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915 De Guigne Town Home Project Sunnyvale, California Trash Management Plan

Guiding Principles: This Trash Management Plan outlines a “concierge” waste and recycling system for this 450-unit for-sale residential in-fill, master-planned community that minimizes costs for future homeowners, and that reduces environmental impacts from trash collection, while providing convenient trash disposal for the future homeowners. Please note the word “trash” when used in this plan covers both waste and recycling.

Waste and Recycling Removal: The City of Sunnyvale has contracted with Specialty Waste Disposal to provide residential and commercial waste and recycling services to the citizens and businesses located within the city limits. Under the current contract (called a “franchise agreement”) the following factors are critical:

1. Exclusivity: Specialty is the only company that can legally engage in waste disposal within the city limits.
2. Non-negotiable rates: Waste disposal rates for both residential and commercial customers are set by the City and cannot be negotiated. These rates are typically adjusted annually on July 1st.
3. Residential recycling services are covered under the franchise agreement and are included in the residential waste collection rates at no additional charge.
4. Compacted disposal is less expensive than loose disposal under the franchise agreement: The implicit \$ per lb. for front load waste disposal is over 70% less expensive with compaction, plus it reduces truck time (noise) and staff bin moving time at the property.

Method	Service	lb. per CY	Compaction ratio	Monthly Price	\$/lb.
Loose	(3) 3-CY dumpsters, 2X per week	100	N/A	\$1,985.22	\$0.57
Compacted	(1) 2-CY dumpster, 2X per week	500	5:1	\$577.90	\$0.13

Background: The City of Sunnyvale requires all persons to source separate their refuse into paper recyclables, container recyclables and waste. Each type of refuse must be placed a separate container designated for collection of that type of refuse by the City’s franchised waste and recycling vendor. Waste can be collected in cart, front load or roll-off containers. Recycling collection must be loose (not in plastic bags) in “Toter” Style carts or in dedicated roll-off containers for each type of recyclable material.

Collection: Absent direct collection from each unit, the City’s design guidelines require that a refuse disposal point (“trash enclosure”) be within 150’ of each residential unit. One solution to meet the 150’ requirement is to create approximately 18 common collection points (trash enclosures) throughout the community. However, this option is not optimal because (1) a common collection point relieves the individual of the costs of waste generation, (2) trash enclosures are inefficient use of space within a community, (3) trash enclosures are an ongoing maintenance expense for the future homeowners, and (4) trash enclosures are an eyesore and a perceived nuisance.

An optimal residential trash collection system places the responsibility to collect, and separate, materials, stage containers and pay for disposal services on the individual homeowner. This aligns the incentives (to reduce disposal costs) with the larger community goal of increasing waste diversion.

The proposed solution is to have the individual homeowners collect waste in bags and recyclables in plastic bins (totes) which are then picked up by a private contractor hired by the Home Owners Association (“HOA”) and moved to a central compactor on the HOA’s property.

The units have been designed to provide sufficient room inside the individual, direct access, garages for the storage of the bags and bins (totes). This solution returns the responsibility for waste and recycling to the actual generator, allows direct collection from each unit and eliminates the need for numerous unsightly trash enclosures throughout the community.

Benefits of the Concierge Trash Collection Service:

- Returns the responsibility for waste and recycling to the actual generator;
- Allows direct collection from each unit;
- Significantly reduces the cost of trash disposal for the future homeowners;
- Provides consistent and responsive trash collection service for future homeowners;
- Eliminates the need for numerous, unsightly trash enclosures spread throughout the community;
- Eliminates the mess and odor from numerous trash enclosures spread throughout the community;
- Eliminates the significant ongoing maintenance expense for the numerous trash enclosures for the future homeowners;
- Eliminates numerous trash enclosures that are an inefficient use of space throughout a community;
- Allows for more space within a community for landscaping and parking; and
- Minimizes impact on the environment from idling trash collection trucks.

Recommended Trash Handling System: Materials will be collected in three different streams by the individual homeowners: Waste, Mixed Container Recyclables (bottles and cans) and Mixed Paper Recyclables (paper, cardboard & containers). These materials will be collected by the homeowners in bags in lieu of standard trash carts (“Toters”). Bags are preferred over carts due to the tight spaces between units and limited access for collection vehicles. Bags “fit” in spaces between town homes without interfering with drivers accessing their respective garages.

Homeowners Handling of Trash. All homeowners will be prohibited from bringing materials to the central trash facility. Waste will be collected by the homeowners in black 33-gallon plastic trash bags. The mixed paper recycling will be collected loose in blue 18-gallon plastic bins (totes) and the mixed container recycling will be collected loose in grey 18-gallon plastic bins (totes). The bags and recycling containers will be placed outside the garage door of each residence one day each week for pick up by the HOA.

Collection of Materials. The homeowners waste and recycling will be picked by the HOA contractor and transported to the waste and recycling compactors located in a central trash facility in the southeast corner of the property. The contractor will utilize a standard utility vehicle and tow three plastic crew carts (waste, mixed paper and mixed containers). These crew carts will be dumped into the appropriate waste and recycling compactor. The HOA contractor will be required to adhere to the City's ordinance regarding collection times (i.e. adherence to City's noise ordinance), clean-up of all collection-related spillages, and responsibility for missed/return pickups.



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Central Trash Facility. The central trash facility will be located near the Western edge of the project. (See Orange Circle on the map below.)

Collection Route. The HOA contractor will collect the bags from the homeowners on a 1x or 2x per week schedule as determined by the HOA. The collection route will be divided into “sections” corresponding to the separate areas of the project. The HOA contractor will proceed from the trash enclosure entering each section at the first opportunity, and travel around the section away from the enclosure and then back, picking up bags along the route. These areas are:

SOUTHWEST (Blue rectangle on site plan)
WEST (Red Rectangle)
CENTRAL (Green Rectangle)
NORTH & EAST (Purple Rectangles)



Clean-up. In addition to picking up bags of materials, the HOA contractor will be responsible for cleaning up litter and debris, placing these materials in containers and depositing them into the waste compactor.

Compactor Operation. The compactors will be loaded and cycled solely by the HOA contractor. No homeowners or property staff will operate the compactors.

Phase-In Period. Collection schedules and routes will be modulated to be consistent with the patterns of owner occupation during the build out of the project. The central trash facility will be constructed during phase 1 of the project. The compactors will be installed in phase 1 of the project. The compactors will be compatible with the City's Franchised waste haulers equipment. (See page 3 for the detailed analysis)

When the project is completely occupied, the waste compactors will be emptied once a week by the City's franchised vendor as determined by the volume assumptions. The HOA contractor will adhere to City's ordinance regarding collection times by adherence to City's noise ordinance. The HOA contractor will be responsible for the clean-up of all collection-related spillages and will be responsible for missed/return pickups. The recycling compactor will be emptied when full and scheduled on an "on call" basis.

Recommended trash compaction system. Materials will be collected in three different streams by the individual homeowners: Waste, Mixed Container Recyclables (bottles and cans) and Mixed Paper Recyclables (paper, cardboard & containers). Three streams would normally imply three separate compactors, which would require a large (33' x 35') central trash facility. To minimize the size of the central trash facility, it is recommended all recyclables are collected in a dual chamber compactor. This allows the enclosure size to be reduced to 22' x 35', a 33% reduction in size.



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Volume Projections and Analysis (Rates reflect the rate changes effective July 1, 2013)

Below is comparative analysis of the disposal costs and labor costs of handling waste and recycling in a loose bins or compacted bins. We recommend using roll-off compacted bins in the central trash area to reduce overall costs. The effective service life of a quality compactor is over 10 years. SmartTrash® system will notify management and staff when bins are full on the compactors so bins will only need to be removed from the machine when full. This will reduce disposal costs and labor requirements. 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.

WASTE AND RECYCLING SYSTEM ANALYSIS - PROJECTED

	Total Units	451	1 Trash Collection Point
	Row Homes	451	percentage of total 100%
	Volume Waste:	0.16	cubic yard/week/unit
	Volume Recycling:	0.16	cubic yard/week/unit
	Volume Paper Recycling:	0.10	cubic yard/week/unit
	Volume Container Recycling:	0.06	cubic yard/week/unit
	Compaction Ratio	4	to 1
	Hauler/Recycler	Specialty	Franchised
	Staff Labor Rate	\$14.15	per unit
ASSUMPTIONS:	# of Trash Areas	1	
	Compacted Service	10	cubic yard self contained compactor
	Loose Waste Service	3	cubic yard front load bins
	Loose Waste Service	0.475	cubic yard side load carts
	Compacted Recycling Service	28	cubic yard self contained compactor

PROJECTIONS:




Units	Total 451	Row Homes 451
VOLUME (cubic yards)		
Loose Waste Volume	72.2	72.2
Compacted Waste Volume	18.0	18.0
Loose Recycling Volume	72.2	72.2
Compacted Recycling Volume	18.0	18.0
BINS (totals may not match due to rounding)		
Loose Waste Bins/week	24.0	24.0
Compacted Waste Bins/week	2.0	2.0
Loose Recycling carts/week	152.0	152.0
Compacted Recycling Bins/week	0.6	0.6

CALCULATIONS (based on Totals) PROJECTED PROJECTED PROJECTED

SERVICE	Loose Trash	Compacted Trash	Compacted Trash
BIN TYPE	Loose Recycling	Loose Recycling	Compacted Recycling
Loose Waste Volume - TOTAL	72.2	N/A	N/A
Compacted Waste Volume	N/A	18.0	18.0
Loose Recycling Volume	72.2	72.2	N/A
Compacted Recycling Volume	N/A	N/A	18.0
Waste Bins/week	24	1	1
Recycling Bins/week	152	152	0.3
Bins/week/Total	176	153	1
Trash Cost/Month	\$8903.04	\$2,496.80	\$2,496.80
Recycling Cost/Month	\$0.00	\$0.00	\$0.00
City Mandated Fees/unit/Month	\$0.00	\$0.00	\$0.00
TOTAL WASTE COST/MONTH	\$8,903.04	\$2,496.80	\$2,496.80
COMPACTOR CAPITAL COST	\$0.00	\$47,457.00	\$94,914.00
SAVINGS/MONTH	N/A	\$6,406.24	\$6,406.24
STAFF LABOR COST/MONTH	\$6,381.65	\$6,381.65	\$6,381.65
STAFF SAVINGS/MONTH	N/A	\$0.00	\$0.00
NET MONTHLY TRASH COSTS	\$15,284.69	\$8,878.45	\$8,878.45
Monthly Trash Cost per Unit	\$33.89	\$19.69	\$19.69
Payback - months	N/A	7	15

Sunnyvale Rates	1x/wk	2x/Week	3x/Week	4x/wk
3 CY Front Load Loose Bin	\$330.88	\$661.73	\$992.61	\$1,323.45
4 CY Front Load Loose Bin	\$430.37	\$860.76	\$1,291.13	\$1,721.51
3 CY Front Load Bin Push Out	\$19.35	\$38.72	\$58.06	\$77.40
4 CY Front Load Bin Push Out	\$24.18	\$48.38	\$72.57	\$96.76
3 CY Bin Rental	\$20.73			
4 CY Bin Rental	\$21.51			
10 CY Roll-off Compactor	\$2,496.80	1x per week		
28 CY Roll-off Compactor	\$0.00	1x per month		

EQUIPMENT

Crew Cart	Recycling Totes
	
Crew Cart Dumping	Recycling Compactor
	

Trash Compactor Area

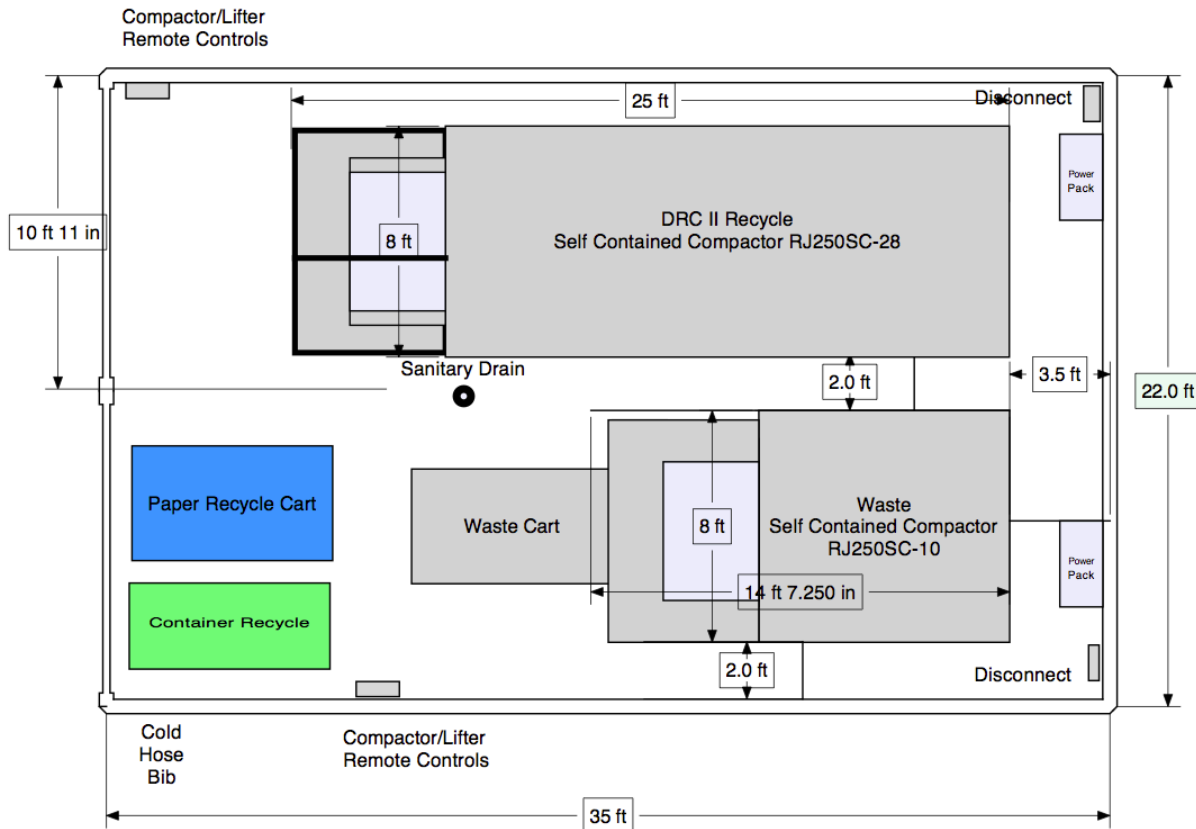
ST JUDE SUNNYVALE - RESIDENTIAL TRASH AREA

Save Time Stamp: Thursday - May 29, 2014 12:56:53 AM

More than 50' in front of Gates
For Truck to back in. Truck is 34'

(2) 5.5' Access
Gates in front of
each compactor

Recycle Carts and Waste Carts
are removable and towed around
the property to collect the trash



Trellis- 12' from back wall of enclosure, 12' Clear height, full width.

Electrical - 2 Switch Disconnect for 3 Phase 10HP motors. Provide a 120V service outlet somewhere within the enclosure. Mounted 54" AFF.

Hosebid - to be mounted 54" AFF.

Sanitary drain - To have plug so storm run off will not enter sewer system. To be used to clean trash carts.

Enclosure Pad - Area to have minimal slope. Area under Self Contained & Waste Compactor should be level for compactor guides.

Gates - to have latches or pins so they can be fixed open during service.

Stress Pad at front of enclosure designed to handle roll-off trash truck and compactor loads.