56-60 Burns Bay Road, Lane Cove

MAY 2019

Operational Waste Management Plan

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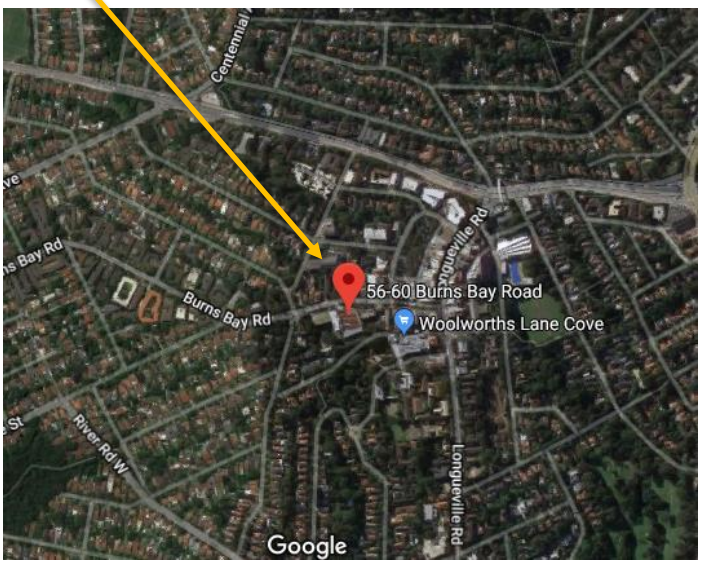
1. Introduction

This Waste Management Plan (WMP) has been prepared to accompany a Development Application for the 56-60 Burns Bay Road, Lane Cove Development. This stage of the development consists of the following (and associated infrastructure):

- Residential units
- Supermarket on ground level Sera St
- Retail tenants
- Community space and lobby

The location is represented below:



Waste audit and management strategies are recommended for new developments to provide support for the building design and promote strong sustainability outcomes for the building. All recommended waste management plans will comply with council codes and any statutory requirements. The waste management plan has three key objectives:

1. ***Ensure waste is managed to reduce the amount of waste and recyclables to land fill*** by assisting staff and visitors to the buildings to segregate appropriate materials that can be recycled; displaying signage to remind and encourage recycling practices; and through placement of recycling and waste bins to reinforce these messages.
2. ***Recover, reuse and recycle*** generated waste wherever possible.
3. ***Compliance*** with all relevant codes and policies.

The following has been based on the information provided and is intended to inform the design of the waste services by identifying the estimated waste profile for the 56-60 Burns Bay Road, Lane Cove Development.

Lane Cove Council's Lane Cove Development Control Plan 2009 and specifically *Part Q – Waste Management and Minimisation*, has been referred to in the development of the waste estimates and related requirements.

2. Waste Generation

2.1 Waste Streams

Based on the number of apartments for this development (as per Section 1), the following are the predominant waste streams that would be expected on a regular basis:

- Paper/cardboard recycling;
- Comingled recycling (glass and plastic container);
- Organic waste; and
- General waste.

Paper, Cardboard and Commingled recycling will be consolidated into the one bin – this is to ensure that the system is economically viable. However, once the waste contractor has been appointed this may be reviewed depending on management costs and potential for rebates for materials.

Other wastes may be generated, but these would be irregular in terms of when generated and as such the quantities not able to be estimated. These would be materials such as furniture, e-waste, and other materials. Space will be provided for recycling of these other streams as required.

In addition, residents will be able to access Councils hard waste collection.

2.2 Waste Generation Estimates

The following tables show the estimated waste generation for the Development. This is based on the profile as provided.

The following tables show the estimated waste generated from the various components of the development – these estimates are based on averages for quantity of waste generated and composition as determined by industry data (ie., data/information provided by WACS' waste audits) as well as consideration of waste generation rates as detailed in the Lane Cove Council's DCP.

Based on the above calculations the following are the bin requirements and associated footprint for each aspect of the Development.

Residential

Waste Stream	Bin Type	No. of Bins	Clearance Frequency (week)	Capacity - (week)	Estimated volume / week (litres)	Footprint per bin (m2)	Total Footprint
Commingled Recycling	1100 MGB	1	**1**	**1,100**	315	1.04	1.04
Paper Recycling	1100 MGB	1	**1**	**1,100**	525	1.04	1.04
General Waste	1100 MGB	2	**1**	**2,200**	1,680	1.04	2.08
TOTAL		**4**		**4,400**	**2,520**		**4.16**

Note that the provision of a compactor for the general waste will reduce the actual volume of this stream requiring disposal. However, the number of bins required remains at the level if there was no compactor so as to allow for peak generation or contingencies.

Supermarket

Waste Stream	Bin Type	No. of Bins	Clearance Frequency (week)	Capacity - (week)	Estimated volume / week (litres)	Footprint per bin (m2)	Total Footprint
Paper/Cardboard	1100 MGB	4	6	**26,400**	22,982	1.04	4.16
Commingled	1100 MGB	1	6	**6,600**	5,746	1.04	1.04
Organics	120 MGB	4	6	**2,880**	2,873	0.28	1.12
General Waste	1100 MGB	4	6	**26,400**	25,855	1.04	4.16
TOTAL		**13**		**28,980**	**57,456**		**10.48**

Community space & Lobby

Waste Stream	Bin Type	No. of Bins	Clearance Frequency (week)	Capacity - (week)	Estimated volume / week (litres)	Footprint per bin (m2)	Total Footprint
Commingled Recycling	1100 MGB	1	**1**	**1,100**	960	1.04	1.04
Paper Recycling	1100 MGB	1	**1**	**660**	240	1.04	1.04
General Waste	1100 MGB	1	**1**	**660**	480	1.04	1.04
TOTAL		**3**		**2,420**	**1,680**		**3.12**

Retail

Waste Stream	Bin Type	No. of Bins	Clearance Frequency (week)	Capacity - (week)	Estimated volume / week (litres)	Footprint per bin (m2)	Total Footprint
Commingled Recycling	1100 MGB	1	**1**	**1,100**	176	1.04	1.04
Paper Recycling	1100 MGB	1	**1**	**660**	44	1.04	1.04
General Waste	1100 MGB	1	**1**	**660**	220	1.04	1.04
TOTAL		**3**		**2,420**	**440**		**3.12**

3. Waste Management Storage

Note that the following describes the requirements for the storage of wastes/recyclables from the residential and retail aspects of the development.

Each waste storage room will be located so that only authorised persons can enter it. Retail tenants will not be able to access the residential waste storage rooms and *vice versa*.

3.1 Storage Calculations

The following table show the recommended waste storage requirements (based on the footprint for bins as described for each aspect of the development in Section 2.2). In addition to this, an allowance of 30% has been factored in to allow for bin movement.

Storage room space allocations

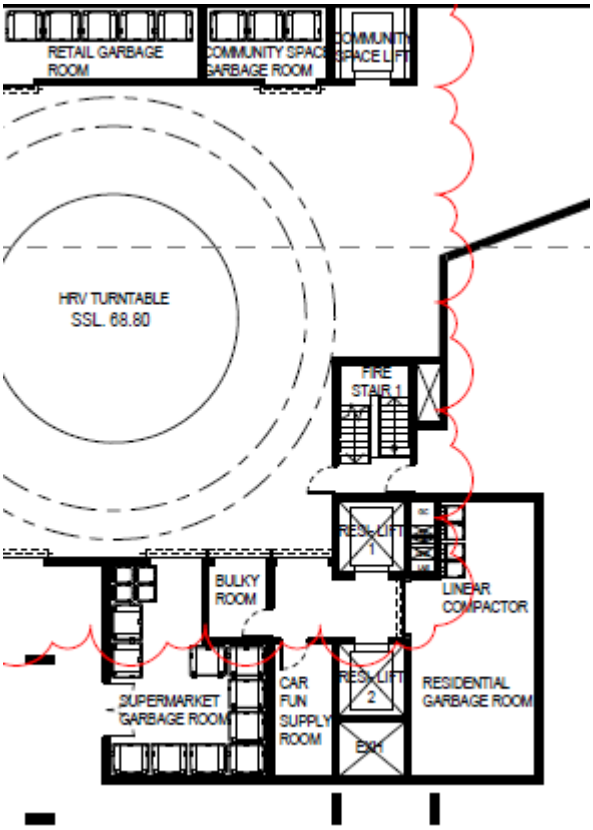
Development Aspect	Bin Footprint with 30% allowance (m^2)	Provided Bin Storage Room Space (m^2)	Remaining Space (m^2)
Residential	5.5	17.0	11.5
Supermarket	14.0	39.5	19.7
Retail	4.2	19.8	8.7
Community space and Lobby	4.2	11.9	7.7

These calculations demonstrate that there is sufficient room for the waste/recyclables generated from each aspect of the development based on calculated generation rates, bin sizes and the nominated collection frequencies.

In addition, the excess space allows for peak generation and contingencies.

In addition, there is sufficient space allocated for residential bulky waste.

The following (over the page), illustrates the location of the waste storage areas for each aspect of the development (located on the Ground Level).



3.2 Storage Design

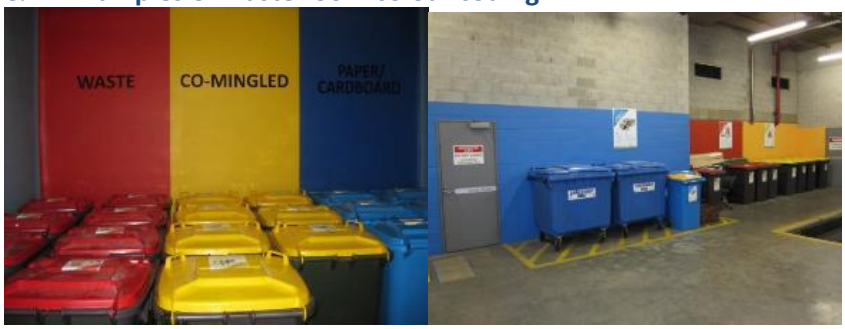
In keeping with best practice sustainability programs, all waste areas and waste and recycling bins will be clearly differentiated through appropriate signage and colour coding to Australia Standards to reflect the materials contained.

There will be a need to ensure that there is sufficient space to allow for bin movement. As a general rule, it is recommended that an additional 30%of the estimated footprint for bins be allocated to this and this has been factored into the waste storage area space calculations.

The waste areas will be accessed by cleaning staff only.

The waste and recycling bins will be colour coded and clearly signed. Each stream will be located in a designated area. This will assist in easy identification of correct bins by those with authorised access.

Photographs 1 & 2 - Examples of waste room colour coding



The waste rooms will contain the following to minimise odours, deter vermin, protect surrounding areas, and make it a user-friendly and safe area:

- waste room floor to be sealed with a two pack epoxy;
- waste room walls and floor surface is flat and even;
- all corners coved and sealed 100mm up, this is to eliminate build-up of dirt;
- a water facility with hose cock must be provided for washing the bins;
- any waste water discharge from bin washing must be drained to sewer in accordance with the relevant water board;
- tap height of 1.6m;
- storm water access preventatives (grate);
- all walls painted with light colour and washable paint;
- equipment electric outlets to be installed 1700mm above floor levels;
- the room must be mechanically ventilated;
- light switch installed at height of 1.6m;
- waste rooms must be well lit (sensor lighting recommended);
- optional automatic odour and pest control system installed to eliminate all pest types and assist with odour reduction – this process generally takes place at building handover – building management make the decision to install;
- all personnel doors are hinged and self-closing;
- waste collection area must hold all bins – bin movements should be with ease of access;
- conform to the Building Code of Australia, Australian Standards and local laws; and
- childproofing and public/operator safety shall be assessed and ensured.

Occupational Health and Safety issues such as slippery floors in waste rooms and the weight of the waste and recycling receptacles will need to be monitored. Cleaners will monitor the bin storage area and all spills will be attended to immediately by cleaners.

A similar design will be incorporated into the chute rooms located on each floor of the development.

4. Waste Management Systems

4.1 Residential

The following summarises the recommended waste and recycling systems that will be implemented for the buildings. These recommendations are based on the Lane Cove Council's requirements and systems implemented for similar developments (and tenants).

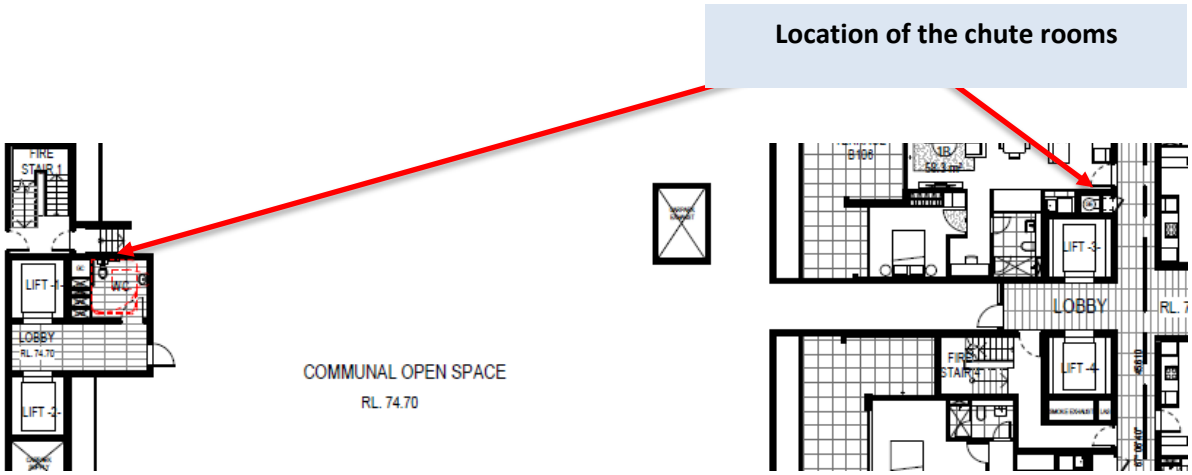
To ensure that the proposed management actions occur management requirements will be contained within the Strata By-laws as well as within the service contract for the maintenance/cleaning contractor(s).

To assist, residents will be provided with separate bins for waste and recyclables. These bins should have a capacity of 30 litres for general waste and 15 litres for recyclables (ie., 2 days' worth of generation).

Essentially all wastes and recyclables will be collected by the Council from the dedicated storage room located on Ground Floor of the development. Waste and Recycling will be collected from the Storage Rooms where the service vehicles can park whilst servicing the bins.

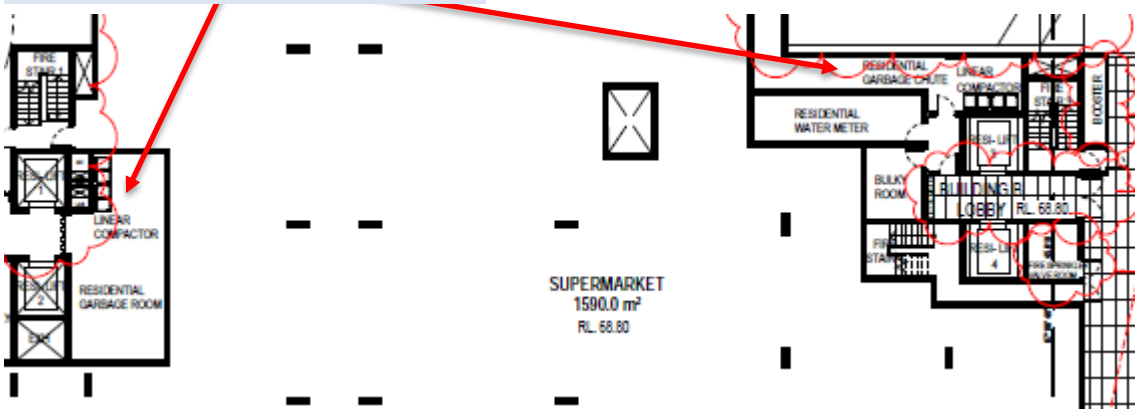
The buildings will utilise a chute which will be accessible from each level and will terminate in one of the Ground Floor chute rooms. Appendix C contains an illustration of an indicative chute system.

The following diagram illustrates the chute rooms that are located in the residential aspect of the development (these are located on Level 1).



The following diagram illustrates the location of the chute rooms located on the Ground Floor.

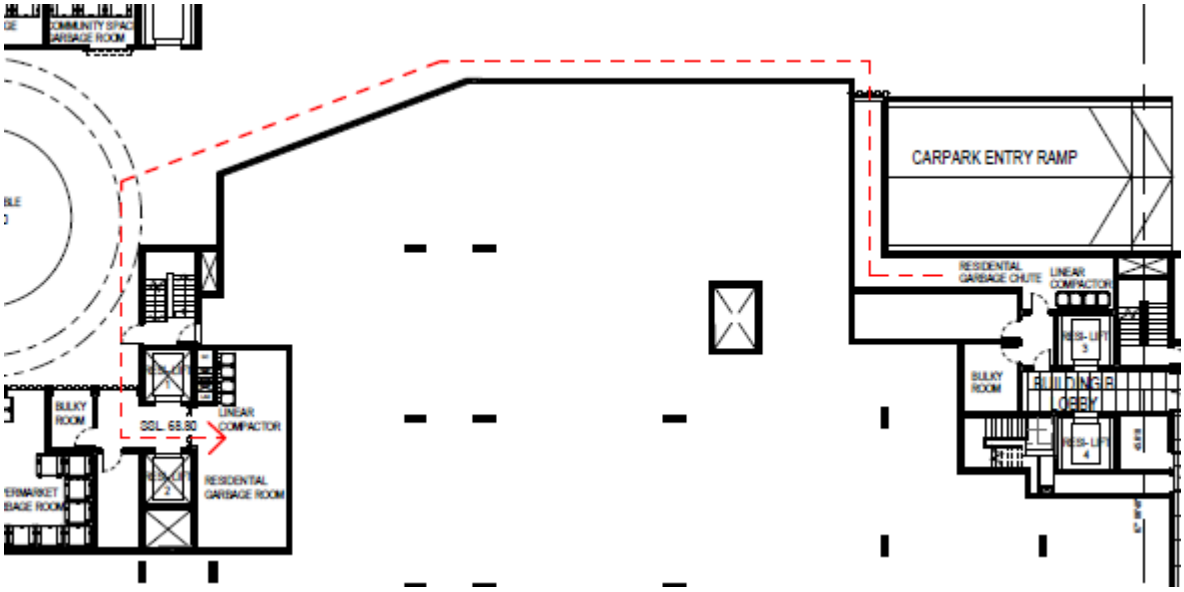
Location of the chute rooms



A compactor unit for the general waste will be provided in the chute rooms on the Ground level.

General waste will be collected under the chute into 1100 litre MGB. These will be transported to the dedicated residential waste storage room by cleaning staff. In addition, a bin "tug" will be provided to assist in the safe movement of the bins. Servicing by Council will be undertaken at the collection point along Sera Street.

The following diagram illustrates the path of travel for the bins from the chute rooms to the storage room (ie., red dotted line).



Recyclables will be deposited into dedicated 240 litre mobile garbage bins that are located in each chute room on each level of the residential aspect of the development. Building management/onsite cleaning staff will be responsible for monitoring all chute waste rooms and transporting full bins (as required), to the central waste room located on the Ground Floor.

Residents will be briefed on the proper use of the chute system and any contamination of the recycling stream will be monitored and reported by cleaners/building management as it is

imperative that the recycling stream remain free of contamination to ensure compliance with collection protocols. Residents will be encouraged to maximise the separation of general waste and mixed recyclables within their apartments to aid the proper disposal of all materials.

Items such as furniture/whitegoods stored within the bulky items storage cage/room will be managed by building management and offered to other residents for reuse if desired. If items remain unclaimed, appropriate collection organisations will be called to collect the items for recycling/reuse as required. Bulky goods storage rooms have been provided for on the Ground Floor.

Appendix A contains illustrations of bins (and other waste management equipment), that could be used within the buildings. The pictures provide examples of the different options for equipment such as MGB, bins placed within the office areas, tugs for transporting bins, trolley unit and a wheelie-safe trolley.

Signage will be a crucial element of the waste management system. Appendix B contains examples of signage. These are the type of signs that should be used throughout the buildings and waste storage area. Other signs can be accessed from the NSW EPA website at: http://www.epa.nsw.gov.au/wastetools/signs-posters-symbols.htm.

4.2 Retail Tenants

The retail tenancies will be designed so as to allow effective segregation of recyclables. These tenancies will (depending on the types of wastes/recyclables generated) be provided with sufficient bins to allow for effective segregation of wastes/recyclables. This will include:

- Comingled recycling
- Organics
- General waste

The size and number of bins for each stream will be discussed with the tenant and service provider as to what will meet the needs for each of them.

Waste and recycling collection services will be provided by a commercial waste contractor (TBA). Utilising a commercial waste contractor affords the tenants greater flexibility regarding collection schedules and the appropriate collection frequencies will be determined in consultation with the waste contractor once appointed – however once operational, collection schedules may need to be adjusted accordingly depending on actual waste generation.

The following table summarise the management system for the wastes and recyclables for retail tenants.

Overview of retail management process

Stream	System	Comment
Recycling	**1100L** MGBs	Tenants separate comingled materials and then cleaners to transfer bins to the waste storage room for collection.
Organics	**120L MGBs**	Tenants ensure that there is no contaminants with the organics material and then cleaners to transfer bins to the waste storage room for collection.
General Waste	**1100L** MGBs	Tenants separate general waste and then cleaners to transfer bins to the waste storage room for collection.

Appendix A contains examples of bin and equipment that can be used to move bins.

4.3 Bin Requirements

Containers located within the development for waste and recycling should be consistent. The following table outlines the colour coding that has been developed by Standards Australia.

Standards Australia waste/recycling container colour coding

Waste Stream	Bin Body Colour	Lid Colour
Paper/cardboard Recycling	Blue	Blue
Commingled Recycling	Green	Yellow
Food Organics	Burgundy	Burgundy
General Waste	Green	Red

5. Education

All tenants and cleaning staff will receive information regarding the waste collection systems including how to use the system, which items are appropriate for each stream and collection regimes.

Large and clear signage will be provided within all waste rooms room and other areas of the development (eg., lobby and on each floor), educating residents on how to recycle – this will be accompanied by a brochure located within each apartment. Appropriate signage and updated information will also be provided.

All waste receptacles will be appropriately signed and additional room signage is usually provided from most waste contractors during implementation of the waste contract. Examples of signage is included in Appendix B.

It is recommended that all signs should;

- Clearly identify the waste/recycling stream;
- Use correct waste/recycling stream colour coding;
- Identify what can and cannot be disposed of in the receptacle; and
- Include highly visual elements to accommodate for individuals with inadequate English literacy.
- As part of the staff induction process, a waste and recycling toolkit will be provided. This toolkit will include the details of each of the systems in place; acceptance criteria for each stream and how each stream is managed.

On a quarterly basis waste and recycling performance reports will be reported back to tenants so that they are aware of their performance and areas for improvement. An active waste monitoring program will be employed. The waste and cleaning contracts will ensure that contractors actively participate in the waste reduction program for the site and meet monthly to identify performance and new opportunities for diversion and avoidance.

6. Ongoing Management

Having suitable systems in place is only one element of an effective waste management system. Compliance by all stakeholders is essential.

Cleaners are a key element in the effectiveness of the systems in place. Prior to acceptance of the cleaning contract, the contractor will be required to demonstrate how the management of waste and recycling will be carried out so as to ensure that segregated materials are placed in the correct systems. This process will be agreed and a training program implemented by the cleaning contractor to ensure full understanding by all cleaners. Monitoring of the system will be carried out by the cleaning supervisor and site management throughout the term of the contract.

In addition, cleaners will be required to feed back to site management any non-compliance issues they observe during their cleaning activities. This may include contamination of recycling; non-participation in the recycling system, or missing or damaged bins. In this way issues can be promptly dealt with by management.

Waste and recycling contractors will be required to report actual volumes collected by stream so that site management can monitor performance and feed this back to stakeholders.

It is highly recommended that a reporting program be set up at the site which would include bin tally sheets that detail the number of bins collected and how full they are at the time of collection, in addition to communication procedures to allow waste contractors to provide feedback regarding contamination and leakage.

All tenants/staff should be educated and made aware of any changes to the existing waste systems.

If a public place recycling system was implemented it would need to be accompanied by clear signage and colour coding to help differentiate the systems. It is likely that staff would also be required to inform the public about the systems and to guide their waste disposal practices.

Appendix A – Waste Management Equipment

The following diagrams illustrate colours and sizes of different bins that could be used within the development.

Figure 1 – MGB bin

Figure 2 – MGB bin

Figure 3 – Indicative size of MGB

Figures 4, 5, 6 and 7 – Bin movers and tugs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Appendix B – Example Signage

Example wall posters

Example bin lid stickers

Appendix C – Indicative Chute Design