Waste Management Plan

Stockland Halcyon Illyarrie

Rev_1

Project No. 23-1516

Stockland

4 April 2024

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Revision	Drafted by	Reviewed by	Date issued
DRAFT Rev_0	K Oliver	J Campbell	26 March 2024
DRAFT Rev_1	J Bradbury	J Campbell	4 April 2024

Table of contents

1 Development details

This Waste Management Plan (WMP) has been prepared for the following project:

Project name / address	Stockland Halcyon Illyarrie, Sinagra
Client	Stockland
Architect	Plus Architecture
Main point of contact	Dwayne Lake - Stockland
Planning status	DA submission
Overview of development	Land lease community with 152 lots, community building/function area, health & fitness facilities, etc.
Architectural plans / area schedule / development information	• Architectural plans, received from Plus Architecture, 28 March 2024 • Swept path analysis, received from Stockland, 28 March 2024
Local Government discussions	Conversation and email with Kylie Howarth, Senior Project Manager – City of Wanneroo – 05 February 2024

1.1 Context

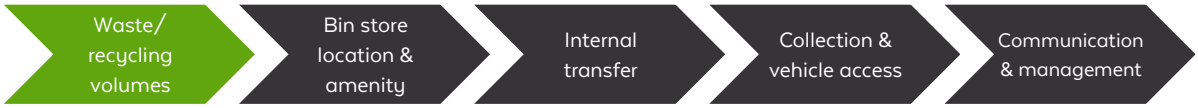
For efficient and effective waste management, the collection and centralisation of waste and recyclables has been carefully considered at the development design phase. Key factors considered at the design phase include:

- Local government requirements for waste volumes and bin type
- Waste and recycling volumes likely to be generated during building operation
- Number and types of bins required
- Bin store/size, location and amenity (odours and noise)
- Internal transfer and access to bins and storage areas from within the buildings
- Access for vehicles for waste collection
- Safety for all operatives involved in waste management
- Communication and ongoing management of waste and recycling services

1.2 Key components of the Waste Management Plan

This Waste Management Plan (WMP) consists of five core components. It will present detailed information on each of the following components.

2 Estimated waste and recycling volumes



2.1 Project parameters

The development when operational will include the following areas:

- 152 Independent Living Units (ILU)
- Clubhouse 1007 m^2 including:
    - Management office
    - Kitchen & servery
    - Function
    - Private dining
    - Arts & crafts
    - Games room/dance floor
    - Cinema
    - Gym
    - Pool & BBQ area

2.2 Local Government Guidelines

The following have been used in the development of this report:

- WALGA Commercial and Industrial Waste Management Plan Guidelines (2021)

2.3 Waste generation rates – residential

The City of Wanneroo residential service and WALGA waste generation rates apply to the ILU's, that is, 1 x 240 L bin for general waste collected weekly, 1 x 240 L bin for recycling collected fortnightly and 1 x 240 L bin for FOGO collected fortnightly.

2.4 Waste generation rates – Lifestyle community facilities

WALGA waste generation rates as per Table 1 have been used as a guide in addition to Encycle's experience and knowledge of the use of the development to calculate the estimated generation of waste and recyclables from the office, clubhouse, gymnasium and education/arts facility.

Table 1 – Waste generation rates applied to the community facilities

Premises type	Waste generation rate	Recycling generation rate
Office - 41m^2	0.1 L /1m^2/day	0.1 L /1m^2/day
Function (Clubhouse) - 280m^2	2 L /1m^2/day	1 L /1m^2/day
Gym (Wellness Centre) 71 m^2	0.1 L /1m^2/day	0.1 L /1m^2/day
Education / Arts (Clubhouse Arts & hobby shed) 55 m^2	0.05 L /1m^2/day	0.05 L /1m^2/day

2.5 Number of bin stores required

The Lifestyle community facilities will have one main bin store at the clubhouse. Other facilities will store the waste and recycling within the building and transfer to the main bin store as required.

2.6 Number of bins required – residential ILUs

The number of bins required to be stored at each ILU are set out in Table 2 below.

Table 2: Number of bins to be stored at each of the ILUs

Waste stream	Bin size (L)	Number of bins	Collection frequency	Colour code*
General waste	240	1	Weekly	**W**
Commingled recycling	240	1	Fortnightly	**CM**
Food organics and garden organics (FOGO)	240	1	Fortnightly	**FOGO**

2.7 Number of bins required – Lifestyle Community facilities

The number of bins to be stored in the main bin store at the clubhouse are set out in Table 3. The caretaker will transfer waste and recycling from the clubhouse facilities to the main bin store.

Table 3: Number of bins to be stored in the main (clubhouse) bin store

Waste stream	Bin size (L)	Number of bins	Collection frequency	Colour code*
General waste (excluding food waste)	240	4	Weekly	**W**
Commingled recycling	360	2	Fortnightly	**CM**
FOGO	140	4	Fortnightly	**FOGO**
Containers for Change	240	1	As required	

3 Bin store location and amenity

3.1 Bin store locations

The main Clubhouse bin store will be located on the ground floor adjacent to the kitchen (refer Figure 1).

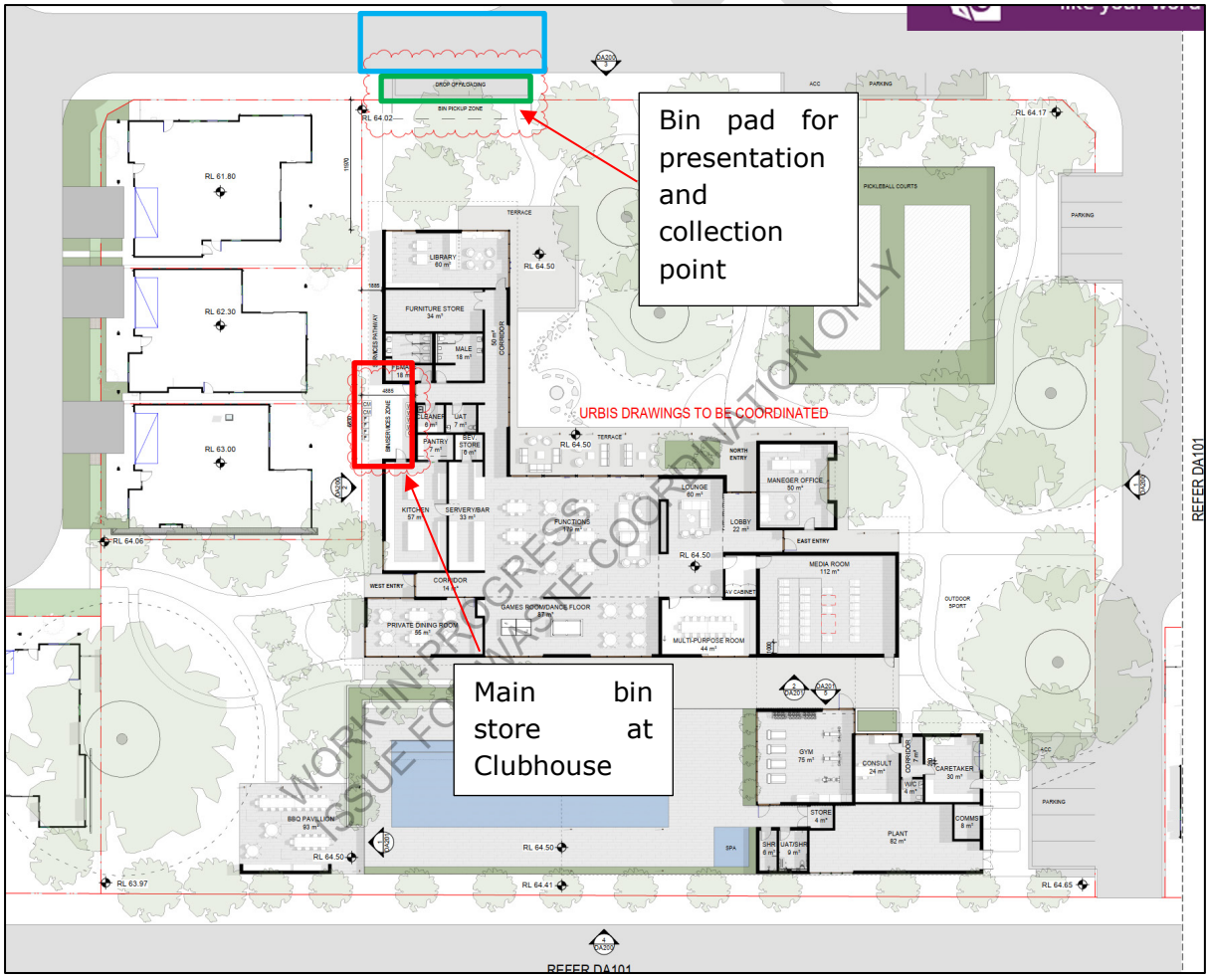


Figure 1: Ground floor plan showing the main Clubhouse bin store and collection point

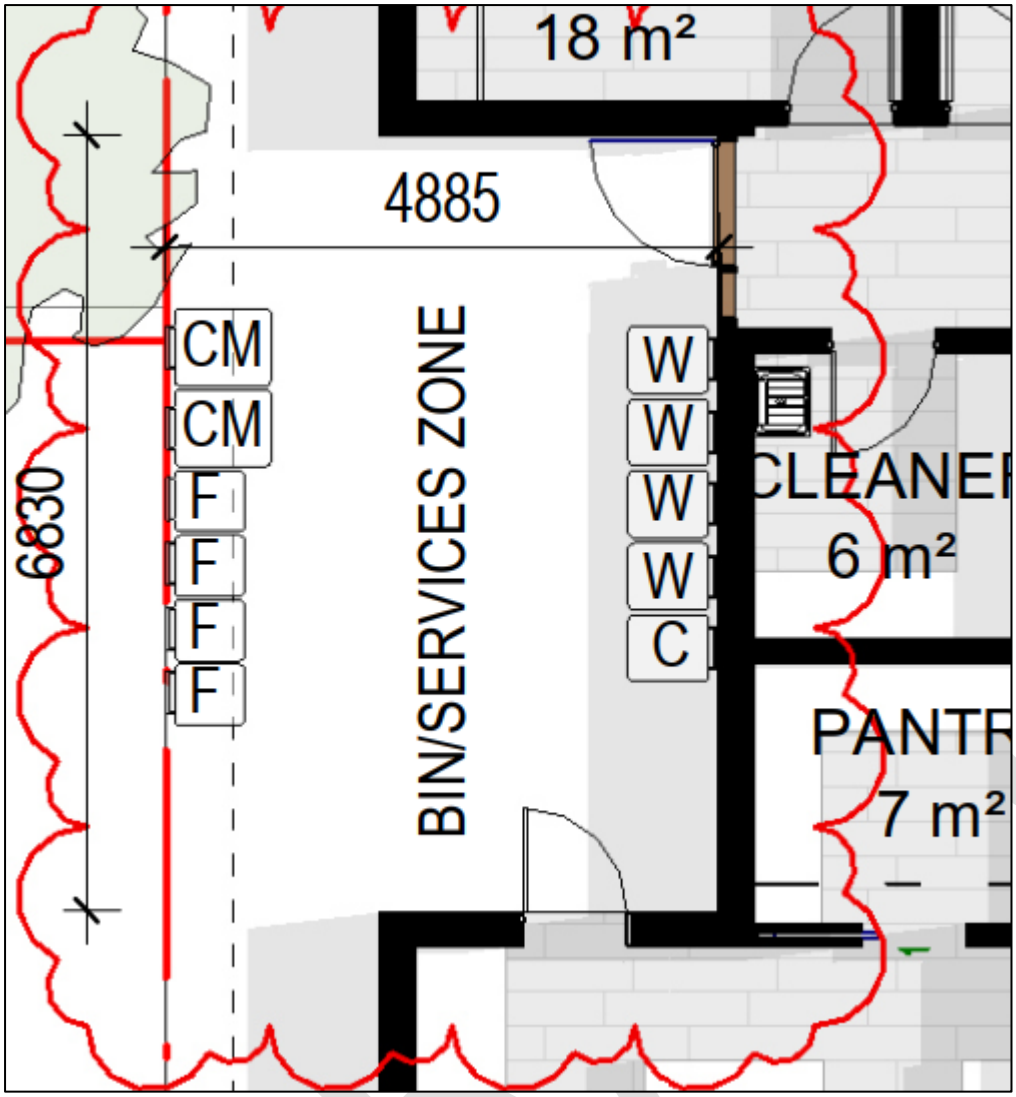


Figure 2: Clubhouse bin store

3.2 Bin store amenity

The bin store has been designed to include the following requirements in Table 4.

Table 4: Bin store amenity requirements

Aesthetics	The bin store will be consistent with the overall aesthetics of the development.
Accessibility	The bin store will only be accessible by residents, cleaners, facilities management and waste service provider.
Spatial requirements	The bin store allows sufficient space to accommodate, manoeuvre and wash the bins and equipment specified. Bins are stored in single rows. Space for personnel access way between rows of bins is included.

Bin wash	The bin store has impermeable walls and floors grading to an industrial floor waste (including a charged 'water-trap' connected to sewer/an approved septic system), with a hose cock to enable bins and/or the enclosure to be washed out. A 100 mm floor waste gully to waste outlet is included. Both hot and cold water is available.
Doors	Ventilated doors will be specified both internally and externally. Self-closing doors will be installed to the bin store to eliminate access to vermin. Doors are designed to fit the largest bin to enable bins to be easily wheeled into and out of the bin store.
Security	Security measures are designed to limit access to the bin store, e.g. PIN code that can be easily changed and reduces loss of key cards etc.
Walls and ceilings	Internal bin store walls will be cement rendered (solid and impervious) to enable easy cleaning. Ceilings are finished with a smooth faced, non-absorbent material that can be easily cleaned. Walls and ceilings will be finished or painted in a light colour.
Floors	Floors will be constructed in concrete in accordance with AS 2870. Floors will be evenly graded to an approved liquid refuse disposal system. Slab thickness will be a minimum of 100 mm, impervious and with a brush finish treatment.
Lighting	The bin store will be provided with artificial lighting Artificial lighting in access walkways to the bin store will ensure resident safety
Noise	Noise is minimised through considering the location of the bin store and collection point and the timing of collections to prevent disruption to occupants or neighbours.
Signage	Visual aids and signage will be provided when the bin store is operational to ensure that the area works as intended.

4 Internal transfer

4.1 Transfer of waste from residential apartments to bin store room

Residents will be responsible for storing waste, recyclables and FOGO separately in their 240 L bins on their property. On collection day residents will present the relevant bins for collection. That is, general waste weekly and commingled and FOGO on alternate weeks.

4.2 Transfer of waste from lifestyle community facilities

Staff or cleaners from the lifestyle community facilities will be responsible for transferring bins from the bin store to the bin pad (at the clubhouse) for collection.

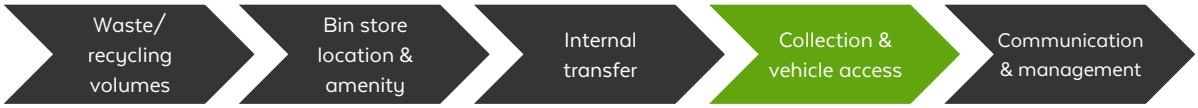
4.3 Bin transfer requirements

All bin transfer routes have been designed to include the following requirements in Table 5.

Table 5: Bin transfer requirements

Bin transfer requirements	
User access route	Waste transfer routes avoid stairs/steps and steep ramps (grade of slope <1:14) and other potential hazards between points of waste generation, storage and collection. Waste transfer routes are designed to ensure that bins (particularly when full) are not moved over any significant distances.
Manual handling	Manual handling of waste in garbage bags is excluded from the waste management systems wherever possible.
Transfer route width	All doors and corridors on the transfer route are designed to fit the largest bin.
Access for waste collection vehicles	Waste collection vehicles will safely enter, operate and exit the development with minimal reversing or manoeuvring.
Walkways	Safe access to waste collection vehicles have been provided to reduce the risk of accidents.

5 Collection and vehicle access



The City of Wanneroo will service the Lifestyle community's general waste, recycling and FOGO bins from the ILUs and the Clubhouse.

On collection day's side-lift vehicles for general waste, commingled recycling and FOGO will enter the development. The vehicles will drive in a forwards direction, to the Clubhouse, and stop adjacent to the bin pad where bins will be presented for collection. The operatives will service the bins and then return the empty bins to the bin pad. Management will then return bins to the bin store.

The vehicle will then proceed in forward motion and complete the collections from individual ILUs, servicing bins presented on the verge in front of each ILU.

Swept path analysis for vehicle ingress and egress has been completed using the specifications of the City of Wanneroo's side lift vehicle (see Figure 3). Swept path diagrams are shown in Figures 4 to 7.

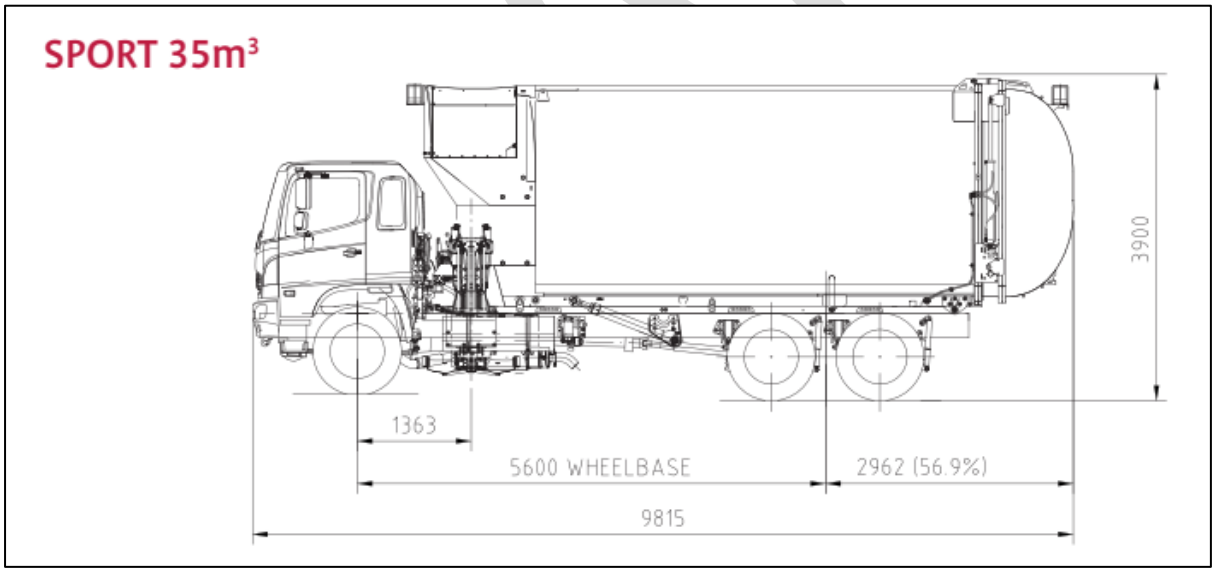


Figure 3: Vehicle dimensions of City of Wanneroo vehicle

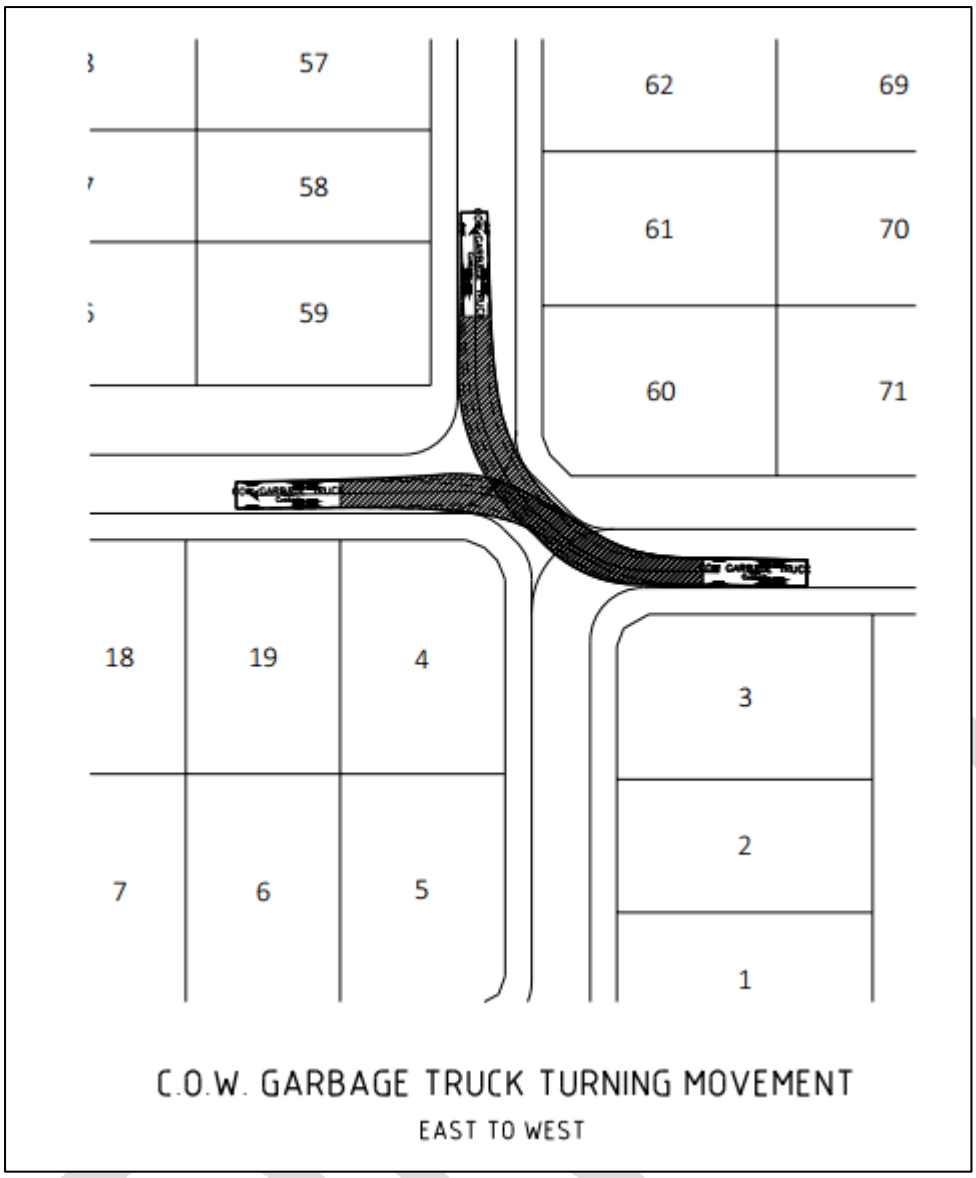


Figure 4: Swept path analyses showing access for side-lift collection vehicles

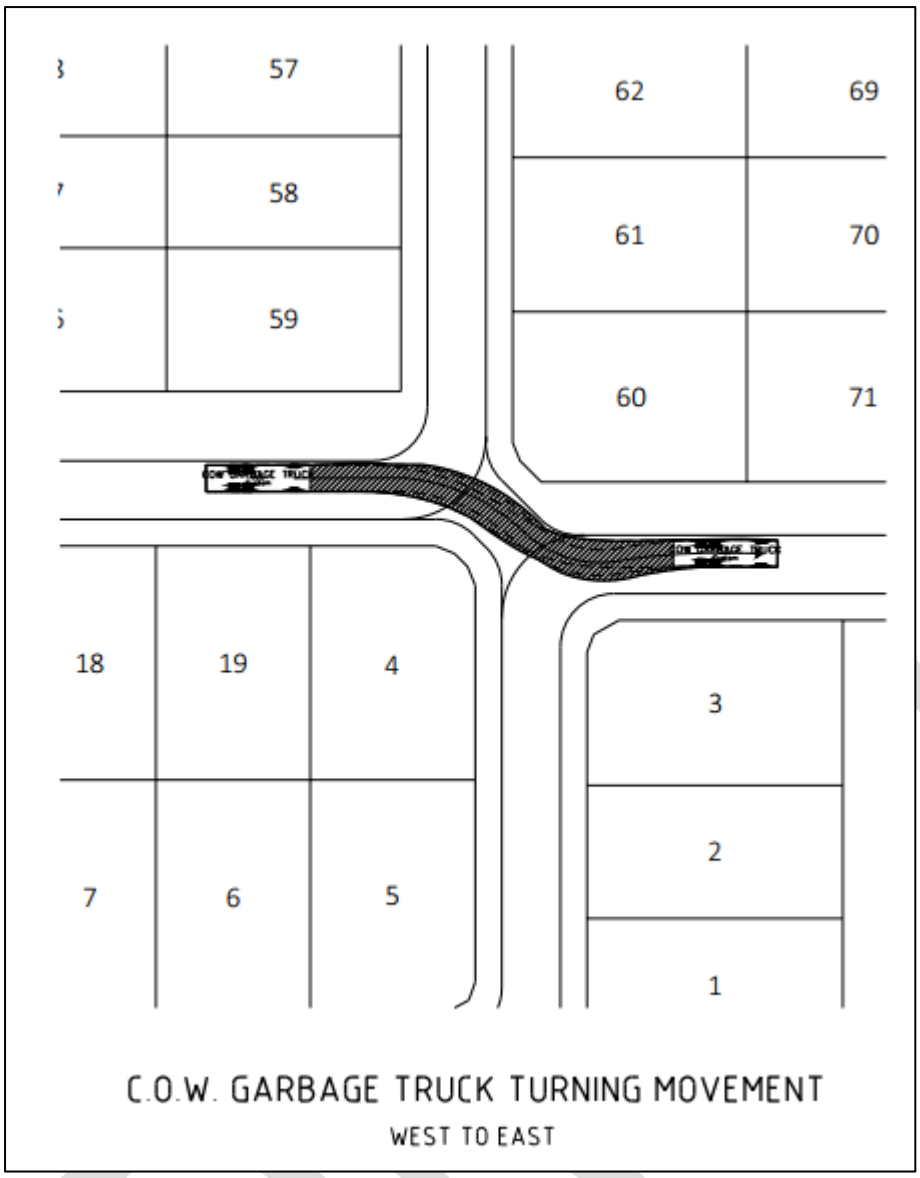


Figure 5: Swept path analyses showing access for side-lift collection vehicles

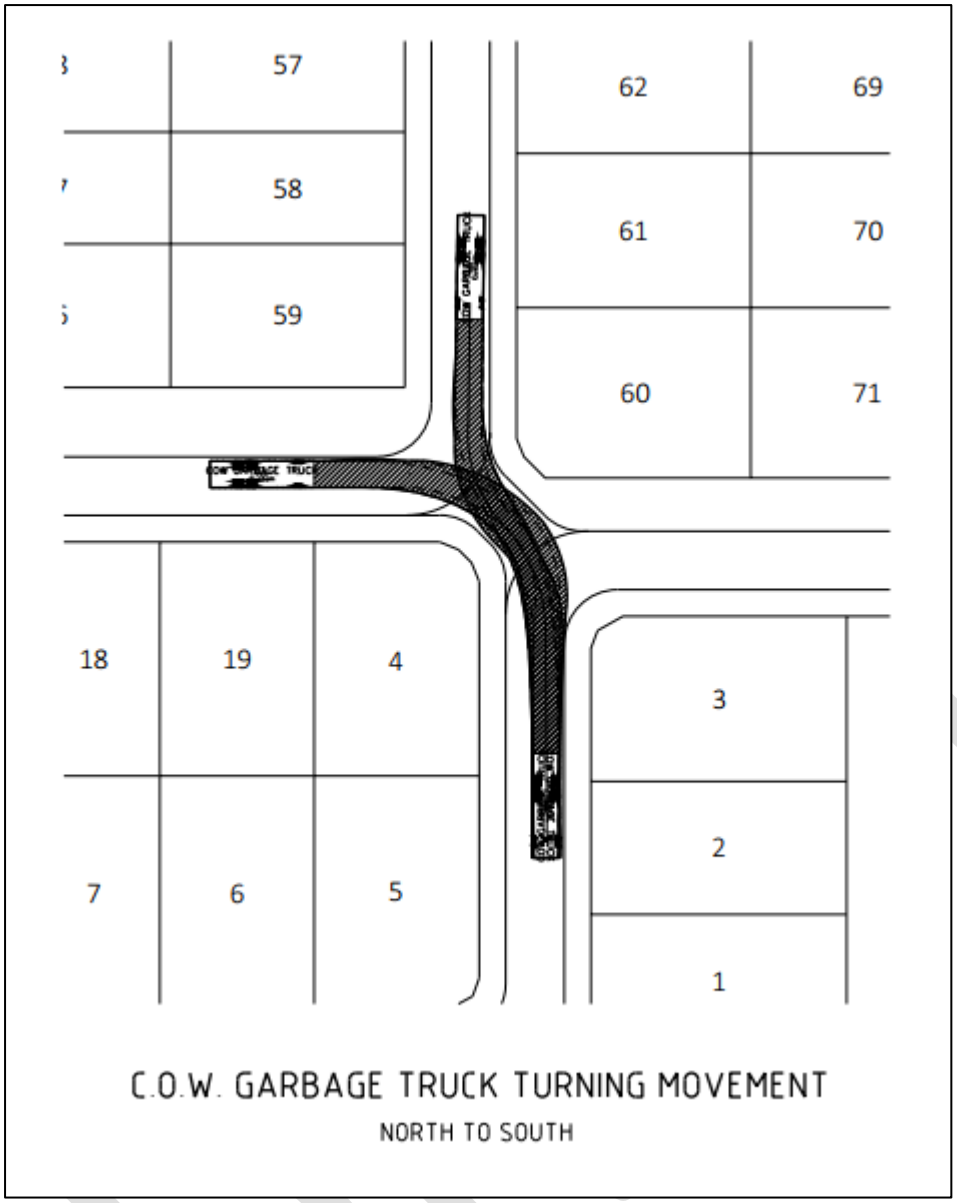


Figure 6: Swept path analyses showing access for side-lift collection vehicles

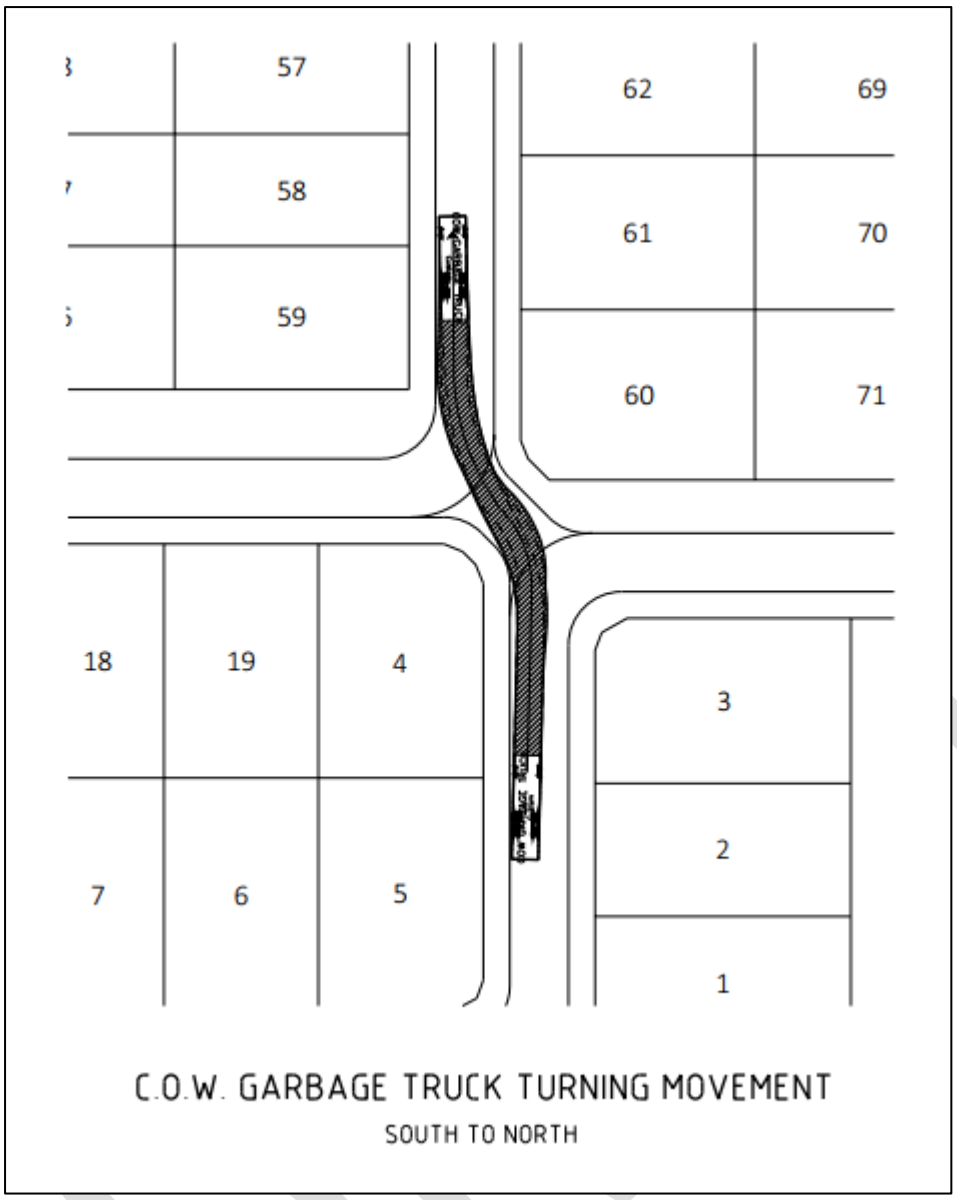
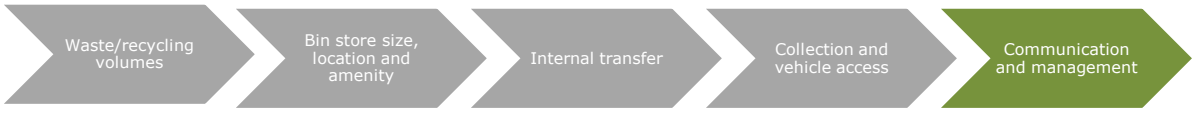


Figure 7: Swept path analyses showing access for side-lift collection vehicles

6 Ongoing communication and management



6.1 Management

The management body of the Community will be responsible for overseeing the waste management systems. The team will be trained and informed about their responsibility to work closely with the City of Wanneroo regarding the schedule for collection and presentation of bins. The Community Manager will be responsible for maintaining the Clubhouse bin store in a clean and tidy condition at all times and ensuring bins are washed regularly.

6.2 Communication

All residents will be made aware through a body corporate document (or equivalent) of the waste, recycling and FOGO systems and how they should be used. An Operational Waste Management Plan suitable for presenting to the lifestyle community residents and staff, including how the plan should be communicated will be developed and implemented during both the initial occupation and ongoing management of the development.

The Community Manager will be responsible for the continuing education of residents on correct segregation of waste, recyclables and FOGO.

Appendix A: Glossary of terms and acronyms

Collection point	The permitted area on a footpath, roadway or private property (where applicable) that waste, recyclables and bulky waste are loaded into collection vehicles.
Commingled recycling	Common recyclables, mostly packaging; such as glass, plastics, aluminium, steel, liquid paper board (milk cartons). Commingled recycling may include paper but often, and particularly in offices, paper and cardboard are collected separately.
Container Deposit Scheme (CDS)	Also known as Containers for Change: In Western Australia 'eligible containers' (usually for soft and alcoholic drinks) have a 10 cent deposit which can be refunded when the container is redeemed at a refund facility.
FOGO	Food Organics Green Organics – a third bin offered to residents for the collection of food waste and garden waste.
General waste	Material that is intended for disposal to landfill (or in some States, incineration), normally what remains after the recyclables have been collected separately.
Grease trap	Collection of solid greases and oils in a tanker system to remove this material from water discharged to sewer from commercial kitchens or food processing facilities. Grease trap collection vehicle requirements can be included in the Waste Management Plan where relevant. Encycle are not hydraulics engineers and do not specify or advise on grease trap systems.
Independent Living Unit (ILU)	Independent living units, also sometimes referred to as villas, offer one, two or three bedroom accommodation, in a village environment, for older people who are actively independent and able to care for themselves.
MGB	Mobile Garbage Bin – A wheeled bin with a lid often used for kerbside collection of waste or recyclables. (Often called a 'wheelie bin').
Recyclable	Material that can be collected separately from the general waste and sent for recycling. The precise definition will vary, depending upon location (i.e. systems exist for the recycling of some materials in some areas and not in others).
Recycling	Where a material or product undergoes a form of processing to produce a feedstock suitable for the manufacture of new products.
Reuse	Replacing a 'disposable' or single-use item with one which can be used again (without needing to be processed or dismantled – i.e. 'recycled') e.g. using a washable ceramic coffee mug or travel cup in place of disposable cups.
Waste avoidance	Changing a service or process so that a waste that was previously generated can be eliminated from the system. An example would be changing from printed forms/tickets/invoices etc. to an online system that does not need any paper.