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LMC-KTGY
A Town Block B Anaheim, CA
Trash Management Plan

Task: Design a waste and recycling system for this 7-story story residential project comprised of 270 residential units and 21,460 SF of ground floor commercial space, 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.Compost collection will be implemented at a later date.

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.

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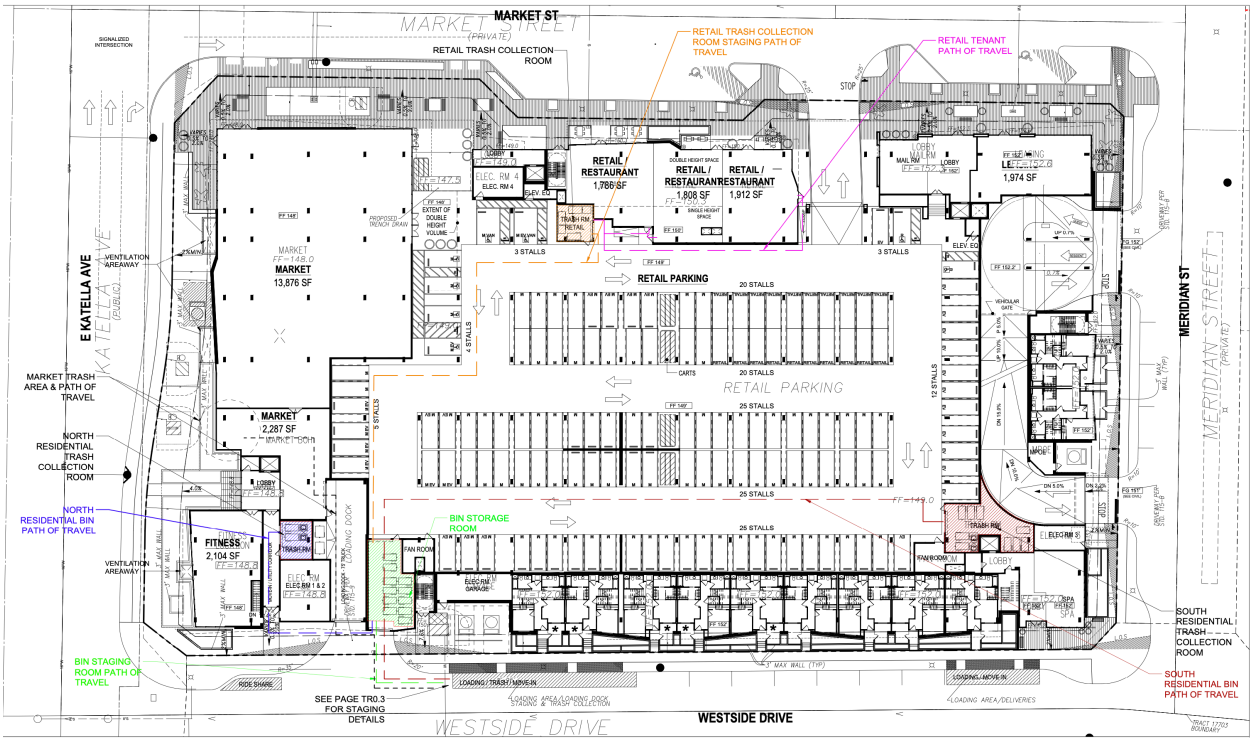
Project Layout:



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Specific Project Design Summary:

First, **residential trash must be collected in 2 streams, waste and recycling, to meet the State requirement of AB341 and the local Recycling Ordinance.** Food scrap recycling is not currently required in multi-family dwellings, however in order **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 two chute cores with (2) 30" diameter residential trash chutes instead of the code minimum 24".** This is to reduce potential jams of large items, particularly cardboard boxes from online shopping and food delivery. **Chutes will discharge into chute-fed waste and recycling compacted containers.**

Third, **ATM uses a suggested maximum travel distance guideline of 350'. There are a few residential units in the building falls outside the suggested travel distance guideline.** 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.

Fourth, **the grocery retailer will operate under a NNN lease and cover all of their own utilities including trash disposal.** This report contains sample projections and layouts, but the tenant will provide its own plan and have its own requirements for space and equipment. There is currently a placeholder in the drawings for trash containers.

Fifth, bins will be staged in the move in loading zone on Westside Drive. **Front load service requires a 25' vertical clearance. Waste and recycling will be emptied into the compactor throughout the week and serviced when full.**

Sixth, **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.**

Seventh, **this building is projected to generate around 945 cardboard boxes per week.**

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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:

Residential Waste: 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).**

Residential Recycling: 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).**

Residential Compost: 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	Total Compact Waste Volume CY/WK	Total Compact Recycle Volume CY/WK	Total Waste Compact 3CY Bins/ WK	Total Recycle Compact 3CY Bins/ WK
North	135	20.3	20.3	5.1	5.1	2	2
South	135	20.3	20.3	5.1	5.1	2	2
Total	270	40.5	40.5	10.1	10.1	4	4

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	Total Waste Loose 3CY Bins/ WK	Total Recycle Loose 3CY Bins/ WK	Total Compost Loose 2CY Bins/ WK
Restaurant	5,180	18.1	19.3	8.1	7	7	5
Retail	0	0.0	0.0	0.0	0	0	0
Total	5,180	18.1	19.3	8.1	7	7	5

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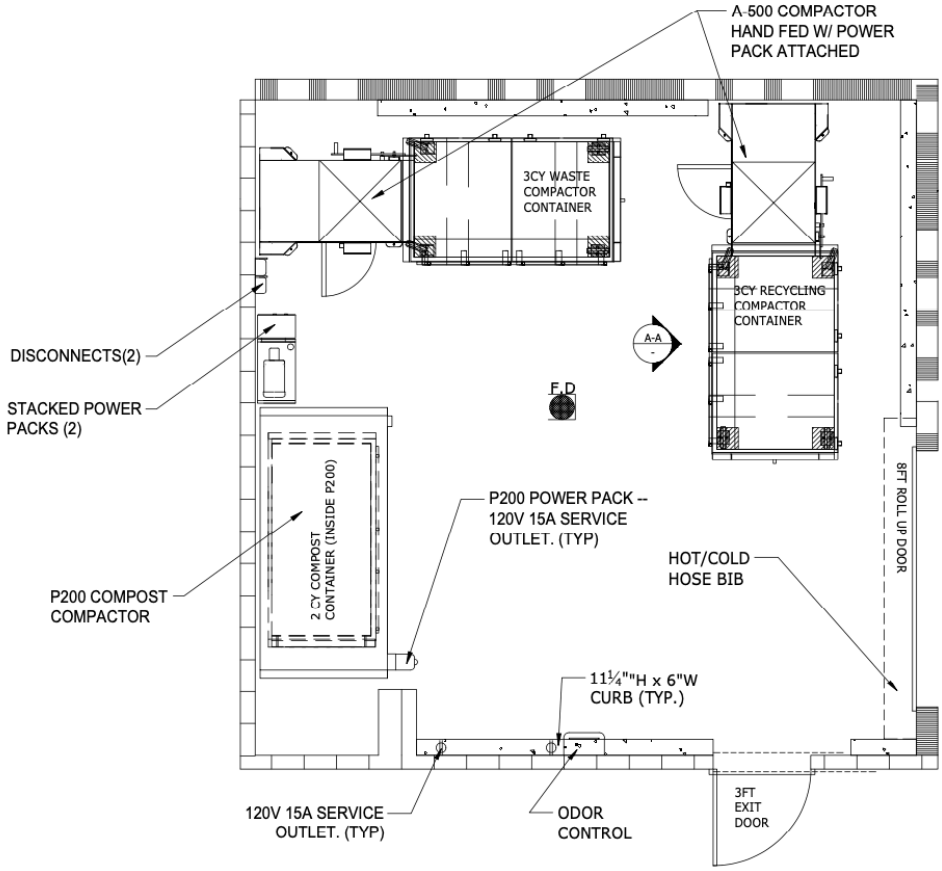
Commercial Trash Room Layout:

PROJECTED COLLECTION SCHEDULE- RETAIL		
SERVICE:	CONTAINER VOL / TYPE:	FREQUENCY:
WASTE	2 x 3CY COMPACTED BINS	1x/wk
RECYCLE	2 x 3CY COMPACTED BINS	1x/wk
COMPOST	2 x 2CY COMPACTED BINS	1x/wk



COMMERCIAL TRASH COLLECTION ROOM

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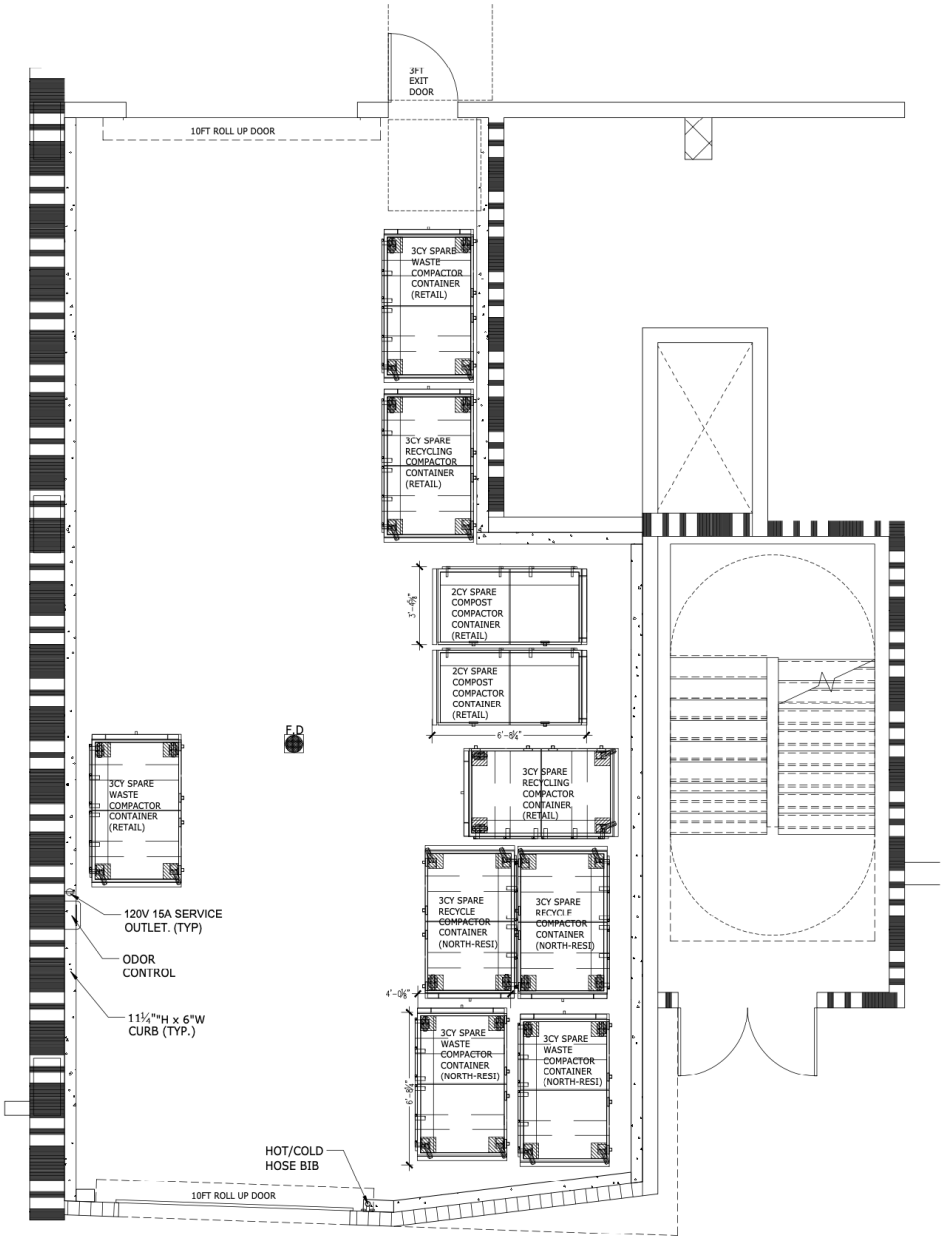
Bin Storage Room Layout:



BIN STORAGE ROOM

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Commercial Trash Volume Projections:

Grocery Stores are high volume trash generators. Typically grocery stores are NNN tenants and handle their own waste and recycling within their net rentable area. There is currently a placeholder in the drawings for trash containers. The trash requirements will be determined by the market operator when they discuss tenant improvements.

Market Equipment:

1. A minimum of (2) 4 yard waste bins with a two (2) 10' (w) x 8' (h) minimum openings

Requirements:

(a) Overhead clearance should be a minimum of 15' for a 75' tractor trailer (WB-67)
(b) Sufficient space should be available for the hauler to safely maneuver trucks from the street into the Grocer's Trash Area, pick up [or drop off] the compactors and then drive off.

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Residential Trash Handling System

To comply with City ordinances, residential trash will be collected in 2 different streams: waste and mixed recyclables (paper, cardboard & glass containers).

Compactors. Waste and recycling will be collected in chute-fed front load compactors.

Service	Compaction Ratio	Monthly Fee
(14) 3-CY loose bins per week	N/A	$2,476.04
(4) 3-CY compacted bins per week	4:1	$1,414.80

Lower Waste Disposal costs. Front-load compaction is 57% less expensive than front-load loose waste services. Please see cost benefit analysis starting on page 22.

Lower labor costs. A 3-cubic yard loose waste bin serviced Monday-through-Sunday must be moved from the trash chute to the trash service location 4x per week. Additionally loose bins must be rotated or raked daily since trash forms a pyramid at the bottom of the chute and does not flow evenly into the containers. Comparable compacted service (4) 3-cubic yard bins picked up 1x per week. That represents 75% fewer times to move the bin from the trash area to the street for pickup. (See cost benefit analysis on page 22).

Cardboard. Due to the number of units, this project is projected to generate 945 cardboard boxes per week. Detailed analysis is on page 22. While diverting cardboard will not result in any direct disposal savings at this time, it can help reduce the number of large boxes creating chute jams. We recommend providing a space adjacent to the trash rooms for residents to place their large, flattened cardboard boxes. These boxes will be moved by building staff daily into a spare recycling bin.

Compost. Food waste collection is not required at this time in multi-family properties in the City of Anaheim. **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.**

Bulky item collection: 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.

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Residential Trash System Equipment

Building	Chutes	Size	Material	Compactor Count	Bin Type	# of Bins	Bin Size Cubic Yards
North	2	(2) 30”	Galvaneal or aluminized steel	2	Front Load Loose	3 Waste 3 Recycle 6 Compost	3CY Waste 3CY Recycle 64 G Compost
South	2	(2) 30”	Galvaneal or aluminized steel	2	Front Load Loose	3 Waste 3 Recycle 6 Compost	3CY Waste 3CY Recycle 64 G Compost

1. Section 44 31 00 - Odor Control
2. Section 41 63 23 - Electric Utility Vehicle for Bin Moving

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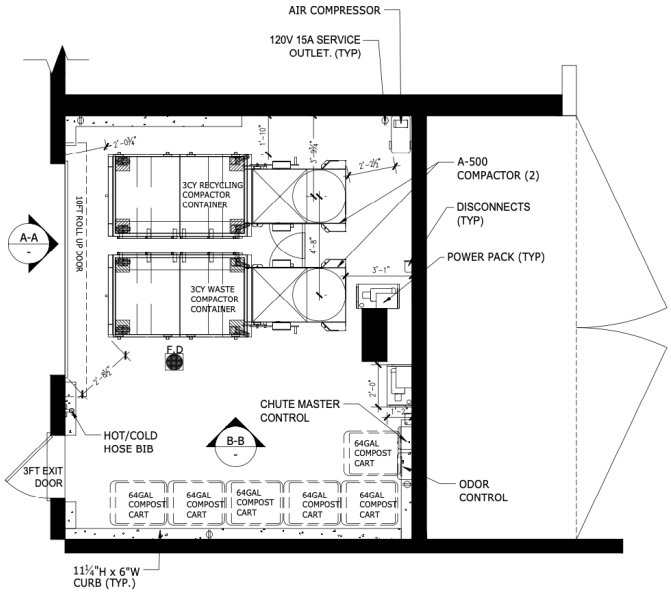
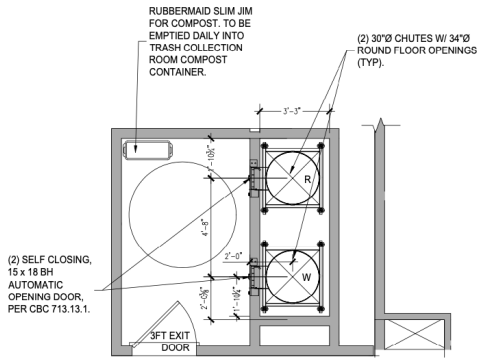
North Residential Trash Room and Upper Residential Vestibule Layout:



NORTH RESIDENTIAL TRASH COLLECTION ROOM

NORTH RESIDENTIAL -PROJECTED COLLECTION SCHEDULE		
SERVICE:	**CONTAINER VOL / TYPE:**	**FREQUENCY:**
WASTE	2 x 3CY COMPACTED BIN	1x/wk
RECYCLE	2 x 3CY COMPACTED BIN	1x/wk
COMPOST	6 x 64GAL GARTS	1x/wk



UPPER RESIDENTIAL VESTIBULE

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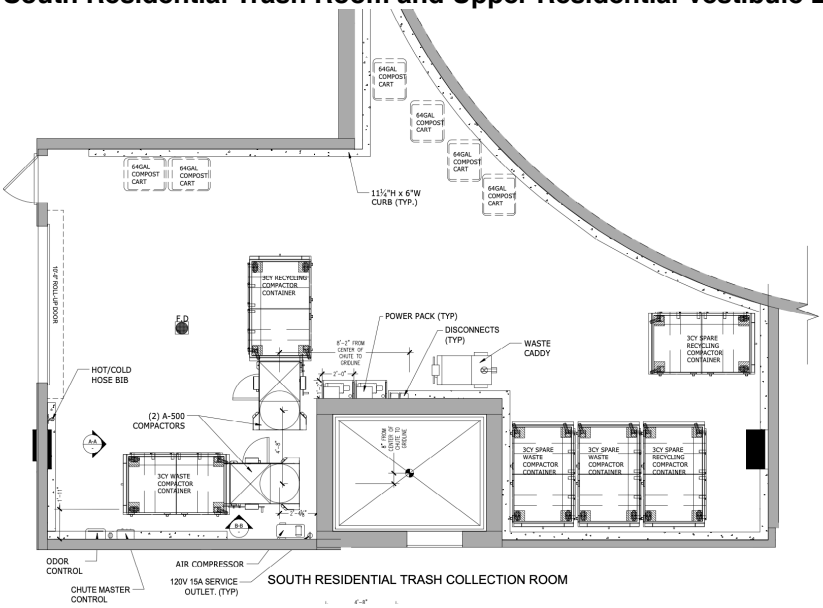
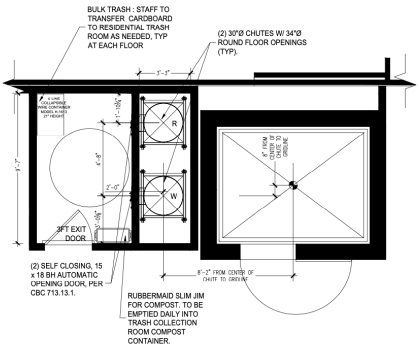
South Residential Trash Room and Upper Residential Vestibule Layout:



SOUTH RESIDENTIAL TRASH COLLECTION ROOM

SOUTH RESIDENTIAL -PROJECTED COLLECTION SCHEDULE		
SERVICE:	CONTAINER VOL / TYPE:	FREQUENCY:
WASTE	2 x 3CY COMPACTED BIN	1x/wk
RECYCLE	2 x 3CY COMPACTED BIN	1x/wk
COMPOST	6 x 64GAL CARTS	1x/wk



UPPER RESIDENTIAL VESTIBULE

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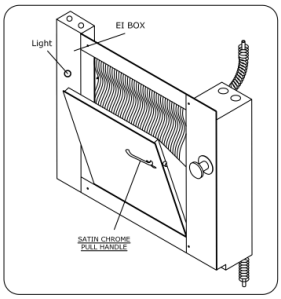
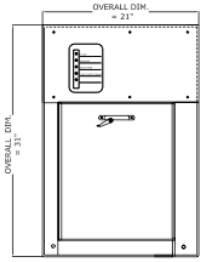
Residential Trash Chute Intake Doors

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

Air Assist Chute Intake Door	Air Assist Recycling Chute Intake Door
	

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

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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).

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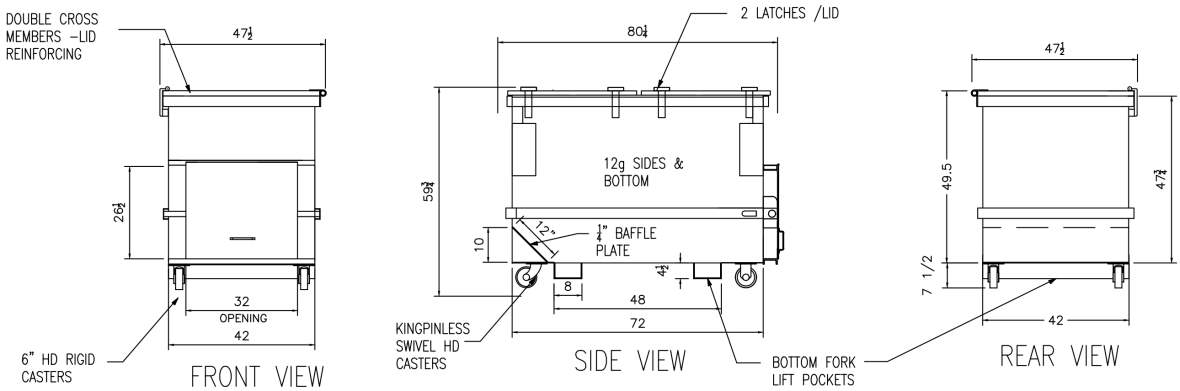
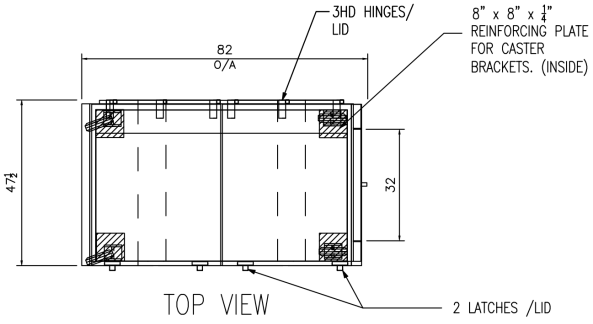
3CY FL Compacted Containers - Bottom Lift Pockets:





STRUCTURAL SPECIFICATIONS

SIDES & BOTTOM.....	12g
LIDS	14g reinforced
LIFTING POCKETS	1" ¼
CASTER PADS.....	4 x 4 1/2 Quick Release
W/ REINFORCED PLATE.....	8" x 8"x 1/4"
REINFORCING CHANNELS....	10g

CASTERS: 2 x 6 POLYURETHANE
1200 LB CAPACITY MIN.
2 FIXED, 2 KINGPINLESS SWIVEL
LID HINGES: 3 SETS/ LID
LID LATCHES: 2 /LID
WEIGHT: 1200 LBS

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Future Compost Collection Containers

3540-60 Slim Jim® with Venting Channels

Features innovative patent-pending solutions that increase efficiency and improve worker well-being.

- Integrated, patent-pending venting channels take the strain out of liner removal.
- Space-saving profile fits virtually anywhere.
- 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

Order #	Color	Product UPC/ UCC Code
FG354060 GRAY	GRAY	086876186376 / 10086876186373
FG354060 BLA	BLA	086876186352 / 10086876186359
FG354060 BEIG	BEIG	086876186369 / 10086876186366
1835671	GR00	10086876217053 / N/A
1835530	BL00	10086876217046 / N/A

Gray
GRAY

Black
BLA

Beige
BEIG

Green
GR00

Blue
BL00

SPECIFICATIONS

	U.S.	Metric
Length:	22.0 in	55.9 cm
Width:	11.0 in	27.9 cm
Height:	30.0 in	76.2 cm
Volume Capacity [Nom]:	23 gal	87.1 L
Volume Capacity [Max]:		
Volume Capacity [Min]:		
Carton Length:	22.0 in	55.9 cm
Carton Width:	11.0 in	27.9 cm
Carton Height:	49.5 in	125.7 cm
Carton Cube:	6.93 ft3	
Ship Weight/Carton:	30.60 lb	13.88 kg

Pack Quantity: 4
Cartons Per Pallet: 8

ADDITIONAL INFORMATION:

Product Sell Sheets: RCP_SM700_SlimJimVentingChannels.pdf
Chemical Resistance Guide: chem.pdf

Products in Slim Jim® with Venting Channels

Item #	Description	Length	Width	Height	Volume Capacity
3540-60	Slim Jim® with Venting Channels	22.0 in	11.00 in	30.0 in	23 gal

Accessories for Slim Jim® with Venting Channels (3540-60):

No.	Description
2688-88	Slim Jim® Handle Top for Slim Jim® Containers

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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"

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.

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"

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.

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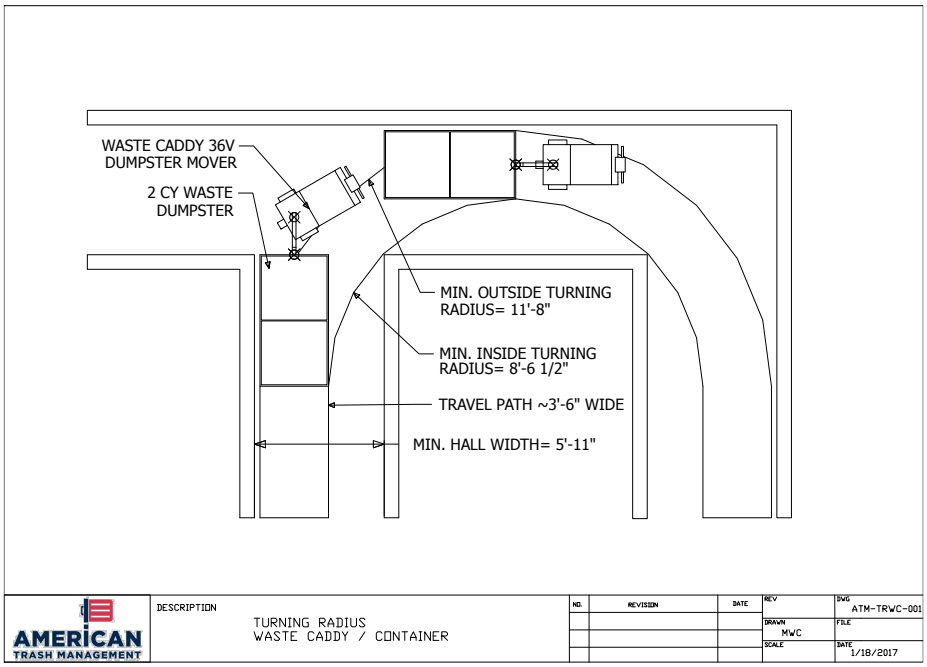
Compactor Bin Moving Options



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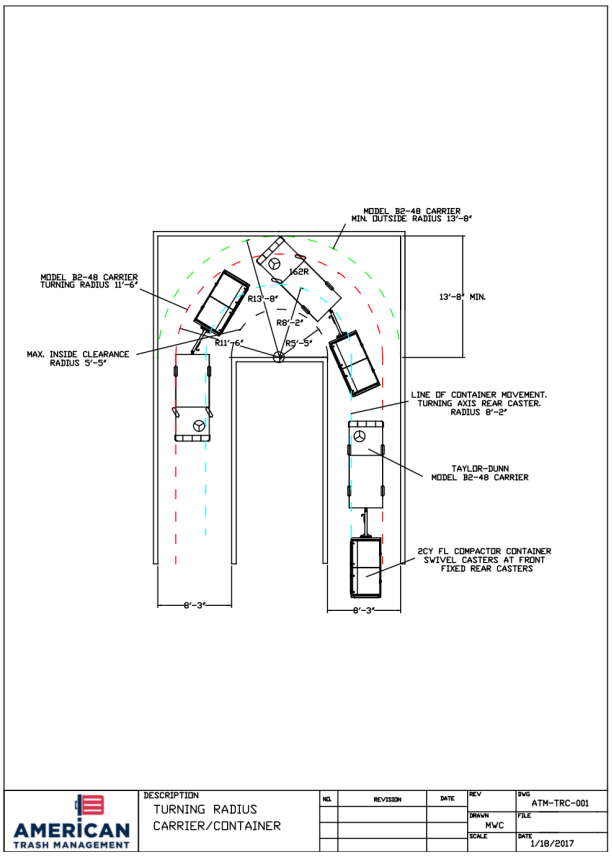

Bin Moving Equipment and Details

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.

> Download Brochure
> See More Videos

Compare This Model

Request A Quote

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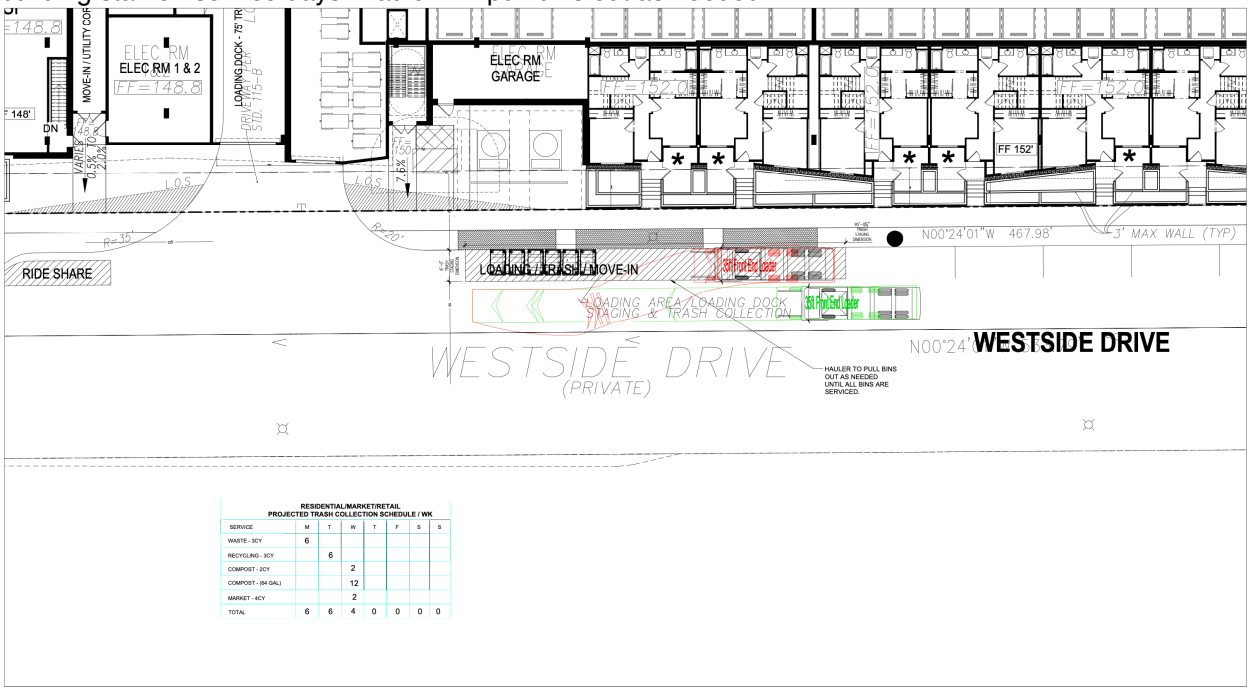
Trash Bin Service Location

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



RESIDENTIAL/MARKET/RETAIL
PROJECTED TRASH COLLECTION SCHEDULE / WK

SERVICE	M	T	W	T	F	S	S
WASTE - 3CY	6						
RECYCLING - 3CY		6					
COMPOST - 2CY			2				
COMPOST - (64 GAL)			12				
MARKET - 4CY			2				
TOTAL	6	6	4	0	0	0	0

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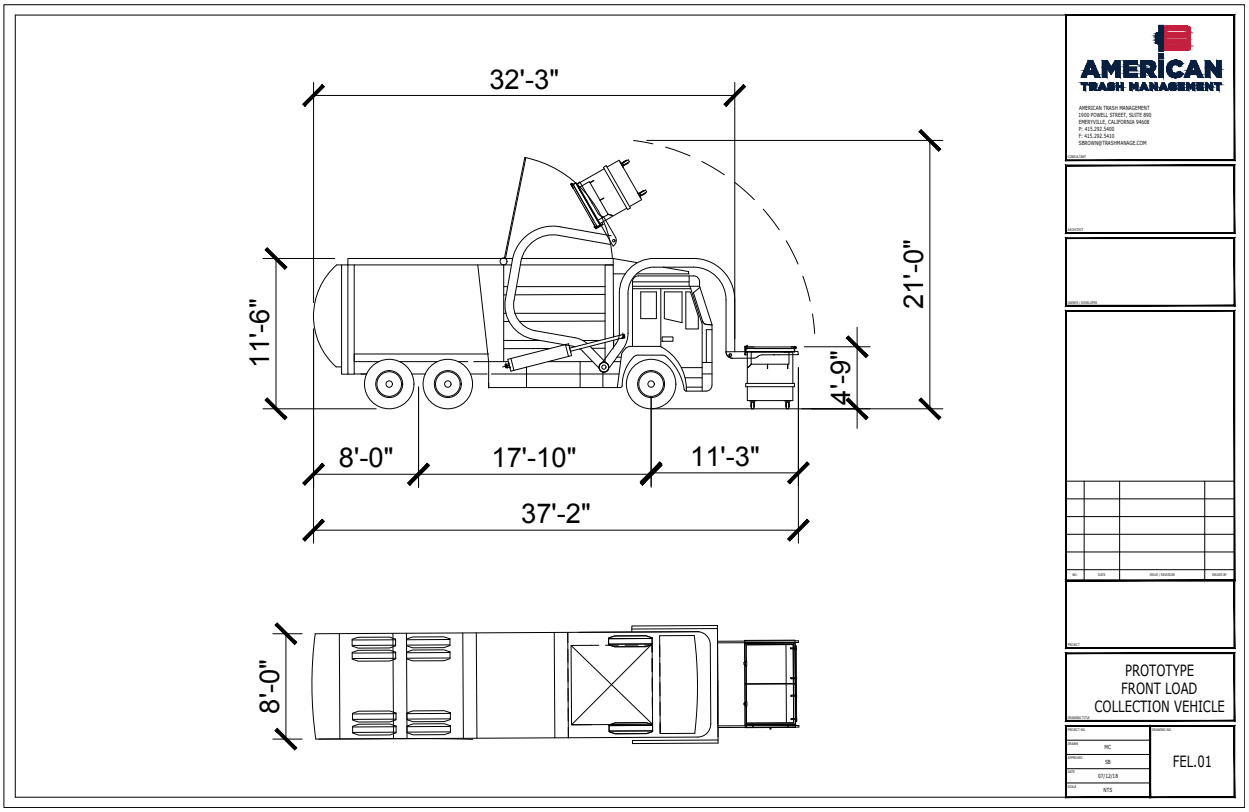
Noise Levels

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.



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

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
3CY Waste Compactor (FL)	6						
3CY Recycle Compactor (FL)		6					
Compost 2CY Compactors (FL)			2				
Market* Waste-4CY			2				
Compost 64G Carts			12				
Total	6	6	4				

Generic market requirements

3. Section 14 91 00 - Trash Chutes & Intake Doors
4. Section 44 31 00 - Odor Control

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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:	270	Gallons	
	Volume Waste:	0.15	cubic yard/week/un	30.15
	Volume Recycling:	0.15	cubic yard/week/un	30.15
	Volume Compost:	0.012	cubic yard/week/un	2.412
	Waste/Recycle Compaction Ratio	4	to 1	
	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	2		
	Compacted Service	3	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	

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	40.5	40.5		
Compacted Waste Volume - CY			10.1	10.1
Loose Mixed Recycling Volume - CY	40.5	40.5	40.5	
Compacted Recycling Volume - CY				10.1
Loose Compost Volume - CY	3.2	3.2	3.2	3.2
Waste Bins/week	14	28	4	4
Recycle Bins/week	14	0	14	4
Compost carts/week	12	12	12	12
Containers/week	40	40	30	20
SYSTEM CAPITAL COST	$0.00	$0.00	$41,920.00	$55,680.00
WASTE COST/MONTH	$2,476.04	$4,952.08	$1,414.80	$1,414.80
RECYCLING COST/MONTH	$1,275.82	$0.00	$1,275.82	$1,414.80
COMPOST COST/MONTH	$653.64	$653.64	$653.64	$653.64
TRASH COST/MONTH	$4,405.50	$5,605.72	$3,344.26	$3,483.24
COMPACTION SAVINGS/MONTH	N/A	N/A	$1,061.24	$922.26
STAFF LABOR COST/MONTH	$2,364.18	$2,364.18	$1,773.14	$1,182.09
STAFF SAVINGS/MONTH	N/A	N/A	$591.05	$1,182.09
NET MONTHLY TRASH COSTS	$6,769.68	$7,969.90	$5,117.40	$4,665.33
Monthly Trash Cost per Unit	$25.07	$29.52	$18.95	$17.28
PAYBACK-MONTHS	N/A	N/A	25	26

CARDBOARD ANALYSIS

945 BOXES/WK

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NORTH TRASH ROOM RESIDENTIAL WASTE & RECYCLING ANALYSIS

ASSUMPTIONS:				
	Units:	135		Gallons
	Volume Waste:	0.15	cubic yard/week/un	30.15
	Volume Recycling:	0.15	cubic yard/week/un	30.15
	Volume Compost:	0.012	cubic yard/week/un	2.412
	Compaction Ratio	4	to 1	
	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	3	cubic yard front load bins	
	Loose Waste Service	3	cubic yard front load bins	
	Loose Recycling Service	3	cubic yard front load bins	
	Loose Compost Service	0.32	cubic yard carts (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	20.3	20.3		
Compacted Waste Volume - CY			5.1	5.1
Mixed Recycling Volume - CY	20.3	20.3	20.3	
Compacted Recycling Volume - CY				5.1
Loose Compost Volume - CY	1.6	1.6	1.6	1.6
Waste Bins/week	7	14	2	2
Recycle Bins/week	7	0	7	2
Compost carts/week	6	6	6	6
Containers/week/trash room	20	20	15	10
SYSTEM CAPITAL COST	$0.00	$0.00	$20,960.00	$27,840.00
WASTE COST/MONTH	$1,238.02	$2,476.04	$707.40	$707.40
RECYCLING COST/MONTH	$637.91	$0.00	$637.91	$707.40
COMPOST COST/MONTH	$326.82	$326.82	$326.82	$326.82
TRASH COST/MONTH	$2,202.75	$2,802.86	$1,672.13	$1,741.62
COMPACTION SAVINGS/MONTH	$0.00	$0.00	$530.62	$461.13
STAFF LABOR COST/MONTH	$1,182.09	$1,182.09	$886.57	$591.05
STAFF SAVINGS/MONTH	$0.00	$0.00	$295.52	$591.05
NET MONTHLY TRASH COSTS	$3,384.84	$3,984.95	$2,558.70	$2,332.67
Monthly Trash Cost per Unit	$25.07	$29.52	$18.95	$17.28
PAYBACK-MONTHS	N/A	N/A	25	26

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SOUTH TRASH ROOM RESIDENTIAL WASTE & RECYCLING ANALYSIS

ASSUMPTIONS:				
	Units:	135		Gallons
	Volume Waste:	0.15	cubic yard/week/un	30.15
	Volume Recycling:	0.15	cubic yard/week/un	30.15
	Volume Compost:	0.012	cubic yard/week/un	2.412
	Compaction Ratio	4	to 1	
	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	3	cubic yard front load bins	
	Loose Waste Service	3	cubic yard front load bins	
	Loose Recycling Service	3	cubic yard front load bins	
	Loose Compost Service	0.32	cubic yard carts (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	20.3	20.3		
Compacted Waste Volume - CY			5.1	5.1
Mixed Recycling Volume - CY	20.3	20.3	20.3	
Compacted Recycling Volume - CY				5.1
Loose Compost Volume - CY	1.6	1.6	1.6	1.6
Waste Bins/week	7	14	2	2
Recycle Bins/week	7	0	7	2
Compost carts/week	6	6	6	6
Containers/week/trash room	20	20	15	10
SYSTEM CAPITAL COST	$0.00	$0.00	$20,960.00	$27,840.00
WASTE COST/MONTH	$1,238.02	$2,476.04	$707.40	$707.40
RECYCLING COST/MONTH	$637.91	$0.00	$637.91	$707.40
COMPOST COST/MONTH	$326.82	$326.82	$326.82	$326.82
TRASH COST/MONTH	$2,202.75	$2,802.86	$1,672.13	$1,741.62
COMPACTION SAVINGS/MONTH	$0.00	$0.00	$530.62	$461.13
STAFF LABOR COST/MONTH	$1,182.09	$1,182.09	$886.57	$591.05
STAFF SAVINGS/MONTH	N/A	$1,182.09	$295.52	$591.05
NET MONTHLY TRASH COSTS	$3,384.84	$3,984.95	$2,558.70	$2,332.67
Monthly Trash Cost per Unit	$25.07	$29.52	$18.95	$17.28
PAYBACK-MONTHS	N/A	N/A	25	26

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TOTAL RETAIL WASTE AND RECYCLING SYSTEM ANALYSIS

Square Feet	5,180		SF	1,640
Retail %	0.0%		SF	1,860
Restaurant %	100.0%		SF	1,680
restaurant trash*	1.25	lbs/sf/wk		
retail trash§	0.07	lbs/sf/wk		
% recycled - restaurants	40%			
% compost - restaurants	25%			
% recycled - retail	60%			
% compost - retail	10%			
restaurant wastes:	125	lb. per loose cubic yards		
retail wastes:	84	lb. per loose cubic yards		
compost:	200	lb. per loose cubic yards		
recyclables:	84	lb. per loose cubic yards		
Compaction Ratio Waste	4	to 1		
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		
Compacted Waste & Recycling Service	3	cubic yard front load bins		
Loose Waste Service	3	cubic yard front load bins		
Loose Recycling Service	3	cubic yard front load bins		
Loose Compost Service	2	cubic yard front load bins		

COST BENEFIT CALCULATIONS:	PROJECTED Restaurant	PROJECTED Retail	PROJECTED Restaurant	Restaurant
Square Feet	5,180	0	5,180	5,180
SERVICE-Waste	Loose	Loose	Loose	Compacted
SERVICE-Recycling	Loose	Loose	Loose	Compacted
SERVICE-Compost	Loose	Loose	Loose	Loose
Loose Waste Volume - CY	18.1	0.0	18.1	4.5
Compacted Waste Volume - CY				
Loose Recycling Volume - CY	19.3	0.0	19.3	4.8
Compacted Recycling Volume - CY				
Loose Compost Volume - CY	8.1	0.0	8.1	4.0
Waste Bins/week	7	0	7	2
Recycling Bins/week	7	0	7	2
Compost bins/week	5	0	5	2
Bins/week	19	0	19	7
SYSTEM CAPITAL COST	$0.00	$0.00	$0.00	$0.00
WASTE COST/MONTH	$637.71	$0.00	$637.71	$637.71
RECYCLING COST/MONTH	$637.91	$0.00	$637.91	$637.91
COMPOST COST/MONTH	$391.96	$0.00	$391.96	$391.96
TRASH COST/MONTH	$1,667.58	$0.00	$1,667.58	$1,667.58
STAFF LABOR COST/MONTH	$1,122.99	$0.00	$1,122.99	$1,122.99
NET MONTHLY TRASH COSTS	$2,790.57	$0.00	$2,790.57	$2,790.57
Monthly Trash Cost per SF	$0.54	$0.00	$0.54	$0.54

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MARKET WEEKLY WASTE & RECYCLING ANALYSIS

ASSUMPTIONS:			
	Size	13,620	
	Groceryt§	0.51	lbs/SF/wk per CalRecycle Studies
	% Waste	35%	
	% Recycle	45%	
	% Compost	20%	
	Food Service Square Feet	0	
	restaurant trash*	1.25	lbs/sf/wk
	% recycled - restaurants	40%	
	% compost - restaurants	25%	
	restaurant wastes:	125	lb. per loose cubic yards
	recyclables:	84	lb. per loose cubic yards
	compost:	300	lb. per loose cubic yards
	Staff Labor Rate	$20.00	per hour - 1 person
	Time move bins	0.5	hr to move to unloading area & back
	Compaction Ratio	4	to 1
	Compacted Service Waste/Recycle	3	cubic yard front load bins
	Compacted Service Compost	2	cubic yard front load bins
	Loose Waste Service	4	cubic yard front load bins
	Loose Recycling Service	3	cubic yard front load bins
	Loose Compost Service	2	cubic yard front load bins

COST BENEFIT CALCULATIONS:	PROJECTED Grocery	PROJECTED Food Service	PROJECTED Total	PROJECTED Total
SERVICE-Waste	Loose	Loose	Loose	Compacted
SERVICE-Recycling	Loose	Loose	Loose	Compacted
Loose Waste Volume - CY	19.4	0.0	19.4	
Compacted Waste Volume - CY	4.9	0.0		4.9
Loose Recycling Volume - CY	37.2	0.0	37.2	
Compacted Recycling Volume - CY	9.3	0.0		9.3
Loose Compost Volume - CY	4.6	0.0	4.6	
Compacted Compost Volume - CY	1.2	0.0		1.2
Waste Bins/week			5	2
Recycling Bins/week			13	4
Compost Bins/week			3	1
Total Containers/week			21	7

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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		

Front Load Compacted Waste Rates	
x per week	3CY
1	$353.70
2	$618.95
3	$883.86

Front Load Compacted Recycling Rates	
x per week	3CY
1	$353.70
2	$618.95
3	$883.86

Front Load Loose Recycling Rates	
x per week	3CY
1	$91.13
2	$182.26
3	$273.29

Recycling only available at 3 times per week service unless hauler approves additional days.

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

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)