# Low Impact Development Consulting

# Waste Management Plan

Mixed Use Development

5 Stud Road, Dandenong

Prepared for: Equisent Prepared by: PM – Low Impact Development Consulting

Date: 17/03/2022

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The content of this document represents the entirety of work output or recommendations offered by LID Consulting for this particular project. This content supersedes all other verbal discussions undertaken by LID Consulting representatives in relation to this project.

Commercial waste calculations are based on rates provided by government organisations and adopted and used as an industry standard. Bin numbers and spatial requirements have been calculated in accordance with these guidelines. The end user requirements may vary from this depending on the business use, type and operational practice.

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LID acknowledges and pays respect to the Australian Aboriginal and Torres Strait Islander people, to their ancestors and elders, past, present and emerging, as the traditional custodians of the lands upon which we work and live. We recognise Aboriginal and Torres Strait Islander people's deep cultural and spiritual relationships to the water, land and sea, and their rich contribution to society.



# 1 Waste Collection Summary

A private collection service is proposed to collect the following bins at the indicated frequency. The bins will be collected from within the bin store area.

Residential and commercial waste	Private Collection Service – collection from bin store area (as marked in appendix 1)			
Waste stream	No. of bins and capacity	Collection frequency		
General Waste	1 x 1100L bins	Once weekly		
Co-mingled Recycling	2 x 660L bins 1 x 240L bin	Once weekly		
Organic Food Waste	1 x 660L bin	Once weekly		
Glass	Not currently required (Future provision) *	NA		
Hardwaste	To be stored within the storage areas/individual units until collection date. Private on call collection as often as required			
	To be excluded from garbage.			
E-waste	To be deposited by the staff /residents at the Council depot (and some other Council facilities) or other e-waste collection sites such as OfficeWorks.			

\* While currently not required, a 4-bin system will be in place in the future as discussed in section 2.1. required number of co-mingled recycling bins can be swapped for glass recycling bins.

The approved Waste Management Plan (WMP) will be the model to be adopted for this development. Detailed design and as-built installation must incorporate the design proposed and approved under this WMP. Any revisions of the WMP or changes to the approved waste system of the development may require Council approval and may require a re-submitted Waste Management Plan. More detail is contained within this report.



# 2 Waste Management Plan

Low Impact Development (LID) Consulting was engaged by Equisent to assess the proposed development at 5 Stud Road, Dandenong to provide a Waste Management Plan (as required by Statutory Planning).

A waste management analysis has been undertaken based on the following documents:

- Sustainability Victoria Better Practice Guide for Waste Management and Recycling in Multi-Unit Developments 2018 (Appendix 2- commercial waste generation rates);
- Greater Dandenong City Council's planning scheme clause 22.06, 53.20-7.12, 55.07-11

This report is based on the drawing sets:

• TP 101 P13 Received 2<sup>nd</sup> March 2022 and TP 001 P1 to TP 104 P5 Received 19<sup>th</sup> January 2022 prepared by The Ellis Group Architects

### 2.1 Future 4-bin System

Victoria will implement a 4-bin colour coded waste and recycling system in all residential settings by 2027. As the 79 different councils work towards this, some will roll out this scheme sooner than others. Generally, all new developments will look to incorporate space for these waste streams now in the planning phase. Commercial developments should also consider these waste streams.

Municipalities will have different percentages of glass and food volumes within each general waste and recycling streams. Bin numbers may need to be adjusted during the first 6-12 months of occupation to ensure appropriate streaming can occur.

In the meantime, if separate glass collections are not possible, these bins may be temporarily swapped for co-mingled recycling bins. More information can be found at <a href="https://www.vic.gov.au/four-bin-waste-and-recycling-system">https://www.vic.gov.au/four-bin-waste-and-recycling-system</a>.



## 2.2 Container deposit scheme

Victoria will have a container deposit scheme that will ensure more plastics, aluminium and glass containers are recycled affectively. This will be implemented by 2023.

This will allow everyone to actively participate by taking his or her recyclables directly to an out let in exchange for a monitory refund. There may be an opportunity for the entire development to participate arranged by the Owner's Corporation. More information can be found at <a href="https://www.vic.gov.au/container-deposit-scheme">https://www.vic.gov.au/container-deposit-scheme</a>.

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## 2.3 Council Considerations

- Utilizing the Council collection service is not possible in this instance for general waste/recycling due to the large volume of bins to be placed on the kerbside for collection and requirement for bins to be placed in one row all 300mm apart. There is insufficient space on the nature strip.
- In addition, since the Council collection service is not used for general waste and recycling, it cannot be used for green waste or hard waste collection.
- The private collection service is to occur on an alternate day to the Council service so that the services are not confused.
- Onsite collection is the most feasible option with a waste truck able to enter and exit the site in a forward direction upon waste collection.

### 2.4 Proposed Development

Address:	5 Stud Road, Dandenong
Туре:	Mixed use development
Break up of	Ground floor- Office space
development:	First floor- 13 x medium term accommodation (MTA) units
	Second floor and third floor- 10 x private units

The proposed 4-storey mixed use development comprises of office space, medium term accommodation units and private residences with amenities over a ground level shared carpark area. The main vehicular access into the ground level carpark is from Stud Road. A shared bin store has been located on the ground level adjoining the central service core.

### 2.5 Proposed Waste Solution

#### Tenancy

Ground level- Nominated waste generation areas: 105 m<sup>2</sup> First floor- 13 x MTA units Second and third floors- 8 x 2-bedroom residential units and 2 x studio units

Site Layout: Refer to Appendix 1 for Site Layout Plan				
<b>Collection Type:</b> Private collection service to collect all waste streams				
Collection Location:	From the front of bin store area within ground level carpark (See appendix 1)			
Bin Store Location:	Bin store area (See appendix 1)			

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Mixed use	ixed use Greater Dandenong City Council Waste generation rates			Proposed Solution			
	Allowances	Total estimated waste volume	No. of Bins	Bin Size	Collection Frequency		
General Waste (landfill)		962.5L/week to landfill	1	1100L	Once weekly		
Co-mingled Recycling		1482.5L/week of recycling	3	2 x 660L, 1 x 240L	Once weekly		
FOGO / Garden waste	Refer Appendix 3 For waste rates	520L/week of food & garden organics	1	660L	Once weekly		
Future Glass <sup>1</sup>	Calculation	A required portion of the co-mingled recycling is to be allocated for glass recycling when council guidelines are available	NA	NA	NA		
Hard Waste		-	NA	NA	As often as required		
E-waste		-	-	-	As per hard waste		

NOTE: Streaming of waste into dedicated bins is encouraged where possible. The type of recycling bins nominated above may be swapped to suit the type of recyclable commercial waste generated (while not altering the number of bins overall). Possible additional waste streams include:

- hard plastics
- soft plastics
- Cardboard / Paper

## **3 Waste Management Details**

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#### 3.1 Management Responsibilities

The Building Management is responsible for all aspects of waste management including implementing adequate safe operating procedures. Items to be addressed in maintaining the system include:

- Individual occupants/staff are responsible for placing their waste in the appropriate colour coded bins to ensure all waste types are collected and recycled where possible. All waste is to be taken directly to the bin store
- The Building Management is responsible in providing access for the waste contractor to enter the site and bin store on the day of collection

<sup>&</sup>lt;sup>1</sup> The Age (2019), <u>https://www.theage.com.au/national/victoria/victorians-to-get-cash-for-bottles-scheme-</u> 20200224-p543ms.htm

- The tenancy agreements are to outline a schedule of waste collection dates in accordance with the collection parameters outlined herein.
- Ensuring the waste contractor has access to the site and bin store on the days of collection and for also providing information to make building occupants aware that waste vehicles enter the site.
- Allocation of responsibility to the contractor to retrieve bins directly from the bin store and return emptied bins at the time of collection. Responsibility should include ensuring the contractor collects any waste that spills from the bins during emptying.
- Cleaners & staff are responsible for placing waste in the appropriate colour coded bins provided in work areas and then transferring them to corresponding bin in the bulk bin store to ensure all waste types are collected and recycled where possible.
- That bins and bins stores are monitored regularly with bins rotated as required to ensure areas are fully operational with regular cleaning of the bins and bin store spaces and clean-up after collection if necessary.
- Management and coordination for bulky hard waste & eWaste collections.
- Provision of information to occupants with guides of how to using the various bin systems e.g. boxes to be flattened, containers for recycling washed, bins to not be over-full. See **Section 3.12** for further information about Signage, Education & Safety.
- Monitoring and feedback to occupants if the system is not working properly. Undertake a waste audit should it be suspected waste is not being placed in the correct bins.

### 3.2 Bin Store Design

The Bin store design/location must include the following:

- A layout that allows access to all of the bins with adequate size to allow easy movement/transfer of the required number of bins
- Doors located in the allocated storage areas should be designed for easy access of larger bins sizes and hard waste
- Space suitable for bin wash down is to be available in the development. If this is the bin store then the floor is to be graded to a waste outlet with a litter trap. Alternately, a private contractor can be arranged to swap dirty bins for clean ones on a regular basis
- If a bin wash is installed, a water tap and hose installed in or near the bin wash areas and correct drainage to sewer (never direct waste to storm water drains) should be designed in accordance with the relevant EPA Bunding Guidelines. Drains to the sewer to be located undercover to prevent rainwater infiltration
- Bin stores should be vermin proof particularly where food waste is included. Consider using baits for vermin control and maintained as an ongoing requirement
- A waterproof power point in or near the bin store.
- Ensure adequate lighting is provided in accordance with National Construction Code (NCC) guidelines if to be accessed after hours
- Meter boxes should not be included in bin store areas

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### 3.3 Bin Sizes

The following sizes are indicative bin sizes based on the Sustainability Victoria Better Practice Guide specified sizes (Appendix 9). These sizes are the size allowances required by most Councils in bin store areas. Allow 100mm between 4-wheel bins and 50mm between 2-wheel bins for movement.



Size	Width	Depth	Height	Footprint
80L	450mm	530mm	870mm	0.24m <sup>2</sup>
120L	485mm	560mm	940mm	0.27m <sup>2</sup>
240L	580mm	735mm	1080mm	0.43m <sup>2</sup>
360L	600mm	885mm	1100mm	0.53m <sup>2</sup>
660L	1370mm	850mm	1250mm	1.16m <sup>2</sup>
1100L	1370mm	1245mm	1470mm	1.71m <sup>2</sup>

### 3.4 Waste Vehicle Requirements

- A private Small Rigid Vehicle (SRV-6.4 m x 2.35 m) is to enter the ground level carpark from the front entry at Stud Road to collect the bins from the proposed bin store area (See appendix 1)
- The waste vehicle will enter the carpark in a foreword direction, The vehicle would stop Infront of the bin store area to collect the bins, Once the bins are emptied, the waste vehicle would turn around on site and exit back onto the Stud Road in a forward direction
- Any 3 suitable car parking spaces are kept free at a time of waste collection for waste vehicle manoeuvring
- The waste contractor will be responsible for retrieving, emptying and returning bins to/from the bin store area
- The Building Management is responsible for ensuring the waste contactor has access to the site on the days of collection. If there is a security code or key required for access, the contractor should be provided with these so they may access the site on the specified collection days

### 3.5 Collection Times

**Collection times:** bin collection shall be in accordance with Council and EPA Noise Control Guidelines Publication 1254, which state:

- Collections occurring once a week are to be restricted to the hours 6:30 am 8 pm Monday to Saturday, or 9am – 8am Sundays and public holidays.
- Collections occurring more than once a week are to be restricted to the hours 7 am 8 pm Monday to Saturday, and 9am 8am Sunday and public holidays.

The WMP approved under this permit must be implemented and complied with at all times to the satisfaction of the Responsible Authority. No alterations to the WMP may occur without the written consent from the Responsible Authority.

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### 3.6 Internal Waste Management

- General landfill garbage shall be placed in plastic bags before placement into bins
- Recycling materials are <u>not</u> to be bagged and are to be placed loosely into the recycling bins. (Items in plastic bags in recycling bins are not recycled). Recyclable items in domestic bin collections include:
  - Rigid plastic containers
  - Paper, cardboard
  - o Glass bottles and jars
  - Steel cans, aluminium cans and aluminium foil are among items that can be recycled.
- But exclude:
  - Plastic bags
  - o Garden hoses
  - Rope (ropes and garden hoses can wrap around and damage equipment in the recycling plant).
- To improve recycling:
  - Empty containers and bottles of any leftover food or liquid. Ideally rinse them out.
  - Leave lids on everything
  - Don't squash plastic bottles or containers or put anything inside
  - Paper if it can't be ripped, it can't be recycled due to the plastic coating.

#### 3.7 Response to Increasing Waste

- A waste audit can be undertaken to understand the content of the waste bins and provide images and feedback to clients of good or poor recycling practices
- If garbage bins consistently overflow, then the occupants/staff are to be directed to educational material as to the appropriate streaming of waste including other recyclables
- If recycling bins continue to overflow, the occupants/staff should be reminded to crush and flatten all cardboard boxes and plastic containers before placing these in the recycling bin(s). If may also be appropriate to obtain an additional recycling bin
- The last option is for more regular collections to occur

#### 3.8 Reducing Odour

Odour from waste primarily emanates from bin store areas. Control of odour must occur in the bin store area with the provision of suitable natural or mechanical ventilation. If installed the mechanical ventilation system for the bin storage area must not cause a public health nuisance (noise and odour generation) and comply with EPA requirements and in accordance with the ventilation requirements of the Building Code of Australia and AS 1668.2.

• The bin store area and bins are to be monitored and cleaned on a regular basis to remove sources of smells

#### 3.9 Noise management

Minimizing noise associated with waste movement and collections include:

- Collections occurring during the stipulated collection times restrict the hours of noise from collections
- Collection vehicles should not break up bottles at the point of collection, only once off site. Compaction of waste should only be carried out whilst waste vehicles are on the move

#### 3.10 Traffic Management

- Traffic management along Stud Road should not be an issue with collection occurring within the property boundary
- Appropriate engineering standards will need to be addressed in the detailed design stage to ensure adequate pavement depths

#### 3.11 Litter Spread

- Litter spread is to be managed by ensuring garbage and recycling bins are not overloaded, and lids are always closed
- Litter spread is to be managed by the system of contractors collecting bins from within the property. As bins are not left outside the property overnight, the possibility of vandalism is removed
- The private collection contractor's agreement should require their pickup of any waste that spills from the bins during collections

### 3.12 Signage, Education & Safety

It will be the responsibility of the building management to ensure all occupants/ staff have all of the material available to them and that they adhere to the required practices regarding waste management, sustainability and promoting waste minimisation.

- All education material will be in accordance with Council requirement or if this is not available, per signage on the following website: <u>https://www.sustainability.vic.gov.au/recycling-and-reducing-waste/waste-systems-in-</u> residential-commercial-and-industrial-buildings/waste-signage
- Ensure permanent "No Standing" text and line markings are visible in the car park area, indicating the parameters of the rubbish collection zone to ensure access for the collection vehicle
- Directional signage should be installed to direct occupants and bin collectors to the bin collection areas
- A preliminary OHS risk assessment has been included to identify potential OHS issues, however this risk assessment does not replace the need for the Owners Corporation and collection contractors to complete their own OHS assessment for the bin collection process. See Appendix 2 for further detail

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# 4 Managing Waste Streams

### 4.1 Sustainability Initiatives

A circular economy is a system where products and services are designed to be reused or ideally be regenerative i.e. to repair the environment. This differs from the predominantly linear model of "take, make and waste" that we have seen in the last few decades.

Food organics is an example of where waste can be regenerative. Food waste is now being actively used via composting to improve the quality of soils.

While occupants of buildings are generally limited in how they can impact on the design of products to make them re-useable, they can change their own and others behaviour to minimise waste.

Where possible building occupants should practice the waste reduction hierarchy identified in the Victorian Environmental Protection Act 2017.

Avoidance of landfill waste by building occupants might involve

- Purchase only what you will consume
- Purchase items of quality that can be re-used, sold on donated or up-cycled.
- Use re-usable drink bottles, lunch containers, shopping bags
- Avoid single use plastics
- Compost anything that once was alive







# 4.2 Separating & Streaming Food Waste

In Victoria, food and garden organics (FOGO) make up approximately 50 per cent of household garbage with food comprising on average 35 per cent (by weight)<sup>2</sup>. Food waste, when buried in landfill waste is starved of air and rots and producing methane; 26 times more damaging than carbon dioxide. Diverting food waste from landfill is not only a really effective way to reduce greenhouse gas emissions, but also a regenerative solution, creating rich, healthy soil.

The Better Practice Guidelines stipulates diverting food from landfill waste. This can be achieved in a number of ways including on site composting and/or FOGO collections for single tenancies or via dedicated food waste collections in larger developments.

<sup>&</sup>lt;sup>2</sup> Metropolitan Waste and Resource Recovery Group, Victoria State Government (2019), Introducing a kerbside food and garden organics collection service: A guide for local government < https://www.mwrrg .vic.gov.au/assets/resource-files/MWRRG-FOGO-Text-Interactive-20181119.pdf>

#### Tips for FOGO

- Place all food waste direct into the provided FOGO bins
- Keep the wheelie bin in a shady spot
- Use paper towel to line the bottom of plastic bags to soak up any moisture that can cause the liner to break down quicker than normal
- Double wrap meat, bones and unwanted pet food (with newspaper or paper towel) before placing in your caddy
- Line the organics bin with newspaper to aid cleaning
- Wrap fish and seafood waste (in newspaper or paper towel) and place in your freezer until your next collection is due
- Sprinkle vinegar, baking soda, charcoal or eucalyptus oil in your organics bin to combat odours
- A mix of garden and food waste helps keep bin odours under control
- Purchase a Bin Kill tag that can be attached to the inside of your organics bin. The tag emits a vapour that kills flies and maggots. The product is available from Bunnings, Coles or Woolworths supermarkets.

#### 4.2.1 Inside Dwellings

 Sustainability Victoria provides information for households, schools and businesses alike to reduce food waste through their Love a List Challenge. Love Food Hate Waste aims to raise awareness of avoidable food waste from Victorian households. The average family in Victoria loses over \$2,000 a year from wasting food. And two thirds of it could have been eaten. <u>https://www.sustainability.vic.gov.au/</u>



- **Multiple bins for waste streams** In multi-unit developments streamed waste bins are to be included (perhaps included under the sink) in each dwelling. Bin types include garbage (Landfill) waste, Recycling, Organic Food Waste, Glass.
- **Bokashi bins** <u>http://www.bokashi.com.au/</u> are an effective way of reducing waste volumes and breaking down food waste for apartment unit dwellers. Food scraps are placed in bokashi bins with an accelerator mix added. The volume of waste food is reduced, and the waste in the bin is already on the path to being composted. Bokashi bins can be emptied into compost bins so providing a compost bin on site and having a garden also helps. Bokashi bins are also available from <u>http://www.eco-organics.com.au/about-us.htm</u>





Apartment Bokashi bin Figure 1. – Different bins for waste streaming

#### 4.3 Other Waste Streaming Details

#### 4.3.1 Hard Waste Collection

- The Building Management is to arrange hard rubbish collections as required
- Hard rubbish items will be required to be stored within the dwelling. Alternatively, residents can take items to the local waste recovery centre
- Residents should liaise with the Building Management to ensure hard waste collection occurs throughout the year
- It should be well communicated to residents that they can request an additional hard rubbish collection with appropriate details provided to contact the Building Management
- Unwanted bulky items, clothes and other consumables can be donated to charities, sold on online or at second-hand local market places as is if in good condition. If repairs are required, seek out repair community centres for re-purposing. Search PlanetARK for a comprehensive listing to each council. <a href="https://recyclingnearyou.com.au/councils/">https://recyclingnearyou.com.au/councils/</a>
- Local information regarding the disposal and recycling of common household items for each Council can be found at:
- <u>https://www.sustainability.vic.gov.au/You-and-your-home/Waste-and-recycling/Council-waste-and-recycling-services</u>

- www.recyclingnearyou.com.au
- In addition suppliers such as **Ecycle** <u>http://www.ecyclesolutions.net.au</u> will deliver whitegoods and either collect clean polystyrene from retailers or take polystyrene away after delivery.
- **TerraCycle** is a national initiative where you can look up where to deposit non-recyclable waste such as contact lenses, coffee capsules, mailing satchels, toothbrushes & tubes. <u>http://www.terracyclemap.com</u>

#### 4.3.2 E-Waste Recycling

- As of 1st July 2019, there is a ban on e-waste to landfill in Victoria. Any item with a plug, battery or cord can no longer be placed in kerbside bins and instead must be deposited at a designated e-waste drop-off point. Electronic waste includes old mobile phones, computers, audio devices, refrigerators and other white goods, hair dryers, TVs, heaters, and air-conditioners.
- Authorised electrical waste disposal locations can be found:
  - o Most council depots collect e-waste
  - o Officeworks collects e-waste



o <u>https://recyclingnearyou.com.au/electrical</u>



- o https://www.sustainability.vic.gov.au/Campaigns/eWaste/Where-do-I-take-ewaste
- o <u>https://www.mobilemuster.com.au</u>

#### 4.3.3 Other Recyclables

- Council recycling hubs recycle
  - o batteries
  - o light globes
  - o printer cartridges
  - o clothes.

#### 4.3.4 Soft Plastic Recycling

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- Eliminating or reducing the use of single-use plastics can greatly reduce waste volumes both in residential and commercial settings. This includes straws, plastic bags and plastic wraps. Many private waste contractors can commercially collect soft Plastic.
- Coles and Woolworths both offer plastic bag and soft plastic recycling. Residents can place all plastics in one plastic bag and add it to the recycling bin at the supermarket for collection. Any location identified on the Redcycle website <a href="http://www.redcycle.net.au/where-to-redcycle/">http://www.redcycle.net.au/where-to-redcycle/</a>

#### 4.3.5 The VIC Bag ban

- As of 1st November 2019, there is a ban on lightweight plastic shopping bags. All retailers including restaurants are not permitted to provide or use these plastic bags.
- The ban applies to all lightweight plastic shopping bags that have a thickness of 35 microns or less at any part of the bag, including degradable, biodegradable and compostable bags.
- EPA Victoria is managing compliance monitoring and reports of suspected banned bags. Further information can be found at: <u>https://vicbagban.com.au</u> & https://www.sustainability.vic.gov.au/PlasticBags

#### 4.3.6 Office, Public Litter & Ash bins

- Separation of garbage and recycling is to initially occur in all work areas and then the bin stores. For this reason, the development will include streamed waste bins on each floor or work area. Cleaners would then transfer waste from these bins to the bin storage area.
- For mixed use and commercial developments with a public interface, common litter bins are recommended to be provided within forecourts or public areas for building users to dispose of waste in the correct manner.

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	Landfill	Mored	Mixed Recyclables	Organic Kasa	Organic	Paper	Paper	म्म	SOFT	
i.	media	10	ecobin	10/10	ecelia	ale .		, - 1	0	



Example of streamed Office bins

Example of common area litter bins

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# 5 Supplementary information

### 5.1 Waste Links

Greater Dandenong City Council Waste Directory: https://www.greaterdandenong.vic.gov.au/waste

Waste collection companies in Victoria:

- Waste Wise Environmental <u>www.wastewise.com.au</u>
- Kartaway http://www.kartaway.com.au/melbourne/index.html
- iDump Waste Management <u>www.idump.com.au</u>
- Wastech <u>www.wastech.com.au</u>
- Easy Waste http://www.easywaste.com.au
- Citywide <u>www.citywide.com.au</u>
- JJ Richards & Sons <u>www.jjrichards.com.au</u> (Australia wide depots per <u>https://www.jjrichards.com.au/contact/</u>)
- Suez (incl Sita) <u>www.suez.com.au/en-au</u> ph 13 13 35
- KS Environmental <u>https://ksenvironmental.com.au/</u> (Melbourne only)
- Transpacific-Cleanaway <u>https://www.cleanaway.com.au</u>, ph 13 13 39
- Veolia <u>https://www.veolia.com/en</u>
- Australian Box Recycling <a href="http://www.australianboxrecycling.com.au/recycling-bins.php">http://www.australianboxrecycling.com.au/recycling-bins.php</a>

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## Appendix 2 - Preliminary Risk Review

Class 1 Risk = Potential to cause death or	Class 2 Risk = Potential to cause injury requiring	<b>Class 3 Risk</b> = Potential to cause an injury
permanent injury.	medical attention.	treatable with first aid.

Activity	Steps involved in completing activity & risk	Risk level	Risk mitigating measures	Implementation responsibility
Vehicle comes on site for collection	Private waste collection vehicle entering and exiting site. Major risk is hitting unaware people.	1	There should be no/few people in the carpark area at the time of collection. Vehicle driver entering site is to survey carpark for activity. If there is no activity near turnaround location, driver to execute turnaround immediately before the situation can change. If there is activity, the driver should ensure the person/persons moving are aware of the vehicle movement and have time to stay away from the turnaround zone. A "No parking" sign effective at the times of collection to be installed in the carpark. This will allow the collection vehicle to perform a turnaround and leave in a forward direction.	Waste collection contractor / Building management
Note this asse Statement be	essment is for consideration c ing completed by the contro	during the	e design phase of the project. It is <u>not</u> to replace a risk assessment / S d persons undertaking the waste removal process.	afe Work Method

# ADVERTISED PLAN

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# Appendix 3 - Waste rates & calculations

**Waste rates and calculations** as per Greater Dandenong city council residential waste allowances and Sustainability Victoria Better Practice Guide for Waste Management and Recycling in Multi-Unit Developments 2018 (Appendix 2- commercial waste generation rates)

Building area	Type of premises and allowances	Garbage estimate	Recycling estimate	Food organics waste
Ground level offices (Waste generation area only): 136 m <sup>2</sup>	Commercial non- food premises- Offices 10L/100m <sup>2</sup> floor area/ day for each of garbage and recycling	95L/week 95L/7 days= 13.5L x 5 days a week = 67.5L/week <b>43.5L /week</b> (excluding 35% Green waste)	95L/week 95L/7 days= 13.5L x 5 days a week = <b>67.5L / week</b>	35% of GW <b>24L/week</b>
First level- 13 x medium term accommodation units	Serviced units 35L/unit /week for each of garbage and recycling	455L/ week including food organics waste = <b>295L/week</b> (Excluding 35% Green waste)	455L/ week	35% of 455L garbage= <b>160L/week</b>
2 <sup>nd</sup> & 3rd floor- 8 x 2 -bedroom units 2 x studio units	Multi-unit residences General waste and recycling: Studio apt- 80L x 2= 160L/week 2 bed apt- 100L x 8= 800L/week Total 960L/week =624L/week	960L/week = <b>624L/week</b>	960L/week	35% of 960L garbage= <b>336L/week</b>
Total waste volume	9	962.5/week	1482.5L/week	520L/week
Bins required for or collection	nce weekly private	1 x 1100L bins	2 x 660L bins & 1 x 240L bin	1 x 660L bin