



Waste Management Plan

192 Stirling Street, Perth

Prepared for 192 Stirling St P/L atf 192 Stirling St Unit Trust

7 May 2026

Project Number: WMP24096

DOCUMENT CONTROL

Version	Description	Date	Author	Reviewer	Approver
1.0	First Approved Release	25/10/2024	SC	DP	DP
2.0	Second Approved Release	07/05/2026	JL	AB	AB

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Executive Summary

192 Stirling St P/L is seeking development approval for the proposed mixed-use development located at 192 Stirling Street, Perth (the Proposal).

To satisfy the conditions of the development application the City of Vincent (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
Residential Bin Storage Area					
Refuse	3,520	660	Three	Twice each week	Private Contractor
Recycling	1,760	660	Three	Once each week	Private Contractor
FOGO	1,760	240	Four	Twice each week	City of Vincent
Commercial Bin Storage Area					
Refuse	1,171	660	One	Twice each week	Private Contractor
Recycling	1,171	660	One	Twice each week	Private Contractor

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

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

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1 Introduction

192 Stirling St P/L is seeking development approval for the proposed mixed-use development located at 192 Stirling Street, Perth (the Proposal).

To satisfy the conditions of the development application the City of Vincent (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 Edward Street to the north, commercial developments to the east and south and Stirling Street to the 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, 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 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: Internal Transfer of Waste;
- Section 4: Waste Storage;
- Section 5: Waste Collection;
- Section 6: Waste Management; and
- Section 7: 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 apartments and the floor area (m²) of the commercial tenancy at the Proposal. The Proposal consists of the following:

Residential:

- One Bedroom Apartments – 88.
 - Loft Apartments – 9;
 - Micro Apartments – 70;
 - Type 1A Apartments – 4;
 - Type 1B Apartments – 4; and
 - Type 1C Apartments – 1.

Commercial:

- Retail Tenancy – 335m².

2.2 Waste Generation Rates

The estimated amount of refuse, recyclables and FOGO to be generated by the proposal is based on the City of Vincent's *Waste Guidelines for New Developments* (May 2020).

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
Residential				
One Bedroom Apartments	>12 Dwellings 1 Bed	40L/week	20L/week	20L/week
Commercial				
Retail Tenancy	Retail (non-food sales) >100m ² floor area	50L/100m ² /day	50L/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.

2.3.1 Residential Waste

Residential 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 residential apartments will generate 3,520L of refuse, 1,760L of recyclables and 1,760L of FOGO each week.

Table 2-2: Estimated Waste Generation – Residential

One Bedroom Apartments	Number of Apartments	Waste Generation Rate	Waste Generation (L/week)
Refuse	88	40L/week	3,520
Recycling	88	20L/week	1,760
FOGO	88	40L/week	1,760
Total			7,040

2.3.2 Commercial Waste

Commercial waste generation volumes in litres per week (L/week) adopted for this waste assessment are shown in Table 2-3. It is estimated that the retail tenancy will generate 1,171L of refuse and 1,171L of recyclables.

Table 2-3: Estimated Waste Generation – Commercial

Retail Tenancy	Area (m ²)	Waste Generation Rate	Waste Generation (L/week)
Refuse	335	50L/100m ² /day	1,171
Recycling	335	50L/100m ² /day	1,171
Total			2,342

3 Internal Transfer of Waste

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

3.1 Residential Internal Bins

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

The resident will then take the contents of their internal refuse and recycling bins to the respective Waste Chute Room on each residential level for disposal, as described below, and their internal FOGO kitchen caddy directly to the Residential Bin Storage Area on the Ground Level.

3.1.1 Waste Chute System

To assist with efficient disposal of waste to the Residential Bin Storage Areas, a dual chute waste system will be utilised at the Proposal for refuse and recycling waste, as shown in Diagram 1.

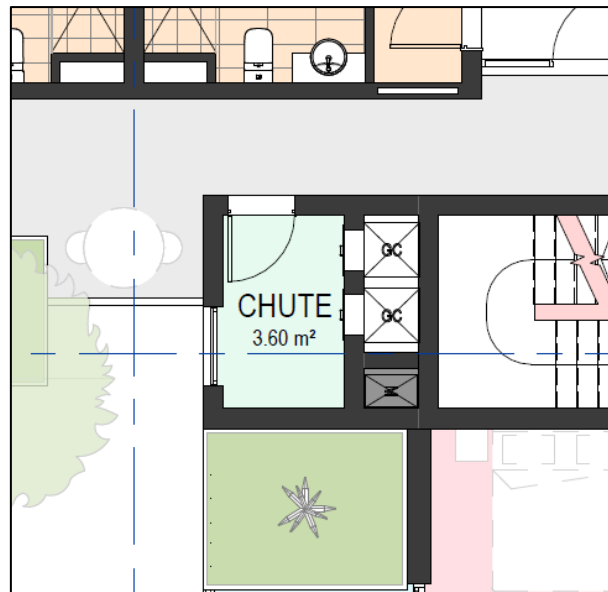
The waste chutes will be located in close proximity to the elevators on each residential level, have self-closing doors with and bottom hinge and fire rated to AS1530.4-2005. Chutes are typically 610mm in diameter and are ventilated with an extraction fan at the top to reduce odour and insulated for noise reduction. The chutes will be routinely cleaned via chute flushing operations. Please note, the exact design of the systems to be utilised at the Proposal will be determined at a later date following discussions with waste chute providers as the designs are finalised.

The Proposal is intending to utilise a linear track system at the terminus of each of the waste chute systems to improve the efficiency of the strata/building manager manoeuvring bins within the Residential Bin Storage Area. Each linear track system will be capable of accommodating two 660L bins which can be automatically or manually rotated to ensure the capture of waste material exiting the chute system. It can also be designed to send the strata/building manager a digital alert of the bins capacity to ensure the swapping of empty and full bins is done in a timely manner.

The strata/building manager will be required to manually swap full bins with empty bins on the linear track system, as necessary.

The strata/building manager will provide training materials for all new residents and tenants on how to use the waste system (typically within a new resident/tenant's handbook). The strata/building manager will advise residents and tenants of any changes to the waste system. In addition, signage will be included in the waste chute rooms to remind residents and tenants how to correctly dispose of their waste materials in the chute and to provide relevant contact details for waste management at the Proposal.

Diagram 1: Example of Residential Waste Chute Room



3.2 Commercial Internal Bins

The commercial tenancy will also have a minimum of two internal bins to facilitate the separate disposal of refuse and recycling. These bins will be transferred by the tenants, staff or cleaners directly to the Commercial Bin Storage Area and deposited into the correct bin.

4 Waste Storage

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

4.1 Bin Sizes

Table 4-1 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 4-1: Typical Bin Dimensions

Dimensions (m)	Bin Sizes				
	140L	240L	360L	*660L	*1,100L
Depth	0.540	0.735	0.885	0.780	1.070
Width	0.500	0.580	0.600	1.260	1.240
Height	1.065	1.080	1.100	1.200	1.330

Reference: City of Vincent's Waste Guidelines for New Developments (May 2020)

Reference: SULO Bin Specification Data Sheets

4.2 Bin Storage Area Size

4.2.1 Residential Bin Storage Area Size

To ensure sufficient area is available for storage of the residential bins, the amount of bins required for the Residential Bin Storage Area was modelled utilising the estimated waste generation in Table 2-2, bin sizes in Table 4-1 and based on collection of recycling once each week and refuse and FOGO twice each week.

Based on the results shown in Table 4-2 the Residential Bin Storage Area has been sized to accommodate:

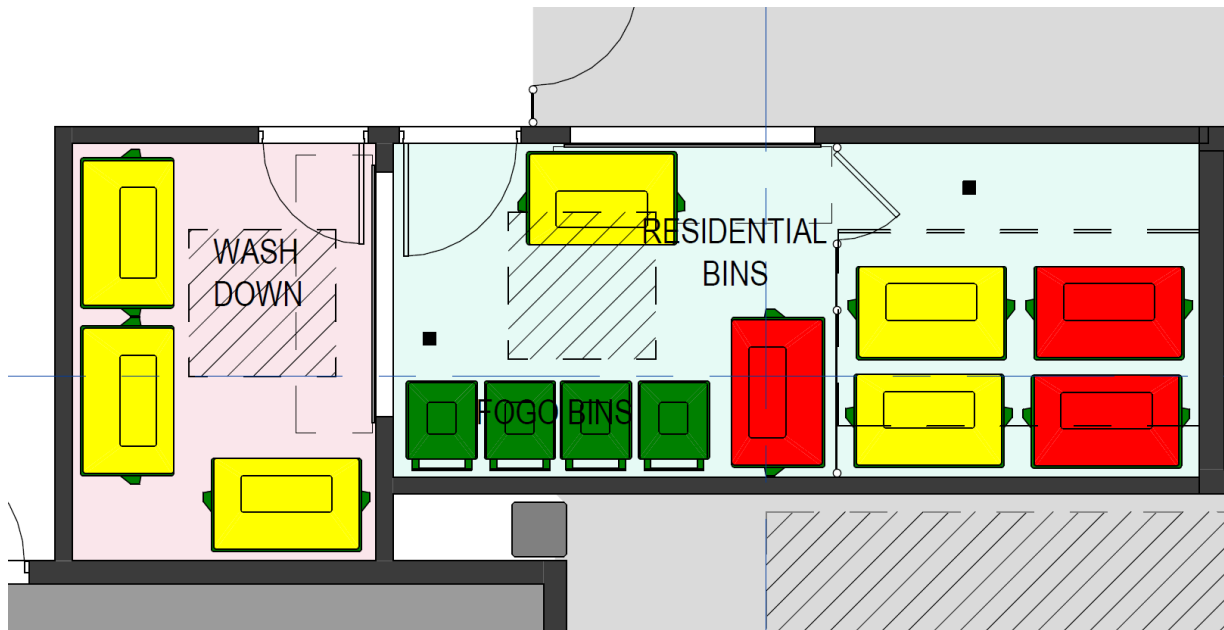
- Three 660L refuse bins;
- Three 660L recycling bins; and
- Four 240L FOGO bins.

Table 4-2: Bin Requirements for Bin Storage Area – Residential

Waste Stream	Waste Generation (L/week)	Number of Bins Required				
		140L	240L	360L	660L	1,100L
Refuse	3,520	13	8	-	3	2
Recycling	1,760	-	8	5	3	2
FOGO	1,760	7	4	-	-	-

The configuration of these bins within the Residential 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 recyclables and two collections each week of refuse and FOGO.

Diagram 2: Residential and Commercial Bin Storage Areas



4.2.2 Commercial Bin Storage Area Size

To ensure sufficient area is available for storage of the commercial bins, the amount of bins required for the Commercial Bin Storage Area was modelled utilising the estimated waste generation in Table 2-3, bin sizes in Table 4-1 and based on collection of refuse and recyclables twice each week.

Based on the results shown in Table 4-3 the Commercial Bin Storage Area has been sized to accommodate:

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

Table 4-3: Bin Requirements for Bin Storage Area – Commercial

Waste Stream	Waste Generation (L/week)	Number of Bins Required		
		240L	660L	1,100L
Refuse	1,171	3	1	1
Recycling	1,171	3	1	1

The configuration of these bins within the 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 two collections each week of refuse and recyclables.

4.3 Bin Storage Area Design

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

- Easily accessible communal Bin Storage Areas;
- Separate Residential and Commercial Bin Storage Areas;
- A minimum aisle width of 1,000mm for access, turning and movement of bins for collection. The aisle shall be kept free of obstructions;
- Sufficient space provided to store refuse waste, comingled recycling material and FOGO in separate bins;
- Located behind the front building setback;
- Bins shall not be visible from the property boundary except when presented for collection;
- Bins are reasonably secured from theft and vandalism;
- Concrete floors (in accordance with AS2870) grading to an industrial floor waste, with a hose cock to enable bins and the Bin Storage Areas to be washed out;
- Undercover and be designed to not permit storm water to enter the drain;
- Bin Storage Areas shall have enough space to facilitate the cleaning of bins;
- Walls and floors of Bin Storage Areas constructed of a material which facilitates the cleaning of the Bin Storage Areas;
- Doors to the Bin Storage Areas self-closing and vermin proof;
- Ventilated to a suitable standard;
- Bin Storage Areas shall be provided with artificial lighting, sensor or switch controlled both internal/external to the room or area. All lighting in open areas shall comply with AS4282-1997 (Control of Obtrusive Outdoor Lighting); and
- Council approved signage shall be incorporated into the Bin Storage Areas to inform users of the appropriate bins for disposing of waste and guidance for the separation of refuse waste, comingled recyclables and FOGO.

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

5 Waste Collection

A private contractor will service the residential refuse and recycling and commercial waste, and the City will service the residential FOGO. The private contractor/City will provide the following:

Residential Bin Storage Area

- Three 660L refuse bins, collected twice each week;
- Three 660L recycling bins, collected twice each week; and
- Four 240L FOGO bins, collected twice each week.

Commercial Bin Storage Area

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

The City's rear loader waste collection vehicle will service the residential FOGO bins onsite, directly from the Residential Bin Storage Area.

The private contractor's rear loader waste collection vehicle will service the residential refuse and recycling bins onsite, directly from the Residential Bin Storage Area. The private contractor will also service commercial waste onsite, directly from the Commercial Bin Storage Area.

The waste collection vehicles will travel with left hand lane traffic flow on Edward Street and turn into the Proposal in forward gear and pull up adjacent the Bin Storage Areas for servicing.

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

Once servicing is complete the waste collection vehicle will exit the Proposal in a forward motion, turning onto Edward Street 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.

5.1 Residential Bulk General and Greenwaste

Each apartment has an allocated internal storage room at the Proposal for the temporary storage of bulk waste. This will assist with the reduction of illegal dumping of bulky wastes at the Proposal.

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

The building manager/caretaker will monitor the accumulation of bulk waste and coordinate a communal bulk bin/verge valet service with the City and advise residents on bulk waste collection procedures.

5.2 Commercial Bulk and Speciality Waste

Adequate space will 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 Commercial Bin Storage Area. These may include items such as:

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

These bulk and speciality wastes will be removed from the Proposal once sufficient volumes have been accumulated to warrant disposal. Bulk and speciality waste collection will be monitored by the strata/building manager who will organise their transport to the appropriate waste facility, as required.

6 Waste Management

The strata manager/building manager 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;
- Exchange full bins with empty bins at the terminus of the waste chute/on the linear track system;
- Ensure all residents and tenants at the Proposal are made aware of this WMP and their responsibilities thereunder;
- Monitor resident and tenant behaviour and identify requirements for further education and/or signage;
- Monitor residential bulk general and green waste accumulation and assist with its removal, as required;
- Monitor commercial bulk and speciality waste accumulation and assist with its removal, as required;
- Regularly engage with residents and tenants to develop opportunities to reduce waste volumes and increase resource recovery; and
- Regularly engage with the City/private contractors to ensure efficient and effective waste service is maintained.

7 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 as follows:

Residential Bin Storage Area:

- Three 660L refuse bins, collected two times each week;
- Three 660L recycling bins, collected once each week; and
- Four 240L FOGO bins, collected two times each week.

Commercial Bin Storage Area:

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

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

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

Figures

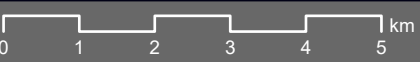
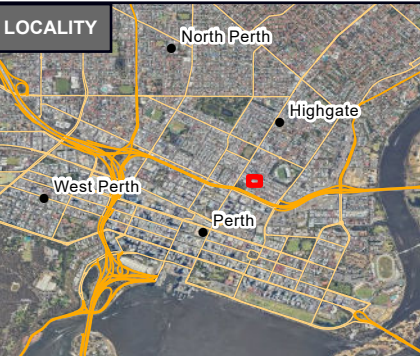
Figure 1: Locality Plan



LEGEND

- Site Boundary
- Cadastre**
- Crown Allotment
- Freehold
- Road
- Strata Plan or Lot
- Easement

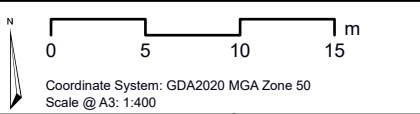
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Reviewed:	D Patel	Revision:	A
Project:	WMP24096		



Figure 01

Data source: Roads, Cadastre - Landgate, 2024; Imagery: Nearmap, 2024.



Assets | Engineering | Environment | Noise | Spatial | Waste

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