunder;
- Monitor resident behaviour and identify requirements for further education and/or signage;
- Monitor garden organics and bulk waste accumulation and assist with its removal, as required;
- Regularly engage with residents to develop opportunities to reduce waste volumes and increase resource recovery; and
- Regularly engage with the City and private contractor 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 storage of refuse, recyclables and FOGO, 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, recyclables and FOGO can be completed from the Proposal.

The above is achieved using:

Townhouses (each):

- One 140L refuse bin, collected fortnightly (alternating with recycling);
- One 240L recycling bin, collected fortnightly (alternating with refuse); and
- One 240L FOGO bin, collected once each week.

Apartments:

- Six 660L refuse bins, collected once each week;
- Four 660L recycling bins, collected once each week; and
- Seven 240L FOGO bins, collected once each week.

The City will collect refuse, recyclables and FOGO from the townhouses utilising its kerbside collection service. The City's waste collection vehicle will service these bins from the Bin Presentation Area on Bragor Place.

A private contractor will collect refuse, recyclables and FOGO from the apartments onsite, directly from the Apartment Bin Storage Area. The private contractor's waste collection vehicle will enter the Proposal in reverse and exit in forward gear via Bragor Place.

A strata manager/caretaker will oversee the relevant aspects of waste management at the Proposal.

Figures

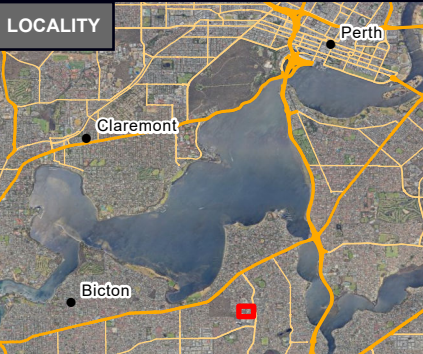
Figure 1: Locality Plan



LEGEND

- Site Boundary
- Cadastre
 - Freehold
 - Road
 - Strata Plan or Lot
 - Easement

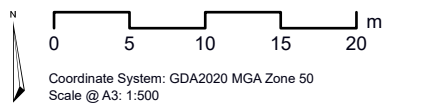
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LOCALITY

Lots 274, 275 & 585
Bragor Place and Almondbury Road
Ardross WA 6153

Scentre Group



Prepared:	E Jackson	Date:	13/12/2023
Reviewed:	A Brouwer	Revision:	A
Project:	WMP23095		



Figure 01

Data source: Roads, Cadastre - Landgate, 2023. Imagery: Nearmap, 2023.



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Talis Consultants
ABN 85 967 691 321

HEAD OFFICE

604 Newcastle Street,
Leederville
Western Australia 6007

PO Box 454,
Leederville
Western Australia 6903

NSW OFFICES

Nowra

76 Bridge Road, Nowra
New South Wales, 2541

PO Box 1189, Nowra
New South Wales, 2541

Newcastle

58 Cleary Street, Hamilton
New South Wales, 2303

P: 1300 251 070
E: enquiries@talisconsultants.com.au