# APPENDIX F: TRASH MANAGEMENT PLAN AREAS C AND D





# LMC-KTGY A Town Block C&D Anaheim, CA Trash Management Plan

**Task:** Design a waste and recycling system for this 2 building mixed-use project comprised of Parcel C retail/ residential building with ~248 units & ~ 17,525 SF of retail space (most likely food & beverage) and Parcel D with ~260 units (with ~50 ground floor units), that minimizes costs, staffing requirements and environmental impacts, while providing convenient trash disposal for the building's tenants. Please note the word "trash" when used in this plan covers both waste and recycling.

# Compliance: Long-term California Diversion Requirements.

Since 1989 and the passage of the first major piece of recycling legislation in California, AB 939, the State has aggressively legislated waste diversion goals and mandates. The major pieces of California legislation are below.

AB 939 (1989) required 50% diversion levels to be achieve by the year 2000.

**AB 341** (2008) requires all business generating 4 cubic yards of waste per week to actively implement and participate in recycling programs. This establishes a goal of 75% diversion by 2020, with appropriate reviews of by local jurisdictions conducted periodically.

**AB 1826** (2014) mandates businesses divert organics with an exemption for food waste from multifamily properties.

**SB 1383** (September 1016) mandates food waste diversion from all residential, multi- family and commercial business by 2022

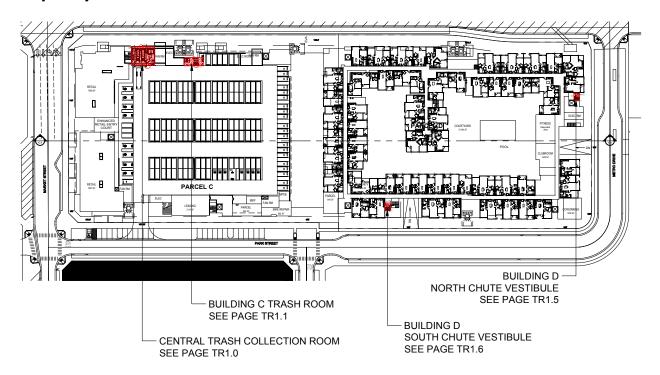
The City of Anaheim supports these diversion initiatives by offering waste, mixed recycling and yard waste collection. The city is expecting to implement a compost/organics plan starting January 2023. Much of 2022 will be spent learning about food and organic waste disposal and figuring out how best to implement new habits before new requirements go into place in 2023.

They also operate a "dirty MRF" which means trash is collected in a single stream and sorted at the Materials Recovery Facility (MRF [pronounced "murf"]). In addition, the City has planned to implement a compost food waste diversion program for the past two years, but to date has not done so. Conversations with the City indicate that multi-family properties can dispose of waste and recycling in a single stream, however to abide by the future California legislation they recommend collecting compost in a separate container.

**Waste and Recycling Removal:** The City of Anaheim has a single waste hauler, Republic Services, which purchased the local franchise holder, Anaheim Disposal, in 2012. This franchise (in various forms) has been in effect since 1948; with the approved transfer of the franchise to Republic, it was extended to 2031. Republic is the sole legal waste hauler. Waste, mixed recycling and yard waste service are provided. As mentioned previously, conversations with the City indicate they recommend collecting compost in a separate container in order to abide by AB 1826 and SB 1383.



# **Project Layout:**



# **Total Trash Volume Projections:**

Below is a summary of projected loose & compacted trash volumes. See detailed analysis on page 22.

Use	Units/ SF	Total Compact Waste Volume CY/WK	Total Compact Recycle Volume CY/WK	Total Compact Compost Volume CY/WK	Total Waste Compact 25CY RO/WK	Total Recycle Compact 25CY RO/WK	Total Compost Compact 2CY Bins/ WK
Building C - Residential	265	9.9	9.9	0.8			
Building D - Residential	243	9.1	9.1	0.7			
Building C - Retail	17,525	8.2	14.1	3.5			
Total		27.3	33.2	5.0	1.1	1.3	3



# **Residential Trash Volume Projections:**

Projections for residential waste, and recycling follows. For waste and recycling, both loose dumpster and compacted services are projected, which allows for evaluation of each type of service. The following metrics were used to project residential waste and recycling levels:

<u>Residential Waste:</u> 0.15 Cubic Yard (30 gallon) per week/unit. **NOTE: This is the equivalent of almost 3 large kitchen garbage cans per unit week (~3 - 13 gallon bags).** 

<u>Residential Recycling:</u> 0.15 Cubic Yard (30 gallon) per week/unit. **NOTE: This is the equivalent** of almost 3 large kitchen garbage cans per unit week (~3 - 13 gallon bags).

<u>Residential Compost:</u> 0.012 Cubic Yard (2.4 gallon) per week/unit. **NOTE: This is the equivalent of small compost pail per unit week.** 

# **Residential Weekly Trash Volume Projections:**

Below is a summary of projected loose & compacted trash volumes. See detailed analysis on page 22.

Core	Units	Loose Waste Volume CY/WK	Loose Recycle Volume CY/WK	Compact Waste Volume CY/WK	Compact Recycle Volume CY/WK	Waste Compact 2CY Bins/WK	Recycle Compact 2CY Bins/WK	Compost Loose 64G Carts/WK
Building C	265	39.8	39.8	9.9	9.9	5	5	10
Building D - North	121.5	18.2	18.2	4.6	4.6	3	3	5
Building D - South	121.5	18.2	18.2	4.6	4.6	3	3	5
Total	508	76.2	76.2	19.1	19.1	11	11	20

# **Projected Waste and Recycling Levels: Commercial**

Below is a summary of projected loose trash volumes for the commercial space. See detailed analysis on page 25.

	SF	Loose Waste Volume CY/WK	Loose Recycle Volume CY/WK	Loose Compost Volume CY/WK	Waste Loose 3CY Bins/ WK	Recycle Loose 3CY Bins/ WK	Compost Loose 2CY Bins/ WK
Restaurant	8,762.5	30.7	52.2	13.7	11	18	7
Retail	8,762.5	2.2	4.4	0.3	1	2	1
Total	17,525	32.9	56.5	14.0	11	20	8



Specific Project Design Summary:

First, residential trash must be collected in 3 streams, waste, recycling, and compost to meet the State requirement of AB341 and the local Recycling Ordinance. The city is expecting to implement a compost/organics plan starting January 2023, to prepare for future compost collection, Slim Jims will be placed in each trash chute vestibule. Staff will then empty these containers into Toter carts in the trash collection

Second, this project is designed with one to two chute cores with (2) 30" diameter residential trash chutes instead of the code minimum 24" (Parcel C designed with one core, parcel D designed with 2 cores). This is to reduce potential jams of large items, particularly cardboard boxes from online shopping and food delivery.

Third, Chutes will discharge into chute-fed waste and recycling compacted containers in Parcel C and Parcel D to minimize bins required to move up to the central compactors and thereby reduce labor costs associated with bin moving. Alternatively, upfront costs can be reduced with loose trailer carts but will require bins to moved at a more frequent basis and will require high labor costs. Trash trailers and bins will be moved using an electric bin moving tug to central roll-off compactors using a hydraulic lifter.

Fourth, we recommend a 8'x11" lift be included to move B1 containers up to the central compactor room.

Fifth, **ATM** uses a suggested maximum travel distance guideline of 350'. There are a 20 residential units in building C that fall outside the suggested travel distance guideline (maximum travel distance of 400ft). Please note that residents regularly travel further to get their mail or go to their cars and that ATM regularly exceeds its own guideline. ATM has received feedback from property managers that travel distance to a trash disposal point is not a concern raised by potential tenants. All units in building D fall within 350' recommended travel distance.

Sixth, 2 central roll-off compactors will be utilized for both buildings for waste and recycling. The central trash area requires 18' clear height for servicing and accessibility for 34' long roll-off trucks. The central roll-off trash system is further discussed on page 5.

Seventh, retail tenants in Parcel C will move trash bins to central compactors for disposal. We recommend retail tenants collect trash in 60G-1CY material handling carts within their own space to utilize the compactors' hydraulic lifter system. Back of house access must be provided for tenants path of travel to central compactors.

Eighth, we recommend compost to be centrally collected in a vertical 2CY compactor. Staging area must be identified for compost as compacted compost containers are ineligible for stinger service. Front load service requires a 25' vertical clearance.

Ninth, add 1 CFM/SF mechanical ventilation per CBC, floor drain, hose bib and odor control to the trash collection rooms. Additionally NFPA 82 requires gravity chutes vent through the roof at least 36" and at full diameter.

Tenth, residential portion of the project is projected to generate around 1,718 cardboard boxes per week (868 for Parcel C and 850 for Parcel D).



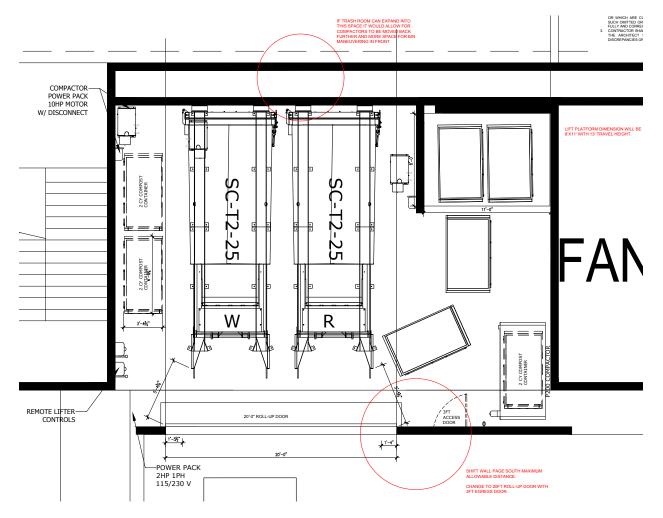
# **Central Roll-Off Waste & Recycling Compactor**

To eliminate the staging of bins on the loading zones, centrally located roll-off compactors can be used for both waste and recycling. Residential bins will be tipped into the compactors by building staff. Compost will still be collected in loose front load bins, so space will still be needed to empty a small number of front load containers per week. Space is not available for a vertical baler so cardboard will not be diverted from the recycling stream and baled to reduce recycling fees.

# Central Roll-Off Trash System

All waste and recycling from the building will be disposed of into dedicated roll-off compactors. Compacted bins will be tipped into the compactors by building staff.

# Central Trash Room Layout:

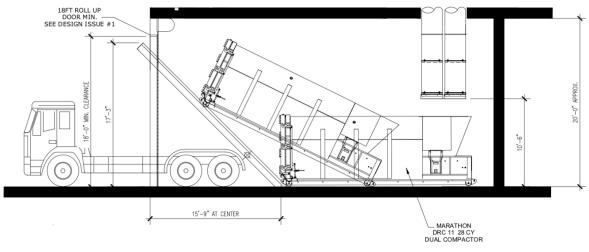






Roll-Off Compactor Clear Height Requirements Without Dock or Scissor Lift (From a similar Project)

Note: We recommend a 25 compactor for this site. Chutes will deposit trash into chute-fed compactors and brought to central roll-off for double compaction.



ROLL OFF COLLECTION VEHICLE



# **Residential Trash Handling System**

To comply with State and City mandates, residential trash will be collected in 3 different streams: waste, mixed recyclables (paper, cardboard & containers) and compost. Two streams will be collected using gravity chutes: Waste and Recycling. The third stream, compost, will be collected in a rubbermaid "Slim Jim" containers in each vestibule.

<u>Chutes for Waste & Recycling</u>. 2 trash chute cores in the project can easily handle the volume of trash generated by the project. The residential waste and mixed recycling streams will be deposited by the tenants on floors into dedicated gravity chutes. We recommend the trash core have two (2) 30" diameter trash chutes per core with 15 x 18 automatic opening (pneumatic) intake doors.

Increasing the chute size to 30" will slightly increase the chute system cost but it will reduce the possibility of chute jams due to large objects (Amazon, super-size pizza and "Costco" boxes) being thrown down the chute and thereby reduce ongoing maintenance cost while increasing tenant convenience.

The chutes should be 16 gauge galvaneal or aluminized steel and be isolated from the building structure using Mason BR mounts or equivalent. The chute should be coated with a sound dampening compound (Soundcoat GP-1 or equivalent) equal to the thickness of the metal.

<u>Compost.</u> Food waste collection is fully implemented at this time in multi-family properties in the City of Anaheim. The city is expected to implement a plan starting 2023. **To prepare for future compost** collection, Slim Jims will be placed in each trash chute vestibule. Staff will then empty these containers into Toter carts in the trash collection. Compost carts will be staged on collection days by. Building staff.

ATM does not typically recommended collecting apartment compostable materials due to the sanitation and collection issues, the corrosive properties of the material, and odorous nature of putrefying household food waste (the primary component of organic waste from apartments). First, the acidic nature of fermenting compost causes chutes to rust prematurely unless they are made of expensive 304 stainless steel. Second, compostable materials adhere to chute walls, becoming an excellent medium for growing fruit flies, maggots, molds, fungus, yeast and bacteria, which can cause insect infestations, allergic reactions and malodors. These problems can only be mitigated by frequent wash downs, which in turn will increase project water usage and sewage loads.

# Please note: Emeryville and San Francisco require compost be collected using gravity chutes. Currently the City of Santa Clara does not require compost to be collected in a gravity chute.

However, other cities are beginning to require a third chute for the compost stream and may do so here.

<u>Odor Control</u>. To mitigate malodors in the trash room(s), a three-pronged approach is recommended including proper cleaning, and installing a deodorizer system.

1. Cleaning the Trash Room. Trash rooms should be swept clean of debris on a weekly basis. Trash room wash-downs should be scheduled quarterly. These should include cleaning any trash equipment such as compactors, as well as floors and the walls. If possible, bins or compactor receiver containers should be cleaned at the same time, assuming the containers are empty.(Bins



should be cleaned by onsite staff. If hauler-provided dumpsters become especially dirty, they should be replaced by the hauler.)

2. Cleaning the Trash Chute. Almost all trash chutes are equipped with deodorizing and sanitizing (D&S) units, located on the top floor behind an access door. These should be operated on a WEEKLY basis, for ~5 minutes. Trash chutes that are designed for a high level of food wastes often also have a "Chute Janitor" built-in wash down system. These should be operated less often, ATM recommends 1x per month. When turned on, they should be allowed to run through their normal Rinse-Wash-Rinse cycle. Even with the presence of the D&S and Chute Janitor systems, all trash chutes should be pressured washed at least once a year to clean materials that adhere to the sides of the chutes. In areas with warmer climate we recommend quarterly wash downs. The chute wash down service should include cleaning the trash discharge room, specifically the floors, walls and the trash compactor.

3. Odor Control Systems. Odor control systems can be helpful in controlling odors, but most have limited effectiveness or create other problems. Popular low-cost systems that spray a masking agent into the air, only serve to neutalize odors in the trash room and not eliminate them. Ozone generators are more effective, but the odor-destroying product they create — ozone — can have deleterious effect on human health and can also destroy compactor hoses and seals. One odor control system that avoids these problems is the Piian Mini Vaporizer. It creates a very fine 50-micron mist that bonds with — and ultimately destroys — odor causing molecules. And unlike ozone, the entirely natural blend of plant extracts, essential oils and emulsifiers which is safe and does not damage equipment.

<u>Roll-off Compactors for Waste and Recycling.</u> This type of equipment provides the following benefits:

Type of Service	Service Levels	Monthly Cost
Loose Front-load	Five 3-CY 3x per week	\$6,897.54
Compacted Front-load	Five 2-CY 3x per week	\$4,951.80
Communal Compacted Roll-off	One 25-CY 1.1x weeks	\$3,264.46
	Savings with Roll-off Compactor	\$3,633.08

(1) <u>Low Disposal Costs</u>. As noted above, compaction of waste is cheaper than loose bins.

- (2) <u>Integrated Lifting Systems.</u> Hydraulic lifters can be integrated into these machines to facilitate safe handling and loading of trash by staff.
- (3) <u>Better Space Utilization.</u> Aggregating all trash into a few larger compactors requires less space for staging than using multiple dumpsters and dumpster locations.
- (4) <u>Improved Hauler Access</u>. The compactors can be situated into a properly designed trash room which can be accessed by the hauler. This is a superior alternative to staging multiple dumpsters in the alley.
- (5) Just-in-Time Trash Disposal Service. SmartTrash Management System
- (6) <u>Flexibility for fluctuating trash levels.</u> In a property that may experience fluctuating trash levels, compaction allows more flexibility to handle additional trash. The current projections call for the compactors to each be picked up 1.1-1.4x per week depending on





calculation methods. In the event of a busy week at the property, additional pickups can be arranged.

The parameters required to make this successful are as follows:

- (1) Overhead clearance should be a **minimum of 14' for roll-off trucks** to be able to pick machine off of a 4' high loading dock and to allow for the carts to be tipped or **18' if the machines sit on the ground.**
- (2) Space is provided for two roll-off compactors for waste and recycling plus compost disposal
- (3) The hauler can safely maneuver trucks from the street into the Central Trash Area, pick up [or drop off] the compactors and then drive off.
- (4) Level loading dock to allow containers and carts to be easily moved to the roll-off compactor hydraulic lifters.
- (5) Allow space for warehouse occupant to operate.

<u>Cardboard.</u> Due to the number of units, this project is projected to generate 1,718 cardboard boxes per week. Detailed analysis starts on page 31. Diverting cardboard can reduce disposal savings as well as reduce the number of large boxes creating chute jams. We recommend providing a space for residents to place their large, flattened cardboard boxes. These boxes will need to be moved by building staff daily into a spare recycling bin for later compaction.

<u>Bulky item collection</u>: Building staff will move bulky items to the bin storage room on the ground floor level, then to the staging location for pick up. Residents must arrange for bulky item pick up through the waste hauler or a 3rd party vendor. Property management will inform residents of bulk items service, and clear signage will be added to all the trash rooms and vestibules.

	Core	Chutes	Size	Material	Compactor Count	Bin Type	# of Bins	Bin Size Cubic Yards
Parcel C		2	30"	Galvaneal or aluminized steel	2	Front Load Loose	2 Waste 2 Recycle 5 Compost	2CY Waste 2CY Recycle 64 G Compost
Parcel	North	2	30"	Galvaneal or aluminized steel	2	Front Load Loose	2 waste 2 recycle 5 compost	2CY waste 2CY recycle 64G Cart
D	South	2	30"	Galvaneal or aluminized steel	2	Front Load Loose	2 waste 2 recycle 5 compost	2CY waste 2CY recycle 64G Cart

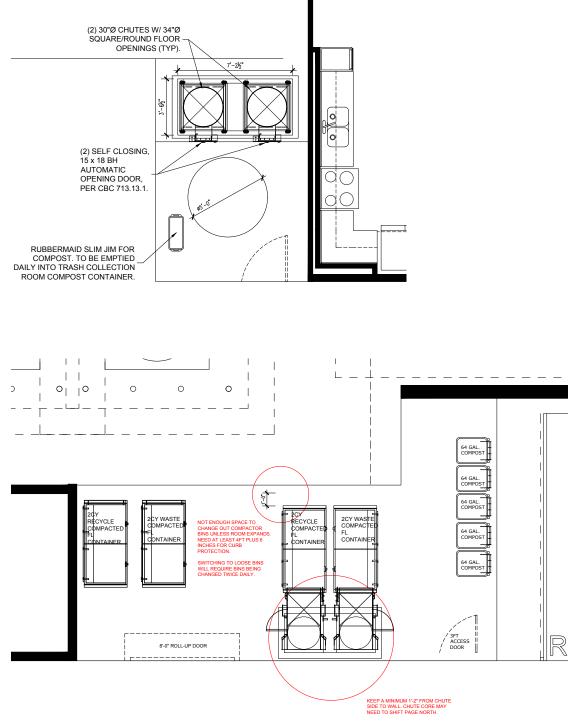
# **Residential Trash System Equipment**

1. Section 44 31 00 - Odor Control

2. Section 41 63 23 - Electric Utility Vehicle for Bin Moving



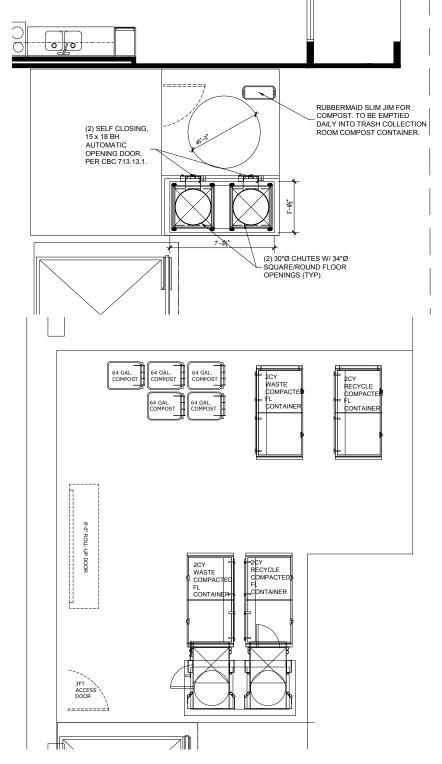
# Parcel C Residential Trash Room and Upper Residential Vestibule Layout:





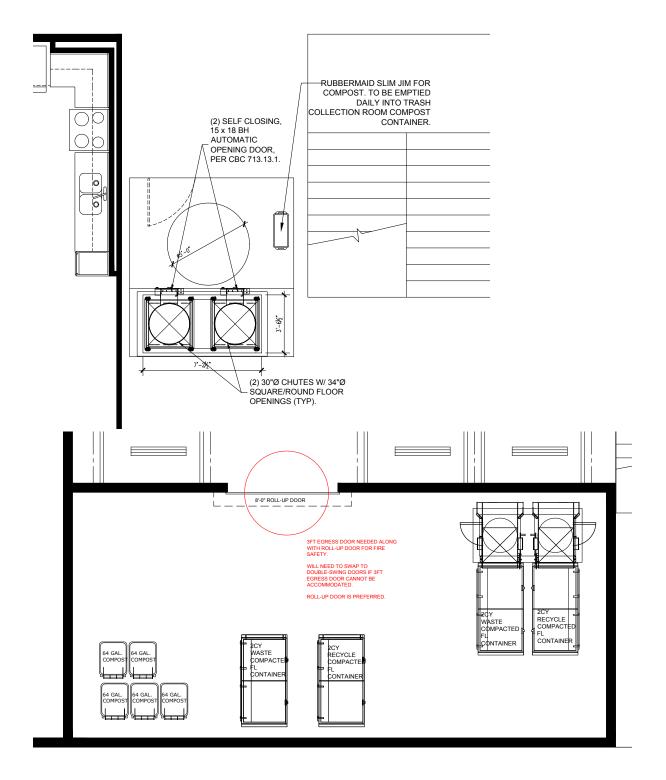


# Parcel D North Residential Trash Room and Upper Residential Vestibule Layout:





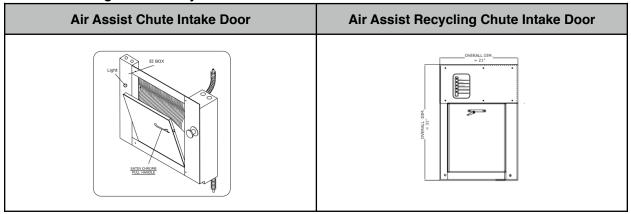
Parcel D South Residential Trash Room and Upper Residential Vestibule Layout:





**Residential Trash Chute Intake Doors** 

# Automatic Opening (Pneumatic) Chute Intake Door to meet Housing Accessibility Section 1138A.4.4.



This is a summary of the current state as we understand it. This is not intended to be legal advice and should not be relied upon with out seeking advice of an ADA expert and your legal counsel.

Per most building codes and FHA requirements, "common use" building areas and building elements, such as a trash rooms and trash chutes are required to be accessible. Specifically, the trash chute door is required to comply with accessibility requirements:

- · Clear floor space for a wheel chair at the chute door
- · Chute door hardware within reach range
- · Chute door hardware complying with operability requirements.

The operability requirements mandate that the chute door hardware must not involve any of the following:

- Two handed operation (such as depressing a button while turning a door handle)
- Tight grasping or pinching
- Twisting of the wrist
- Force to activate the hardware that exceeds 5.0 pounds.

The majority of manual chute intake chute door installations do not comply with the accessibility requirements. Lower quality chute doors require grasping, twisting of the wrist and more than 5 pounds of force to open the chute door. Regardless of what has been installed for the chute door, the chute door is still required by both Code and FHA requirements to comply with accessibility requirements. In the cases where non-compliant chutes have been installed, the building Owner has made management decision to handle the accessibility requirement using other means.

Residential and other buildings are subject to the progressively revised provisions of Federal and Local ADA laws and regulations. To meet the current ADA Standards as they apply to Gravity Trash Chute Intake Doors, the person using the door must not have to grasp, twist, or pinch the control mechanism in order to operate the intake door. ADA Standards also limits the maximum operating force required to



open an interior door (without specificity to size) to 5 pounds of force. The maximum allowable mounting height of the operating mechanisms (i.e. door handle, etc) of an ADA compliant device is 48" (for side reach revised as of July 1, 2012 from 54") or 48" (for front reach when hopper door is open). The maximum allowable projection of an ADA compliant device is 4" off the projection surface of the wall.

The Wilkinson Signature Series and IDC-2000 Recycling Manually operated doors require the person operating the door to push a membrane selector switch (waste, recycling or compost) and grasp the u-shaped handle, push down on the thumb latch with a finger and pull open the door. This type of intake doors meets the mounting height, the projection, the twist and the pinch requirements but it does not meet the pulling force or the grasp requirement.

Lower quality manual chute intake doors from other manufacturers all use a T-handle or L-handle operating mechanism. These doors fail on 3 counts. They do not meet the pulling force, the grasp and twist requirements. These door are especially hard to operate for persons with arthritis due to the required simultaneously grasping, twisting and pulling motion.

The Wilkinson Signature Series and IDC 2000 Pneumatic Assist door meet all the above requirements since it is operated by pushing the membrane selector switch which opens the door automatically. The door closes after a set time and latches so it meets all the current fire code requirements. The air assist mechanism is designed to preclude the need to grasp, twist, or pinch the control mechanism in order to operate the intake door. The membrane meet the height, projection and force requirements too. It is conceivable, however that certain disabled persons will still not be able to operate this type of door. ADA law requires one to accommodate all persons with disabilities.

The supra-majority of all new construction within the US still uses manually operated chute intake doors due to the extra upfront (~ \$900 per floor) and higher maintenance costs of the Pneumatic Assist Chute Intake type of doors. Many building owners have chosen to only install the pneumatic assist doors in facilities with a high senior or disabled population and in order to meet the above ADA requirements make it their policy to provide a staff person to assist any individual with disabilities who need assistance in operating the manual operated door.

Trash chute systems have been designed to meet the fire and life safety found within Building Codes. All trash chute intake doors are required to be behind a rated fire-barrier and any door in these walls is required to be a fire-rated door.

This fire-rated-door is required to be self-closing (or automatic-closing upon the detection of smoke), so it has a closer mechanism and positive latch. Because this door is designated as a "fire-door", per most codes and accessibility standards (including ANSI A117.1 used for FHA compliance), the door opening force for this door is exempt from typical accessibility requirements (maximum 5 pounds) and allowed to have a minimum opening force allowed by the authority having jurisdiction (typically a maximum of 15 pounds). The opening force for the required fire-rated doors in front of trash chute intake doors routinely exceeds 5 pounds and is more typically in the 14-18 pound range.

Requiring the chute intake door to meet accessibility requirements while allowing the fire-rated door in front of the trash chute intake door to not meet the pull force and grasp requirements is illogical. If an individual with accessibility needs cannot open the fire door in front of the trash chute intake then they will not be able to access the non compliant chute. Owners should always have a policy in place to provide assistance to any person who can not access the trash chute (with or without automatic opening doors).



# **Commercial Trash Handling System:**

Retail commercial trash must be separated into three different streams: waste, recycling and organics. We recommend commercial tenants will be required to move their trash using material handling carts to and from the central roll-off compactors. Commercial staff must be trained to use the compactors.

Given the potential negative esthetic impacts of a common trash room, trash handling rules should be implemented.

# SAMPLE RETAIL COMMERCIAL TENANT TRASH RULES

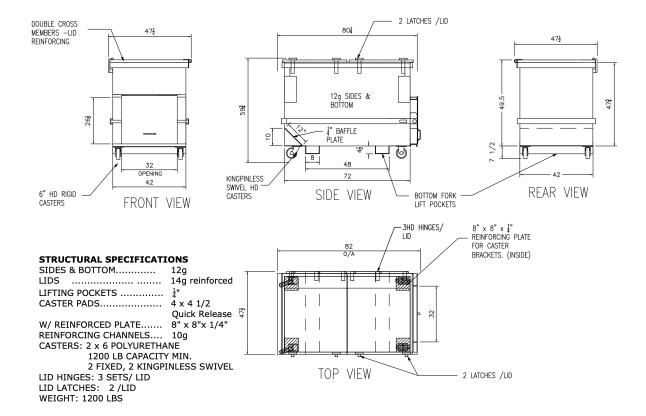
- 1. <u>Moving Trash</u>: Require commercial tenants to move all solid waste and recycling with wheeled carts with locking lids. No items can be discarded in bags. This is to avoid leaks.
- 2. <u>Cleanup</u>: Tenants will be responsible for keeping these carts clean and common areas clean. They cannot clean in their carts in the common areas. Any sewer blockage will be the responsibility of the tenant. All spills if they do happen must be immediately cleaned up or the property management will fine the tenant and arrange for the clean up at the tenants expense. No vent hood filters or floor matts will be cleaned on site.
- 3. <u>Cooking Oil & Fat Disposal:</u> Tenant producing used cooking oil to arrange and pay for a service who will collect this used oil. Oil must be stored in the tenant space. No oil can be moved in open containers on the property. All spills if they do happen must be immediately cleaned up or the property management will fine the tenant and arrange for the clean up at the tenants expense. Used cooking oil cannot be stored in the communal trash room (it stinks and when it is communal, you get a mess).
- 4. <u>Bulk Items:</u> Disposal of any large bulky items that do not easily fit within the tenants trash containers must be removed from the property by the tenant at the tenants expense (excluding all non-standard solid waste disposal). Anything that is not typically disposed of on a regular basis (at least every quarter) must be handled directly by the tenant.
- 5. <u>Hazardous Materials</u>: Tenants are responsible for arranging and paying for the disposal of all Hazardous Material as defined by law.





**3CY FL Compacted Containers - Bottom Lift Pockets:** 

# NOTE: 2CY compost containers must contain bottom lift pockets





**Future Compost Collection Containers** 



### 3540-60 Slim Jim® with Venting Channels



# Integrated, patent-pending venting channels take the strain out of liner removal.

Features innovative patent-pending solutions that increase

Space-saving profile fits virtually anywhere.

efficiency and improve worker well-being.

- Four patent-pending can liner cinches improve productivity.
- Molded-in handles and base grips make lifting and emptying easier.
- Available with Universal Recycling Symbol, SKU# 3540-07.
- Custom imprinting available; contact Rubbermaid Customer Service at (800) 347-9800 for details.

#### **AVAILABLE COLORS**

#### SPECIFICATIONS

Order #	Color	Product UPC/		U.S.	Metric
Order #	0000	UCC Code	Length:	22.0 in	55.9 cm
FG354060 GRAY	GRAY	086876186376 /	Width:	11.0 in	27.9 cm
		10086876186373	Height:	30.0 in	76.2 cm
FG354060 BLA	BLA	086876186352 /	Volume Capacity [Nom]:	23 gal	87.1 L
		10086876186359	Volume Capacity [Max]:	•	
FG354060 BEIG	BEIG	086876186369 /	Volume Capacity [Min]:		
		10086876186366	Carton Length:	22.0 in	55.9 cm
1835671	GR00	10086876217053 /	Carton Width:	11.0 in	27.9 cm
		N/A	Carton Height:	49.5 in	125.7 cm
1835530	BL00	10086876217046 /	Carton Cube:	6.93 ft3	
		N/A	Ship Weight/Carton:	30.60 lb	13.88 kg
			Pack Quantity:		4
			Cartons Per Pallet:		8
Gray GRAY		lack LA	ADDITIONAL INFORMAT	ION:	
			Product Sell Sheets: RCP_SM70	00_SlimJimVenting	Channels.pdf

Blue BL00

Beige BEIG Chemical Resistance Guide: chem.pdf

 Products
 Im Slim Jim® with Venting Channels
 Length
 Width
 Height
 Volume Capacity

 3540-60
 Slim Jim® with Venting Channels
 22.0 in
 11.00 in
 30.0 in
 23 gal

No. Description

8-88 Slim Jim® Handle Top for Slim Jim® Containers

Green GR00



**Compost Collection Carts** 

# 96 GALLON EVR® II UNIVERSAL / NESTABLE

Part Number: 79296

Description 96 GALLON EVR® II CART

Size (l x w x h) 35.25" X 29.75" X 43.25"

Load Rating 335 LBS/151.9 KG

Wheel Diameter 10"



E

#### 64 GALLON EVR® II UNIVERSAL / NESTABLE

Part Number: 79264

Description 64 GALLON EVR® II CART

Size (l x w x h) 31.75" X 24.25" X 41.75"

Load Rating 224 LBS/101.6 KG

Wheel Diameter 10"



### 32 GALLON EVR® UNIVERSAL

Part Number: 76532\*

Description 32 GALLON EVR® CART

Size (l x w x h) 24.25" X 19.25" X 38.50"

Load Rating 112 LBS/50.8 KG

Wheel Diameter 10"

\* 32 gallon is original EVR design and does not nest fully assembled.

#### 24 GALLON EVR® II UNIVERSAL

Part Number: 79224\*

Description 24 GALLON EVR® II CART

Size (l x w x h) 24.00" X 19.75" X 34.50"

Load Rating 84.0 LBS/38.1 KG

Wheel Diameter 10"

\* 24 gallon does not nest fully assembled.



### 48 GALLON EVR® II UNIVERSAL / NESTABLE

Part Number: 79248

Description 48 GALLON EVR® II CART

Size (l x w x h) 28.75" X 23.50" X 37.50"

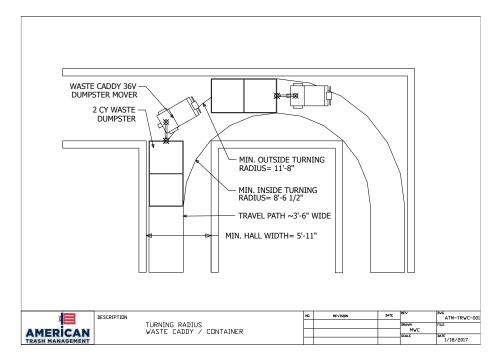
Load Rating 168 LBS/76.3 KG Wheel Diameter

10"



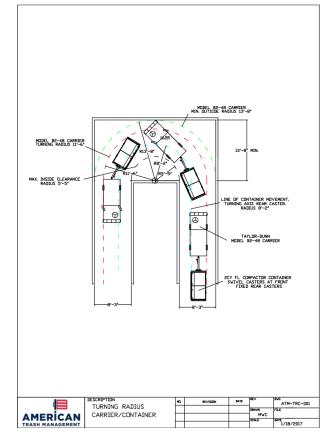


**Compactor Bin Moving Options** 









### **Bin Moving Equipment and Details**

### **BIGFOOT® 48V**

Taylor-Dunn's new line of Bigfoot® electric vehicles has a 10 inch larger operator's compartment, adjustable seats, and tilted steering wheel for improved legroom and operator comfort.

<ul><li>&gt; Download Brochure</li><li>&gt; See More Videos</li></ul>
Compare This Model

Request A Quote



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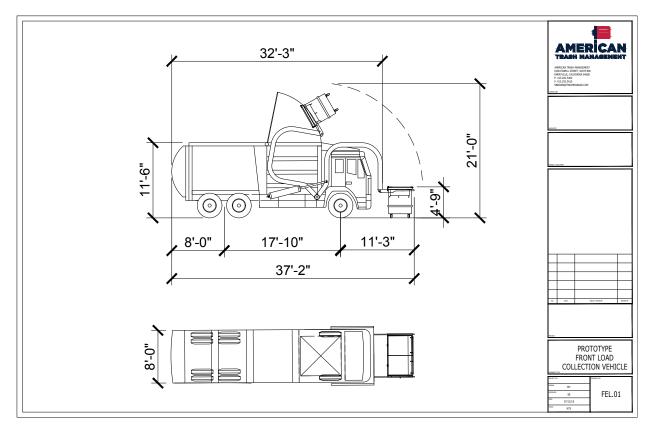
### **Trash Bin Service Location**

Compost bins will be staged in the designated area on Park Street. Bins will be moved to and from this area by building staff on service days. Hauler will pull bins out as needed.

### **Noise Levels**

Location	Decibel Levels
Banging on Bins when Emptying	100
Behind Garbage Truck (while compacting)	89

\*Noise levels from compactor operation were measured by JV Manufacturing, makers of Cram-a- lot compactors.





**Sample Communal Collection Schedule** (actual schedule to be determined by hauler and building management)

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
25CY Waste Compactor (RO)	1.1					
25CY Recycle Compactor (RO)	1.3					
Compost 2CY Compactors (FL)			3			
Total	2.4	0	3	0	0	0

6. Section 14 91 00 - Trash Chutes & Intake Doors

7. Section 44 31 00 - Odor Control



# Waste, Recycling and Compost Analysis

Below is a comparative analysis of the disposal and labor costs of handling waste and recycling in loose versus compacted bins. Please note that the projections below are estimates derived from actual audits of comparable multifamily complexes in the San Francisco Bay area. They are not guaranteed. They are to be used for planning purposes only and may be higher or lower than projected.

### TOTAL RESIDENTIAL WASTE AND RECYCLING SYSTEM ANALYSIS

ASSUMPTIONS:	Units:		Gallons	
	Volume Waste:	-	cubic yard/week/un	30.15
	Volume Recycling:		cubic yard/week/un	30.15
	Volume Compost:		cubic yard/week/un	2.412
Waste/Becvc	le Compaction Ratio		to 1	2.112
Theorem 10090	Staff Labor Rate		per hour - 1 person	
		+		
	Time move bins		hr to move to unloading area 8	
	Rake-Rotate bins		hr to go to each bin rake or rot	ate
	# of Trash Rooms			
	Compacted Service		cubic yard front load bins	
	Compacted Service		cubic yard front load bins	
	oose Waste Service		cubic yard front load bins	
	se Recycling Service		cubic yard front load bins	
	ed Compost Service		cubic yard front load bins	
COST BENEFIT CALCULATIONS:	PROJECTED	PROJECTED	PROJECTED	
SERVICE-Waste	Loose	Compacted-FL	Compacted-RO	
SERVICE-Recycling	Loose	Compacted-FL	Compacted-RO	
SERVICE-Compost	Loose	Compacted-FL &	L Compacted-FL	
Loose Waste Volume - CY	109.1			
Compacted Waste Volume - CY		27.3	27.3	
Loose Mixed Recycling Volume - CY	132.7			
Compacted Recycling Volume - CY		33.2	33.2	
Loose Compost Volume - CY	20.1			
		5.0	5.0	
Waste Bins/week	39	14	1.1	
Recycle Bins/week	47	16	1.3	
Compost carts/week	27	22	3	
Containers/week	113	52	5	
SYSTEM CAPITAL COST	\$0.00	\$190,640.00	\$268,720.00	
WASTE COST/MONTH	\$6,897.54	\$4,951.80	\$3,264.46	
RECYCLING COST/MONTH	\$4,283.11	\$5,659.20	\$3,973.26	
COMPOST COST/MONTH	\$2,094.95	\$1,796.80	\$1061.10	
TRASH COST/MONTH	\$13,275.60	\$12,407.80	\$8,298.82	
COMPACTION SAVINGS/MONTH	N/A	\$867.80	\$4,976.78	
STAFF LABOR COST/MONTH	\$6,678.81	\$3,073.43	\$3,073.43	
STAFF SAVINGS/MONTH	N/A	\$3,605.37	\$3,605.37	
NET MONTHLY TRASH COSTS	\$19,954.41	\$15,481.23	\$11,372.25	
PAYBACK-MONTHS	N/A	43	31	

### CARDBOARD ANALYSIS

868 BOXES/WK



# TOTAL BLG C TRASH ROOM RESIDENTIAL WASTE & RECYCLING ANALYSIS

Volume Waste:         0.15         cubic yard/week/ur         30.15           Volume Compost:         0.015         cubic yard/week/ur         30.15           Volume Compost:         0.012         cubic yard/week/ur         2.412           Compaction Ratio         4         to 1         2.412           Compaction Ratio         4         to 1         30.15           Time move bins         0.5         hr to move to unloading area & back           Rake-Rotate bins         0.15         hr to go to each bin rake or rotate           # of Trash Rooms         1         Compacted Service         2         cubic yard front load bins           Compacted Service         23         cubic yard front load bins         cubic yard front load bins           Loose Waste Service         0.32         cubic yard front load bins         cubic yard front load bins           Cost BENEFIT CALCULATIONS:         PROJECTED         PROJECTED         PROJECTED         PROJECTED           SERVICE-Recycling         3 Streams         MRF & COMPOST         Loose         Compacted-FL           Compacted Waste Volume - CY         3.2         3.2         3.2         3.2           Mixed Recycling Volume - CY         3.2         3.2         3.2         3.2           Compact	ASSUMPTIONS:	Units	265		Gallons
Volume Recycling:         0.15         cubic yard/week/ur         30.15           Volume Compost:         0.012         cubic yard/week/ur         2.412           Compaction Ratio         4         to 1         2.412           Compaction Ratio         4         to 1         5           Staff Labor Rate         \$21.00         per hour -1 person         -           Time move bins         0.5         hr to move to unloading area & back         Rake-Rotate bins         0.15         hr to go to each bin rake or rotate           # of Trash Rooms         1         -         Compacted Service         2         cubic yard front load bins           Compacted Service         3         cubic yard front load bins         -         -           Loose Waste Service         3         cubic yard front load bins         -           Loose Compost Service         0.32         cubic yard front load bins         -           SERVICE-Waste         Loose         MRF & COMPOST         Loose         Compacted His           SERVICE-Recycling         3 Streams         MRF & COMPOST         Loose         Compacted FL         Compacted-FL           Loose Compost Volume - CY         39.8         39.8         39.8         39.8         39.8         39.8         39.8<		Volume Waste:	0.15	cubic yard/week/ur	30.15
Volume Compost:         0.012         cubic yard/week/un         2.412           Compaction Ratio         4         to 1           2.412           Compaction Ratio         4         to 1           2.412           Staff Labor Rate         \$21.00         per hour - 1 person             Time move bins         0.15         hr to move to unloading area & back         Rake-Rotate bins         0.15         hr to go to each bin rake or rotate           # of Trash Rooms         1          Compacted Service         2         cubic yard front load bins           Compacted Service         2         cubic yard front load bins              Loose Waste Service         3         cubic yard front load bins             Loose Recycling Service         3         cubic yard front load bins            Loose Recycling Service         0.32         cubic yard front load bins            SERVICE-Recycling         3 Streams         MF & COMPOST         Compacted-FL         Compacted-FL           SERVICE-Recycling Volume - CY         39.8         39.8         39.8         39.8         39.8           Compacted Recycling Volume - CY         3.2		Volume Recycling:	0.15		
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COST BENEFIT CALCULATIONS: SERVICE-WastePROJECTED LoosePROJECTED MIXED LOOSE*PROJECTED Compacted-FL Compacted-FL Compacted-FLSERVICE-Recycling Loose Waste Volume - CY3 Streams 39.839.839.8Compacted-FL Compacted Waste Volume - CY39.839.8Compacted Waste Volume - CY39.839.839.89.99.9Mixed Recycling Volume - CY39.839.839.89.9Loose Compost Volume - CY3.23.23.23.2Waste Bins/week142755Recycle Bins/week140145Compost carts/week10101010Containers/week/trash room38372920SYSTEM CAPITAL COST\$0.00\$0.00\$20,960.00\$41,920.00WASTE COST/MONTH\$2,476.04\$4,775.22\$1,768.50\$1,768.50RECYCLING COST/MONTH\$1275.82\$0.00\$1,275.82\$1,768.50COMPOST COST/MONTH\$4,296.56\$5,319.92\$3,589.02\$4,081.70COMPACTION SAVINGS/MONTH\$0.00\$0.00\$707.54\$214.86STAFF LABOR COST/MONTH\$2,245.97\$2,186.87\$1,714.03\$1,182.09STAFF SAVINGS/MONTHN/A\$2,186.87\$531.94\$1,063.88NET MONTHLY TRASH COSTS\$6,542.53\$7,506.79\$5,303.05\$5,263.79Monthly Trash Cost per Unit\$24.69\$28.33\$20.01\$19.86	Loos	se Recycling Service	3	cubic yard front loa	ad bins
SERVICE-Waste         Loose         MIXED LOOSE* Compacted-FL         Compacted-FL         Compacted-FL           SERVICE-Recycling         3 Streams         39.8         39.8         39.8         39.8           Compacted Waste Volume - CY         39.8         39.8         39.8         39.8         39.8           Compacted Recycling Volume - CY         39.8         39.8         39.8         39.8         39.8           Compacted Recycling Volume - CY         32.2         3.2         3.2         3.2         3.2           Loose Compost Volume - CY         3.2         3.2         3.2         3.2         3.2           Waste Bins/week         14         0         14         5         5           Compost carts/week         10         10         10         10           Containers/week/trash room         38         37         29         20           SYSTEM CAPITAL COST         \$0.00         \$0.00         \$20,960.00         \$41,920.00           WASTE COST/MONTH         \$2,476.04         \$4,775.22         \$1,768.50         \$1,768.50           RECYCLING COST/MONTH         \$4,296.56         \$5,319.92         \$3,589.02         \$4,081.70           COMPOST COST/MONTH         \$4,296.56         \$5,319.92 </td <td>Loc</td> <td>se Compost Service</td> <td>0.32</td> <td>cubic yard carts (6</td> <td>4 G Toter Carts)</td>	Loc	se Compost Service	0.32	cubic yard carts (6	4 G Toter Carts)
SERVICE-Recycling         3 Streams         MRF & COMPOST         Loose         Compacted-FL           Loose Waste Volume - CY         39.8         39.8         39.8         39.8         39.8           Compacted Waste Volume - CY         39.8         39.8         39.8         39.8         39.8           Compacted Recycling Volume - CY         39.8         39.8         39.8         39.8         39.8           Compacted Recycling Volume - CY         3.2         3.2         3.2         3.2         3.2           Loose Compost Volume - CY         3.2         3.2         3.2         3.2         3.2           Waste Bins/week         14         27         5         5         5           Recycle Bins/week         14         0         10         10         10           Containers/week/trash room         38         37         29         20         SYSTEM CAPITAL COST         \$0.00         \$0.00         \$20,960.00         \$41,920.00           WASTE COST/MONTH         \$2,476.04         \$4,775.22         \$1,768.50         \$1,768.50           RECYCLING COST/MONTH         \$2,476.04         \$4,775.22         \$1,768.50         \$1,768.50           COMPOST COST/MONTH         \$2,4296.56         \$5,319.92	COST BENEFIT CALCULATIONS:	PROJECTED	PROJECTED	PROJECTED	PROJECTED
Loose Waste Volume - CY         39.8         39.8         39.8           Compacted Waste Volume - CY         39.8         39.8         39.8           Compacted Recycling Volume - CY         39.8         39.8         39.8           Compacted Recycling Volume - CY         3.2         3.2         3.2         3.2           Loose Compost Volume - CY         3.2         3.2         3.2         3.2           Waste Bins/week         14         27         5         5           Recycle Bins/week         14         0         14         5           Compost carts/week         10         10         10         10           Containers/week/trash room         38         37         29         20           SYSTEM CAPITAL COST         \$0.00         \$0.00         \$20,960.00         \$41,920.00           WASTE COST/MONTH         \$2,476.04         \$4,775.22         \$1,768.50         \$1,768.50           RECYCLING COST/MONTH         \$1275.82         \$0.00         \$1,275.82         \$1,768.50           COMPOST COST/MONTH         \$4,296.56         \$5,319.92         \$3,589.02         \$4,081.70           COMPACTION SAVINGS/MONTH         \$0.00         \$0.00         \$707.54         \$214.86	SERVICE-Waste	Loose	MIXED LOOSE*	Compacted-FL	Compacted-FL
Compacted Waste Volume - CY         9.9         9.9         9.9           Mixed Recycling Volume - CY         39.8         39.8         39.8         39.8           Compacted Recycling Volume - CY         3.2         3.2         3.2         3.2           Loose Compost Volume - CY         3.2         3.2         3.2         3.2           Waste Bins/week         14         27         5         5           Recycle Bins/week         14         0         14         5           Compost carts/week         10         10         10         10           Containers/week/trash room         38         37         29         20           SYSTEM CAPITAL COST         \$0.00         \$0.00         \$20,960.00         \$41,920.00           WASTE COST/MONTH         \$2,476.04         \$4,775.22         \$1,768.50         \$1,768.50           RECYCLING COST/MONTH         \$1275.82         \$0.00         \$1,275.82         \$1,768.50           COMPOST COST/MONTH         \$1275.82         \$0.00         \$1,275.82         \$1,768.50           COMPOST COST/MONTH         \$0.00         \$0.00         \$707.54         \$244.70           TRASH COST/MONTH         \$0.00         \$0.00         \$707.54         \$214.86	SERVICE-Recycling	3 Streams	MRF & COMPOST	Loose	Compacted-FL
Mixed Recycling Volume - CY39.839.839.839.8Compacted Recycling Volume - CY3.23.23.23.2Loose Compost Volume - CY3.23.23.23.2Waste Bins/week142755Recycle Bins/week140145Compost carts/week10101010Containers/week/trash room38372920SYSTEM CAPITAL COST\$0.00\$0.00\$20,960.00\$41,920.00WASTE COST/MONTH\$2,476.04\$4,775.22\$1,768.50\$1,768.50RECYCLING COST/MONTH\$1275.82\$0.00\$1,275.82\$1,768.50COMPOST COST/MONTH\$544.70\$544.70\$544.70\$544.70TRASH COST/MONTH\$4,296.56\$5,319.92\$3,589.02\$4,081.70COMPACTION SAVINGS/MONTH\$0.00\$0.00\$707.54\$214.86STAFF LABOR COST/MONTH\$2,245.97\$2,186.87\$1,714.03\$1,182.09STAFF SAVINGS/MONTHN/A\$2,186.87\$531.94\$1,063.88NET MONTHLY TRASH COSTS\$6,542.53\$7,506.79\$5,303.05\$5,263.79Monthly Trash Cost per Unit\$24.69\$28.33\$20.01\$19.86	Loose Waste Volume - CY	39.8	39.8		
Compacted Recycling Volume - CY         3.2         3.2         3.2         3.2         3.2           Loose Compost Volume - CY         3.2         3.2         3.2         3.2         3.2           Waste Bins/week         14         27         5         5           Recycle Bins/week         14         0         14         5           Compost carts/week         10         10         10         10           Containers/week/trash room         38         37         29         20           SYSTEM CAPITAL COST         \$0.00         \$0.00         \$20,960.00         \$41,920.00           WASTE COST/MONTH         \$2,476.04         \$4,775.22         \$1,768.50         \$1,768.50           RECYCLING COST/MONTH         \$1275.82         \$0.00         \$1,275.82         \$1,768.50           COMPOST COST/MONTH         \$1275.82         \$0.00         \$1,275.82         \$1,768.50           COMPOST COST/MONTH         \$2,496.56         \$5,319.92         \$3,589.02         \$4,081.70           COMPACTION SAVINGS/MONTH         \$0.00         \$0.00         \$707.54         \$214.86           STAFF LABOR COST/MONTH         \$2,245.97         \$2,186.87         \$1,714.03         \$1,182.09           STAFF SAVINGS/MONTH	Compacted Waste Volume - CY			9.9	9.9
Loose Compost Volume - CY3.23.23.23.23.2Waste Bins/week142755Recycle Bins/week140145Compost carts/week10101010Containers/week/trash room38372920SYSTEM CAPITAL COST\$0.00\$0.00\$20,960.00\$41,920.00WASTE COST/MONTH\$2,476.04\$4,775.22\$1,768.50\$1,768.50RECYCLING COST/MONTH\$1275.82\$0.00\$1,275.82\$1,768.50COMPOST COST/MONTH\$544.70\$544.70\$544.70\$544.70TRASH COST/MONTH\$4,296.56\$5,319.92\$3,589.02\$4,081.70COMPACTION SAVINGS/MONTH\$0.00\$0.00\$707.54\$214.86STAFF LABOR COST/MONTH\$2,245.97\$2,186.87\$1,714.03\$1,182.09STAFF SAVINGS/MONTHN/A\$2,186.87\$531.94\$1,063.88NET MONTHLY TRASH COSTS\$6,542.53\$7,506.79\$5,303.05\$5,263.79Monthly Trash Cost per Unit\$24.69\$28.33\$20.01\$19.86	Mixed Recycling Volume - CY	39.8	39.8	39.8	
Waste Bins/week142755Recycle Bins/week140145Compost carts/week10101010Containers/week/trash room38372920SYSTEM CAPITAL COST\$0.00\$0.00\$20,960.00\$41,920.00WASTE COST/MONTH\$2,476.04\$4,775.22\$1,768.50\$1,768.50RECYCLING COST/MONTH\$1275.82\$0.00\$1,275.82\$1,768.50COMPOST COST/MONTH\$544.70\$544.70\$544.70\$544.70TRASH COST/MONTH\$4,296.56\$5,319.92\$3,589.02\$4,081.70COMPACTION SAVINGS/MONTH\$0.00\$0.00\$707.54\$214.86STAFF LABOR COST/MONTH\$2,245.97\$2,186.87\$1,714.03\$1,182.09STAFF SAVINGS/MONTHN/A\$2,186.87\$531.94\$1,063.88NET MONTHLY TRASH COSTS\$6,542.53\$7,506.79\$5,303.05\$5,263.79Monthly Trash Cost per Unit\$24.69\$28.33\$20.01\$19.86	Compacted Recycling Volume - CY				9.9
Recycle Bins/week140145Compost carts/week10101010Containers/week/trash room38372920SYSTEM CAPITAL COST\$0.00\$0.00\$20,960.00\$41,920.00WASTE COST/MONTH\$2,476.04\$4,775.22\$1,768.50\$1,768.50RECYCLING COST/MONTH\$1275.82\$0.00\$1,275.82\$1,768.50COMPOST COST/MONTH\$544.70\$544.70\$544.70\$544.70TRASH COST/MONTH\$4,296.56\$5,319.92\$3,589.02\$4,081.70COMPACTION SAVINGS/MONTH\$0.00\$0.00\$707.54\$214.86STAFF LABOR COST/MONTH\$2,245.97\$2,186.87\$1,714.03\$1,182.09STAFF SAVINGS/MONTHN/A\$2,186.87\$531.94\$1,063.88NET MONTHLY TRASH COSTS\$6,542.53\$7,506.79\$5,303.05\$5,263.79Monthly Trash Cost per Unit\$24.69\$28.33\$20.01\$19.86	Loose Compost Volume - CY	3.2	3.2	3.2	3.2
Compost carts/week10101010Containers/week/trash room38372920SYSTEM CAPITAL COST\$0.00\$0.00\$20,960.00\$41,920.00WASTE COST/MONTH\$2,476.04\$4,775.22\$1,768.50\$1,768.50RECYCLING COST/MONTH\$1275.82\$0.00\$1,275.82\$1,768.50COMPOST COST/MONTH\$544.70\$544.70\$544.70\$544.70TRASH COST/MONTH\$4,296.56\$5,319.92\$3,589.02\$4,081.70COMPACTION SAVINGS/MONTH\$0.00\$0.00\$707.54\$214.86STAFF LABOR COST/MONTH\$2,245.97\$2,186.87\$1,714.03\$1,182.09STAFF SAVINGS/MONTHN/A\$2,186.87\$531.94\$1,063.88NET MONTHLY TRASH COSTS\$6,542.53\$7,506.79\$5,303.05\$5,263.79Monthly Trash Cost per Unit\$24.69\$28.33\$20.01\$19.86	Waste Bins/week	14	27	5	5
Containers/week/trash room38372920SYSTEM CAPITAL COST\$0.00\$0.00\$20,960.00\$41,920.00WASTE COST/MONTH\$2,476.04\$4,775.22\$1,768.50\$1,768.50RECYCLING COST/MONTH\$1275.82\$0.00\$1,275.82\$1,768.50COMPOST COST/MONTH\$544.70\$544.70\$544.70\$544.70TRASH COST/MONTH\$4,296.56\$5,319.92\$3,589.02\$4,081.70COMPACTION SAVINGS/MONTH\$0.00\$0.00\$707.54\$214.86STAFF LABOR COST/MONTH\$2,245.97\$2,186.87\$1,714.03\$1,182.09STAFF SAVINGS/MONTHN/A\$2,186.87\$531.94\$1,063.88NET MONTHLY TRASH COSTS\$6,542.53\$7,506.79\$5,303.05\$5,263.79Monthly Trash Cost per Unit\$24.69\$28.33\$20.01\$19.86	Recycle Bins/week	14	0	14	5
SYSTEM CAPITAL COST\$0.00\$0.00\$20,960.00\$41,920.00WASTE COST/MONTH\$2,476.04\$4,775.22\$1,768.50\$1,768.50RECYCLING COST/MONTH\$1275.82\$0.00\$1,275.82\$1,768.50COMPOST COST/MONTH\$544.70\$544.70\$544.70\$544.70TRASH COST/MONTH\$4,296.56\$5,319.92\$3,589.02\$4,081.70COMPACTION SAVINGS/MONTH\$0.00\$0.00\$707.54\$214.86STAFF LABOR COST/MONTH\$2,245.97\$2,186.87\$1,714.03\$1,182.09STAFF SAVINGS/MONTHN/A\$2,186.87\$531.94\$1,063.88NET MONTHLY TRASH COSTS\$6,542.53\$7,506.79\$5,303.05\$5,263.79Monthly Trash Cost per Unit\$24.69\$28.33\$20.01\$19.86	Compost carts/week	-	10	10	10
WASTE COST/MONTH\$2,476.04\$4,775.22\$1,768.50\$1,768.50RECYCLING COST/MONTH\$1275.82\$0.00\$1,275.82\$1,768.50COMPOST COST/MONTH\$544.70\$544.70\$544.70\$544.70TRASH COST/MONTH\$4,296.56\$5,319.92\$3,589.02\$4,081.70COMPACTION SAVINGS/MONTH\$0.00\$0.00\$707.54\$214.86STAFF LABOR COST/MONTH\$2,245.97\$2,186.87\$1,714.03\$1,182.09STAFF SAVINGS/MONTHN/A\$2,186.87\$531.94\$1,063.88NET MONTHLY TRASH COSTS\$6,542.53\$7,506.79\$5,303.05\$5,263.79Monthly Trash Cost per Unit\$24.69\$28.33\$20.01\$19.86	Containers/week/trash room	38	37	29	
RECYCLING COST/MONTH\$1275.82\$0.00\$1,275.82\$1,768.50COMPOST COST/MONTH\$544.70\$544.70\$544.70\$544.70TRASH COST/MONTH\$4,296.56\$5,319.92\$3,589.02\$4,081.70COMPACTION SAVINGS/MONTH\$0.00\$0.00\$707.54\$214.86STAFF LABOR COST/MONTH\$2,245.97\$2,186.87\$1,714.03\$1,182.09STAFF SAVINGS/MONTHN/A\$2,186.87\$531.94\$1,063.88NET MONTHLY TRASH COSTS\$6,542.53\$7,506.79\$5,303.05\$5,263.79Monthly Trash Cost per Unit\$24.69\$28.33\$20.01\$19.86	SYSTEM CAPITAL COST	\$0.00	\$0.00	\$20,960.00	\$41,920.00
COMPOST COST/MONTH\$544.70\$544.70\$544.70\$544.70TRASH COST/MONTH\$4,296.56\$5,319.92\$3,589.02\$4,081.70COMPACTION SAVINGS/MONTH\$0.00\$0.00\$707.54\$214.86STAFF LABOR COST/MONTH\$2,245.97\$2,186.87\$1,714.03\$1,182.09STAFF SAVINGS/MONTHN/A\$2,186.87\$531.94\$1,063.88NET MONTHLY TRASH COSTS\$6,542.53\$7,506.79\$5,303.05\$5,263.79Monthly Trash Cost per Unit\$24.69\$28.33\$20.01\$19.86		\$2,476.04	\$4,775.22	\$1,768.50	\$1,768.50
TRASH COST/MONTH\$4,296.56\$5,319.92\$3,589.02\$4,081.70COMPACTION SAVINGS/MONTH\$0.00\$0.00\$707.54\$214.86STAFF LABOR COST/MONTH\$2,245.97\$2,186.87\$1,714.03\$1,182.09STAFF SAVINGS/MONTHN/A\$2,186.87\$531.94\$1,063.88NET MONTHLY TRASH COSTS\$6,542.53\$7,506.79\$5,303.05\$5,263.79Monthly Trash Cost per Unit\$24.69\$28.33\$20.01\$19.86	RECYCLING COST/MONTH	\$1275.82	\$0.00	\$1,275.82	\$1,768.50
COMPACTION SAVINGS/MONTH\$0.00\$0.00\$707.54\$214.86STAFF LABOR COST/MONTH\$2,245.97\$2,186.87\$1,714.03\$1,182.09STAFF SAVINGS/MONTHN/A\$2,186.87\$531.94\$1,063.88NET MONTHLY TRASH COSTS\$6,542.53\$7,506.79\$5,303.05\$5,263.79Monthly Trash Cost per Unit\$24.69\$28.33\$20.01\$19.86	COMPOST COST/MONTH	\$544.70		\$544.70	\$544.70
STAFF LABOR COST/MONTH\$2,245.97\$2,186.87\$1,714.03\$1,182.09STAFF SAVINGS/MONTHN/A\$2,186.87\$531.94\$1,063.88NET MONTHLY TRASH COSTS\$6,542.53\$7,506.79\$5,303.05\$5,263.79Monthly Trash Cost per Unit\$24.69\$28.33\$20.01\$19.86	TRASH COST/MONTH	\$4,296.56	\$5,319.92	\$3,589.02	\$4,081.70
STAFF SAVINGS/MONTHN/A\$2,186.87\$531.94\$1,063.88NET MONTHLY TRASH COSTS\$6,542.53\$7,506.79\$5,303.05\$5,263.79Monthly Trash Cost per Unit\$24.69\$28.33\$20.01\$19.86	COMPACTION SAVINGS/MONTH	\$0.00	\$0.00	\$707.54	\$214.86
NET MONTHLY TRASH COSTS         \$6,542.53         \$7,506.79         \$5,303.05         \$5,263.79           Monthly Trash Cost per Unit         \$24.69         \$28.33         \$20.01         \$19.86	STAFF LABOR COST/MONTH	\$2,245.97	\$2,186.87	\$1,714.03	\$1,182.09
Monthly Trash Cost per Unit         \$24.69         \$28.33         \$20.01         \$19.86	STAFF SAVINGS/MONTH				
	NET MONTHLY TRASH COSTS	\$6,542.53	\$7,506.79	\$5,303.05	
PAYBACK-MONTHS N/A N/A 17 33	•				
	PAYBACK-MONTHS	N/A	N/A	17	33



TOTAL BLDG D RESIDENTIAL WAS	TE AND RECYCLIN	IG SYSTEM ANAL	(SIS	
ASSUMPTIONS:	Units	: 243		Gallons
	Volume Waste	: 0.15	cubic yard/week/u	un 30.15
	Volume Recycling	: 0.15	cubic yard/week/u	un 30.15
	Volume Compost	: 0.012	cubic yard/week/u	un 2.412
Waste/Recyc	le Compaction Ratio	o 4	to 1	
	Staff Labor Rate	e \$21.00	per hour - 1 perso	on
	Time move bins	o 0.5	hr to move to unlo	bading area & back
	Rake-Rotate bins	s 0.15	hr to go to each b	in rake or rotate
	# of Trash Rooms	s 2		
	Compacted Service	e 2	cubic yard front lo	ad bins
I	oose Waste Service	e 3	cubic yard front lo	ad bins
Loos	se Recycling Service	e 3	cubic yard front lo	ad bins
Loos	se Recycling Service	0.32	cubic yard front lo	ad bins
COST BENEFIT CALCULATIONS:	PROJECTED	PROJECTED	PROJECTED	PROJECTED
SERVICE-Waste	Loose	MIXED LOOSE*	Compacted-FL	Compacted-FL
SERVICE-Recycling	3 Streams	MRF & COMPOST	- Loose	Compacted-FL
Loose Waste Volume - CY	36.5	36.5		
Compacted Waste Volume - CY			9.1	9.1
Loose Mixed Recycling Volume - CY	36.5	36.5	36.5	
Compacted Recycling Volume - CY				9.1
Loose Compost Volume - CY	2.9	2.9	2.9	2.9
Waste Bins/week	14	26	6	6
Recycle Bins/week	14	0	14	6
Compost carts/week	10	10	10	10
Containers/week	38	36	30	22
SYSTEM CAPITAL COST	\$0.00	\$0.00	\$41,920.00	\$83,840.00
WASTE COST/MONTH	\$2,476.04	\$4,598.36	\$2,122.20	\$2,122.20
RECYCLING COST/MONTH	\$1275.82	\$0.00	\$1,275.82	\$2,122.20
COMPOST COST/MONTH	\$544.70	\$544.70	\$544.70	\$544.70
TRASH COST/MONTH	\$4,296.56	\$5,143.06	\$3,942.72	\$4,789.10
COMPACTION SAVINGS/MONTH	N/A	N/A	\$353.84	-\$492.54
STAFF LABOR COST/MONTH	\$2,245.97	\$2,127.76	\$1,773.14	\$1,300.30
STAFF SAVINGS/MONTH	N/A	N/A	\$472.84	\$945.67
NET MONTHLY TRASH COSTS	\$6,542.53	\$7,270.82	\$5,715.86	\$6,089.40
Monthly Trash Cost per Unit	\$26.92	\$29.92	\$23.52	\$25.06
PAYBACK-MONTHS	N/A	N/A	51	185

CARDBOARD ANALYSIS

850.5 BOXES/WK



### NORTH TRASH ROOM RESIDENTIAL WASTE & RECYCLING ANALYSIS

ASSUMPTIONS:	Units	: 121.5		Gallons
	Volume Waste	: 0.15	cubic yard/week/u	n 30.15
	Volume Recycling	: 0.15	cubic yard/week/u	
	Volume Compost	: 0.012	cubic yard/week/u	n 2.412
	Compaction Ratio	9 4	to 1	
	Staff Labor Rate	\$21.00	per hour - 1 persor	า
	Time move bins	s 0.5	hr to move to unloa	ading area & back
	Rake-Rotate bins	s 0.15	hr to go to each bi	n rake or rotate
	# of Trash Rooms	s 1		
	Compacted Service	2	cubic yard front loa	ad bins
	Loose Waste Service	e 3	cubic yard front load bins	
Loo	se Recycling Service		cubic yard front loa	ad bins
Loc	ose Compost Service	e 0.32	cubic yard carts (6	4 G Toter Carts)
COST BENEFIT CALCULATIONS:	PROJECTED	PROJECTED	PROJECTED	PROJECTED
SERVICE-Waste	Loose	MIXED LOOSE*	Compacted-FL	Compacted-FL
SERVICE-Recycling	3 Streams	MRF & COMPOST	Loose	Compacted-FL
Loose Waste Volume - CY	18.2	18.2		
Compacted Waste Volume - CY			4.6	4.6
Mixed Recycling Volume - CY	18.2	18.2	18.2	
Compacted Recycling Volume - CY				4.6
Loose Compost Volume - CY	1.5	1.5	1.5	1.5
Waste Bins/week	7	13	3	3
Recycle Bins/week	7	0	7	3
Compost carts/week	5	5	5	5
Containers/week/trash room	19	18	15	11
SYSTEM CAPITAL COST	\$0.00	\$0.00	\$20,960.00	\$41,920.00



### SOUTH TRASH ROOM RESIDENTIAL WASTE & RECYCLING ANALYSIS

ASSUMPTIONS:	Units	: 121.5		Gallons
	Volume Waste	: 0.15	cubic yard/week/u	r 30.15
	Volume Recycling	: 0.15	cubic yard/week/u	r 30.15
	Volume Compost	: 0.012	cubic yard/week/u	n 2.412
	Compaction Ratio	o 4	to 1	
	Staff Labor Rate	\$21.00	per hour - 1 perso	n
	Time move bins	s 0.5	hr to move to unlo	ading area & back
	Rake-Rotate bins	s 0.15	hr to go to each bi	n rake or rotate
	# of Trash Rooms	s 1		
	Compacted Service	e 2	cubic yard front loa	ad bins
	Loose Waste Service	-	cubic yard front load bins	
Loc	se Recycling Service		cubic yard front loa	ad bins
Lo	ose Compost Service	e 0.32	cubic yard carts (6	64 G Toter Carts)
COST BENEFIT CALCULATIONS:	PROJECTED	PROJECTED	PROJECTED	PROJECTED
SERVICE-Waste	Loose	MIXED LOOSE*	Compacted-FL	Compacted-FL
SERVICE-Recycling	3 Streams	MRF & COMPOST	Loose	Compacted-FL
Loose Waste Volume - CY	18.2	18.2		
Compacted Waste Volume - CY			4.6	4.6
Mixed Recycling Volume - CY	18.2	18.2	18.2	
Compacted Recycling Volume - CY				4.6
Loose Compost Volume - CY	1.5	1.5	1.5	1.5
Waste Bins/week	7	13	3	3
Recycle Bins/week	7	0	7	3
Compost carts/week	5	5	5	5
Containers/week/trash room	19	18	15	11
SYSTEM CAPITAL COST	\$0.00	\$0.00	\$20,960.00	\$41,920.00



TOTAL RETAIL WASTE AND RECYCLING SYSTEM ANALYSIS				
	Square Feet	17.525	SF	
	Retail %	50.0%	SF	
	Restaurant %	50.0%	SF	
	restaurant trash*	1.25	lbs/sf/wk	
		0.07	lbs/sf/wk	
0/	retail trash§		IDS/SI/WK	
	ecycled - restaurants	40%		
% 60	mpost - restaurants	25%		
	% recycled - retail	60%		
	% compost - retail	10%		
	restaurant wastes:	125	lb. per loose cubic	
	retail wastes:	84	lb. per loose cubic	
	compost:	200	lb. per loose cubic	yards
	recyclables:	84	lb. per loose cubic	yards
Com	paction Ratio Waste	4	to 1	
	Staff Labor Rate	\$21.00	per hour - 1 person	1
	Time move bins	0.5	hr to move to unloa	
	Rake-Rotate bins	0.15	hr to go to each bin	rake or rotate
Compacted Waste	& Recycling Service	3	cubic yard front loa	d bins
	Loose Waste Service	3	cubic yard front loa	
	se Recycling Service	3	cubic yard front loa	
	se Compost Service	2	cubic yard front loa	
			,,	
COST BENEFIT CALCULATIONS:	PROJECTED	PROJECTED	PROJECTED	PROJECTED
	Restaurant	Retail	Total	Total
Square Feet	8,762.5	8,762.5	17,525	17,525
SERVICE-Waste	Loose	Loose	Loose	Compacted
SERVICE-Recycling	Loose	Loose	Loose	Compacted
SERVICE-Compost	Loose	Loose	Loose	Compacted
Loose Waste Volume - CY	30.7	2.2	32.9	8.2
Compacted Waste Volume - CY	00.7		02.0	0.2
Loose Recycling Volume - CY	52.2	4.4	56.5	14.1
Compacted Recycling Volume - CY	02.2		00.0	
Loose Compost Volume - CY	13.7	0.3	14.0	3.5
Waste Bins/week	11	1	11	3
Recycling Bins/week	18	2	19	5
Compost bins/week	7	1	7	2
Bins/week	36	0	37	10
SYSTEM CAPITAL COST	\$0.00	\$0.00	\$0.00	\$64,880.00
WASTE COST/MONTH	ψ0.00	ψ0.00	\$1,945.46	\$1,061.10
RECYCLING COST/MONTH				
			\$1,731.47	\$1,768.50
COMPOST COST/MONTH			\$1,005.55	\$707.40
			\$4,682.48	\$3,537.00
COMPACTION SAVINGS/MONTH			N/A	\$1,145.48
			\$1,682.21	\$454.65
STAFF SAVINGS/MONTH			N/A	\$1,227.56
NET MONTHLY TRASH COSTS			\$6,364.69	\$5,137.13
Monthly Trash Cost per SF	N1/A	N1/A	\$0.36	\$0.29
PAYBACK-MONTHS	N/A	N/A	N/A	27



Waste and Recycling (Partial) Rates

City: Anaheim Vendor: Republic Services

Front Load Loose Waste Rates			Organic Materials Rates*	
x per week		3CY	64 G	2 CY
-	1	\$176.86	\$54.47	\$143.65
	2	\$265.26	\$108.95	\$205.68
	3	\$353.57		\$267.93
	4	\$442.08		\$330.26
	5	\$530.41		\$391.96
	6	\$618.78		\$449.97
	7	\$707.25		
			*Compacted organi	c rates not not
			provided by Republ	
Front Load Compacted Waste Ra	ates		time	
x per week	-	3CY		
-	1	\$353.70		
	2	\$618.95		
	3	\$883.86		
Front Load Compacted Recyclin	g Rates			
x per week	-	3CY		
-	1	\$353.70		
	2	\$618.95		
	3	\$883.86		
Front Load Loose Recycling Rat	ies			
x per week		3CY		
	1	\$91.13		
	2	\$182.26		
	3	\$273.29		
Desculing and source lights at 0 th				

Recycling only available at 3 times per week service unless hauler approves additional days. Roll-Off Waste Compactor Up to 8

tons	\$691.29	
Compacted cubic yard charge:	\$49.73	Per ton over 8 tons

\*Specific roll-off rates for waste and recycling being processed & confirmed by Republic Services

Chute Fed Compactor Cost	\$20,960.00	A500, 2-3CY Towable bins, tax, ship Install
Chute Fed Compactor Cost	\$24,400.00	A500, 3-3CY Towable bins, tax, ship Install
Chute Fed Compactor Cost	\$27,840.00	A500, 4-3CY Towable bins, tax, ship Install
Chute Fed Compactor Cost	\$34,720.00	A500, 6-3CY Towable bins, tax, ship Install
Hand Fed Compactor Cost	\$30,000.00	A1000 with 1-4CY towable bins, tax, ship, install
Vertical Compactor Cost	\$22,960.00	P200, 1-2CY front load bin-tax, ship Install
Roll-Off Compactor	\$60,000.00	25 CY Self Contained Compactor with Bin Lifter
Vertical Baler Cost	\$21,934.00	MD60STD, tax, ship Install

TRASH SYSTEM SPECIFICATIONS: Provided separately.



- 1. Section 14 91 82 Trash Chutes
- 2. Section 11 82 26 Waste & Recycling Compactors
- 3. Section 44 31 00 Odor Control
- 4. Section 41 63 23 Bin Towing Vehicle (Taylor Dunn Bigfoot)