

Design Narrative for Solid Waste & Recycling System Requirements

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Purpose and Scope

This document specifies the design requirements for solid waste and recycling systems for facilities built for use by Alameda County, including build-to-suit. It is provided to assist project managers and project design teams with ensuring County operational services needs are met, including:

- Capacity considerations for expected waste & recyclables generation,
- Indoor and outdoor space and equipment needs,
- Path of travel requirements for waste and recyclables from the building to the outdoor enclosure, and
- Design and access requirements for the outdoor trash enclosure.

The waste and recycling system shall be designed to support the minimum diversion of 75% of all the waste generated in the facility per Alameda County Board of Supervisors [Resolution No. 2008-213](#), and the 1990 County Charter Amendment known as [Measure D](#), as well as meet the requirements of the [Alameda County Mandatory Recycling Ordinance \(2012\)](#). These requirements do not override any applicable regulations, such as municipal code, and the Design Builder must ensure compliance with such applicable regulations.

The waste system should be designed into the facility from the earliest stages, as bin needs inside and the waste enclosure outside may influence the building's design, layout and budget. This document was developed by the GSA-Sustainability program, with extensive input from affected internal and external stakeholders responsible for managing operations related to waste and recycling. It should be shared with architects and consultants (as applicable) to ensure that the topics included are addressed.

Overview of County Waste & Recycling System

Waste and recyclables are generated by building occupants and visitors in a variety of areas including in work spaces, clinics, waiting rooms, bathrooms, break rooms, coffee stations, etc. The management of this waste should be planned for in the initial building designs. The County typically operates a five-stream collection system for waste and recyclables including mixed office paper, cardboard, mixed recyclables (glass, metal, hard plastic), compost (including paper towels from restrooms) and trash. Janitorial staff collects this material daily and consolidates it for collection by service providers. Confidential paper may also be collected. A summary of the typical services in a facility can be seen in the chart below.

Material type	Janitorial Collection Points	Service Provider	Service Location
Office paper	Desk side, common areas, conference rooms, copy areas	Property & Salvage	Internal, consolidated into totes in one collection area
Cardboard	Common areas	Property & Salvage	Enclosure or internal consolidated location

Mixed recycling	Common areas	Waste Hauler	Enclosure
Compost	Common areas & bathrooms	Waste Hauler	Enclosure
Trash	Desk side and common areas	Waste Hauler	Enclosure

Indoor Containers and Space Requirements

General

Early in the design process, the County project manager should consult with client department, GSA-Building Maintenance and GSA-Sustainability to identify a waste management strategy for the new facility. Provision of indoor trash, recycling and compost containers shall be included in the project budget and shall be procured as part of the furniture, fixtures & equipment (FF&E). See Appendix A for a list of County approved containers. Deviations from this list shall be approved by GSA-Building Maintenance and GSA-Sustainability.

Work Stations

During programming, discuss with building occupants if the facility will have deskside or centralized waste & recycling services. Centralized services are preferred. If required, work stations throughout the building should have sufficient space for two deskside containers (1 paper recycling, 1 trash) each with a footprint of 12 inches by 9 inches and a height of 12 inches.

Common Areas

In break rooms, kitchens, and heavily trafficked public areas (e.g. public lobbies), there should be sufficient space for 4 waste containers grouped together, each with a footprint of 22 inches by 11 inches and height of 30 inches. The container types are: trash, compost, mixed recycling, and mixed office paper recycling. Space shall be reserved above containers to post educational material and signage that is 8 ½ x 11 inches in size.

If cabinetry is used, it must be designed to accommodate 4 waste containers grouped together, each with a footprint of 22 inches by 11 inches and height of 30 inches. The cabinet should have top openings for depositing materials of sufficient size for commonly generated materials. Each opening should be labeled consistent with the container types listed above, in the following order: Compost, Mixed Recycling, Paper Recycling, and Landfill. The cabinet should have front loading access for removing and servicing the internal containers. For other waste and recycling cabinetry proposed by the design team, consult the GSA-Sustainability program to ensure cabinet size will accommodate the County's standard waste and recycling containers (see Appendix A).

Design teams should consider where additional containers or recycling storage areas may be required, including:

- Areas with high volume of paper towel use will require a compost collection container
- Areas with high volume of office paper use will require an office paper collection container
- Areas to consolidate cardboard

Restrooms

Restrooms should be equipped with a minimum of one surface-mounted waste receptacle, separate from any hand dryers or towel dispensers. Additional containers may be required for high volume restrooms. This waste stream will be collected for composting. All stalls in the women's restrooms shall be equipped with sanitary receptacles (Bobrick B-270 ConturaSeries® or equivalent). See Alameda County's Green Cleaning Narrative for more information on other bathroom fixture types.

Paper Recycling Consolidation Areas, Confidential Paper, and Cardboard Recycling

Sufficient space shall be provided on each floor of the building to consolidate mixed office paper into collection totes and to allow for confidential paper collection (if required by program). Each tote has a maximum footprint of 36 inches by 30 inches and height of 43 inches. Sufficient clearance should be provided above the totes to allow for opening the lid, a minimum 76 inches from floor. The number of totes per floor will vary based on building size and department function. Approximately 1 tote per 30 people is a rule of thumb for early design purposes. Consult with client department, GSA-Property and Salvage, and GSA-Sustainability to review and approve number and location of office paper and confidential paper collection totes.

At the ground floor, near the service exit, there shall be sufficient space designated for staging all the totes in the building for weekly collection (such as an alcove).

Consideration should also be given to the amount of cardboard likely to be generated in each work area and if space is needed in the enclosure to consolidate the cardboard for collection.

Path of Travel Requirements for Material Collection

Consideration should be given during building design to ensure that materials can be moved from the points of generation to the collection containers in a manner consistent with the building use and without undue restriction or delay to janitorial staff or service providers. For instance, multi-story facilities should consider convenient elevator access requirements of janitors. Materials should exit the building through appropriate service exits, such as a loading dock, and not through the front lobby, office space, or special use space (like a conference room or studio). Janitors should be able to prop the doors open to facilitate moving multiple containers at one time. All paths, internal and external, shall allow for rolling carts without step downs, lips, steep grades or other impediments to the use of rolling carts.

Outdoor Requirements: Enclosure, Vehicle Loading, Accessibility

Enclosure Siting

The enclosure should be sited within 250 feet of the building service exit that the Janitorial department will use while transporting the indoor waste to the outdoor enclosure. The path of travel from this exit door to the enclosure should be ADA accessible, include curb cuts to accommodate rolling containers, and not require moving carts up/down steep grades.

Size and Capacity

The enclosure shall have the capacity to house a minimum of three bins, one each for: trash, recycling, and compost. Bin sizes will vary with building size and County operation/function, and large facilities

may require additional waste and recycling containers, such as cardboard and/or additional compost or trash bins. Final enclosure design shall be approved by GSA-Sustainability program and GSA-Building Maintenance department prior to completion of the Design Drawings to confirm bin sizes and necessary enclosure space. See Appendix B and C for possible enclosure layout designs and bin size dimensions.

For schematic design purposes, the designer may use 7 ft. by 4 ft. as a proxy bin footprint for each bin. Internal roof height should be greater than 9.5 ft. to allow the bin lids to fully open while inside the enclosure. These dimensions and lid clearance may be modified if bins larger or smaller than 3 cubic yards are recommend for the site, but final design shall be approved by GSA-Sustainability program and GSA-Building Maintenance department. Additional room should be added if cardboard or other special waste streams will be consolidated in the enclosure for collection. See Appendix C for generic outdoor cart and bin (dumpster) sizes that can be used for design purposes.

There should be a minimum 2 ft. buffer around each bin when they are positioned in the enclosure with 3 ft. in the front of each bin to allow for a janitor with a rolling cart full access to each bin. There shall be a physical barrier along the interior edge of the enclosure to prevent dumpsters from hitting the enclosure walls.

Gate opening should be 8 feet wide, or 1' wider than largest bin in enclosure, to allow for easy removal and replacement of dumpster. In order to facilitate the movement of bins in and out of the enclosure, there should be sufficient doorway access to remove one bin without having to reposition the other bins. There should be no lips or barriers impeding movement of the bins in or out of the enclosure.

The County prefers not to use compactors as they inhibit future flexibility in waste program design. However, for facilities that require roll-off compactor bins, GSA-Sustainability program and GSA-Building Maintenance Department shall be consulted early in the schematic design process to determine specific waste and recycling system design requirements to handle expected material flows. The Building Maintenance Department also prefers not to install front-end load compactor bins (bins collected by front-end load route trucks which couple with a stationary compactor mechanism). However, if installing compactors is necessary, ensure appropriate electrical service is provided.

Enclosure Door Operation

Cane bolts shall be installed on enclosure doors to hold the enclosure doors open when accessing the bins. Galvanized steel shall be specified for the embedded sleeve to hold bolt when doors are in open position. Bollards, or other protective measures, shall be used if the swinging path of the enclosure doors could damage a nearby structure or vehicle. Care shall be taken to ensure operation of cane bolts is not limited by bollards, or other structures, when doors are in open position. Cane bolts shall be of sufficient length to be operable from a standing position.

Security and Safety

The enclosure shall be designed to prevent unauthorized entry of humans and animals. The walls and doors of the enclosure should be opaque so that the enclosure contents are not visible from the outside. Lighting shall be provided to ensure sufficient visibility over the path of travel to the enclosure and inside the enclosure during non-daylight hours.

The container access gates for the enclosure should be lockable with a standard padlock, with a longer shackle (2 inch clearance height). The total number of padlocks shall be minimized while maintaining security (e.g., two gates may be locked together in the middle with 1 lock). Padlocks shall be located 2.5-4 feet above the ground. Padlocks will be provided by waste hauler.

Sanitation

The enclosure shall have a roof to protect the waste bins from exposure to the weather. There shall be access to potable water (such as a hose bib) within 40 feet of the enclosure to allow for cleaning the enclosure area. The enclosure floor and adjacent areas shall be graded to limit drainage into and out of the enclosure. The drainage provided shall be consistent with local law and storm water permits. Consideration should be given to can washes and the necessity of a 110V lockable outlet. Plumbing or electrical fixtures located on the interior of the enclosure should be embedded into the enclosure wall when possible to minimize the potential for damage.

Service Provider Access to Enclosure

Overhead clearance in the vehicle service area should be free from obstruction to allow overhead dumping of bins into collection vehicles. The enclosure and service area immediately in front of it shall be flat to allow for bins to be pulled out and emptied without concern of rolling under the force of gravity. The roadway and enclosure pad should be designed to accommodate expected loads. Steepness of path of travel from building to enclosure shall be minimized.

The enclosure should be accessible to collection service provider(s) at all times of the day; avoid locating the enclosure in a limited access or gated area. A continuous path of travel for service vehicles, including large garbage trucks, is preferred for entry and exit. If this is not possible, a turnaround with a radius of at least 45 feet is required, unless city code specifies less feet as a minimum.

The path of travel of the waste hauling trucks must have a minimum of 15 foot clearance. Overhead clearance in service area should be sufficient to allow overhead dumping of bins into collection vehicles. The roadway and enclosure pad should be designed to accommodate expected loads. If there is a closing gate required, consideration should be given to allowing truck to exit without requiring the driver to get out of vehicle.

Service Provider Access to Building

A loading dock or sufficient loading zone space shall be provided adjacent to the service exit to accommodate convenient collection of materials staged inside the building (paper recycling and/or confidential totes).

Outdoor Public Receptacles Requirements

Public access trash and recycling receptacles shall be provided as part of the project for buildings with public accesses, or that otherwise expect to generate public litter. These should be located at the main entrance, and in parking lots and other high foot-traffic areas.

A bottles and cans recycling receptacle should be integrated with all outdoor public trash receptacles. (For example, see <http://www.forms-surfaces.com/urban-renaissance-receptacle>.) If not integrated, there should be another receptacle for recycling positioned next to each trash receptacle. All

receptacles should have a front loading access for removing internal containers. Coordinate with Art Commission for opportunities to design outdoor receptacles as part of public art program to reduce long-term vandalism risk.

Submittals Requirements

The Architect, and FF&E Consultant if applicable, shall submit floor plans indicating the placement and size of recycling bins and waste containers for all functional spaces, including (as applicable) offices and clinics, cafeteria, eating areas, kitchen, public areas, patient areas, supply areas, and loading docks for approval by the County. These plans shall meet the requirements outlined in this narrative and shall be consistent with requirements of LEED Materials and Resources Prerequisite and/or credit requirements.

The Architect shall submit a written description and/or diagrams of the path of travel for waste collected through the building from the points of generation to the outdoor waste bins for approval by the County.

Definitions

“Office Paper Recycling” or “Paper Recycling” means all non-soiled office paper, including printing and writing paper, colored paper, envelopes, newspaper, and magazines.

“Mixed Recycling” means beverage bottles and cans, metals, plastics, and glass.

“Compost” means organic waste material that can decay into dirt to produce a soil amendment and includes food scraps, paper towels, paper napkins, paper cups, and paper plates.

“Tote” means a 4-wheel rolling cart of varying sizes, typically 64 or 96 gallons. The 96 gallon tote has a footprint of 26 inches by 34 inches and height of 42 inches.

“Trash” means waste that is not recyclable, compostable, or reusable.

“Waste” means any material that is no longer needed including recycling, compost, and trash.

“Diversion” means the redirection of material for any purpose other than disposal in a landfill or transfer facility.

APPENDIX LIST

APPENDIX A – Indoor Waste and Recycling Bin Options for Alameda County Facilities

APPENDIX B – Examples of Different Enclosure Layouts

Appendix C – Generic Outdoor Container Dimensions for Alameda County Facilities

Appendix A

Indoor Waste and Recycling Bin Options for Alameda County Facilities

Please design for use of the following types of indoor waste and recycling bins at Alameda County facilities. Use of different types (i.e., brands, sizes, colors) requires approval from BMD and Sustainability. Using the same types of bins throughout County facilities helps promote the recycling program, sets consistent expectations for staff, and assures replacement bins are readily available.

Type*	Color	Use	Dimensions (L x W x H)	Volume
Small Bins	Blue: Paper Recycling Black: Trash	Desk-side bins, Conference Rooms	11" x 8" x 12"	13 5/8 qt.
Medium Bins	Blue: paper or mixed recycling Green: compost Black: trash	Conference Rooms Copy Areas Kitchenettes	14.4" x 10.2" x 15"	28 1/8 qt.
Slim Jim Bases	Blue: paper or mixed recycling Green: compost Black: trash	Conference Rooms Break Rooms Kitchenettes Other Common Areas	20" x 11" x 30"	23 gal.
Locking Confidential Recycling Totes	Grey: confidential paper recycling	Areas with large amounts of confidential documents to destroy	27" x 23" x 40" (70" with lid open)	64 gal.
Paper Recycling Totes	Blue: paper recycling Grey: paper recycling	Areas with large amounts of non-confidential paper generation	30" x 36" x 46 (76" with lid open)	96 gal.

* All bins and Slim Jims are from Rubbermaid and the totes are from Toter Inc.

Small:

11" x 8" x 12"



Paper Recycling



Landfill

Medium:

14.4" x 10.2" x 15"



Paper Recycling



Landfill



Compost

Slim Jim:

20" x 11" x 30"



Paper & Mixed Recycling



Landfill



Compost



Paper Slot Top

Totes:



Paper Recycling Totes:
30" x 36" x 46"



Confidential Locking Totes:
27" x 23" x 40"

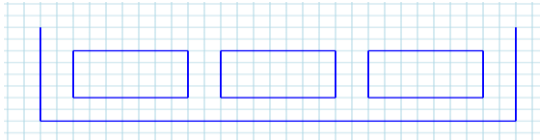
APPENDIX B: Examples of Different Enclosure Layouts

These are examples of basic layouts for trash enclosures currently in use at various County buildings. Please note that the specific bins sizes will vary based on the needs of the facility. Additionally:

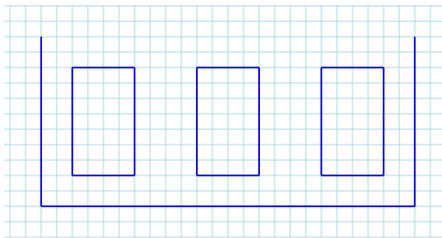
- Bins in enclosure must have a 2 ft. buffer on all sides,
- The front of the bins must be accessible by a janitor pushing a rolling cart,
- Each bin must be able to be removed from enclosure without moving the other bins, and
- The enclosure must be lockable and should have no lips or steep grades.

For complete enclosure requirements please see Waste and Recycling checklist.

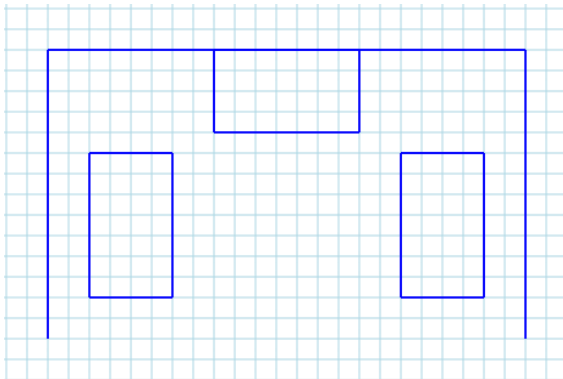
Long – Enclosure Layout



Perpendicular



U-shaped Enclosure Layout



Appendix C:

Generic Outdoor Waste Container Dimensions for Alameda County Facilities

This document provides generic dimensions for the various waste carts and bins (dumpsters) utilized by the County, to be used as a guide for waste enclosure sizing. It should be noted that these are the dimensions provided by Waste Management, and that other company's bins may be slightly different.

Cart (Tote) Dimensions:

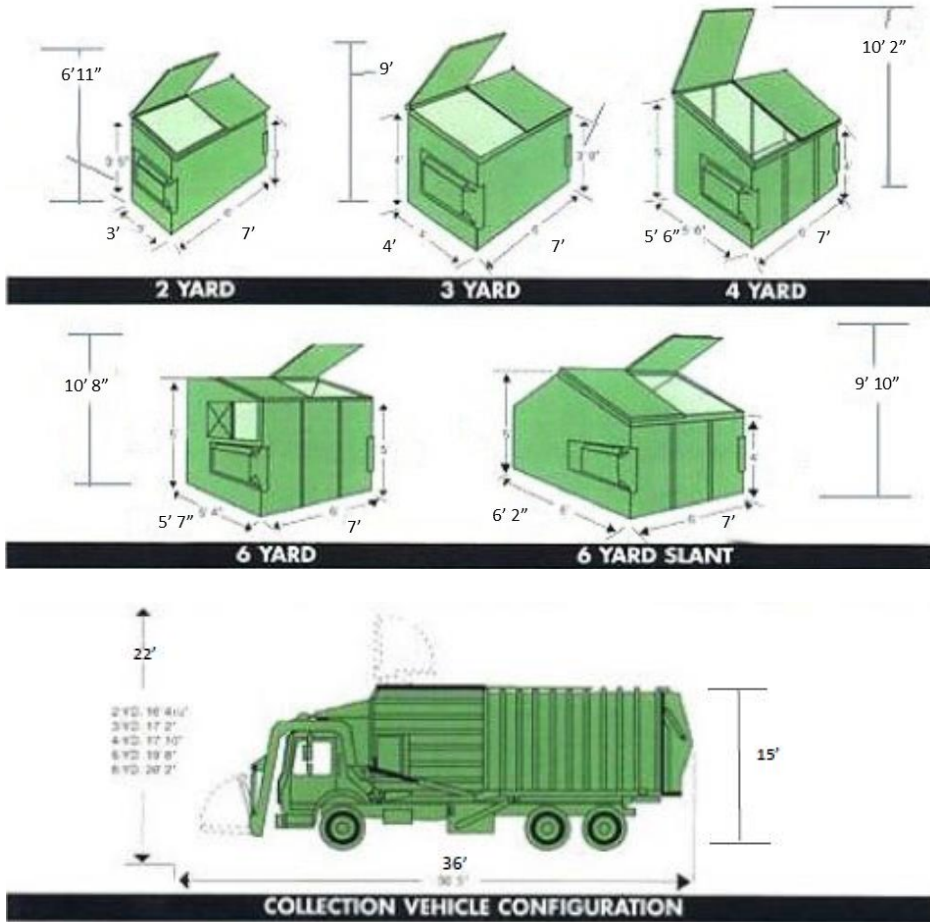
Name/Volume:	Dimensions: (L x W x H)	Height with Lid Open
20 gallon	23.5" L x 18.75"W x 37"H	Approx. 57"
35 gallon	23.5"L x 18.75"W x 37"H	Approx. 57"
64 gallon	27.25"L x 23.5"W x 41"H	Approx. 66"
96 gallon	34"L x 25.5"W x 46"H	Approx. 76"

Bin (Dumpster) Dimensions:

Volume:	Dimensions: (L x W x H)	Max lid height
1 Yard	3' L x 7' W 3' H in rear x 3' H in front	Approx. 5'8"
2 yard	3' L x 7' W 5' H in rear x 3' H in front	Approx. 6' 11"
3 yard	4' L x 7' W 4' H in rear x 3' 9" H in front	Approx. 9'
4 yard	5' 6" L x 7' W 5' 4" H in rear x 4' H in front	Approx. 10' 2"
6 yard	5' 7" L x 7' W 5' 11" H	Approx. 10' 8"
6 yard slant	6' 2" L x 7' W 5'5" H at peak x 4' H at edge	Approx. 9' 10"
7 yard	7' 3" L x 7' W 5' 9" H at peak	Approx. 9' 9"
7 yard slant	6' 1" L x 7' W 6' 4" H at peak	Approx. 11' 1"
8 yard	5' 4" L x 7' W 6' 8" H in rear x 5' H in front	
8 yard slant	6' 8" L x 4' H at edge 7' W x 6' 1 1/2" H at peak	

Please keep in mind that the following is needed:

- A 2 ft. buffer on either side of each bin so they can be removed and replaced easily
- A 3ft. space in front of each bin so that janitors can easily access them
- Sufficient space to completely open the lids of all bins while they are inside the waste enclosure



Note: Approximate specifications subject to change.