



City of Sunnyvale Design Guidelines For Solid Waste and Recycling Facilities

Commercial/ Mixed-use/Industrial



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Introduction:

City of Sunnyvale Solid Waste & Recycling Design Guidelines and Requirements are based upon the City's General Plan Solid Waste Management Sub-Element, Sunnyvale Municipal Code Chapter (SMC) 8.16 Solid Waste Management and Recycling, and SMC Section 19.38.030 Recycling and Solid Waste Facilities, and are subject to periodic updates as needed.

Key Provisions:

All residential and nonresidential uses shall provide adequate recycling and solid waste facilities on site. (SMC 19.38.030 (a))

Collection stations ... shall be easily accessible to the city licensed disposal service operator(s) for collection of the solid waste or recyclable materials accumulated at such location for collection. (SMC 8.16.130)

Terminology:

While most projects will utilize standard garbage and recycling enclosures, other facility types such as roll-off or front-load compactors, balers, chutes, etc. may be desired by applicant or be more suitable for some projects. For brevity, the terms *enclosure* or *facility* are used generically to refer to all solid waste and recycling facility types.

Where the phrasing *solid waste* is used, this refers to both garbage *and* recycling unless otherwise specified.

Cubic Yard abbreviation: cyd

PROJECT REVIEW/APPROVAL

Except when approved as part of a Special Development Permit or Use Permit, proposed recycling and solid waste enclosures or individual cart services shall require the approval of a Miscellaneous Plan Permit (MPP) and a Building Permit by the Director of Community Development. Plans depicting the proposed design, materials, size and location of enclosures, and the number, size, type and placement of bins and containers shall accompany each application submitted for approval (SMC 19.38.030(e)(1)(B)).

Section A: Applicable Project Types

Solid waste and recycling facilities/enclosures are required for the following Planning and/or Building Permit applications:

1. All new non-residential structures. (SMC 19.38.030(b))
2. An addition to a non-residential site which equals or exceeds "30% of the existing floor area of a building or buildings on a site." (SMC 19.38.030(e)(1)(A))
3. When there is a change of use and:
 - a. The site does not have existing facilities
 - b. And/or where existing facilities may not be adequate for that use.Each project shall be modified or improved as necessary for the permitted uses based upon current guidelines.
4. Where there is any modification to an existing building that triggers the requirements to upgrade the building to current code(s); this includes codes related to recycling and solid waste facilities

Section B: Project Submittal Requirements for Solid Waste & Recycling

This section details the necessary design and site layout elements to include on plan submittal. Many line-items are flagged along the right-hand side to call-out whether they should be illustrated on the Site Layout, Design Pages, or described in Project Data sheet. This information is also shown on the Applicant Checklist, page 17. Additional information may be required based upon project specifics.

Section B Summary:

- B-1: Projections for Weekly Garbage and Recycling Volume, Facility Sizing – Table A will help determine the space required for on-site container storage.
- B-2: Enclosure Sizing, Materials and Required Design Elements - such as wheel stops, doors, etc.
- B-3: Site Plan Submittal - illustrating enclosure details and locations, and vehicle access, to scale,.
- B-4: Alternative Volume and Enclosure Proposals
- B-5: Fire Safety Requirements
- B-6: Stormwater Requirements
- B-7: Signed statement from applicant acknowledging review and incorporation of the solid waste and recycling requirements into the project plan.

B-1: PROJECTIONS FOR WEEKLY GARBAGE AND RECYCLING VOLUME, FACILITY SIZING

Table A outlines the minimum enclosure space requirements based upon common land and/or building uses. Estimated volume by type of use provided below are for combined waste and recycling volumes.

1. Provide a projection of the waste/recycling volume by type of building or site use, in cubic yards per week. Provide in Project Data Sheet.
2. Based upon the total volume per week, the project shall dedicate sufficient square footage for storage so that collection service frequency *is no more than 3 days per week* (see examples in B-2.1e, page 6). Provide detail in Project Data Sheet.

Table A: Minimum Enclosure Space Requirements for Common Types of Use

	First Tier Sizing*: Maximum of 3 service days per week			Second Tier Sizing*: Maximum of 3 service days per week		
Use-type**	Project Gross Square Feet	Minimum Enclosure size	Typical Container Types, Notes	Project Threshold	Design for Addl. Garbage Recycling Volume	Consider for Larger Projects**
<i>Retail</i>	Up to 10,000	13 ft. x 9 ft.	3cyd garbage and 3cyd recycling	>10,000 sq. ft.	1 cyd Per 1,000 sq. ft (or fraction of)	Roll-off or Front-load Compactor
<i>Full-service Restaurant</i>	Up to 6,000	14 ft. x 9 ft.	4cyd garbage and 3cyd recycling	>6,000 sq. ft.	3 cyd per 1,000 sq. ft. (or fraction of)	Front-load Compactor
<i>Fast Food Restaurant</i>	Up to 3,000	14 ft. x 14 ft.	Two 3 or 4cyd garbage and one recycling	>3,000 sq. ft.	8 cyd per 1,000 sq. ft. (or fraction of)	Front-load Compactor
<i>Office/ R & D</i>	Up to 35,000	13 ft. x 9 ft.	3cyd garbage and 3cyd recycling	>35,000 sq. ft.	0.3 cyd per 1,000 sq. ft. (or fraction of)	Roll-off or Front-load Compactor
<i>Industrial</i>	Up to 20,000	13 ft. x 9 ft.	3cyd garbage and 3cyd recycling	>20,000 sq. ft.	0.7cyd per 1,000 sq. ft. (or fraction of)	Roll-off or Front-load Compactor
<i>Manufacturing</i>	Up to 15,000	14 ft. x 9 ft.	4cyd garbage and 3cyd recycling	> 15,000 sq. ft.	1.1 cyd per 1,000 sq. ft. (or fraction of)	Roll-off or Front-load Compactor
<i>Multi-family Units</i>	For every 10 units	12.5 ft. x 9 ft.	3cyd garbage and two 96-gallon recycling carts. Located w/in 150 ft. of any unit	Contact City	—	Roll-off or Front-load Compactor

* Generation rates are estimated, and are subject to change.

** Contact Public Works Department at (408) 730-7415 for other use-types types or other styles of solid waste and recycling management (e.g., chutes, compactors, balers).

*** A garbage or recycling compactor should be considered for large developments, where the site generates a large volume of material, or when there is a space constraint.

B-2: ENCLOSURE SIZING, MATERIALS AND REQUIRED DESIGN ELEMENTS

As part of an initial plan-set submittal, show each item below as indicated on a to-scale site layout, as project data, or on one or more pages illustrating design details. See Appendix A for examples of enclosure layout and design.

Required submittal details include but are not limited to:

1. Enclosure Sizing:

- a. Minimum Interior & Exterior Dimensions: Based upon volume projections (Table A), size enclosures as appropriate for use-type and volume. (see Appendix A for sample layouts).
- b. Service Frequency: Total enclosure sq. footage shall be sized to limit frequency of truck trips to no more than 2 or 3 times a week.
- c. Sample Enclosure Layouts and Sizes: See Appendix A for sample layouts and bin placement within enclosures.
- d. Container Sizes: After meeting guidelines for enclosure dimension *minimums*, applicant may consider various container sizes in planning, see Appendix D
- e. Larger Projects: To calculate additional enclosure sq. footage needed for waste and recycling generated beyond one standard enclosure, below are examples for estimating total volume and number of bins:

☒ Detail Pages,
Site Plan

☒ Project Data



☒ Project Data

EXAMPLE #1:

A	Building square footage: <i>Office</i>	89,000	Sq. Ft.
B	Projected waste volume per sq. ft. (per sq. ft., derived from Table A)	0.0003	CYD/ Sq. Ft.
C	Multiply A and B for total weekly volume	26.7	CYD
D	Divide C by three service days to find cyd per service day	8.9	CYD/Day
E	Divide D by container size (3cyd) to find number of containers (round up)	3	# Bins

EXAMPLE #2:

A	Building square footage: <i>Fast Food Restaurant</i>	3,000	Sq. Ft.
B	Projected waste volume per sq. ft. (per sq. ft., derived from Table A)	.008	CYD/ Sq. Ft.
C	Multiply A and B for total weekly volume	24	CYD
D	Divide C by three service days to find cyd per service day	8	CYD/Day
E	Divide D by container size (3cyd) to find number of containers (round up)	3	# Bins

2. Planned Containers by Type (garbage or recycling):

Number, size, type (bins, carts, etc.), and placement within enclosures (most uses generally have one recycling container for each waste container). The site plan should demonstrate that all containers are given sufficient space to be easily accessible to users and the service operator

☒ Detail
Pages

3. Enclosure Orientation:

It should be apparent from the site layout where and how service vehicles will approach enclosures to lift containers from inside (or where containers need to be rolled out).

☒ Site Plan

4. Screening:

Each enclosure shall have four sides, one of which shall include a service door. The enclosure walls and doors shall be a minimum of 6 feet high and fully screen all materials and containers from public view. Screening over the top of enclosure is recommended where interior will be visible from upper floors.

☒ Detail Pages

5. Materials:

Walls must be constructed of masonry for commercial uses, and match or be compatible (in terms of design, materials and color) with the main structure.

☒ Detail Pages

6. Enclosure Doors:

a. Service doors shall be of solid, un-perforated steel or aluminum decking

☒ Detail Pages

b. Each door shall swing open at least 150° from closed position. Generally a 10 ft wide clearance (hinge to hinge) is required to enable collection vehicle equipment to reach containers inside the enclosure and lift each with hydraulic forks.

☒ Detail Pages

c. Cane bolts should be installed on service doors with sleeved holes in the concrete to hold doors in both the open and closed position.

☒ Detail Pages

d. A pedestrian door that complies with the Americans with Disabilities Act installed separately from the service door(s) is required for multi-family uses and is recommended for non-residential uses.

☒ Detail Pages, Site Plan

e. Consider a door that is easier to operate for onsite personnel to help maintain a neat and sanitary area, and to minimize littering.

7. Enclosure to be ADA accessible.

☒ Detail Pages

8. Wheel Stops:

Wheel stops shall be installed 1 foot from interior walls of storage area to prevent damage to walls. Wheel stops may be concrete curbs, metal stops, or recycled-content plastic curbs, with a height of no more than 5 inches. Bollards are not acceptable. This requirement applies to all interior walls except at doors.

☒ Detail Pages

9. Enclosure Floor:

Install a concrete pad consisting of 5 inch aggregate base (Class II compacted) material and 6 inch Portland cement concrete (PCC), or equivalent, as approved by the Director of Community Development. Where roll-out bins and containers are used, pad should have a *level* (non-sloping) surface, and no floor obstructions or textures that prevent bins from rolling freely.

☒ Detail Pages

10. Loading Area Stress Pad:

- a. A concrete pad shall be constructed in front of each enclosure or service location for the collection vehicle. ☑ Site Plan
- b. Pad must be large enough (generally 10 feet by 20 feet) and correctly oriented to allow service vehicle to rest upon it when loading and unloading bins and containers. ☑ Detail Pages, Site Plan
- c. Paving materials shall consist of 5 inch aggregate base (Class II compacted) material and 6 inch Portland cement concrete. ☑ Detail Pages
- d. The pad shall have a smooth, level surface that is continuous with interior flooring. ☑ Detail Pages

11. Container Placement:

- a. Garbage and recycling containers (or chutes) shall be located within the same enclosure or storage area to maximize diversion of waste from landfill and to minimize contamination of recycling containers. ☑ Detail Pages, Site Plan
- b. There shall be a minimum clearance of 4 feet from front to back of enclosure or storage area to allow pedestrian access to all containers within the enclosure. ☑ Detail Pages, Site Plan
- c. Solid waste containers must not be 'staged' in public view. If containers must be staged for service in a location other than the enclosure, they must be screened from public view.

12. Lighting:

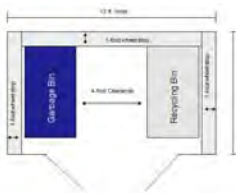
- Provide adequate lighting along path and at the enclosure for the safety of users and collection personnel. If containers are stored within a building, install motion activated lighting. ☑ Detail Pages

13. Prohibited:

- a. Tallow (grease, cooking oil) containers: Do not store within solid waste enclosures. Tallow containers (normally only used at food facilities) should be stored within the building, or if outside, provided with acceptable secondary containment. ☑ Detail Pages, Site Plan
- b. Storm Water Run-off: No storm drains shall be installed in the immediate vicinity of any garbage enclosure, compactor, or tallow (used cooking oil) storage area. Design waste storage areas so that drainage from adjoining roofs and/or pavement is diverted around the area(s) to avoid run-on of stormwater. ☑ Site Plan

14. Situations To Avoid:

- a. Indirect Vehicle Approach: Enclosures that can not be directly approached by collection vehicles: In these cases additional monthly push-out fees may apply. ☑ Site Plan
- b. Shared Enclosures/Containers: Avoid designs requiring separate tenants to share facilities who are not jointly responsible for litter problems and recycling contamination. If the facilities are shared, there shall be a written document submitted prior to building permits ☑ Project Data



clearly defining the responsible parties for cleaning and maintenance of the solid waste/recycling areas.

- c. Views into Enclosures from Upper Floors: Designer should shall consider methods of screening enclosure interior from upper floor view (trellis, etc.), especially in residential settings.

☒ Detail
Pages

B-3: SITE PLAN SUBMITTAL

After determining the square footage necessary for storing solid waste containers and any site-dependant design elements (such as service vehicle access and door placement), illustrate these additional items on the site layout:

A: Enclosure Details

1. Show design elements flagged for 'Site Plan' in section B-2 above (also see Checklist on pg. 17).
2. Location of Enclosures, New or Existing:
 - a. Dimensions—interior and exterior—of each enclosure on site plan.
 - b. Note: Unapproved locations include any parking, landscape or setback areas, unless otherwise approved by Use Permit.
3. Distance to Residential Units: Within 150 ft. of any unit



B: Onsite Collection Vehicle Movements, Clearances

1. Vehicle Access to Containers:
 - a. Direct Access: Wherever possible, enclosures shall be oriented to allow collection vehicles to easily approach service doors head-on to lift containers/bins directly from the enclosure interior.
 - i. Direct access requires a 50-ft. straight approach to enclosure doors.
 - b. Push-out fees: Where containers must be moved by the service operator more than 10 feet away from the enclosure, an additional monthly push-out fee may apply.
 - c. NOTE: Six cubic yard bins *do not have wheels*, so direct truck access to bins inside enclosure is required.
2. Curb-returns & Truck Turning Radius—Label on Site Plan:
 - a. The requirement for adequate curb-returns applies to all turns leading to and away from enclosures, at intersections, designated truck turn-out areas and container/cart set-out areas.
 - b. NOTE: Collection vehicles are typically 10 feet wide (including side-mounted mirrors) and as long as 33 feet
 - c. *20-foot to 24-foot-wide access route:* Requires an inside curb-return radius of at least 30 feet (measured from the face of the curb on the main route).

- d. *26-foot-wide access route*: Requires at least a 25 foot inside curb-return radius (measured from the face of the curb on the main route).
- e. *Templates*: If there are any site-specific constraints, apply the City's truck turning template (provided upon request) to ensure curb-returns conform to access requirements.

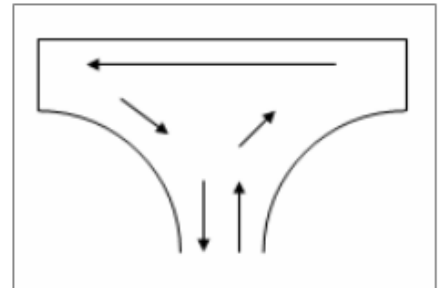
3. Travel Clearance—Horizontal and Vertical:

- a. Clearance requirements apply to access routes leading to and away from enclosures, at intersections, designated truck turn-out areas and container/cart set-out areas.
- b. Horizontal clearance: minimum of 16 ft in width. Widen access routes as required to meet turning requirements (per item B-3.2, above).
- c. Vertical travel clearance: 15 ft unobstructed
- d. No obstructions: Building/roof overhangs, balconies, landscaping or other site elements shall not encroach into required clearances for vehicle operations.



e. Truck Turnouts:

Required where driveways do not extend from street to street, when a road dead-ends or has an otherwise inaccessible access route longer than 50 feet. Provide turn-out areas (or identify existing turn-outs) meeting the access requirements in items B-3.2 through 3 above.



4. Loading Area Clearance:

Minimum unobstructed vertical clearance shall be:

- 20 feet for front-load bin operations
- 15 feet for cart service
- 30 feet for roll-off containers, compactors (see Section C-1 regarding roll-off compactors).

5. Access Route Pavement:

Pavement section along access route leading to or away from central enclosures and at truck turnout areas should be designed by using a Traffic Index of 5.0 and as recommended by the Geotechnical Engineer.

B-4: ALTERNATIVE VOLUME AND ENCLOSURE PROPOSALS

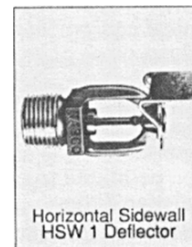
In lieu of using Table A (pg. 5) to determine solid waste volumes, developer may consider submitting an alternative proposal for City approval by following the steps below:

- 1. Other than Section B-1 (volume projections), apply all other Section B design and submittal requirements.

2. Any alternative proposal must demonstrate that the design supports a service frequency of *three* or fewer collection days.
3. Project the average volume: Developer may use methods other than Table A to determine the volumes of solid waste and recycling for the project.
 - a. Identify materials by cubic yards per week generated by each type of use.
 - i. For example, applicant may apply an actual waste and recycling generation rate (e.g. cyd per square ft.) for a similar project of comparable size reported by a California jurisdiction or waste hauler
 - b. Include calculations and documentation of the data-sources.

B-5: FIRE SAFETY

1. Enclosures or other solid waste facilities that are within 5 feet of a structure, roof overhang, or canopy shall provide an automatic fire sprinkler system. If the existing building is not required to have an automatic fire sprinkler system, the sprinkler system for the enclosure may be connected to the domestic water supply if the supply line is a minimum of 1 inch in diameter.
2. Three copies of the detailed fire sprinkler plans must be submitted by the fire sprinkler engineer. These plans must be reviewed and approved by the Fire Prevention Engineer, with the following requirements (*California Fire Code 903.2.7*):
 - a. An approved accessible shut-off valve is to be provided on the line.
 - b. An approved means of securing the valve in the open position shall be provided where valves are subject to vandalism.
 - c. All exposed water lines have to be brazed copper or steel.
 - d. If the enclosure does not have a ceiling, a heat baffle, 18 square inches in area, shall be attached not more than six (6) inches above the sprinkler head.
3. Interior Storage: Containers located within a building (waste collection rooms over 100 square feet) must be surrounded by one-hour fire-resistive rated walls, or installation of an automatic fire sprinkler system. (2010 California Building Code Section 508.2.5.3)



B-6: STORM WATER REQUIREMENTS [REPEATS SECTION B2. 13]

Storm Water Run-off:

1. No storm drains shall be installed in the immediate vicinity of any garbage enclosure, compactor, or tallow (used cooking oil) bin storage area.
2. Design waste storage areas so that drainage from adjoining roofs and/or pavement is diverted around the area(s) to avoid run-on of stormwater.



Section C: Site-Specific Requirements & Other Types of Facilities

This section provides information on additional requirements (normally applied to large developments) and alternative waste and recycling management systems—such as compactors—which may be appropriate for a variety of project sizes.

C-1: COMPACTORS; ROLL-OFF AND FRONT-LOAD

1. All proposed compactor equipment and locations to be reviewed for compatibility by the franchised hauler (Specialty Solid Waste & Recycling, 408-566-1805), and approved by the City.
2. **PLEASE NOTE:** Prior to determining compactor size, review rate, health code, and operational restrictions, including but not limited to issues below:
 - a. Rates: All solid waste containers are charged by container *volume*, not by *weight*.
 - b. Public Health Requirements: All solid waste containers/compactors are to be serviced a *minimum of once a week*.
 - c. Volume: Care should be taken to choose an appropriate size so that user isn't paying utility fees on un-utilized volume in cases where the compactor isn't filled at least once a week.
 - d. Compactor Weight: Ensure that compactors are sized for the type of material to be collected. E.g. compactor at a restaurant with dense, wet material would be heavier per cubic yard than would be a compactor at a typical office building. Solid waste containers which exceed DOT weight requirements can not be serviced.
3. **Roll-off Compactors:**
 - a. Typically between 10 and 40 cubic yards, having a 5:1 compaction ratio.
 - b. Servicing: The entire receiving container is loaded onto a collection vehicle and removed, dumped, then returned to the account location.
 - c. Vehicle Access: Provide a straight approach of 70 feet leading to the compactor. Additionally, service vehicles require a turn-out of sufficient size to turn and back up to the compactor.
 - d. Vertical Loading Clearance: Unobstructed 30 feet vertical and 14 ft. wide
 - e. Turning Radius: See Section B-3.B.2.
 - f. Access Route: Minimum 16 ft. wide and 15 ft. high, adjusted as necessary for minimum curb-return requirements.
 - g. Turn-outs: Required wherever collection vehicles would otherwise have to backup more than 50 feet, such as dead-end driveways.
 - h. Stress Pad: To be oriented to allow collection vehicle to completely rest upon it. Concrete stress pad shall consist of minimum 5-inch



aggregate base (Class II compacted) material and 6 inch Portland cement concrete.

4. Front-load Compactors:

- a. Typically 1-4 cyd, having a 3:1 compaction ratio.
- b. Section B, *Project Submittal Requirements for Solid Waste and Recycling* enclosure design requirements apply, except that interior storage area will need to be sized appropriately to include compaction equipment (consult franchised hauler and equipment vendor).
- c. Weight Considerations: Please see **2d** above.
- d. Chutes: Where used with chutes, provide cowling or other system from chute discharge to compactor to meet public health code requirements.

C-2: LARGE PROJECT, MIXED USE SUBMITTAL REQUIREMENTS

For certain projects, such as mixed-use development, large demolition jobs, major shopping centers, etc., the City may require that a formal 'Waste Management Plan' be submitted for approval prior to any Building Permit issuance. The Waste Management Plan shall illustrate Section B items, and include the following:

1. Provide waste and recycling projections in spreadsheet or matrix format. Document sources and provide details for volume assumptions.
2. Identify which buildings will be served by which solid waste facilities.
3. In addition to Section B for exterior, also provide building interior details, including chutes, garbage storage areas, collection points in building, etc.
4. Clearly illustrate and describe how different types of waste streams will be managed, such as designing residential separately from commercial equipment and collection.
5. Describe how utility accounts will be handled, whether by property management or by individual tenants.

The City may require additional information during the project review/approval process depending on project scope.

C-3: CHUTE DESIGN FOR MIXED USE BUILDINGS:

1. General: Special care must be taken to assure recyclable material, such as corrugated cardboard, does not hang up in chutes and to minimize contamination by trash. In addition, property management shall be available to monitor the chutes daily (including weekends) to check operations, maintain bins and chutes, and avoid nuisance conditions.
2. Number and Size of Chutes:
 - a. Three chutes are required; one for garbage, one for recyclable paper and one for mixed containers.
 - b. Diameter to be 24 inches

3. Doors:

- a. Provide 16 inch square chute doors (intended to be a smaller dimension than the 24 inch chute diameter) to prevent users from dumping large items which may hang up in chute.
 - b. Chute doors must have side panels to minimize risk of injury (hands being caught in doors, etc.).
 - c. Provide temporary "shut-off door" at end of chute to prevent disposal when receiving trash bins are being changed.
4. Receiving Containers: Provide cowling or other system from chute discharge to container to meet public health code requirements
5. Insulation: Provide around each chute to reduce noise.
6. Sanitary systems to be provided to minimize nuisance conditions [above some threshold project size? Review]:
- a. Placement of a manufacturers built-in water cleaning system, where appropriate
 - b. Use of a deodorizer device, where appropriate
 - c. Include positive, mechanical air ventilation of at least six (6) room volumes per hour or as designed for specific use by registered engineer. Fan switch shall be located at a convenient location near trash bins.
7. Individual slide-out refuse cabinets to be provided in residential units, with 15 pound plastic bag holder in each kitchen for plastic, tie-top disposal bags to be used for disposal into chutes. [Review]
8. Chutes in excess of three floors must include a baffle system to reduce the drop impact of material.
9. Chute systems must adhere to fire code (DPS will review).
10. Conform to all Equipment Manufacturer's requirements.

Section D: Green Building Requirements: (See Separate Green Building Program brochure/checklist)

Certain projects, as outlined by the City's "Green Building Program", are subject to requirements of a Construction Waste Management Plan. During the Building Permit review process, applicant shall provide a detailed plan for City approval that:

1. Identifies the materials to be diverted from disposal by efficient usage, recycling, reuse on the project or salvage for future use or sale.
2. Specifies if materials will be sorted on-site or mixed for transportation to a diversion facility.
3. Identifies the diversion facility where the material collected will be taken.
4. Identifies construction methods employed to reduce the amount of waste generated (required for residential only).
5. Specifies that the amount of materials diverted shall be calculated by weight or volume.

Upon completion of the demolition, applicant shall provide the City with a *report* summarizing material types, quantity, disposition (e.g., recycled or land-filled) and facility used. (*California Assembly Bill 939 Integrated Waste Management Act, California Green Building Standards Code 2010, Sections 4.408 and 5.408, City's General Plan Goal 3.2B.1.d. and Action Statement 3.2B.2e, City's Zero Waste policy*).

Section E: Construction and Demolition Debris Management:

1. During demolition and construction and pursuant to SMC8.16.170-180, mixed debris of any type must be disposed of in containers provided and serviced by the City's franchised hauler (except for exclusions granted where applicable, SMC 8.16.110).
2. Project must maintain and use a debris box for all mixed material from the franchised hauler onsite for the entire duration of work. This requirement shall be shown on the Building Permit plans and will be enforced during building demolition and construction.
3. At project start-up, contact the franchised hauler, Specialty Solid Waste & Recycling, at 408-565-9900 to order debris boxes. NOTE: All solid waste rates are established by the City Council, and are based upon the cost of service.
4. Recyclable material that is separated from mixed debris on the job site may be hauled by an independent recycling company holding a current Sunnyvale Business License (list available upon request), provided that the following conditions are met:
 - a. On-site debris boxes for mixed debris disposal are provided and hauled by the franchised waste company.
 - b. The material to be recycled is separated onsite from non-recyclable material or mixed debris that is collected by the franchised waste hauler.
 - c. The material is actually recycled or reused, and is not disposed of or used for 'alternative daily cover' at a landfill.
 - d. The recycler must maintain a valid Sunnyvale business license

Section F: Project Requirements for Post-Construction Operations

1. *The property owner is responsible for the maintenance and cleanup of recycling and solid waste enclosures*, including closing and securing doors/gates when not being used (*SMC 19.38.030(e)(1)(E))*). Where applicable, there shall be provisions in the CC&Rs or other recorded document for routine maintenance of solid waste facility areas.
2. If chutes are installed, there shall be provisions in the CC&R's (or other pertinent document) for routine maintenance of the chutes including vector control, sanitation and resident education.

Resources:

1. Sunnyvale General Plan Solid Waste Management Sub-Element
<http://sunnyvale.ca.gov/CodesandPolicies/GeneralPlan.aspx>
2. Sunnyvale Municipal Code Chapters 8.16 and 19.38.30
<http://qcode.us/codes/sunnyvale/>
3. California Department of Resources Recycling and Recovery (CalRecycle)
<http://www.calrecycle.ca.gov/>
4. California Green Building Standards Code
http://www.documents.dgs.ca.gov/bsc/CALGreen/2010_CA_Green_Bldg.pdf

Contacts:

Solid Waste Guidelines: City of Sunnyvale, Public Works Department (408-730-7415)

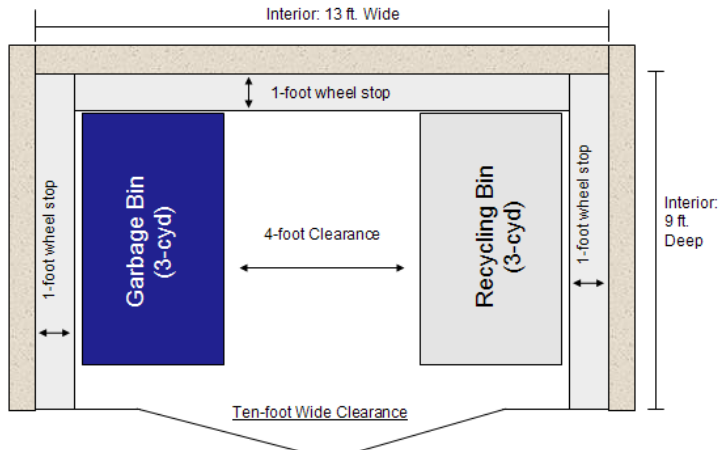
Project Review/Approval and Construction Phase: City of Sunnyvale, Community Development Department (408-730-7444)

Compactor Review, Construction & Demolition Disposal, and Operation Phase: Specialty Solid Waste & Recycling (408-565-9900, Specialty@sswr.com) or, City of Sunnyvale Public Works Department (408-730-7415)

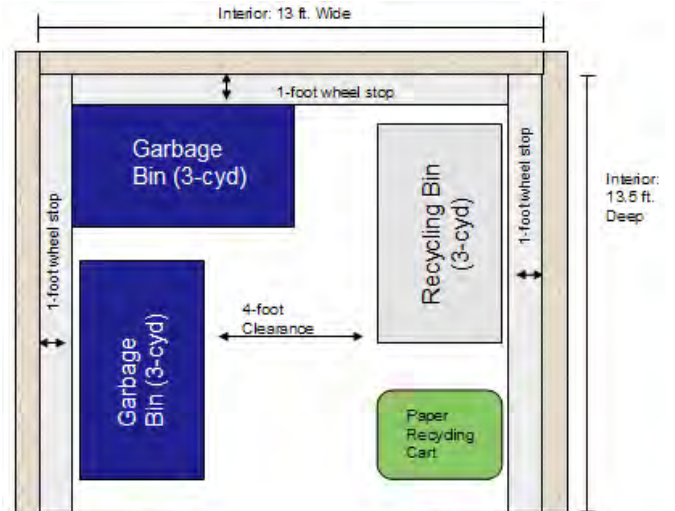
Business License: City of Sunnyvale, Finance Department (408-7380)

Appendix A - Sample Enclosure Layouts (To be updated in AutoCAD) Commercial

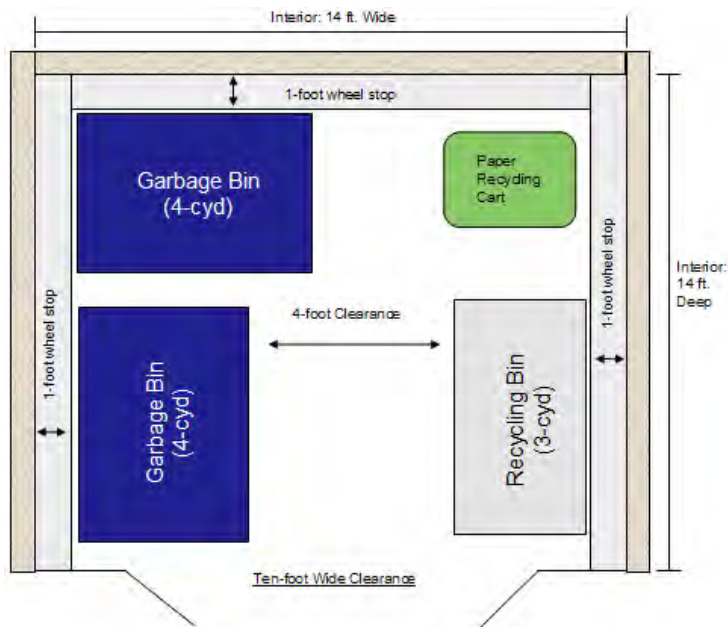
One 3cyd Garbage Bin and One 3cyd Recycling bin:



Two 3cyd Garbage Bins and Two Recycling

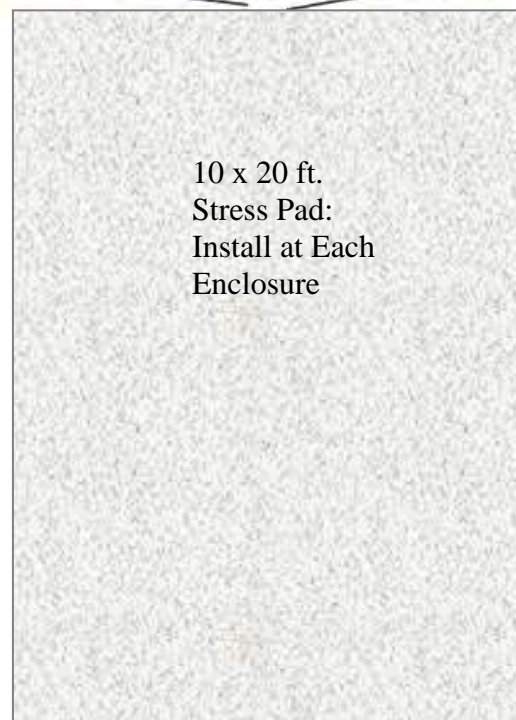
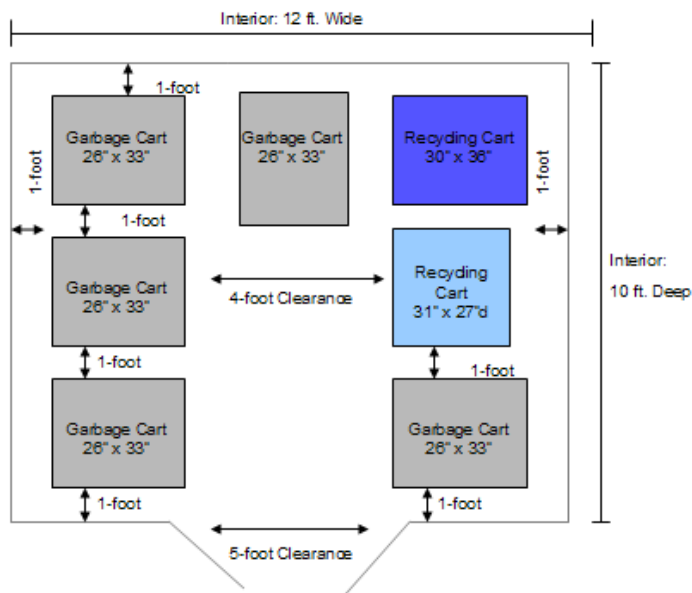
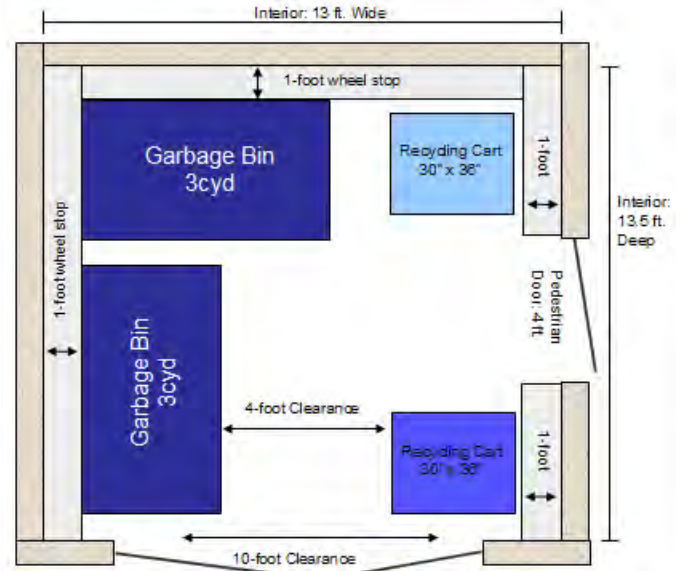
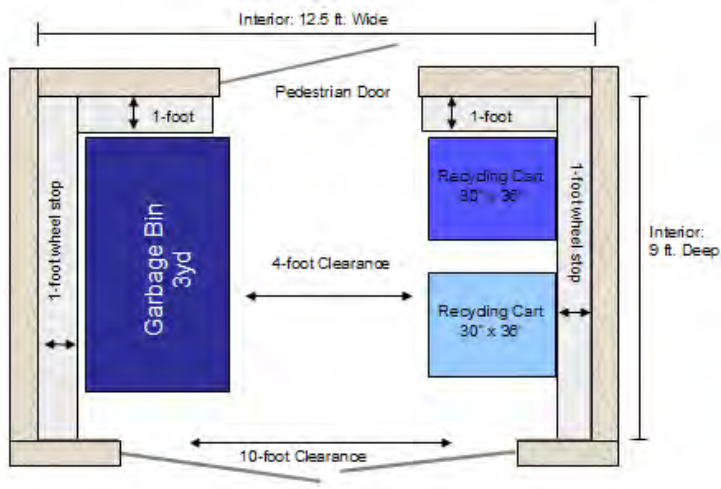


Two 4-cyd Garbage Bins and Two Recycling Containers:



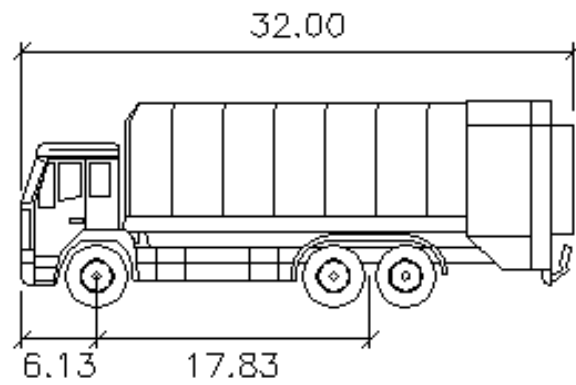
10 x 20 ft.
Stress Pad:
Install at Each
Enclosure

Multi-family Sample Enclosures [Pending update in CAD]



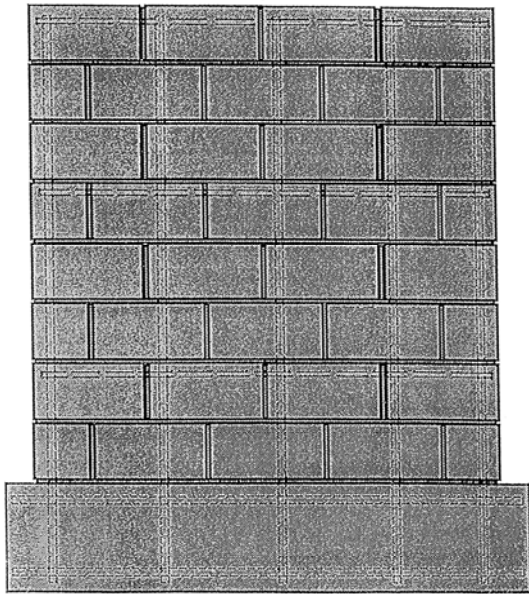
Appendix B – Sample Truck Size

[Pending update in CAD]



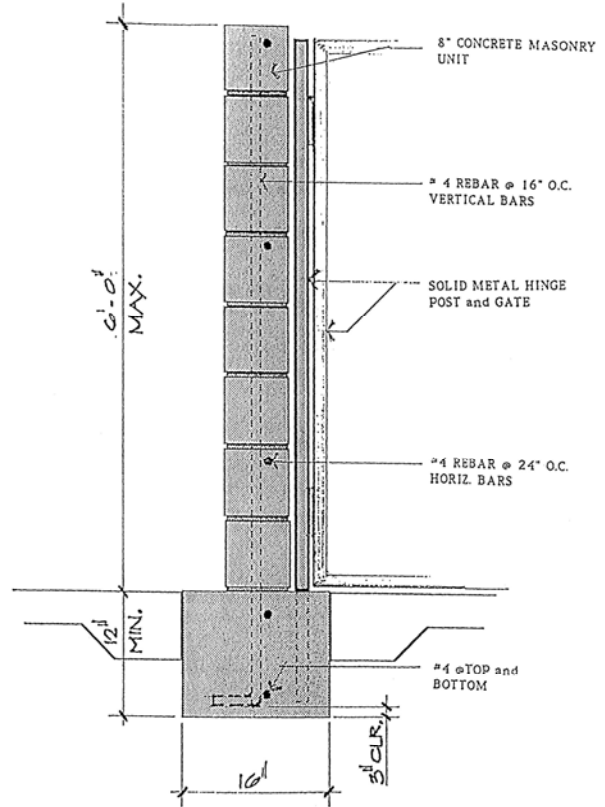
Appendix C – Sample Enclosure Design Details

[Pending update in CAD]

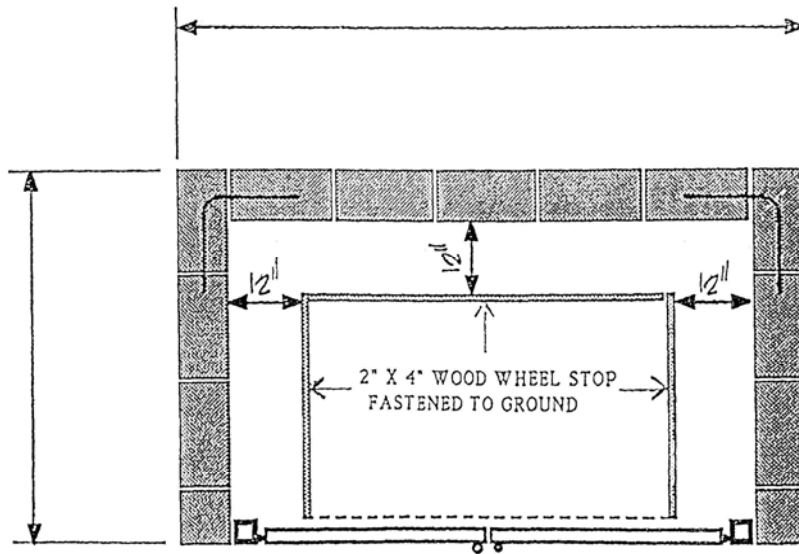
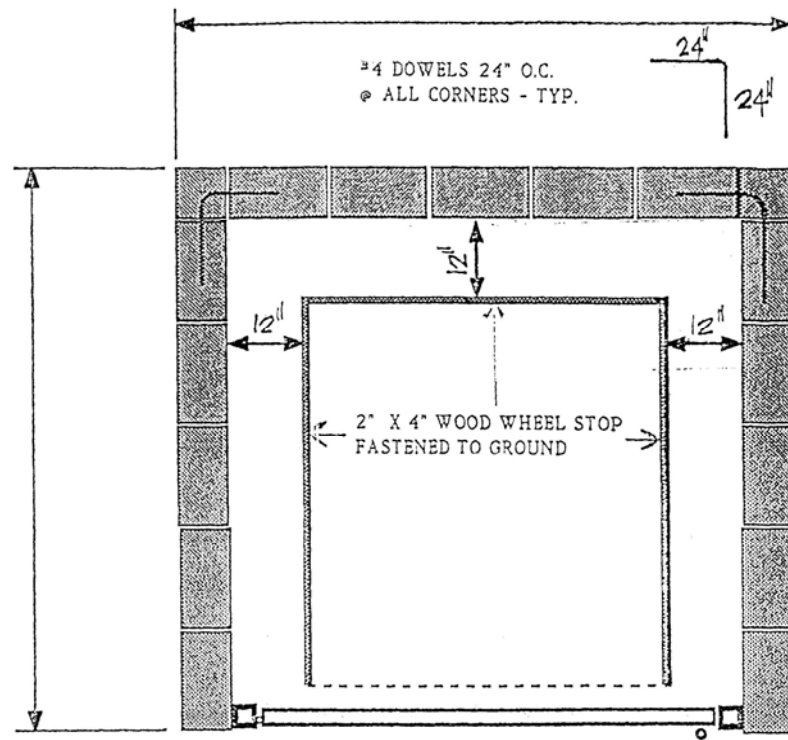


NOTE: SEE DETAIL ON SHT. #1 FOR INFO. NOT SHOWN.

SHT. 2



SHT. 1



SHT. 5
CD300-B (7)

Appendix D - Container/Bin Sizes and Capacities

Single-Family Carts					
Carts	Gallons	Height	Height w/lid up	Width	Depth
Black Garbage Cart	95	45 1/2"	75"	26"	33"
Black Garbage Cart	65	40 1/2"	64"	24"	27"
Black Garbage Cart	35	39"	57 1/2"	19 1/2"	23"
Split-Recycling Toter	64	40 1/2"	55"	30 1/2"	26 1/2"
Yardwaste Toter	96	43"	76"	28"	34 1/2"
Multi-Family Carts					
	Gallons	Height	Height w/lid up	Width	Depth
Black Garbage Cart	95	45 1/2"	75"	26"	33"
Black Garbage Cart	65	40 1/2"	64"	24"	27"
Black Garbage Cart	35	39"	57 1/2"	19 1/2"	23"
Recycling Cart	96	45 1/2"	7 ft.	27"	35"
Paper Recycling Cart	96	45 1/2"	7 ft.	27"	35"
Commercial Cart Sizes (for smaller accounts)					
	Gallons	Height	Height w/lid up	Width	Depth
Black Garbage Cart	95	45 1/2"	75"	26"	33"
Black Garbage Cart	65	40 1/2"	64"	24"	27"
Black Garbage Cart	35	39"	57 1/2"	19 1/2"	23"
Commercial & Multi-Family: Front-load Bins					
	Cubic Yards	Height	Height w/lid up	Width	Depth
1yd Blue Garbage Bin	1	39"	9 ft.	81"	25"
2yd Blue Garbage Bin	2	52"	9 ft.	81"	37"
3yd Blue Garbage Bin	3	60"	9 ft.	81"	42"
4yd Blue Garbage Bin	4	67"	9 ft.	81"	51"
6yd Blue Garbage Bin (no wheels)	6	71"	9 ft.	81"	68"
3yd Recycling Bin	3	60"	9 ft.	81"	42"
6yd Recycling Bin (no wheels)	6	71"	9 ft.	81"	68"
Roll-off Debris Boxes					
8 yd Roll-off Box	8	4' 4 "		8 ft.	10' 3"
15 yd Roll-off Box	15			8 ft.	12 ft.
20 yd Roll-off Box	20			8 ft.	16 ft.
30 yd Roll-off Box	30			8 ft.	22 ft.



City of Sunnyvale

Solid Waste & Recycling Design Guidelines

Multi-Family Residential



MULTI-FAMILY: Four or More Units

In residential zones all trash, refuse, and recyclable materials must be placed in proper containers that are fully screened from public view by an enclosure. All structures shall provide adequate and accessible enclosures for the storage of trash, refuse, and recyclable materials containers. Specific requirements:

1. Except for uses in R-0, R-1 and R-2 zones, and unless the container is kept within a building, the screening must enclose the container on all four sides with a door/gate on one side.
 - a. At a minimum, the screening must be 6 feet high and constructed of wood or masonry materials compatible with the main building.
2. The enclosure and door/gate must be painted to match the building.
3. The service door/gate must be large enough to provide easy access for removal of containers. [Create specs.]
4. An ADA compliant door for residential access must be included.
5. Enclosures must be adequate in capacity, number and distribution to accommodate the uses in a development. [See space guidelines]
6. Enclosures shall not be located in any parking, landscape, or setback area (exceptions apply).
7. Trash and recycling enclosures within 5 ft. of a structure must be sprinklered, and containers located within a building must be surrounded by walls with a one-hour fire resistive rating.

The property owner is responsible for:

1. The clean-up of the interior of the enclosure.
2. The overall maintenance of the enclosure.
3. Closing and securing doors/gates, and containers lids when enclosures are not being serviced.

The recycling and solid waste contractors are responsible for maintenance of their respective bins and containers.



RECYCLING & SOLID WASTE COLLECTION VEHICLE ACCESS REQUIREMENTS

Attachment C has truck access requirements. It is important to consider truck access and turning radii early on in the planning process for best results.

1. Driveways or travel aisles leading to enclosures shall be a minimum of 16 feet in width.
2. Where driveways do not extend from street to street, a turnaround area will be provided for the collection vehicles (taking into account that the turning radius of collection vehicles is approximately 32 ft. inner and 47 ft. outer).
3. Driveways or travel aisles shall provide:
 - a) Unobstructed access for collection vehicles.
 - b) A minimum of 15 feet of vertical clearance. However, in loading areas minimum overhead vertical clearance shall be 20 feet for loading operations.
4. To prevent damage to driveways, a concrete pad shall be constructed in front of each enclosure. The pad needs to be large enough and correctly oriented so as to allow the service vehicle to rest on it when loading and unloading bins and containers. The pad shall have a level surface (i.e. no slope) and no floor obstructions that prevent bins from rolling freely. Paving materials for the concrete pad shall consist of 5 inches compacted aggregate base material and 6 inches Portland Cement paving (or equivalent materials approved by the director of Community Development).

REGULATIONS

The California Public Resources Code Section 42911(c) requires adequate space for collecting and loading recyclable materials in all developments, and Section 40059.1 requires diversion of at least 50 percent of wastes from the landfill. Thus, space for trash and recycling should be the same.

In addition to these standards, the City may require modifications or impose additional requirements to ensure the safe and efficient collection of solid waste and recyclable materials.

SERVICE & SPACE GUIDELINES

Multi-family properties typically* use front-load bins for garbage and plastic carts for recycling, one for mixed paper and one for bottles/cans and other containers.

*Some larger properties utilize front-load or roll-off compactors for solid waste—contact the city for requirements.



ENCLOSURE DIMENSIONS

The minimum solid waste bin capacity per each 10 units is 3-yards, plus one set of recycling carts. See Attachment A:

- Sample enclosure dimension requirements for 1-2 bins
- Common sizes for garbage and recycling containers However, the actual enclosure or bin sizes used by the building occupant may vary.

Sample enclosure layouts are shown in Attachment B.

PLAN REQUIREMENTS

A Building Permit is required for a trash enclosure. Plans need to conform to the plan submittal and content requirements for building, special development, use & design permits. Submitted plans must show:

- 1) Proposed design, size, and location of recycling & trash enclosures (e.g. site plan, detail, and elevations).
- 2) The number, type and placement of the bins and containers within the enclosure.

To ensure that the enclosure is constructed safely and its location and design are compatible with the building and adjoining properties, the plans for the enclosure are reviewed by the Director of Community Development. The Solid Waste Program manager and the Department of Public Safety will advise the Director of Community Development on enclosure design and specific construction requirements.

ADA REQUIREMENTS

All residential enclosures to be ADA accessible.

SITE LAYOUT

The attached trash enclosure plans are provided as a courtesy. Once your dimensions are added, a completed package must include:

- 1) A completed Miscellaneous Plan Approval application.
- 2) Three copies of a plans (including site plan, detail, and elevations).
- 3) The appropriate fees.

The site plan can be hand drawn showing the dimensions of the property, any existing buildings and the location of the trash enclosure. The package should be submitted to the Planning and Building Safety Divisions at the One Stop Permit Center in City Hall.

Additional requirements may apply. For further information you can contact the Planning, Building Safety of Fire Prevention Divisions at (408) 730-7444, or by visiting the One Stop Permit Center at 45 West Olive Avenue between the hours of 8:00 a.m. and 12:00 p.m.

FIRE SAFETY REQUIREMENTS

When a trash enclosure is located within 5 feet of a building (or inside), an automatic fire sprinkler system must be installed. If the existing building is not required to have a sprinkler system, the sprinkler system for the trash enclosure may be connected to the domestic water supply, if the supply line is a minimum of 1 inch in diameter.

- An approved accessible shut-off valve is to be provided on the line.
- An approved means of securing the valve in the open position shall be provided where valves are subject to vandalism.
- All exposed water lines have to be brazed copper or metal.
- If the enclosure does not have a ceiling, a heat baffle, 18 square inches in area, shall be attached not more than 6 inches above the sprinkler head.



Three copies of the detailed fire sprinkler plans must be submitted by the fire sprinkler contractor. These plans must be reviewed by the Fire Prevention personnel in the Building Safety Division.

STORMWATER MANAGEMENT GUIDELINES

In addition to general requirements for solid waste and recycling enclosures, the guidelines below must be accounted for in the design:

- Do not locate trash storage areas in the immediate vicinity of storm drain inlets.
- Design trash container areas so that drainage from adjoining roofs and pavement is diverted around the area(s) to avoid run-on. This might include berming or grading the waste handling area to prevent run-on of stormwater.
- Provide roofs or awnings over enclosures, or attached lids on all trash containers to minimize direct precipitation and prevent rainfall from entering containers.



CONSTRUCTION & DEMOLITION DEBRIS MANAGEMENT

1. During demolition and construction and pursuant to SMC8.16.170-180, mixed debris of any type must be disposed of in containers provided and serviced by the City's franchised hauler (except for exclusions granted where applicable, SMC 8.16.110).
2. Project must maintain and use a debris box for all mixed material from the franchised hauler onsite for the entire duration of work. This requirement shall be shown on the Building Permit plans and will be enforced during building demolition and construction.
3. At project start-up, contact the franchised hauler, Specialty Solid Waste & Recycling, at 408-565-9900 to order debris boxes. NOTE: All solid waste rates are established by the City Council, and are based upon the cost of service.
4. Recyclable material that is separated from mixed debris on the job site may be hauled by an independent recycling company holding a current Sunnyvale Business License (list available upon request), provided that the following conditions are met:
 - a. On-site debris boxes for mixed debris disposal are provided and hauled by the franchised waste company.
 - b. The material to be recycled is separated onsite from non-recyclable material or mixed debris that is collected by the franchised waste hauler.
 - c. The material is actually recycled or reused, and is not disposed of or used for 'alternative daily cover' at a landfill.
 - d. The recycler must maintain a valid Sunnyvale business license.



Attachment A

MINIMUM NUMBER OF CONTAINERS

Land Use	Development Size	Minimum Space Required For Garbage and Recycling Containers
Multi-family Residential (4 or more units)	Each 10 Units	Space for one 3-yard bin and two recycling carts Alternatively, in large complexes front-load compactors may be used

SAMPLE ENCLOSURE SIZES

Number of Bins	Interior Dimensions	Minimum <i>Interior</i> Clearances*
One plus Set of Recycling Carts	12.5' W x 9' D	1' between bin and enclosure walls 4' user walkway from the entry to access all containers in enclosure.
Two plus Set of Recycling Carts	13' W x 12.5' D	

COMMON CONTAINER SIZES

Bin Size	Bin Dimensions	Minimum <i>Interior</i> Clearances*
4-cubic yard	6'9" W x 51" D	1' between bin and enclosure walls 4' user walkway from the entry to access all containers in enclosure.
3- cubic yard	6'9" W x 3'6"D	
2- cubic yard	6'9"W x 3'1"D	1' between other containers and enclosure walls
Recycling carts (96-gallon)	2'7"W x 3'D x 3'10"H	Set of two carts, one light blue and one dark blue

*See bin layouts, Attachment B.

Attachment B

EXAMPLES OF BIN LAYOUTS*

- Layouts shown for 1 to 2 typical 3-yd garbage and two 96 gallon recycling bins. Dimensions are approximate and not to scale.
- Interior clearance: One foot between containers and other obstructions.
- Aisle to the back of enclosure: Four feet wide to assure easy access to all containers.
- Vertical clearance: Nine-feet to allow lids to open (from ground to top of lid).
- Wheel stops: To be one foot from interior walls, generally on three sides.
- Service door: Nine feet wide with offset hinges to easily remove bin for collection.
- Paving: Level surface inside trash area through door to collection point (travelway), without stamped concrete or other textures.
- Tallow Containers: Do not store inside enclosure, but provide space for container outside, and include secondary containment



*Bin Layouts Show **Interior** Dimensions

Attachment C

TRUCK ACCESS REQUIREMENTS:
Multi-family with Centralized Collection Service

Multi-family with bin service	<i>Inside</i> turning radius: 32' <i>Outside</i> turning radius: 47'
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Travel-aisle: horizontal and vertical clearance:	16 ft. wide and 15' high
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Loading Clearance	20 ft. vertical clearance for bins 15 ft. vertical clearance for carts
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For safety reasons, in residential areas a truck turnaround is required for any street, driveway or travel-aisle does not extend from street to street. Sample turning templates are attached. Use "Front-load & Recycling" for multi-family developments

TOWNHOME-TYPE PROPERTIES WITH INDIVIDUAL
CART COLLECTION SERVICE*

Turning Radius	<i>Inside</i> turning radius: 33' <i>Outside</i> turning radius: 48'
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Minimum Street Widths	22 ft. for collection on straight-aways Adequate width required for all turns
-----------------------	--

For safety reasons, in residential areas a truck turnaround is required for any street, driveway or travel-aisle does not extend from street to street.

*Additional requirements may apply

Design Requirements for Solid Waste Recycling Collection in Townhome Complexes

	Option A: Front-load Bins in Enclosures		Option B: Individual Cart Set-out at Each Unit		Option C: Centralized Carts, Enclosed or Central Locations	
	Specifics	Description	Specifics	Description	Specifics	Description
Turning Radius	Front-load garbage truck: 26 inner, 41 outer. Recycling truck: 32 ft. inner, 47 ft. outer: Street widths must allow for adequate turning radius.	Applicable to intersections, turns & streets leading to and away from central enclosures and designated turnouts	Minimum truck turning radii: 33 ft. inner radius & 48 ft. outer radius. Street widths must allow for adequate turning radius.	All intersections, turns & streets: sufficient for side-load residential collection vehicles to navigate streets lined with garbage & recycling carts on both sides.	Minimum truck turning radii: 33 ft. inner radius & 48 ft. outer radius. Street widths must allow for adequate turning radius.	Applicable to intersections, turns & streets leading to and away from central collection points and designated turnouts
Street Widths: collection and travel	Minimum 16 ft. The street width may vary at intersections and turns to allow for adequate turning radius.	Along access route to central enclosure	Minimum 22 ft. wide for collection operations. The street width may vary at intersections and turns to allow for adequate turning radius.	As required for vehicles to safely service carts and travel all streets. Accommodates truck, 7.8 ft. total space for cart set-out (split between both sides of street), operational space and safety envelope.	Minimum 16 ft. on straight-aways. Collection points: 17 ft. minimum. The street width may vary at intersections and turns to allow for adequate turning radius.	Along access route to central collection points
Horizontal and Vertical Clearances	<ul style="list-style-type: none"> Horizontal travel clearance: 16 ft. Vertical loading clearance 20 ft. 	Applicable to streets leading to or away from central enclosures and set-out areas. Balconies, landscaping or other elements shall not encroach into approved horizontal or vertical clearances for vehicle travel, backing, loading, or other operations along any streets.	<ul style="list-style-type: none"> 17 ft. horizontal operating/travel clearance 15 ft. vertical clearance 	All streets. Balconies, landscaping or other elements shall not encroach into approved horizontal or vertical clearances for vehicle travel, backing, loading, or other operations along any streets.	<ul style="list-style-type: none"> Horizontal clearance: 16 ft. travel, 17 ft. for loading at central collection areas. Vertical clearance: 15 ft. travel and loading 	Applicable to streets leading to or away from central enclosures and set-out areas. Balconies, landscaping or other elements shall not encroach into approved horizontal or vertical clearances for vehicle travel, backing, loading, or other operations along any streets.
Pavement	Build to standards suitable for two 25 ton vehicles accessing central collection points on service days.		Build to standards suitable for two 25 ton vehicles traveling down all streets twice each service day.	Alternatively, responsible party or HOA to provide waiver (recorded with property) for potential damage caused to private streets over time by normal hauler operations	Build to standards suitable for two 25 ton vehicles accessing central collection points on service days.	
Stress Pad	Same as Central Carts	A stress pad is required in front of enclosures sufficient in size to support the front wheels of collection vehicles during loading.	N/A	N/A	None for central staging areas	
Storage	N/A	N/A	Per Cart*: 5.75' W x 3.5' D x 7' H (20 sq. ft., 140 cubic ft) Additional 50 sq. ft. shall be provided for storage of two carts in the garage	Includes 4" buffer on all sides and 7 ft. vertical clearance to open lids.	If stored in townhome units, same as individual carts.	
Container Clearance (through doors or gate, such as to side yard or enclosure)	10 ft. service door. ADA compliant pedestrian door.	N/A	3.25 ft.	Provides a 4" buffer on each side of cart through door or gate	3.25 ft. if stored at townhome unit. Enclosures: 4 ft. clearance through door	Same as Individual Carts if stored in garages/side-yards. Central enclosures: combination service/residential access door.
Setout Area	N/A	N/A	2 Carts*: 10.75 ft. x 4 ft.	Provide sufficient linear space for 2 carts per unit. Two-feet required between each cart and a 2 ft. buffer between setout area and other carts, vehicles or obstructions.	Central staging along street: 2 Carts*: 10.75 ft. x 4 ft. Enclosures: size is dependant upon number of carts.	Same set-out space as Individual Carts if staged on main street or other central area. Sufficient space within enclosures for 2 carts per unit (depends on service). To include a 4 ft. aisle and one-foot buffer between carts and walls or other structures.

Design Requirements for Solid Waste Recycling Collection in Townhome Complexes

	Option A: Front-load Bins in Enclosures		Option B: Individual Cart Set-out at Each Unit		Option C: Centralized Carts, Enclosed or Central Locations	
	Specifics	Description	Specifics	Description	Specifics	Description
Screening from View	Minimum 6 ft. High enclosures w/solid decking on doors	All containers to be screened from view by passersby as well as from upper floor windows	N/A	N/A	<ul style="list-style-type: none"> Enclosures: Minimum 6 ft. high enclosures w/solid decking on doors If carts are staged along main road, remove from public view after service. 	When central enclosures are used, all carts to be screened from view by passersby, as well as from upper floor windows.
Truck Turnouts	Collection vehicles will not access dead-end townhome streets longer than 50 ft. Number of turnouts to be determined based upon site layout, number of units, and other factors.	Where driveways do not extend from street to street, a turnaround area for collection vehicles shall be provided so vehicles do not have to back up in townhome complexes.	Same	Same	Same	Same
Distance from Units	Maximum 150 ft.	Per section 19.38.030	N/A	N/A	Maximum 150 ft.	Per section 19.38.030
Enclosure Materials	Recycling and solid waste enclosures shall be constructed of wood or masonry compatible with the main structure		N/A	N/A	Where applicable, enclosures shall be constructed of wood or masonry compatible with the main structure	
Minimum Enclosure Dimensions	Minimum interior dimensions, one bin: 12.5 x 9ft. Two bins: 13 x 12.5ft.	Enclosures to be sized to minimize frequency of truck trips on property.	N/A		Dependant upon number of carts and location.	
CCRs	Keep enclosure doors closed, deposit all material inside containers and not on floor, other.	Store all containers out of view	Store carts out of view except for service days		Same	

*Two carts are typical; however an additional cart for yardwaste is available where extensive landscaping would require service