

TRANSFER/PROCESSING REPORT

For the

**Sunnyvale Materials Recovery and Transfer
SMaRT Station[®]**

July 2012

Prepared by

City of Sunnyvale Environmental Services Department

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I. FACILITY OVERVIEW

A. Introduction

The Sunnyvale Materials Recovery and Transfer Station (SMaRT Station[®]) is a large volume transfer/processing facility serving the cities of Mountain View, Palo Alto, and Sunnyvale. SMaRT Station operations include:

- Recovery of recyclable materials from the mixed municipal solid waste delivered by franchised collectors and self-haul customers,
- Processing of source-separated recyclable materials from collection programs in the cities of Mountain View and Sunnyvale,
- Processing of source-separated and recovered yard trimmings and wood waste for use as compost feedstock and fuel for biomass cogeneration,
- Drop-off recycling center for public use, and buy-back of California Redemption Value containers,
- Transfer of non-recyclable residue to a regional landfill

The SMaRT Station is owned by the City of Sunnyvale and operated under contract by Bay Counties Waste Services (the Operator). The facility is located on City of Sunnyvale property adjacent to the Sunnyvale Landfill, which underwent closure in 1993. The SMaRT Station was designed to divert from disposal a minimum of 15% materials received. Current annual recovery rates achieved are approximately 32%. Processed materials are shipped to export and domestic markets. The materials recovered and processed in the station include aluminum, cardboard, ferrous and non-ferrous metals, concrete, mixed paper, newsprint, glass, wood, yard waste, MRF fines, plastic, and white goods (large appliances). The green waste and wood waste are chipped, sized and used as feedstock for compost, and fuel for biomass cogeneration.

B. Site Location

The SMaRT Station was constructed on City property located within the City of Sunnyvale, adjacent to the Sunnyvale Landfill, the Sunnyvale Water Pollution Control Plant (WPCP), and San Francisco Bay as shown in Figure A-1 (See Appendix A). Nearby land uses include office and industrial park complexes, wastewater processing, asphalt and concrete recycling, biosolids management, recreation (on the closed Sunnyvale Landfill) and a former salt production pond.

The SMaRT Station occupies nine acres in an area formerly used for asphalt and concrete recycling, and prior to that, for wastewater sludge storage. The concrete recycling operation was moved to the top of the East Hill of the Sunnyvale Landfill in order to accommodate the SMaRT Station. Tipping, sorting, and processing operations are enclosed in a large steel-frame structure

enclosing the 113,000 square foot concrete floor, with an attached 6,000 square foot office and employee facility. Truck staging and tarping, processed wood and green waste storage, recyclable metals storage, and household recyclables drop-off are managed outdoors adjacent to the SMaRT Station structure. The SMaRT Station building itself is 45 feet tall at its highest point.

The 1992 Environmental Impact Report found that the operation of the SMaRT Station is compatible with adjacent land uses, which include a landfill and wastewater treatment facility. The City of Sunnyvale Planning Commission on August 10, 1992 issued a special development permit for this facility.

The City of Sunnyvale General Plan was adopted by the Sunnyvale City Council in July 2011. The Environmental Management Element (Chapter 7) contains goals to encourage residents to maintain clean neighborhoods. To carry out this goal (EM-13) the City of Sunnyvale provides periodic disposal of extra refuse at the SMaRT Station for Sunnyvale residents. These “Extra Dump” weekend events have taken place at the SMaRT Station since 1993.

The SMaRT Station is accessible to traffic via Borregas Avenue from Caribbean Drive. Caribbean Drive connects with Mathilda Avenue, Highway 237, and Lawrence Expressway, all of which in turn connect with Highway 101. Both Highways 237 and US 101 have interchanges with Mathilda Avenue and Lawrence Expressway within approximately two miles of the project site. Residual waste from the SMaRT Station is hauled to the Kirby Canyon Landfill, which is located east of the Golf Links Road interchange with US 101 in southern San Jose. The haul route for transfer trucks between the SMaRT Station and the landfill is U.S. 101 to the Golf Links Road exit. The legal description of the SMaRT Station site is located in Appendix G of this report.

C. General Site Plan

The SMaRT Station includes one main building for waste processing and materials recovery, an entrance facility, a perimeter roadway and parking area, as shown in Figure A-4. The total floor space for the facility is approximately 119,200 square feet (sf), divided into the functional areas as follows:

Waste processing and materials recovery area	91,875 sf
Wood waste and yard trimmings processing area	9,375 sf
Curbside recycling area	5,000 sf
Residue load-out area	4,950 sf
Facility offices	6,000 sf
Vehicle maintenance area	2,000 sf

The following description of facilities corresponds with Figure A-4. Franchise Hauler and City vehicles entering the SMaRT Station are weighed at the two inbound scales located on Carl Road, and then directed to the proper tipping area. Public Haul vehicles are inspected and measured by the scale attendant to determine a volume-based fee. Public vehicles with loads exceeding 12 cubic

yards are weighed in and out, and recorded on a per ton basis in accordance with Disposal Reporting Regulations.

An office and visitor facility, used jointly by the City and the operations contractor, is located at the west end of the structure. Employee and visitor parking are provided south of the SMaRT Station offices. The California Certified Recycling Center is located outside the southwest end of the SMaRT Station.

The primary tipping areas for residential and commercial vehicles are located in the center portion of the SMaRT Station, on both the south and north sides of the structure. The source-separated recyclables processing area is located in the southwestern section of the SMaRT Station. The source-separated recyclables processing system includes mechanical and hand sorting, as well as a horizontal baler. A 30-foot scale allows trucks to be weighed after unloading each compartmentalized section of their loads.

An enclosed hazardous waste storage unit is located in the southeast corner of the facility, and is used to store household hazardous waste recovered from municipal solid waste and some universal wastes collected at the drop-off area. Bins used to store recyclable metals are positioned just north of the hazardous waste storage unit.

Transfer trailers are loaded with residual waste at a loading area located at the east end of the structure. A mechanical compactor and two overhead conveyors are available to load trucks. The equipment maintenance shop is located at the northeast corner of the structure. The wood and yard trimmings processing area is located at the northwest end of the structure, as is the recovered materials storage and loading area.

D. Service Area

The SMaRT Station currently accepts material from the cities of Mountain View, Palo Alto, and Sunnyvale, all of which are located on the southwestern portion of the San Francisco Bay within Santa Clara County. Future service areas may include parts of the Los Altos and Los Altos Hills communities, and other areas bordering the present service area. A map of the current and potential future service areas approved in the initial permit and CEQA review is presented in Figure A-2.

The City of Sunnyvale, where the facility is located, has a population of 142,896¹. The cities of Mountain View and Palo Alto are located north of Sunnyvale as shown in Figure A-2. The area surrounding the SMaRT Station is zoned M-3 Industrial or P-F Public Facility (see Figure A-3). Refuse collection trucks operating in the City of Sunnyvale use surface streets and Highway 237 to approach and exit the facility. Trucks from the Cities of Palo Alto and Mountain View use Highways 237 and 101, and surface streets.

¹ 2012 California Department of Finance population estimate

E. Nature and Quantity of Wastes to be accepted

1. WASTE TYPES

a. General

The SMaRT Station is designed specifically to handle municipal solid waste and source-separated recyclable materials. Municipal solid waste includes household, commercial and industrial wastes. For the 12 months ended June 30, 2011 the SMaRT Station received incoming materials as follows:

Source	Annual Tons	Tons**
MSW - Franchised Haulers	168,332	645
MSW - Public Haul	10,158	39
Source-Separated Recyclables	20,103	77
Source-Separated Yard Trimmings	22,158	85
Total Incoming Tons	220,751	846
Note: During 2010/11 Palo Alto temporarily directed 15,273 tons to its City owned landfill		
* Based on 261 weekdays		

b. High Liquid Content Wastes (i.e. greater than 50%)

This material is not accepted at the SMaRT Station.

c. Designated Waste and Hazardous Waste

These materials, as defined in the California Code of Regulations Title 27, are not accepted at the SMaRT Station.

d. Medical Wastes

These materials are not accepted at the SMaRT Station with minor exception: Household sharps, e.g. hypodermic needles from self-administered medications, are **received in a special sharps container placed in the recycling drop-off area**. It is the policy of the Sunnyvale Materials Recovery and Transfer Facility to exclude disposal of hypodermic needles, syringes and other “sharps” from medical, veterinary and commercial sources. This restriction includes disposal of “sharps containers,” which enclose these materials, regardless of the method of sterilization performed.

e. Other Wastes Requiring Special Handling

Appliances are handled to remove mercury switches, mercury lamps, capacitors, freon and compressor oils prior to being recycled. Tires are pulled out for shipment to tire processors. Universal wastes requiring special handling but acceptable under permit conditions include used motor oil and filters, antifreeze, computer and TV monitors, consumer electronic devices,

automotive batteries, rechargeable batteries, household batteries, fluorescent light bulbs and tubes and other household items containing mercury.

2. WASTE QUANTITIES

a. Maximum Daily Load Capacity

The maximum capacity of the SMaRT Station is permitted at 1,500 tons of material each day.

b. Average Daily Throughput

The facility currently receives, processes and transfers an average of 846 tons of material each weekday. The following conversion factors are used to calculate volume-based charges for public and self-hauled loads:

Waste Type	Conversion Factors (lbs/cubic yard)
Misc. Public	308
Demolition Debris	1000
Asphalt	1000
Concrete	2000
Dirt	2000

c. Unusual Peak Loadings

The facility is permitted for a peak capacity of 1,500 tons of material each day. During peak loading periods, station spotters are instructed to move vehicles as quickly and as safely as possible and all available tipping floor stalls and spaces are used. Under such circumstances, employees are asked to work overtime, if necessary, to process and transfer municipal solid waste.

d. Average Loading for the Next Five Years

The average annual weekday loading expected to be handled at the SMaRT Station for the next five years is projected as follows:

Year	Average Annual Loading	Tons/Day
2012	225,000	862
2013	234,000	896
2014	235,000	900
2015	237,000	908
2016	238,000	912

The annual loading projected for the next five years is well within the permitted capacity of 1,500 tons per day or 547,500 tons per year.

These figures are a combination of the projected waste streams of all three cities that presently use the SMaRT Station, and do not include wastes from any areas not presently using SMaRT. The projections of Mountain View, Palo Alto, and Sunnyvale are incorporated into these figures.

e. Types and Numbers of Vehicles Entering the SMaRT Station

A variety of different vehicle types use the SMaRT Station. They range from automobiles to 48' transfer trailers. The design traffic loading for this facility is projected as listed below. The projected design loading rates are based on the permitted station capacity of 1,500 TPD.

Weekdays	Design Daily	Current Daily	Design Per Hour	Current Per Hour
Residential Packer	61	21	7	3
Commercial Packer	64	39	12	5
Roll-off (open-top and compacted)	115	34	21	4
Public Haul	316	54	29	7
Source-Separated Recycling Collection (incl Yard Trimmings)	30	26	4	3
Transfer Trucks	55	23	4	3
Trucks Hauling Recovered Material	33	12	1	2
Employees**	86	102	2	18
TOTAL	760	311	80	44

Weekends (Saturday, Sunday)	Design Daily	Current Daily	Design Per Hour	Current Per Hour
Residential Packer	0	0	0	0
Commercial Packer	9	10	2	3
Roll-off (open-top and compacted) ⁽¹⁾	0	52	0	6
Public Haul	458	45	58	6
Source-Separated Recycling Collection (incl Yard Trimmings)	0	0	0	0
Transfer Trucks	10	8	2	2
Trucks Hauling Recovered Material	2	2	1	1
Employees**	<u>40</u>	<u>33</u>	<u>2</u>	<u>22</u>
TOTAL	519	150	65	40

Extra Dump Weekend Events***	Design Daily	Current Daily	Design Per Hour	Current Per Hour
Residential Packer	0	0	0	0
Commercial Packer	9	15	1	3
Roll-off (open-top and compacted)	5	3	1	1
Public Haul	1200	834	150	104
Source-Separated Recycling Collection (incl Yard Trimmings)	0	0	0	0
Transfer Trucks	55	25	2	1
Trucks Hauling Recovered Material	10	16	1	2
Employees**	<u>111</u>	<u>70</u>	<u>2</u>	<u>70</u>
TOTAL	1390	963	157	181

Document Shredding Events****	Design Daily	Current Daily	Design Per Hour	Current Per Hour
Residential Packer	0	0	0	0
Commercial Packer	9	15	1	3
Roll-off (open-top and compacted)	5	3	1	1
Public - Entering parking lot	1200	762	300	208
Source-Separated Recycling Collection (incl Yard Trimmings)	0	0	0	0
Transfer Trucks	55	25	2	1
Trucks Hauling Recovered Material	10	16	1	2
Employees**	<u>111</u>	<u>70</u>	<u>2</u>	<u>70</u>
TOTAL	1390	891	307	285

(1) This number was observed during a neighborhood cleanup event sponsored by the city. These events are not scheduled during extra dump events.

**Employee arrival and departure times are not at peak waste arrival times. In addition, their routing through the site does not impact the haul vehicle waiting times or queuing requirements. On extra dump weekends, employees arrive and depart at off-peak traffic times.

***Extra Dump Events are held on Saturdays and Sundays only, a total of eight (8) days per year. Events are four days in the spring (April) and four days in the fall (October).

**** Document Shredding Events are held on weekends (currently Saturdays only, 3-4 times per year). The facility parking lot is used for document shredding events.

Users routing through the site does not impact the haul vehicle waiting times or queuing reqmts.

II. REGULATORY REQUIREMENTS

A. Permits and Approvals

All conditions, criteria, and requirements established by various regulatory agencies having jurisdiction over the SMaRT Station are summarized in this section.

1. U.S. ARMY CORPS OF ENGINEERS

The SMaRT Station is situated adjacent to stormwater drainage channels and wetlands associated with the San Francisco Bay. No drainage channels or wetlands were filled to construct the SMaRT Station, and no permits were required from the Army Corps of Engineers. There are no ongoing or anticipated activities at the SMaRT Station subject to the Army Corps of Engineers regulatory requirements

2. UNITED STATES FISH AND WILDLIFE SERVICE

The SMaRT Station is located in an area previously occupied by an asphalt and concrete recycling operation and next to the Sunnyvale landfill. Because of the nature of these prior uses, and the established absence of biological resources on the project site, disturbance to the site necessary to build the SMaRT Station was deemed not to have impacted native plant or animal life at the site. No permits from the U.S. Fish and Wildlife Service were required for this facility. None of the present or anticipated activities of the SMaRT Station are subject to USFWS regulations. Bird control methods used at SMaRT are passive and non-destructive, and do not require permits.

3. FEDERAL AVIATION ADMINISTRATION

The SMaRT Station is located approximately two miles east of the runways of Moffett Federal Airfield (formerly Moffett Field Naval Air Station). FAA Part 77 Regulations apply to equipment, buildings, and vegetation that obstruct airspace. Section 77.28 of the regulations describes the imaginary surfaces extending around military airports in which an object would be considered an obstruction, including:

- Inner Horizontal Surface: a plane, oval in shape, at a height of 150 feet above the established airfield elevation. The plane is constructed by scribing an arc with a radius of 7,500 feet about the centerline at the end of each runway and interconnecting these arcs with tangents.
- Conical Surface: a surface extending from the periphery of the inner horizontal surface outward and upward at a slope of 20 to 1 for a horizontal distance of 7,000 feet to a height of 500 feet above the established airfield elevation.
- Outer Horizontal Surface: a plane, located 500 feet above the established airfield elevation, extending outward from the outer periphery of the conical surface for a horizontal distance of 30,000 feet.

At its highest point the SMaRT Station structure is approximately 45 feet high and is screened from the runways by the existing landfill surface which has two large hills. The South Hill is approximately 55 feet mean sea level (MSL) and the East Hill is 90 feet MSL. The station building does not intrude into any of the imaginary surfaces described above, and therefore no FAA review or permits were required for the project. There are no anticipated modifications to the SMaRT Station that would cause structures to intrude into the radar envelope.

4. CALIFORNIA DEPARTMENT OF RESOURCES RECYCLING AND RECOVERY (CALRECYCLE)

Conformance with Assembly Bill 939

Under Chapter 6, Article 1 of AB 939, each city or county Source Reduction and Recycling Element (SRRE) must include an implementation schedule for diverting 50% of all solid waste from landfill or transformation facilities by January 1, 2000 through source reduction, recycling and composting activities.

The SMaRT Station is a critical component to meeting AB 939 diversion rates. This facility: 1) captures recyclable materials in the refuse loads received; 2) processes and prepares for market the recyclable materials (including yard waste) collected by the cities; 3) allows residents and businesses to drop off source-separated recyclables. The SMaRT Station was designed to divert a minimum of 15% of all incoming solid waste. Higher recovery levels are encouraged through financial incentives given to the station operator. The actual level of recycling achieved by the SMaRT Station fluctuates due to many factors. The Cities are not able to rely solely on the SMaRT Station to meet the 50% diversion goal established by AB 939. The Cities have developed, funded and operate recycling and other waste reduction efforts independent of the SMaRT Station to ensure that the AB 939 requirements are met. SMaRT Station operations are nonetheless a critical component to the success of Mountain View, Palo Alto, and Sunnyvale in meeting and exceeding AB 939 mandates.

State Minimum Standards for Solid Waste Handling and Disposal

Chapter 3 of Title 14, California Code of Regulations establishes minimum standards for solid waste handling and disposal. The standards and regulations that apply most directly to the SMaRT Station cover the storage of wastes, design requirements, operator responsibility and standards for the operation of transfer stations.

State Minimum Standards are enforced by the CalRecycle through the Local Enforcement Agency (LEA), the Santa Clara County Department of Environmental Health. The LEA is charged with conducting monthly inspections of SMaRT Station operations, using an inspection checklist following Title 14 standards. The SMaRT Station has generally managed to operate within the standards, only rarely incurring a violation.

Under Section 17403.9, the operator of a Large Volume Transfer/Processing Facility must file this Transfer/Processing Report (TPR) with the LEA to obtain, renew or revise a solid waste facility permit.

5. CALIFORNIA AIR RESOURCES BOARD/BAY AREA AIR QUALITY MANAGEMENT DISTRICT

The California Air Resources Board establishes air quality and emission standards and rules for Air Quality Management Districts (AQMD's) based on EPA guidelines under the Clean Air Act. AQMD's are responsible for implementing local air quality controls and issuing permits for modifications for new sources of air pollution. The SMaRT Station falls under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD).

The permits issued by the BAAQMD are the Authority to Construct and Permit to Operate. The Authority to Construct Permit was obtained prior to start of construction in 1993. The Permit to Operate for the facility was issued approximately 60 days prior to start of operation and has been renewed annually. In addition, the City was issued a permit to operate the Emergency Standby Generator on April 10, 2002.

The BAAQMD permit is attached as Appendix B.

6. CALIFORNIA DTSC - HAZARDOUS WASTE EXCLUSION PROGRAM

The Hazardous Waste Exclusion Program (HWEP), which ensures that toxic or hazardous wastes are removed from the waste stream and are not transferred to the landfill, is included as Appendix C. This program consists of operator staff checking residential, commercial and self-haul loads at random, as well as inspecting waste as it is tipped and as it is processed for hazardous wastes. The cities of Mountain View, Palo Alto, and Sunnyvale all conduct household hazardous waste collection events and education programs for their residents to minimize improper disposal of hazardous wastes. The commercial and residential collection companies for the three cities, presently Recology of Mountain View, GreenWaste Recovery of Palo Alto, and Specialty Solid Waste and Recycling, also provide education and waste acceptability guidance to their customers. The County of Santa Clara also provides household hazardous waste collection event services to area residents, and has leased property from the City at a location separate from the SMaRT Station where a permanent household hazardous waste collection facility is located. The County typically holds one collection event per month at this facility. A radiation detection system has been installed at the SMaRT Station scales to protect against inappropriate disposal of radioactive wastes at the SMaRT Station.

7. SWRCB/RWQB NPDES PERMIT

The State Water Resources Control Board (SWRCB) has jurisdiction over discharge of effluent and stormwater to waters of the state. The SWRCB,

through its Regional Water Quality Control Boards (RWQCBs), issues permits under the National Pollution Discharge Elimination System (NPDES) for the discharge of stormwater and treated wastewater to natural waters. The City's NPDES permit for stormwater is a General Industrial Permit (the Permit), under which numerous facilities may file. Due to its proximity to the closed Sunnyvale Landfill, the SMaRT Station is permitted under the landfill and adjacent facilities, including the Stevens Creek Quarry concrete and asphalt recycling facility and the Recycle Yard. There are no permitted or other non-stormwater discharges from the SMaRT Station.

Stormwater generated at the SMaRT Station is collected on-site and discharged to the stormwater drainage canals located immediately west and north of the site. Rainfall on the asphalt staging areas outside of the SMaRT Station drains to ten different drainage inlets, and then gravity drains through buried storm drain pipes into drainage canals. The drainage canals, which also receive stormwater from upstream sources, flow to a large stormwater pump station, known as Baylands #1, which conveys stormwater over a levee into the Guadalupe Slough. Water is retained in the drainage canals until the pumps are turned on, with the result that the bulk of entrained sediment in stormwater settles out in the drainage canals. The pump station can also be turned off to confine a spill affecting SMaRT Station storm drains.

Stormwater draining from the SMaRT Station is filtered to remove metals, hydrocarbons, and oil and grease prior to discharge to the drainage canals. Storm drain filters designed for this purpose have been installed in a redundant fashion to eliminate discharge of metals, oil, and grease to the drainage canals. Stormwater management practices include periodic cleanings of catch basins and their filters as applicable. To the extent practicable, cleanings also occur before, during and after significant storm events. Certain catch basins designed to retain sediment are periodically vacuumed out and periodic maintenance is performed under contract with Kristar Inc. /Drainage Protection Systems.

8. BAY CONSERVATION AND DEVELOPMENT COMMISSION

Under the 1965 McAteer-Petris Act, the Bay Conservation and Development Commission (BCDC) is responsible for maintaining and carrying out the provisions of the San Francisco Bay Plan. The SMaRT Station site is immediately south of the Bay and associated levees, but lies outside of the jurisdiction of the BCDC. The SMaRT Station does not prevent access to the Bay and shoreline, change existing access patterns, or change the contour of the bay shoreline. Hence, a BCDC advisory action was not necessary to establish the SMaRT Station. None of the present or anticipated activities at the SMaRT Station prevent access to or impact the shoreline.

9. CALIFORNIA DEPARTMENT OF FISH AND GAME

Under Sections 1601-06 of the California Fish and Game Code, the California Department of Fish and Game (CDFG) has discretionary authority over a project if it requires a Streambed Alteration Agreement. Any project that

"substantially diverts or obstructs the natural flow or substantially changes the bed, channel, or bank of any river, stream or lake, or uses any material from a streambed, or drills a well in the 100-year flood plain," may require a Streambed Alteration Agreement from the CDFG before it can begin construction.

The construction of the SMaRT Station did not affect any river, stream or lake and thus did not require a permit from CDFG. None of the present or anticipated future activities of the SMaRT Station require permits from CDFG.

10. SANTA CLARA COUNTY

Solid Waste Management Plan/Finding of Conformance

The regulatory conformance process determines whether a proposed facility is in conformance with a city's general plan and zoning ordinance, and the County Solid Waste Management Plan (CoSWMP), or County Integrated Waste Management Plan (CIWMP).

To be found in conformance with a city's general plan the site must have an appropriate designation as shown on the general plan map. The SMaRT Station site was designated as a "Future Solid Waste Transfer Station" in the Sunnyvale General Plan prior to its permitting and construction.

As described below, under City of Sunnyvale Zoning Ordinance, the SMaRT Station site was rezoned from Public Facilities District (P-F) to an industrial zoning, M-3 PD (General Industrial District, Planned Development), to allow for the need to operate machinery and temporarily store hazardous materials on-site.

Santa Clara County Environmental Health Services Department

Title 14 and Title 7.3 of the California Code of Regulations (now incorporated in Title 27) set forth minimum standards for handling and disposal of solid wastes as a means of promoting the health, safety, and welfare of citizens. Standards are to be enforced by the Local Enforcement Agencies, who enforce these codes on behalf of the California Department of Resources Recycling and recovery (CalRecycle). In the case of the SMaRT Station, the LEA is the Santa Clara County Environmental Health Services Department. Prior to drafting or renewing a Solid Waste Facilities Permit (SWFP), the LEA must receive a completed application and this Transfer/Processing Report.

The LEA also enforces minimum standards of solid waste handling and conducts monthly inspections of the SMaRT Station.

11. CITY OF SAN JOSE

Kirby Canyon Landfill Solid Waste Facility Permit

The Kirby Canyon Sanitary Landfill received a Planned Development (PD) permit from the City of San Jose in 1984 (PD permit 84-5-55). The facility is currently allowed to receive an annual average of 2600 tons per day of waste,

operating on a 7-day week basis. The PD permit issued by the City of San Jose for the landfill operations limits operating hours to between 12 a.m. and 5 p.m.

12. City of Sunnyvale

City of Sunnyvale Zoning Ordinance

The SMaRT Station site was rezoned from Public Facilities District (P-F) to an industrial zoning, M-3 PD (General Industrial District, Planned Development), to allow for the need to operate machinery and temporarily store hazardous materials on-site.

City of Sunnyvale General Plan

Sunnyvale's General Plan consists of a Community Vision and five supporting chapters addressing the physical development of the city. The Sunnyvale Materials Recovery and Transfer (SMaRT Station ® is discussed in Chapter 7 of the General Plan, Environmental Management.

Permits required by the City of Sunnyvale

Permits that are required by the City of Sunnyvale to construct the SMaRT Station include a building and grading permit and an erosion control permit. Building Permit Design plans for the facility were reviewed and approved by the Planning Department, Department of Public Works, Building Department and the City's Public Safety Department prior to issuing a building permit. The City of Sunnyvale has received a Special Development Permit, issued by the City of Sunnyvale Planning Commission. Documentation is contained in Appendix F.

Sunnyvale Water Pollution Control Plant

The SMaRT Station generates two liquid waste streams. Domestic wastewater is generated from employee shower and bathroom facilities located in three separate locations. Domestic wastewater is routinely discharged to the WPCP, and operations staff is trained not to use sinks and toilets for disposal of inappropriate liquid wastes. Tipping floor sump water (or leachate) is generated when trash is collected on rainy days. Past tests showed quality problems indicating certain metals were present at concentrations greater than the Local Limits established by the WPCP. A pre-treatment system was installed to improve the quality; however, the system had mixed success. Until a system is in place that meets the requirements for discharge to the WPCP, the water will continue to be collected in the existing sump and removed for proper treatment/disposal off-site.

City of Sunnyvale Public Safety Department

The Sunnyvale Public Safety Department has issued Hazardous Materials Storage Permits for all hazardous materials stored at the SMaRT Station site, including waste oil and diesel fuel. A 2,000-gallon diesel fuel tank and pump system was installed northeast of the maintenance shop for the fueling of all on-site operations vehicles and equipment. No waste hauling vehicles or transfer trucks are fueled at the SMaRT Station. The fuel tank was installed pursuant to the requirements of the City of Sunnyvale Municipal Code Title 20, the Uniform Fire Code Article 79, and the EPA practices for underground flammable liquid tanks.

A waste oil storage tank is located near the buy-back area and is used to store waste oils collected through the curbside program or delivered to the SMaRT Station by the public. The storage tank for curbside collected waste oil is a 2,000-gallon underground tank designed with the same requirements stated for the diesel tank. A 500-gallon aboveground diesel fuel storage tank is located at the east end of the facility to provide fuel supply for an emergency standby generator.

The Underground Storage Tank permit is contained in Appendix F.

B. Design Requirements

Design criteria and requirements established by statutes, regulations and local ordinances or by approval conditions imposed by agencies having jurisdiction over the SMaRT Station are summarized in this section.

1. CALIFORNIA DEPARTMENT OF RESOURCES RECYCLING AND RECOVERY (CALRECYCLE)

Title 14 California Code of Regulations - Minimum Standards for Solid Waste Handling and Disposal

Title 14 specifies design requirements that must be met in order to obtain a solid waste facilities permit. These Sections include such regulations as:

Sections 17451-17453 The design of a new station shall utilize expert advice, as appropriate and shall be based on appropriate data regarding the service area, anticipated nature and quantity of wastes to be received, climatological factors, physical settings, adjacent land use, types and number of vehicles anticipated to enter the station, drainage control, the hours of operation and other pertinent information. The station shall be designed in such a manner to minimize the propagation of flies, rodents or other vectors and the creation of nuisances. Other pertinent matters related to the protection of public health shall be taken into consideration.

Sections 17481-17485 It is the responsibility of the operator to provide adequate station improvements including pertinent storage signage, security around the perimeter of the station, reasonably smooth road surfaces, and visual screening.

Sections 17491-17497 Adequate sanitary facilities, drinking water, communications facilities, lighting, and firefighting equipment shall be provided for station personnel to ensure their safety. Also the station shall be designed, constructed and operated so that contact between users and solid waste is minimized.

2. CALIFORNIA AIR RESOURCES BOARD: BAY AREA AIR QUALITY MANAGEMENT DISTRICT

The construction of the SMaRT Station required the excavation of landfill material in the Sunnyvale landfill and the redesign of the landfill's gas control system. These activities have been completed.

The monitoring system for structures adjacent to the Sunnyvale Landfill includes the SMaRT Station. All adjacent structures are monitored continuously for the presence of explosive gases in the lower explosive range (LEL). The SMaRT Station design includes a migration cutoff trench on the east and south sides of the building, with sample ports for migration monitoring. Additionally, a passive methane ventilation system was installed beneath the facility to allow for the release of gases should they migrate beneath the structure. Vents are monitored quarterly for the presence of methane. Both the migration cutoff trench and the passive ventilation system can be modified to active ventilation systems if gases are detected.

If migrating gas is consistently found to be in the explosive range, the trench will be connected to the landfill gas collection system, where the collected gas will be flared or burned in engine generators at the nearby Power Generation Facility. A modification of the BAAQMD permit to operate the landfill gas system would be required to connect the migration cutoff trench to the landfill gas collection system.

3. SWRCB/RWQCB NPDES

Stormwater is collected on-site and discharged into the stormwater drainage canals located immediately west and north of the site. The discharge is through drop inlets and buried drainpipe into drainage canals. The SMaRT Station is included under the General Permit for the Sunnyvale Landfill.

4. CITY OF SUNNYVALE – GENERAL PLAN CONFORMANCE

City of Sunnyvale General Plan

The City of Sunnyvale's General Plan is comprised of a number of policies. Those policies and goals that affect the SMaRT Station design are discussed below.

LAND USE & TRANSPORTATION

The Land Use & Transportation goals establish patterns of land use for housing, commercial uses, industry and open space and it sets standards for density of population and intensity of development for each of the land uses.

Policy LT-1.11b. Protect and preserve the diked wetland areas in the Baylands, which serve as either salt evaporation ponds or holding ponds for the wastewater treatment plant.

Conformance: The SMaRT Station site is located south of the salt evaporation ponds and east of the wastewater treatment plant's ponds. The project does not affect these ponds.

ENVIRONMENTAL MANAGEMENT - WASTEWATER

Environmental Management -Wastewater policies in the City's General Plan is a long range planning document that ensures that required sewerage facilities are provided consistent with actual growth.

Policy EM-5.2: Ensure that wastes discharged to the wastewater collection system can be treated with existing treatment processes of the WPCP.

Conformance: The SMaRT Station discharges wastewater to the WPCP and leachate is sent to a permitted off-site facility for treatment. Sources for wastewater include domestic usage. Leachate is generated when wash down water has come in contact with garbage or drains from MSW loads received in the rainy season.

SAFETY AND NOISE

The purpose of the Safety and Noise policies are to establish a balance between the community's need for safety with other needs such as housing, employment and transportation. This can be accomplished by incorporating knowledge of existing safety hazards into the planning and development review process.

Policy SN-1.1: Evaluate and consider existing and potential hazards in developing land use policies. Make land use decisions based on an awareness of the hazards and potential hazards for the specific parcel of land.

Conformance: EMCON Consultants conducted a site specific geotechnical investigation, including test borings and CPT soundings, in August 1989. Based on these site investigations, EMCON developed a foundation report entitled: "Field Investigations Conducted in Support of the Comprehensive Project Description." This report provides procedures and techniques necessary to construct the foundation. The foundation was constructed accordingly and the seismic hazard at this facility was minimized. Periodic safety inspections by the City of Sunnyvale Building Department review ongoing seismic safety issues related to operations and equipment.

Policy SN-1.2: Take measures to protect life and property from the effects of a 1% (100-year) flood.

Conformance: The EIR concluded that the major surface drainage in the vicinity, the East and West Channels, have sufficient capacity to handle the worst-case scenario of a 100-year storm peaking at the same time as a 10-year tide. These channels are not expected to impact the site. Flooding could occur, however, if the levees north of the site were over topped by a tsunami or

breached due to ground shaking from an earthquake. A tsunami is an earthquake induced sea wave and may result from local or distant seismic activity. In the south bay area, tsunami overtopping of levees is considered very unlikely, and the probability that the site would flood at all has been considered as very low.

In February 1998, the levee of the East Sunnyvale Channel overtopped during peak flow following a period of high rainfall intensity. The Bay Lands #1 pump station, which drains the canals north and west of the SMaRT Station, was not started for several hours due to mechanical and logistical problems. Even so, the SMaRT Station remained open, and trucks continued to arrive in spite of flooding along some access roads. Since this occurrence, the Santa Clara Valley Water District has performed construction on the levees that overtopped, raising them to elevations deemed to be protective. The City of Sunnyvale has also made improvements at the pump station to improve its performance and reliability.

Breaching of the levees due to ground shaking could result from earthquake induced landsliding of the levee sides, which would lower the levee sufficiently for high tide to flood the areas around them. It is unlikely, however, that even the lower portions of the SMaRT Station would flood. Flooding risk from both tsunami and breaching of levees could be reduced through regular maintenance of the levees, which is the responsibility of the Santa Clara Valley Water District.

5. SUNNYVALE WATER POLLUTION CONTROL PLANT

Wastewater generation from the SMaRT Station is estimated to be 500 gallons per day. In order to dispose of water generated on the tipping floor to the sanitary sewer system, the water must meet certain standards established by the WPCP. The WPCP's acceptance criteria are presented in Section 12.12.120 of the City of Sunnyvale's Sewer Ordinance. This section states that no facility shall discharge wastewater to the sewer system containing concentrations of pollutants in excess of their standards regarding limitations on wastewater strength. In addition to these limitations, no person shall discharge any wastewater:

- a) Having a temperature higher than 140 degrees F,
- b) containing more than 100 parts per million by weight of oil or grease of petroleum origin; containing more than 300 parts per million by weight of fat, oil or grease of animal or vegetable origin; or containing grease or oil or other substances that will solidify or become discernibly viscous at temperatures between 32 and 140 degrees F, or
- c) Having a pH lower than 6.0 or greater than 10.5.
- d) Having zinc in concentrations greater than 1.48 mg/L or concentrations of nickel greater than 0.25 mg/L [other compound specific limits also apply].

Presently, leachate water collected in the sump is collected by a contract vacuum truck service for transport to an off-site permitted liquid waste

treatment facility. Modifications to the pretreatment system to reduce contaminant loads may allow the resumption of discharge of treated floor sump wastewater to the sanitary sewer in the future. The vehicle maintenance building is equipped with an oil and grease trap in its floor sump.

6. CITY OF SUNNYVALE PUBLIC SAFETY DEPARTMENT

Storage of hazardous material at the SMaRT Station site, such as waste oil or diesel fuel, requires a Hazardous Materials Storage Permit from the Sunnyvale Public Safety Department. A 2,000-gallon diesel fuel tank with an appropriate pump system was installed for the fueling of on-site vehicles only. No waste haul vehicles or transfer trucks are fueled at the SMaRT Station. The fuel tank is underground and installed per the requirements of the City of Sunnyvale Municipal Code Title 20, the Uniform Fire Code Article 79, and the EPA practices for underground flammable liquid tanks. Underground storage tanks are continuously monitored for leaks and overfill. The permit is located in Appendix F.

In addition, a waste oil storage tank is located near the buy-back area for waste oil collected from the curbside program, or delivered to the SMaRT Station by the public. The storage tank for curbside collected waste oil is a 2,000-gallon underground tank designed per the requirements stated for the diesel tank.

C. Operational Requirements

Conditions, criteria, and operational requirements established by statutes, regulations or local ordinances or by approval conditions imposed by agencies having jurisdiction over the SMaRT Station are summarized in this section.

1. CALIFORNIA DEPARTMENT OF RESOURCES RECYCLING AND RECOVERY (CALRECYCLE)

Title 14 California Code of Regulations - Minimum Standards for Solid Waste Handling and Disposal

Title 14 specifies operating requirements that must be met in order to obtain a solid waste facilities permit. These Sections include such regulations as:

Section 17341 Requires that all equipment used for the collection and/or transport of solid waste be durable, easily cleaned, designed for safe handling, and constructed to prevent loss of wastes from the equipment during collection or transportation. In addition, all equipment is to be maintained in good condition and cleaned in a manner that prevents the propagation or attraction of flies, rodents, or other vectors and the creation of nuisances.

Sections 17414 each station operator is required to maintain records of weights or volumes handled in a manner and form approved by the local enforcement agency. Operators must also maintain records of fires, injury, property damage accidents, explosions, and incidents regarding hazardous wastes and other unusual occurrences. These records are to be open to inspection by the local

enforcement agency and other regulatory and enforcement agencies and accessible for a period of three years.

Sections 17410.2, 17410.3 & 17418.2: It is the responsibility of the operator of the station to provide adequate numbers of qualified personnel to staff the station and to deal effectively and promptly with matters of operation, maintenance, environmental controls, records and emergencies. The station operator is also required to provide adequate supervision to ensure proper operation of the station in compliance with all applicable laws, regulations, permit conditions and other requirements.

Section 17406.2 Unloading of solid wastes shall be confined to as small an area as practicable.

Section 17407.2 Facilities shall be cleaned daily of all loose materials and litter or on a schedule approved by the local enforcement agency. All boxes, bins, pits or other types of containers used shall be cleaned daily or on a schedule approved by the local enforcement agency.

Section 17410.1 Facilities shall remove solid wastes deposited at the site within 48 hours from time of receipt.

Sections 17406.2 & 17409.6 Compliance with specific provisions regarding adequacy of parking in a local land use approval (conditional use permit). Containers used to store garbage or other wet or liquid producing wastes shall in all cases be non-absorbent and leak-resistant.

Section 17409.3 Scavenging shall be prohibited. Salvaging activities shall be conducted in a planned and controlled manner and shall not interfere with other aspects of site operation. Salvaging activities shall be confined to specified, identified areas of the facility, and controlled to prevent health, safety or nuisance problems.

Sections 17409.3 & 17408.4 Storage of materials salvaged from solid wastes shall be ancillary to the activities of the operation or facility unless such storage is planned as an integral part of the operation. Materials salvaged on-site shall be stored away from other activity areas in specified, clearly identifiable areas as noted in the Transfer/Processing Report. They shall be arranged to minimize risk of fire, health and safety hazard, vector harborage, or other hazard or nuisance, and limited to a specified volume and/or duration as described in the Transfer/Processing Report. Drugs, cosmetics, foods, beverages, hazardous wastes, poisons, medical wastes, syringes, needles, pesticides and other materials capable of causing public health or safety problems shall not be salvaged at operations or facilities unless approved by the local health agency and the EA.

Sections 17408.5, 17407.4, 17410.4, 17407.3, 17408.1, 17408.3, 17418.3 (17408.5) each operation and facility shall be conducted and maintained to prevent the creation of a nuisance. The operator shall take adequate measures to minimize the creation, emission, or accumulation of excessive dust and

particulates, and prevent other safety hazards to the public caused by obscured visibility. The operator shall take adequate steps to control or prevent the propagation, harborage and attraction of flies, rodents, or other vectors, and animals, and to minimize bird attraction. Drainage at all operations and facilities shall be controlled to: minimize the creation of contact water; prevent to the greatest extent possible given existing weather conditions, the uncontrolled off-site migration of contact water; protect the integrity of roads and structures; protect the public health; and prevent safety hazards and interference with operations. Litter at facilities shall be controlled, and routinely collected to prevent safety hazards, nuisances or similar problems and off-site migration to the greatest extent possible given existing weather conditions. Noise shall be controlled to prevent health hazards and to prevent nuisance to nearby residents. Traffic flow through the facility shall be controlled to prevent interference with or creation of a safety hazard on adjacent public streets or roads, on-site safety hazards, and interference with operations.

Sections 17408.6 All aspects of the facility shall be maintained in a state of good repair. The operator shall implement a preventative maintenance program to monitor and promptly repair or correct deteriorated or defective conditions.

Sections 17407.1, 17407.5 & 17408.2 An operation or facility shall not intentionally accept or store hazardous wastes, including batteries, oil, paint, and special wastes, unless it has been approved to handle the particular waste by the appropriate regulatory agencies. At facilities where unauthorized hazardous wastes are discovered, control measures as are necessary to protect public health, safety and the environment. Medical waste, unless treated and deemed to be solid waste, shall not be accepted at an operation or facility, unless approved by the appropriate regulatory agency. If burning wastes are received at an operation or facility, they shall be separated from other wastes and deposited in a safe area, spread, and extinguished.

2. CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

Hazardous Waste Exclusion Program

Implementation of the Hazardous Waste Exclusion Program (HWEP) ensures that toxic or hazardous wastes are removed from the waste stream and do not reach the landfill. Exclusion activities include questioning self-haul customers of their load contents, inspecting self-haul and commercial loads, including picking apart packer truck loads at random, public education, and removal of hazardous wastes that could not be returned to generators. A copy of the HWEP is included in Appendix C.

3. CITY OF SUNNYVALE

City of Sunnyvale Zoning Ordinance

The Zoning ordinance regulates operations so as to reduce the impacts on surrounding land uses. Section 19.24.010, Operations upon Land - Nuisance Prohibited states: "Operations upon land shall be conducted in such a manner as to promote and protect the public health, safety, convenience and

general welfare of the inhabitants of the city." Activities specifically regulated include noise, types of fuels permitted, night lighting, ground vibration, and open storage of materials. The SMaRT Station design and operation complies with these standards.

III. Operations Plan

A. DETAILED SITE PLAN

1. TIPPING AREAS

Four areas of the SMaRT Station tipping floor have been designated for unloading franchise collection vehicles, (Figure A-4a). 18 stalls are provided for unloading residential, commercial and industrial MSW from franchise collection vehicles. Areas A and B are designated for tipping of materials to be sorted in the MRF. Area D is designated for roll-off vehicles dumping loose materials, which are typically from industrial sources and may contain larger materials for floor sorting or for sorting on the C&D sorting line. Roll-off trucks hauling compactors containing properly treated medical waste are tipped in Area C, and pushed directly into the compactor.

The public is directed to place refuse in an area separate from that used by the commercial vehicles. Ten discharge stalls are provided beginning at Column 15 and east, approximately to Column 17. As the character and number of incoming loads vary, any of the ten stalls can be assigned for tipping. Traffic spotters direct public haul vehicles.

During the weekend, public vehicles may also be directed to the commercial tipping areas, as there is little commercial traffic on weekends. This can be used to alleviate traffic backups during peak periods for public drop-off on weekends.

An AB 2020 California Redemption Value (CRV) container buy-back center is sited on the southwest edge of the yard, separate from the main processing building on the south side of the facility by traffic patterns and curbs. Beverage containers qualifying under the AB 2020 redemption program are also redeemed at the buy-back center 7 days per week. A public drop-off facility for source-separated recyclables such as corrugated cardboard, aluminum, paper, glass, plastics, and other recyclables is also located in this area. In addition, certain Universal Wastes are accepted at the drop-off, such as automotive batteries, household batteries, used motor oil and filters, fluorescent bulbs and tubes, mercury thermostats and thermometers, and electronic wastes. Finished compost, mulch and wood fines are available to residents in this area. Public drop-off materials are stored in containers. Refrigerators, freezers and air conditioning units are staged outside the building near the northwest tipping floor area for Freon and compressor oil evacuation prior to recycling.

2. STORAGE AREAS

An area of approximately 3,000 sf at the North West corner of the building is designated for storage and loadout of baled materials (Figure A-4). Material from this area is loaded onto semi-trailers for transport to market. A loading dock for the semi-trailers is located on the north side of the building. The storage areas for material awaiting transfer vehicles is approximately 20,000 sf, and the area for extra equipment and parts is approximately 2,400 sf. This area has a minimum 28' height clearance.

3. PARKING AREAS

The facility has parking for transfer trailers awaiting loading north of the loading area (Figure A-4). Trucks waiting to load bales of recyclables are parked in loading areas. A staging area is used to keep loading operations running smoothly. Employee and visitor parking are provided adjacent to the SMaRT Station office.

4. ACCESS

Caribbean Drive is the main access route to the SMaRT Station. Caribbean Drive becomes Lawrence Expressway on its eastern end and Mathilda Avenue on its western end. Both Lawrence and Mathilda provide direct access to Highway 237 and Highway 101. North Fair Oaks Avenue, which connects to Java Drive, is the only other roadway in the vicinity of the station that crosses Highway 237 (see Figure A-2).

5. BUILDING PLANS

Figure A-4 and A-6 provide show the layout of facilities that have waste handling activities.

6. TRAFFIC FLOW PLAN

Figure A-4 shows the flow of traffic entering and exiting the facility.

7. WASTE FLOW DIAGRAM

Figure A-5 shows the flow of material through the SMaRT Station.

8. DRAINAGE AND LEACHATE WATER DISCHARGE

Water introduced to the tipping floor is captured within the facility and is collected and drained to a sump, where it is held and periodically pumped into a liquid waste transfer vehicle for shipment to an off-site treatment facility. The facility is designed so that stormwater is captured outside the facility and feeds into storm drains. See Figure A-8a.

The following are the basic design parameters and concepts utilized in the design of the stormwater and leachate water systems.

a) Stormwater System

All stormwater from the structure's roof drainage systems and the paved parking and roadway areas is directed across sloped asphalt to catch basins and drop inlets equipped with pollutant filters, which in turn drain to storm drainage canals located immediately west and north of the SMaRT Station. The storm drainage system has been designed using 100 year storm data, for a storm intensity of 3.5 inches per hour, resulting in design storm run-off requirements of approximately 25 cubic feet per second (cfs). In order to prevent stormwater from contacting solid waste, wastes that inadvertently collect on the asphalt outside the covered area are removed by litter picking and by sweeping the entire area daily with a mechanical street sweeper. Blowing dust is minimized through use of an interior misting system. Rain water that may blow in to the tipping floor drains internally. Interior floors are designed to drain internally, and exterior asphalt surfaces drain away from the tipping floor. To mitigate the facility's impacts on stormwater quality, stormwater drop inlets and catch basins have been equipped with filtration devices that remove sediment and filter out oil and grease. Drop inlet and catch basin grates are cleaned at least weekly during rainfall events, sediment and oil and grease traps are checked at least weekly and cleaned as needed.

b) Leachate Water System

Wash down water and liquids collected from the solid waste materials are retained within the buildings, drained to collection trenches, and then routed to a storage sump for transport to an off-site treatment facility via vacuum truck. Dry sweeping systems are the predominant methods for cleanup; however, wash down may be done periodically. The leachate water system has been designed for 10 gallons per minute (GPM) wash down capacity, and 10 GPM for the dust suppression system. A dust suppression mist system is installed in the vehicle unloading areas and transfer areas.

c) Drainage Control Capacity

The SMaRT Station stormwater drainage system has been designed for a storm intensity of 3.5 inches per hour, resulting in design storm run-off requirements of approximately 25 cubic feet per second (cfs). Stormwater is routed to the existing stormwater canals located immediately west and north of the Station site.

The project site is protected from the flood elevations by the levees between the site and the adjacent salt ponds. In studies necessary for the Environmental Impact Report, it was concluded that the levees adjacent to the stormwater canals are of sufficient height to protect the Station site from any flood levels. (See Figure A-8b).

In February 1998, the west levee of the East Sunnyvale Channel north and south of Caribbean Drive was overtopped by heavy flows following a period of intense rainfall. The drainage canals to which the SMaRT Station stormwater

discharges were backed up due to a failure at Baylands #1 pump station coinciding with the flood event. The SMaRT Station remained dry throughout this episode, though access to and from the SMaRT Station was significantly restricted for two hours due to flooding. Since this flood event, the Santa Clara Valley Water District has embarked on a construction project to raise the channel levees. The City of Sunnyvale has also made improvements at the pump station to improve its performance and reliability.

9. UTILITIES PLAN

Figure A-8a shows locations of water supply lines, sewer lines, and storm drains.

10. TRAFFIC DESIGN CALCULATIONS

The SMaRT Station design included analysis of anticipated traffic patterns. Traffic engineering calculations were presented in the original Report of Station Information, and are also included as Appendix I in this Processing/Transfer Report. Follow-up surveys to confirm traffic engineering design calculations and assumptions have not been performed as there have been no significant problems with queuing, traffic flow, or access to the tipping floor, and materials are loaded out of the station on schedule and without exceeding design stockpile quantities. Queuing does occur from time to time during “Extra Dump” events, neighborhood beautification events held twice per year to enable residents to haul bulky wastes not normally collected at curbside. These events are typically held in April (2 weekends) and in October (2 weekends). During these weekend events, queues form on Caribbean Drive during the most popular event hours. However, the use of one lane for queuing does not result in any traffic safety problems. Caribbean Drive has three lanes in each direction and carries very little non-SMaRT Station traffic on weekends. Traffic on weekends is typically light because Caribbean Drive serves an industrial park in which most businesses are generally open only on weekdays. Traffic control is nevertheless provided in anticipation of the backup.

The original traffic design criteria and calculations for the SMaRT Station traffic queuing is presented in Appendix I.

B. STATION IMPROVEMENTS

1. IDENTIFICATION AND DIRECTION SIGNS

Signs stating the name of the facility and facility operator are posted at all entrances from public roads. There are also signs throughout the facility directing users to the proper tipping area. Sign locations and content are presented in Figure A-9. Photos of selected signs are presented in the Appendix J, Plates 1 and 2.

2. ENTRY SIGNS

There are signs at the main entrance that provide guidance to drivers of vehicles entering to unload recyclable materials and/or waste at the facility. The signs are of sufficient size for users to readily read the facility name, the SMaRT Station fee schedule, hours of operation, and a listing of the types of materials accepted and not accepted at the facility. A sign advising that no hazardous waste can be accepted at the facility is posted (Appendix J Plate 31). Another sign identifies which cities are served by the facility.

3. STATION SECURITY

A six-foot high chain-link fence placed at the site perimeter encloses the facility. The facility is patrolled by an on-site security guard during non-operating hours.

4. ROADS

The following criteria have been established for the design, construction and maintenance of all on-site roadways and parking areas.

- All surfaces are paved with asphaltic concrete pavement (3" for parking areas, 5" for all roadways). Aggregate base and sub-base requirements for roadways are 8" class two ABM or 12" class two ABS.
- All roadways are designed to support the largest axle and wheel loads which can be expected from the solid waste transfer trucks and roll-off trucks hauling roll-off compactor units.
- All roadways and parking areas are constructed with a minimum of four (4) feet of compacted granular subgrade to 90% relative compaction, and the 6" of aggregate base immediately beneath the asphalt to 95% relative compaction. This assures a stable pavement system under the anticipated loading.
- All roadways and parking areas are adequately drained to permit proper run-off of all stormwater.
- The Station operations plan includes a program for daily street/perimeter sweeping.
- After 19 years of use, there has been no significant settlement, cracking, or other failures of paved surfaces at the SMaRT Station. Minor repairs have been made as needed.

5. VISUAL SCREENING

A screening fence was installed along the northern boundary of the site to help block views of ground level activities and traffic. The facility's grounds also include trees and other shrubs.

C. OPERATIONS

1. HOURS OF OPERATION

The SMaRT Station is open to receive refuse from the public Monday through Sunday 8:00 a.m. to 5:00 p.m. and from franchise waste haulers Monday

through Saturday 5:00 a.m. to 5:00 p.m. and Sunday from 8:00 a.m. to 5:00 p.m. (when needed). Materials processing, removal and equipment maintenance is permitted 24 hours a day, seven days a week. Currently, processing and equipment maintenance takes place approximately 18.5 hours per day, from 5:00 a.m. -- 11:30 p.m.

2. STATION PERSONNEL

The SMaRT Station is operated by a contractor, presently Bay Counties Waste Services. A minimum of 111 employees of Bay Counties Waste Services and contract employees operate the SMaRT Station. Bay Counties Waste Services has organized their staff and contract personnel into five functional groups performing tasks in the areas of operations, materials recovery, maintenance, accounting, and safety and regulatory compliance.

a. Availability

The current staffing level for operation of the SMaRT Station is as follows:

<u>Office</u>	<u>Number of employees</u>
General Manager	1
Environmental, Safety and Health/Human Resources	1
Accounting Assistant	1
Service Representative	1
Safety/Training Coordinator (off-site)	1

Materials Recovery Facility (MRF) and Source-Separated Recyclables

Processing

Manager	1
Supervisor	2
Forklift Operator	2
Baler Operator	2
Lead Sorters	4
Sorters	58

Transfer and Wood Waste Operations

Manager	1
Tipping Floor Supervisor	1
Wood waste Room Lead Operator	1
Loader Operators	2
Forklift Operators	2
Compactor Operator (1 part-time)	1.5
Wood Grinder Operator	1
Traffic Control Spotters (Tipping Floor)	2
Traffic Control Spotter (Wood room)	1
Transfer Drivers	8
Floor Sorters (Tipping Floor)	10
Floor Sorters (Wood room)	1

Scale Operations

Scale Attendants	2
Buy Back Attendant	1
<u>Maintenance</u>	
Manager	1
Electrician	1
Lead Mechanic	1
Mechanic	2
Assistant Mechanics	4
 Total Staffing	 113.5

A Supervisor is on duty during all hours of operation. A designated Environmental, Safety and Health supervisor is in charge of enforcing the facility's health and safety plan. The Health and Safety Plan for the SMaRT Station is presented as Appendix L. Designated individuals are trained to perform load checks for hazardous material. In the event of an injury or accident, or if hazardous material is found at the facility, employees are instructed to immediately call for assistance and to notify the facility manager in charge. All special occurrences are recorded in a log. These procedures are described in detail in the Health and Safety Manual.

b. Training

All employees at the facility are provided with monthly safety training including but not limited to, the proper use of personal protective equipment, hazard communication, blood borne pathogens, emergency action plan and fire protection plan. These training programs have been developed by the station operator and are updated as needed. The Environmental, Safety and Health supervisor ensures that the facility's plan is comprehensive and is followed by all employees and individuals entering the facility.

A copy of the Contract Operators' Emergency Response Plan is included as Appendix M.

c. Emergency Contact List

Name	Title	Affiliation	Phone Number	Cell Number
Rich Gurney	General Manager	Bay Counties Waste Services.	408-752-8530	408-595-2250
Mark Bowers	Solid Waste Program Manager	City of Sunnyvale	408-730-7421	408-203-5304
Karen Gissibl	Recycling Manager	City of Sunnyvale	408-730-7277	
Debi Sargent	Contract Administrator	City of Sunnyvale	40-730-7673	408-718-4018

A list of emergency contacts for Bay Counties Waste Services is found in Appendix M

d. Operator

The facility contract operator is presently Bay Counties Waste Services, which is responsible for the daily operation of the SMART Station. The City of Sunnyvale entered into a seven year operating agreement with Bay Counties Waste Services in 2008 to operate the SMART Station through December 2014.

3. STATION EQUIPMENT

a. Type, Capacity and Number of Units

The stationary equipment used in the daily operation of the SMaRT Station is as listed in Appendix H.

b. Equipment Maintenance

A maintenance program has been implemented by the contractor, including training of personnel in maintaining facility equipment. Preventive maintenance schedules for equipment have been established in accordance with manufacturer's guidelines and are routinely followed. With this preventive maintenance program the reliability of this Station can be maintained. The anticipated downtime of the Station processing equipment has been estimated to be only 1% percent of the operating hours. Thus, the resulting overall annual availability of the Station is approximately 99% for both the transfer and processing systems.

c. Standby Equipment

Equipment used to operate the SMaRT Station includes the following:

Solid-tire loaders for waste handling and pushing to the transfer truck loading area. A minimum of two loaders is available at all times to ensure that the transfer operations are maintained. Essential spare parts are either maintained on-site or are available for purchase locally. In addition, equipment is available for rent locally in the event that this equipment is out of service for a period of time. A back-up generator is provided by the operator to ensure that the scale system is always supplied with electric power.

Equipment installed in the materials recovery and separation area includes conveyors for hand sorting of wastes, screens, baling equipment, and other types of equipment for which parts are often locally available. An inventory of spare parts is also maintained by the operator. To provide redundancy for loadout of wastes in the event that the compactor is out of service, an overhead fill conveyor is available for use when the hydraulic compactor is out of service. A spare hydraulic ram has also been secured to provide for rapid repair of the compactor in the event that the cylinder is damaged. When the compactor is out of service, transfer trucks are top loaded; however waste must be hauled in a loose state, reducing transportation efficiency. An emergency standby generator is available to power loadout equipment in the event of a power

failure. In the event that both loadout systems are inoperable for a period of time, the contractor will load MSW into transfer trailers with loaders.

Downtime during the most recent fiscal year averaged approximately 1% of operating hours, most of which was associated with MRF sorting equipment. There is sufficient storage capacity on the tipping floor to accommodate the levels of MRF equipment and compactor downtime experienced during the first 19 years of operation, which included the “breaking in” period.

4. MATERIALS HANDLING ACTIVITIES

a. *Materials Receiving*

(1) Materials check in and weighing

Traffic control signs along the access road to one of two inbound scales direct inbound refuse collection vehicles. The scales are used to measure net load weights in order to determine tipping fees. After weighing, collection vehicles proceed from the gatehouse to the tipping area. The primary determination of the suitability of a load for processing is made at the gatehouse or by pre-arrangement with the hauler.

Traffic signs on the access road to the scale house at the entrance facility direct the public. Public customers are charged according to the volume of material being delivered, measured in cubic yards by the scale house attendant. Public vehicles with loads exceeding 12 cubic yards are weighed in and out, and recorded on a per ton basis in accordance with Disposal Reporting Regulations. Public vehicles are then directed to the public tipping area or wood/yard waste unloading area.

(2) Hazardous Waste

The SMaRT Station does not accept hazardous or designated wastes. However, some household or other hazardous wastes are occasionally incorporated into municipal solid waste. The station operator is required to perform periodic load checking and operate a Hazardous Waste Exclusion Program (HWEP) that dictates the procedure for handling hazardous wastes that may arrive in the waste stream. The HWEP is intended to protect SMaRT Station personnel from hazardous waste, to ensure safe transport of municipal solid waste from the SMaRT Station to the landfill, and to prevent disposal of hazardous waste in the Kirby Canyon Landfill. The program calls for the detailed inspection of six random loads each week and any suspicious loads entering the facility. The six loads that are formally inspected include two loads each of commercial waste and industrial waste, and one load each of residential and publicly hauled waste.

Loads chosen for inspection are directed to a specific area on the tipping floor. The area is then isolated to avoid contact with other waste handling activities. The load check team uses the loader, rakes and long handled tools to inspect for hazardous or designated wastes. If no such wastes are found, the load is

pushed to the working area for processing. If hazardous or designated wastes are found, the load-check team follows the specified procedure for isolating and returning the unacceptable waste to the generator or packing and moving the materials to the hazardous waste storage area.

Members of load check teams are trained on how to recognize hazardous material, how to isolate the suspect material, which materials not to mix, and the agencies to notify in case certain materials (such as radioactive or explosive wastes) are detected.

Signs are posted near the entrance at the scale house and collection booth, which clearly state the types of waste that are not accepted at the station. Printed on each SMaRT Station scale ticket is a questionnaire regarding hazardous wastes that the customer may be carrying.

(3) Unloading

The waste unloading (tipping area) at the facility is fully covered. Customers are directed by traffic spotters to an area of the tipping floor to empty their loads. Waste hauling vehicles discharge their loads by maneuvering into position outside of the building and then backing into the station for unloading. Vehicles can either enter on the south side of the station, or proceed around the east end of the station to the unloading area on the north side of the Station. A covered area of over 36,000 square feet is available for unloading and for storage of unloaded waste materials. Vehicles transporting source-separated recyclables weigh at the scale house to properly record inbound traffic and weight. These vehicles then proceed to the curbside processing area where they are weighed on a 30' scale after each compartment has been emptied and recorded.

If burning wastes are received at the facility Public Safety/Fire is notified. Burning wastes are separated from other wastes and deposited in a safe area, spread and extinguished.

(4) Incoming materials storage

Allowing for vehicle movement and proper access, a minimum of 20,000 sf is available for storage. This storage area can accommodate up to 1,000 tons (assuming 10 lb. per sf³), which is approximately one day's total waste volume when taking into account the separate areas for the curbside materials, wood and yard wastes. Therefore, the storage area is sufficient to handle the peak arrival rates, plus provide adequate surge capacity between peak arrival rates and transfer or processing rates.

(5) Hazardous materials storage

Hazardous waste is not intentionally accepted at the facility, nor is this facility utilized for a regularly scheduled public household hazardous waste drop-off program. As previously discussed, a hazardous waste exclusion program has been established for the facility.

When unauthorized hazardous wastes are discovered they are removed from the incoming waste stream and placed into a separate covered, self-contained storage area with double containment (approximately 600 sf) located outdoors on the southeast side of the SMaRT Station structure. These wastes are removed for off-site processing on a regular basis, and not less than once every 90 days. The hazardous materials shed is equipped with a fire suppression system, and accessed only by trained personnel. The removal, categorization, and lab packing of hazardous waste removed from the tipping floor and Materials Recovery Facility is conducted by a licensed hazardous materials handling contractor.

Household sharps, i.e. needles, syringes, and lancets generated by home medication users in the SMaRT Station service area are collected in a specially designed 3-yard capacity sharps receptacle. The receptacle was placed at the buyback recycling area in April 1996 to encourage proper disposal of sharps. Commingling sharps with household waste can lead to accidental needle sticks to workers staffing sorting lines.

Sharps may be discarded in the receptacle during SMaRT Station operating hours (7 days per week, 8:00 AM to 5:00 PM). The receptacle is equipped with a collection chute in which residents place their full containers of sharps. Sharps placed in the chute will slide into a drum. A contracted medical waste handling service performs regularly scheduled sharps collections. Drum contents are packaged for transport and a tracking document is initiated, which is retained in the record by the SMaRT Station operator. The capacity of the sharps drum is monitored by personnel properly trained in blood borne pathogen hazards, and is locked to prevent unauthorized entry.

This program is restricted to resident-generated sharps; medical wastes from businesses are strictly prohibited.

b. Salvaging and materials recovery

(1) Materials separation and sorting

The SMaRT Station provides a complete and fully functioning materials recovery operation. The materials recovery operation currently recovers the following materials:

- Fiber (cardboard (OCC), newsprint (ONP) and mixed paper)
- Plastics (HDPE and PET) and Mixed Plastics
- Ferrous metals and tin cans
- Aluminum beverage containers and aluminum scrap
- Glass (all colors)
- Wood
- Green Waste
- Inerts (concrete, brick, asphalt, dirt)
- MRF minus 2" Fines

Most of the materials separation and sorting operations occur at the West end of the building in the “MRF”, and are separated from the waste receiving, unloading, and transfer operations. The MRF operations consist of feed conveyors, screening equipment, aluminum and plastic sorting equipment, sorting conveyors and balers. The MRF comprises an area of approximately 40,000 square feet. Hand sorting techniques are used on several sorting lines to recover various recyclable materials. Reclaimed materials are stored in bins and bunkers until sufficient material accumulates to warrant baling and final transport to buyers. An additional 10,200 sf area at the Southeast end of the tipping floor is used for staging and sorting construction and demolition materials.

(2) Storage of separated materials

The recovered recyclable materials are handled as follows:

- All glass is sorted off the conveyors by color and moved by forklift to storage bins located outside the facility at the southwest corner and outside the south area of the tipping floor. When sufficient quantities are available, the storage bins are exchanged with empties and transported to a glass beneficiation plant. The outside storage bins are steel 40-cubic yard bins.
- Fiber, aluminum, plastics and tin cans are sorted off the conveyors and placed in storage bins. When sufficient quantities have accumulated, the materials are moved to the baler feed conveyor, baled, and stored within the Station building against the west wall and on the loading dock. When a sufficient number of bales have accumulated, they are loaded into trucks and transported to intermediate or end markets. Ferrous metals other than tin cans are stored in 40’ trailers outside at the southeast end of the facility. These containers are exchanged as needed by a scrap metal processor.
- Bales are stacked no more than 4 high, excepting bales stored directly adjacent to walkways leading to the two west end doors which are stacked no more than 3 high. Loose, incomplete, or out-of-shape bales shall not be stacked or used to support other bales in the stack. The bale storage area at the west end of the MRF has a capacity of approximately 500 tons. At current processing levels this storage capacity provides for up to 3.8 days storage of baled recyclables.
- Wood and yard wastes are shredded and screened into two size fractions -- "Wood Overs" (sized 3” minus) or chips for use as a fuel source, and "unders" (sized 1” minus) for use as compost. Processed yard waste materials are dropped in bunkers and then loaded into trucks for transport to an off-site composting facility. According to the Sunnyvale fire code, the flammability of the wood stored here requires that this area be zoned as a hazardous material area, which requires extensive fire protection equipment. The area includes a firewall and sprinkler system. Processed wood and yard wastes are typically removed within a 24-hour period during weekdays.

- The SMaRT Station recovers small quantities of vehicle tires. Loads containing less than 10 tires are accepted at the SMaRT Station. The recovered tires are stored in a 40-cubic yard roll-off container outside the building at the southeast corner. Once enough tires have accumulated, they are removed by a licensed waste tire hauler for reuse, retreading, recycling, transformation, or disposal depending on tire quality and market conditions. All waste tire loads leaving the SMaRT Station are manifested in accordance with waste tire program requirements.

(3) Non-recoverable materials storage – Solid Waste Removal

All residuals are removed from the Station within 48 hours. The transfer truck compactor loading operation is located away from other facility operations. One compaction station is provided resulting in the capacity to load approximately 70 tons per hour. As stated earlier, the storage or surge area for residuals prior to loading can accommodate up to 1,000 tons, which is sufficient to accommodate the surges between peak arrival rates and loading rates.

At design capacity, with 25% recycling, approximately 1,125 tons per day of residual material from the processing lines and non-processible material from the tipping area can be transported to the Kirby Canyon Landfill.

c. Materials processing and volume reduction

(1) Size reduction

Wood and yard wastes are reduced in size in a building adjacent to the main building. The wood and yard waste building is 9,375 square feet and includes a tipping area, a shredder and a processing conveyor. The wood waste is fed onto the conveyor and moved through a shredder. Green waste and dry wood may be shredded together or separately. Shredded material is sorted into two size fractions (overs and fines) and placed in bays located outside the building. Green fines and wood fines are mixed together, while green overs and wood overs are kept in separate piles. The piles are loaded onto trucks for transport to off-site handling and processing facilities. Wood overs (3" minus) are delivered to wood fuel power plants (also called biomass generation plants) in the region and burned to generate electricity.

(2) Transformation

There are no activities that constitute transformation of material at the SMaRT Station.

(3) Compaction and/or baling

Recovered material and source separated recyclables are conveyed to balers and baled. Baled materials are then stored until a sufficient quantity has accumulated for vendor pick up. An area of approximately 5,000 square feet

on the west side of the main building is designated for the storage of baled materials. This area can accommodate approximately 500 tons of material. Materials from this area are loaded onto semi-trailers or into ocean shipping containers for transport to market. A loading dock with three stalls for the semi-trailers is located on the north side of the building.

d. Materials removal

(1) Load-out of recyclable materials

Processed material is either baled or collected in drop boxes. As material is baled, it is either stored or loaded directly into shipping containers. Once these containers are full they are removed from the premises. Sufficient quantities of material to ship loads of paper/fiber to market are generally collected daily. It may take up to 60 days to accumulate a load of plastic materials. Processed green materials and wood overs are moved from the grinder to bunkers outside the wood room. These materials are then top loaded into transfer trailers for transport to markets.

(2) Removal of non-recoverable residues

Non-processible and residual refuse from the processing system is transported to the Kirby Canyon Sanitary Landfill for final disposal. Transfer trucks (48' tractor-trailers with walking floors) are loaded with compacted solid waste through the backs of the trailers. Once the vehicle is loaded, it departs for the Kirby Canyon Landfill if permissible within the time restrictions of freeway use and landfill operating hours. Transfer trucks are restricted from departing the SMaRT Station to deliver municipal solid waste to Kirby Canyon Landfill between 4:30 PM and 5:30 PM Monday through Friday except holidays, and from departing Kirby Canyon to return to the SMaRT Station between the hours of 7:15 AM and 8:30 AM, Monday through Friday except holidays. The City, as a traffic mitigation measure, places these restrictions in the use permit issued for the SMaRT Station. If restricted from accessing the freeway or the landfill at the time the transfer trucks are loaded, trucks are parked on the SMaRT Station floor overnight until they are able to depart the facility within the allotted times.

(3) Removal of hazardous materials

When storage capacity is reached or within 90 days, whichever comes first, all hazardous material is removed from the hazardous waste storage container by a licensed contractor and packaged for transport to an appropriate and permitted hazardous waste recycling or disposal facility.

5. STATION MAINTENANCE

a. General

The facility operator is contractually required to maintain all property, facilities, and equipment in a safe, clean, neat, and operable condition at all times. The

agreement includes operating standards and procedures that must be followed to insure maintenance and housekeeping standards are met. A Maintenance Plan defines the frequency and nature of required maintenance tasks. The facility operator retains monthly reports confirming completion of maintenance tasks in accordance with the maintenance plan.

b. Station Cleaning/Housekeeping

Tractors and transfer trailers are thoroughly washed on the exterior at least once per week and thoroughly cleaned with pressurized water at least once per year or as recommended by the equipment manufacturer. At present, this is conducted off-site.

Building office areas are cleaned daily. Areas within buildings and structures occupied by workers are swept daily and washed, if necessary. The compactor loading area and access ramps are cleaned and swept at the end of each operating day.

The contractor is required to clean each area of the tipping floor once every 24 hours in accordance with a plan approved by the City. In addition, perimeter roads and areas outside the tipping floor are cleaned daily using an industrial street sweeper.

The exterior of the transfer building is thoroughly cleaned with pressurized hot water at least once per year. The SMaRT Station was designed and constructed with a drainage system within the facility, which collects incidental waste water emanating from the refuse on the floor, and any rinsate generated. This liquid is collected in a sump and is currently removed as needed to an off-site treatment facility. Any wash water run-off that drains to the exterior of the facility is prevented from entering storm drains by blocking drains with temporary seals or berms. All equipment is cleaned and maintained as recommended by the manufacturer and environmental health laws. Cleaning criteria are part of the above-mentioned operating standards and procedures exhibit to the operating agreement.

6. HEALTH AND SAFETY PROGRAM

a. Sanitary Facilities

The SMaRT Station has sanitary facilities for both men and women, which are located in the Administrative Office. These facilities include lockers, showers, toilets, sinks, soap and towel dispensers, and hot and cold running water. Facilities for visitors are separate from facilities for employees. Additional restrooms are available adjacent to the maintenance shop and at the southwest corner of the main building. Portable toilets are provided for refuse truck drivers on the north and south sides of the main transfer building.

b. Water Supply

Potable water for domestic, operations, and fire control uses is available from existing 12-inch water mains at the intersection of Caribbean and Borregas and Caribbean and Crossman. An eight-inch line serves the WPCP from the main at Caribbean and Borregas. Drinking water is available at SMaRT Station offices. Landscape irrigation is supplied by separate main carrying recycled water from the Water Pollution Control Plant. Pressurized water supplies the fire suppression system. Should a fire hose be used or fire sprinkler be activated, a pressure switch instantly notifies a central alarm contractor, which notifies the Fire Department, triggering an automatic emergency response.

c. Communications Facilities

The SMaRT Station has telephone service at the administrative offices, inside the processing facility and maintenance shop, and at the scale house. Radio communication, consisting of hand-held two-way radios and cell phones operated by the Facility Operator also links all of these locations. Emergency telephones are located in the MRF, Wood Room and Transfer areas of the facility. The SMaRT Station Operator monitors process, unloading, load-out, and a variety of other activities on a multi-screen video monitoring system.

d. Lighting

The main processing facility is equipped with an array of T5 high bay fluorescent light fixtures. The outer road area and parking lot is equipped with Halide light fixtures with 3-5 foot candles of power.

e. Fire Fighting Equipment

The SMaRT Station is equipped with all the firefighting apparatus required by the City of Sunnyvale's fire codes. This equipment is maintained in accordance with all codes and personnel have been trained to use and maintain this equipment. The facility is equipped with a fire protection system (FPS) consisting of fire department connections, fire hydrants, risers and interior sprinkler systems. The facility is also equipped with fire hoses and extinguishers. Any water flow through the FPS (sprinkler head activation, fire hose use, etc...) triggers an alarm to a central monitoring facility, which in turn dispatches the Fire Department. The City of Sunnyvale's Fire Station Number 2 is located within 1.5 miles of the SMaRT Station.

f. Protection of Users

The SMaRT Station is designed to provide workers and public with proper protection from hazards. Railings and other protection devices such as screens and guards are strategically positioned to keep people away from dangerous areas and equipment. Signage is placed to inform users of personal protective equipment (PPE) requirements and cautions users to look for moving

equipment (such as forklifts). Safety of personnel and public is also addressed in the contractor's Injury and Illness Prevention Program.

g. Safety Equipment

All employees at the site have been issued, and are required to wear personal protective equipment (PPE) according to their job duties. The operator issues all required PPE which may consist of flag vests, coveralls, tyvek suits, hard hats, boots, gloves, dust masks, and ear and eye protection. Emergency eye wash units are placed throughout the facility working areas. Public visitors to the facility are required to wear flag vests, hard hats and eye protection. The facility also provides appropriate sanitary facilities, showers and lockers for employees. Two Automated External Defibrillator (AED) units are provided by the City of Sunnyvale at the east and west ends of the facility. Key personnel are trained in first aid, CPR and AED operation in the event of a medical emergency.

h. Power Failures

The SMaRT Station is equipped with a battery system and diesel-powered backup generator which gives the facility emergency lighting and refuse load-out capabilities in the case of a power failure. A portable generator is available to provide power for scale house operations if needed.

D. STATION CONTROLS

1. NUISANCE CONTROL

The SMaRT Station has the potential to create nuisance problems such as the attraction of vectors, the generation of odor, dust, and noise, and impact to surrounding land uses from night lighting. The SMaRT Station has been constructed and operated in conformance with state, regional, and local laws which are designed to prevent public nuisance problems from arising. In addition, the design and construction of the SMaRT Station provide for compliance with permits issued for facility operation and for CEQA approval of the project.

Potential nuisances are eliminated or minimized by thoroughly cleaning the station each day, keeping all refuse-related operations within the enclosed building, transferring the waste from the station to the landfill within 48 hours and adherence to litter control programs.

Attraction of vectors, gulls in particular, was initially a problem at the SMaRT Station. A grid of optimally spaced monofilament wires was installed above the unloading areas to disrupt the flight patterns of gulls. This system has been successful at effectively deterring gulls from feeding at the SMaRT Station. Regular service by a pest extermination service has been successful in controlling insect and rodent vectors.

2. PASSIVE LANDFILL GAS VENTING SYSTEM

The adjacent closed Sunnyvale Landfill continues to generate landfill gas, which has the potential to migrate to and collect under structures such as the SMaRT Station. The SMaRT Station structure was designed to mitigate landfill gas migration by including a passive venting system.

The landfill gas passive ventilation system consists of the following:

- Perforated pipe collection system located beneath the floor slab within the main processing building and office building, and beneath the pits below the conveyors
- Underground perforated pipes are connected to vertical vent pipes that extend three feet above the roof of the processing building. A drawing of the methane gas ventilation system is shown in Figure A-11.
- A system of sensors and alarms is located inside the SMaRT Station offices to alert staff should unhealthy conditions develop inside the office.

The closed Sunnyvale Landfill is equipped with a landfill gas extraction system that maintains a continuous vacuum on the landfill. The landfill gas extraction system is comprised of approximately 80 gas wells connected to a network of pipes that distribute a vacuum from a central blower, which draws the gas to a set of engine generators and a landfill gas flare. The gas extraction system is operated with several goals, one of which is preventing migration of landfill gas to neighboring structures, including the SMaRT Station.

3. DUST CONTROL

Dust generation is inherent in solid waste handling operations and wood grinding operations. For the SMaRT Station, the following dust control measures have been implemented:

- Three large exhaust fans are strategically located within the building with separate air intakes located at dust-generating points such as truck unloading and conveyor loading points.
- In the truck unloading and waste transfer area, a wet suppression misting system is operated to suppress airborne fugitive dust emissions.
- The wood and yard waste processing system has a separate dust collection system at the wood grinder to suppress local dust emissions. The wood grinder has been partially enclosed with a hood that collects dust, which is then pulled by a blower to a bag house for collection.

4. VECTOR AND BIRD CONTROL

Vectors are animals that may contact refuse and carry disease. They include birds, rodents, and flying and crawling insects. The following design and

operational practices are in place to control vectors. Gulls are controlled by a grid of monofilament wires outside the waste unloading areas. Opportunities for harborage of other vectors, such as rodents are deterred by screening or elimination of small voids under and around equipment and containers. In addition the operator contracts with a commercial pest control specialist that maintains bait traps on a regular basis. The operations are enclosed, and the wastes are compacted and removed within 48 hours, so refuge or breeding areas for birds, rodents, flies and other insects is controllable.

5. DRAINAGE CONTROL

Stormwater from the exterior of the SMaRT Station is collected by grate drains and catch basins equipped with sediment and oil and grease filters, and conveyed via pipes to the existing stormwater channels located west and north of the site. This stormwater is discharged to the Guadalupe Slough through the existing Baylands pump station at the northwest corner of the project. The station operation is enclosed, so stormwater contact with refuse is minimal. Some stormwater may nevertheless come into contact with refuse. Storm drains have been equipped with specialized filters designed to remove sediment, hydrocarbons, and oil and grease. Filters are inspected and serviced weekly during the wet season. Inspections are recorded on the maintenance log and reported by the Station operator on a monthly basis. Stormwater which contacts refuse on the tipping floor drains internally and is removed for off-site treatment.

The sanitary sewer flow from restrooms, showers, etc., is separated from the tipping floor leachate water source.

Water used to wash down the SMaRT Station floors or equipment drains to the center floor drain, which in turn collects in a sump located at the east end of the SMaRT Station. Leachate water collected in the sump is presently pumped into a tank truck for transport to a permitted liquid waste treatment facility. Revisions to the SMaRT Station pretreatment system may enable the resumption of permitted discharge of SMaRT Station leachate water to the sanitary sewer at a future date.

6. LITTER CONTROL

Local ordinances and state regulations require refuse collection and transfer trucks to be closed or covered. Enforcement of these statutes is essential for effective litter control. The Sunnyvale Public Safety Department and the California Highway Patrol provide enforcement of the California Vehicle Code, particularly along access roads leading to the SMaRT Station. As a second means of enforcement, vehicles with uncovered loads are charged an additional fee and provided with a tarp.

Litter is collected on site daily. The operator sweeps the facility roadway and outside the tipping floor with an industrial street sweeper daily, typically in the afternoon. The site is fenced to contain wind-blown litter. On-site streets and Caribbean Drive are checked regularly to assure that litter does not

accumulate. A litter control plan has also been implemented. The program includes a twice-weekly litter pick-up on the adjacent landfill surface and on Mathilda Ave., Caribbean Drive and Borregas Ave. between Highway 237 and the project site. Litter is confined to a limited area within the grounds of the SMaRT Station, and is removed each operating day.

7. NOISE CONTROL

Noise is generated at the SMaRT Station by refuse handling equipment inside the facility, truck traffic traveling around the site, and project-related off-site traffic. Because most refuse handling and processing equipment is enclosed, activity inside the station does not create significant impacts to neighboring businesses. Engine noise from trucks on site does not exceed noise standards at the property boundary or those established for parklands. The station contributes to the cumulative noise impact of the Water Pollution Control Plant, and the asphalt/concrete recycling operation atop the east hill of the landfill. Off-site project related traffic has not been observed to have a significant impact along haul routes or near the station. The largest predicted noise increase from off-site project related traffic was 0.5 dB(A) at the intersection of Borregas Avenue and Caribbean Drive. There have been no complaints regarding noise generated by the SMaRT Station or related traffic.

8. ODOR CONTROL

The odor associated with municipal solid waste is mainly from the decay of organic materials within the refuse. The SMaRT Station handles a variety of organic materials that do become malodorous. The characteristic odor of refuse is at times apparent within the transfer building itself and immediately downwind of the door openings outside the buildings.

The potential for odor buildup is greatest in hot weather, which speeds bacterial decomposition of waste high in organic matter. The warm weather effect is somewhat counteracted by the fact that warm weather coincides with the dry season. Moisture as well as heat favors bacterial action. As hot weather periods are associated with dry periods, the moisture content of loads will be reduced, thus reducing the rate of decomposition.

The project site is near other industrial uses that also generate odors, such as the Sunnyvale Water Pollution Control Plant and the Cargill (Leslie) salt ponds. There are currently no sensitive receptors, i.e. residential neighborhoods, schools, hospitals, restaurants, etc., immediately downwind from the project. The nearest neighbors to the SMaRT Station include the Twin Creeks Softball Park, the Sunnyvale Water Pollution Control Plant, and south of Caribbean Drive, the businesses occupying the Moffett Industrial Park.

The adjacent landfill is closed, and parts are now used by the public for walking and jogging. These visitors to the landfill may be subjected to odors from the SMaRT Station and the WPCP. At certain times of year, the neighboring ponds may also give off unpleasant odors. Under most conditions, odors from the SMaRT Station dissipate before reaching the nearest downwind

receptors. Odor is at times present during warm weather if waste is retained at the SMaRT Station for long periods of time. North winds coincide with warm weather, which dissipate odors but also spread them under certain conditions. Non-specific complaints of odors from the general vicinity of the SMaRT Station, WPCP, and Cargill Salt have been registered; however none have been due to the operation of the SMaRT Station. There have been no odor complaints regarding SMaRT Station operations documented by the Bay Area Air Quality Management District.

CalRecycle has established a maximum residence time of 48 hours for waste held in transfer stations. Limiting the time waste spends in the SMaRT Station reduces the amount of decomposition of organic materials that takes place in the station building and thus reduces the amount of malodorous gas emitted by the decomposition process. Should odor become a problem at the SMaRT Station, adopting a residence time shorter than 48 hours could further reduce the odor producing potential of waste.

9. TRAFFIC CONTROL

Figures A-4 and A-10 illustrate the on-site traffic circulation. The access road to the SMaRT Station (Borregas Avenue north of Caribbean Drive) is two lanes in each direction. A four-lane road can carry as much as 2,400 vehicles in the peak hours. The SMaRT Station design anticipates a maximum of approximately 80 vehicles per hour, currently observed volume is 49 vehicles per hour (with the exception of extra dump weekends). The roadway has more than adequate capacity to serve the expected traffic volumes.

A total of 600 feet of queuing area (three lanes of 200 feet each) is provided at the commercial and public entrance. The 400 feet dedicated to commercial traffic is sufficient to stack five large trucks. During peak periods, incoming truck traffic averages about two vehicles per minute. The queue length is adequate, if incoming trucks are processed at an average of one minute per vehicle (at each scale). In addition, the operating contract requires the operator to process trucks through the scale house within 90 seconds, and requires a turnaround time (scale, dump, outbound) within 15 minutes. If these standards are not met the agreement allows for liquidated damages to be assessed.

The 200 feet of available queuing area for public users holds about eight vehicles. The maximum rate of incoming public vehicles is about two per minute. A processing rate of about 45 seconds per vehicle is needed to keep queues limited to the storage area.

During extra dump weekend events two lanes are provided for the incoming event traffic queue. There is no measuring or weighing of vehicles (only an ID check), so there is not a wait at the scale house. This queuing area extends approximately 1000 feet from the point of the East Hill access road west to the intersection at Caribbean Drive. This allows area for queuing of approximately 80 residential vehicles. Queue area for approximately 15-20 additional vehicles is provided on the roadway and areas adjacent to the tipping floor. Historically,

at peak hours (typically 8:30 a.m.—10:00 a.m.) during these events traffic has queued onto Caribbean Drive. During these peak periods, a traffic attendant and signage assists in directing traffic from eastbound Caribbean and northbound Borregas to Crossman where traffic destined for the event is directed to make a U-turn and enter the #1 lane (of three). This has not impacted traffic on Caribbean and Borregas since weekend traffic on these streets is very minimal.

E. STATION RECORDS AND REPORTING PROCEDURES

1. WEIGHT VOLUME RECORDS

Daily records of traffic volumes and weight are generated at the scale house. Daily, monthly and annual reports are generated using these reports. Data is based on actual tonnage over the scale, and by volume for public hauled material. Public Haul volume is converted to tons based on the factors listed below. Public haul loads greater than 12 cubic yards are weighed and recorded in accordance with Disposal Reporting System (DRS) requirements. Data is also kept on material leaving the facility for transport to market or to the landfill. Tonnage records are maintained on-site in the facility's offices and quarterly reports are distributed to facilities and agencies as required by DRS.

Waste Type	Conversion Factors (lbs. /cubic yard)
Misc. Public	308
Demolition Debris	1000
Asphalt	1000
Concrete	2000
Dirt	2000

Tare weights for packer type refuse trucks are determined using an average of three scale weights taken not less than once annually. Roll-off trucks are weighed full and empty on each trip to account for differences in container weights.

2. SPECIAL OCCURRENCES

A daily log is maintained at the facility to record special occurrences such as injuries, fires, equipment failures, vehicle accidents, spills, hazardous materials incidents, and other incidents that are not part of normal daily operations. Once incidents of special occurrence are reported to a facility supervisor, the supervisor writes a detailed account of the incident and a description of the action that was taken. This log is kept at the facility's offices. The log is updated daily and if no special occurrences take place this is noted in the log. This log also includes Public Complaints.

3. INSPECTION OF RECORDS

Records regarding the facility's operation are available during normal business hours for inspection and review by authorized agencies. These records are maintained at the facility's on-site offices for a period of not less than three years.

4. PUBLIC COMPLAINTS

Written public complaints received are included in the log of special occurrences. The public complaint log includes: 1) the nature of the complaint; 2) the date the complaint was received; 3) the name, address and telephone number of the person(s) making the complaint; and 4) actions taken to respond to the complaint. The LEA will be notified of such complaints within 24 hours of receipt.

5. OPERATOR NOTIFICATION

The operator of the Sunnyvale Materials Recovery and Transfer (SMaRT) Station is as follows:

Bay Counties Waste Services
301 Carl Road
Sunnyvale, CA 94089

Rich Gurney, General Manager
Phone: 408-752-8530

6. EMPLOYEE TRAINING

Personnel assigned to the operation of the facility shall be adequately trained in subjects pertinent to site solid waste operations and maintenance, hazardous materials recognition and screening, use of mechanized equipment, environmental controls, emergency procedures and requirements for recordkeeping. A record of such trainings is maintained at the facility and is available for inspection during business hours.

APPENDIX A

Site Maps and Design Drawings

Figure A-1	Land Uses Surrounding the SMaRT Station
Figure A-2	Location Map and Cities Served by SMaRT
Figure A-3	Zoning Map of SMaRT Station and Surrounding Parcels
Figure A-4	SMaRT Station Layout
Figure A-4a	Tipping Floor Areas
Figure A-5	SMaRT Station Material Flow Schematic
Figure A-6	Diagram of Waste Handling Activities
Figure A-7	Layout of Material Recovery and Transfer Operations
Figure A-8	Utility Lines and Flood Protection Levees
Figure A-9	Locations of Signs to Directing Traffic and Inform Customers
Figure A-10	Diagram of On-Site Traffic Circulation
Figure A-11	Design Drawing for Methane Gas Ventilation System

APPENDIX B

**Bay Area Air Quality Management District
Permit to Operate**

APPENDIX C

SMaRT Station Hazardous Waste Exclusion Program

APPENDIX D

SMaRT Station Discharge Permit

APPENDIX E

Solid Waste Facility Permit for Kirby Canyon Landfill

APPENDIX F

SMaRT Station Conditional Use Permit

APPENDIX G

Legal Description of SMaRT Station Site

Legal Description of SMaRT Station Facility Site

All that certain real property situated in the City of Sunnyvale, County of Santa Clara, State of California being portions of Lots 14, 15 and 16 as shown on the Map of Crossman Subdivision No. 2 filed in Book F-2 of Maps at page 24 and a portion of Lot 79 of the Map of T.J. Murphy's Subdivision No. 3 filed in Book I of Maps at page 45, Santa Clara County Records described as follows:

Commencing at a brass disk monument at the intersection of the centerline of Borregas Avenue with the centerline of Caribbean Drive as shown upon that certain Record of Survey Map filed July 18, 1969 in Book 256 of Maps at page 28 and 29, Santa Clara County Records;

Thence from said Point of Beginning along the centerline of Caribbean Drive South 75_ 09' 07" East 364.21 feet;

Thence leaving said centerline North 14_ 50' 53" East 432.07 feet to the TRUE POINT OF BEGINNING;

Thence from said TRUE POINT OF BEGINNING North 14_ 50' 53" East 100.70 feet;
Thence South 69_ 14' 28" East 21.68 feet;

Thence easterly along a tangent curve concave to the North with a radius of 396.00 feet, through a delta angle of 4_ 11' 54" for a length of 29.02 feet;

Thence South 73_ 26' 22" East 285.41 feet;

Thence South 75_ 09' 28" East 76.35 feet;

Thence Northeasterly along tangent curve concave to the Northwest with a radius of 46.00 feet, through a delta angle of 87_ 42' 40" for a length of 70.42 feet;

Thence along a line that is radial to the end point of said curve South 72_ 51' 55" East 4.00 feet;

Thence North 20_ 38' 42" East 198.66 feet;

Thence North 21_ 28' 05" East 74.25 feet;

Thence Northeasterly along a tangent curve concave to the southeast with a radius of 38.00 feet, through a delta angle of 34_ 21' 30" for a length of 22.79 feet;

Thence North 55_ 49' 36" East 31.46 feet;

Thence North 59_ 05' 49" East 29.54 feet;

Thence North 55_ 15' 29" East 38.84 feet;

Thence North 52_ 47' 38" East 47.83 feet;

Thence North 58_ 19' 56" East 21.46 feet;
Thence Easterly along a tangent curve concave to the South with a radius of 70.00 feet,
through a delta angle of 41_ 26' 14" for a length of 50.63 feet;

Thence South 80_ 13' 50" East 601.01 feet;

Thence South 17_ 41' 00" West 176.47 feet;

Thence South 17_ 58' 53" West 254.71 feet;

Thence Southwesterly along a tangent curve concave to the Northwest with a radius of 95.00 feet, through a delta angle of 43_ 29' 18" for a length of 72.11 feet, to the beginning of a non tangent curve concave to the North with a radius of 92.00 feet;

Thence Westerly from a radial bearing of North 21_ 40' 27" West along said non tangent curve through a delta angle of 37_ 35' 15" for a length of 60.35 feet;

Thence North 74_ 05' 12" West 424.34 feet;

Thence South 14_ 50' 32" West 53.97 feet;

Thence North 75_ 09' 28" West 12.62 feet;

Thence Westerly along a curve concave to the South with a radius of 156.00 feet, through a delta angle of 34_ 45' 50" for a length of 94.65 feet, to a point of reverse curvature;

Thence Westerly from said point of reverse curvature along a curve concave to the North with a radius of 281.00 feet, through a delta angle of 34_ 44' 05" for a arc length of 170.35 feet;

Thence North 75_ 09' 28" West 124.62 feet;

Thence North 73_ 26' 22" West 334.49 feet, to the TRUE POINT OF BEGINNING.

Reserving therefrom an easement for public ingress and egress and any and all public service facilities including poles, wires conduits, gas, water, pipes, storm drains, sanitary sewers, gas recovery facilities, monitoring wells and all appurtenances to the above, under, upon, or over the following described portion;

Commencing at a brass disk monument at the intersection of the centerline of Borregas Avenue with the centerline of Caribbean drive as shown upon that certain Record of Survey Map filed July 18, 1969 in Book 256 of Maps at pages 28 and 29, Santa Clara County Records;

Thence from said Point of Beginning along the centerline of Caribbean Drive South 75_ 09' 07" East 364.21 feet;

Thence leaving said centerline North 14_ 50' 53" East 432.07 feet, to the TRUE POINT OF BEGINNING;

Thence from said TRUE POINT OF BEGINNING North 14_ 50' 53"" East 100.70 feet;

Thence South 69_ 14' 28" East 21.68 feet;

Thence easterly along a tangent curve concave to the North with a radius of 396.00 feet,
through a delta angle of 4_ 11' 54" for a length of 29.02 feet;

Thence South 73_ 26' 22" East 285.41 feet;

Thence South 75_ 09' 28" East 285.41 feet;

Thence Northeasterly along tangent curve concave to the Northwest with a radius of 46.00 feet, through a delta angle of 87_ 42' 40" for a length of 70.42 feet;

Thence along a line that is radial to the end point of said curve South 72_ 51' 55" East 4.00 feet;

Thence North 20_ 38' 42" East 13.29 feet;

Thence South 56_ 44' 47" East 62.31 feet;

Thence South 74_ 05' 12" East 198.10 feet;

Thence South 14_ 50' 32" West 53.97 feet;

Thence North 75_ 09' 28" West 12.62 feet;

Thence Westerly along a curve concave to the South with a radius of 156.00 feet,
through a delta angle of 34_ 45' 50" for a length of 94.65 feet, to a point of reverse curvature;

Thence Westerly from said point of reverse curvature along a curve concave to the North with a radius of 281.00 feet, through a delta angle of 34_ 44' 05" for an arc length of 170.35 feet;

Thence North 75_ 09' 28" West 124.62 feet;

Thence North 73_ 26' 22" West 334.45 feet, to the TRUE POINT OF BEGINNING.

Appendix H

Description of SMaRT Station Processing Equipment

Table H-1 Stationary Equipment to be furnished by City

Table H-2 SMaRT Station Processing Equipment to be Furnished and Owned by Contractor

Table H-1
Equipment to be Furnished By City (Replaced
with Equipment List Rev C – NEW MRF)

Transfer Equipment:

Refuse Compactor
Compactor Infeed Conveyor
Top Load Conveyor
(3) Truck Scales (2 inbound, 1 outbound)

**Table H-1
Equipment to be Furnished By City (Continued)**

Wood and Yard Waste Processing Equipment:

- Feed Conveyor
- Troughing Conveyor
- Metal Detector
- Shredder
- Dust Collection Bag House
- Conveyor w/ Magnetic Head Pulley
- Disc Scalping Screen
- Overs Conveyor
- Fines Conveyor

Source Separated Recyclables Processing Equipment:

- Fiber Infeed
- Fiber Platform and Sorting Conveyor
- Fiber Bunkers
- Container Infeed
- Trom-mag™
- Cyclone
- Heavies Platform and Sorting Conveyor
- Lights Platform and Sorting Conveyor
- Lights Bunkers
- Scale
- Baler Infeed
- Mosley Gorilla Baler
- Motor Control Center (Curbside)

Table H-2

**SMaRT Station Processing Equipment
Equipment to be Furnished and Owned by Contractor**

EQUIPMENT		QTY
CAB-OVER TRACTORS	PETERBILT	10
48' ALUMINUM TRAILERS	PEERLESS	10
ROLL-OFF TRUCKS	PETERBILT	1
FRONT END LOADER	CAT 950	1
FRONT END LOADER	CAT 950	1
FRONT END LOADER	CAT IT28	1
FRONT END LOADER	CAT 906	1
40 CY ROLL-OFF	CONSOLIDATED FABRICATORS	10
6 CY BINS	CONSOLIDATED FABRICATORS	10
4 CY BINS	CONSOLIDATED FABRICATORS	30
HHW STORAGE BOX	STAGG	2
FORKLIFT	CLARK	4
ROLL-OFF TRUCK	PETERBILT	1
BOOM LIFT	CATERPILLAR	1
STREET SWEEPER	TENCO	1

APPENDIX I

Traffic Calculations - Queuing Requirements

[The following traffic calculations are excerpted from the original SMaRT Station Design documents, and have not been updated to reflect any changes in traffic loading experienced at the SMaRT Station. It has not been necessary to re-evaluate traffic design at SMaRT because queues and wait times have been extremely efficient, with only rare exceptions.]

Design Criteria

The original queuing allowances and waiting times established by the City of Sunnyvale in the Performance Standards and contained in the City's contract with the station operator are:

- Waiting time from arrival at gate house to the time refuse vehicles can exit station shall be no longer than 15 minutes.
- Waiting time for the public shall be no longer than 4 minutes at the tollbooth and 4 minutes to be assigned to a place to dump.

For design purposes, the volume and the types of traffic and peak arrival rates were established as follows:

Design Weekday Traffic Volumes and Peak Hourly Arrival Rates

	<u>Daily Totals</u>	<u>Peak Hourly Rates</u>
Residential Packer	61	7
Commercial Packer	64	12
Roll-off or Drop Boxes	115	21
Public (including buy-back)	316	29
Curbside Collection	30	4
Transfer Trucks	55	4
Trucks Hauling Recovered Material	33	1*
Employees	86	2**
<hr/>		
TOTAL	740	

Design Weekend Traffic Volumes and Peak Hourly Arrival Rates

	<u>Daily Totals</u>	<u>Peak Hourly Rates</u>
Residential Pacer	0	0
Commercial Packer	9	2
Roll-off	0	0
Public	458	58
Curbside Collection	0	0
Transfer Trucks	10	1
Trucks Hauling Recovered Materials	2	1*
Employees	40	2**
TOTAL	519	

The above rates are based on the final station capacity of 1,500 TPD.

Design Extra Dump Weekend Traffic Volumes and Peak Hourly Arrival Rates

	<u>Daily Totals</u>	<u>Peak Hourly Rates</u>
Residential Pacer	0	0
Commercial Packer	9	2
Roll-off	5	1
Public	1200	150
Curbside Collection	0	0
Transfer Trucks	55	1
Trucks Hauling Recovered Materials	10	1*
Employees	111	9**
TOTAL	1390	

* Arrival and departure of trucks hauling recovered materials to market is scheduled so as not to occur during the peak arrival times for waste hauling trucks.

** Employee arrival and departure times are prior to and after event hours, not at peak waste arrival times. Routing of employee vehicles through the site does not impact the waiting times or queuing requirements of the Performance Standards.

a. Station Capacity

For on-site traffic management and queuing requirements, the transfer trailers,

recovery trucks and employee vehicles are not considered because they have a separate, exclusive in-bound lane and proceed directly to specified areas. They do not presently stop at the scale house. Therefore, these vehicles were not included in the on-site queuing requirements. An analysis of the impact of this practice to traffic patterns will be performed prior to modifying scale house stopping requirements.

For station capacity, only the time that a vehicle occupies a specific area, thus preventing the next vehicle from occupying that same area is considered. Therefore, only the time at the scale house and at the unloading stalls is considered for station capacity. Based on this, the station capacity is as follows:

The peak arrival rates are 40 vehicles per hour (residential/commercial weekday), 29 vehicles per hour (public weekday), and 58 vehicles per hour (public weekend). However, it is reasonable to assume that, at a minimum, 10% of the public or self-haul vehicles contain wood wastes and yard debris, which are unloaded in a separate area. Therefore, the actual number of vehicles at the main unloading areas during the peak periods is estimated to be 40 vehicles per hour (residential/commercial weekdays), 26 vehicles per hour (public weekdays), and 52 vehicles per hour (public weekend).

During extra dump events two additional commercial stalls are utilized, and four additional stalls are provided for unloading of yard and wood waste materials, bringing the total available stalls to 32. Additional traffic spotters are utilized to direct vehicles, and personnel are provided to assist customers to unload their vehicles to reduce service time.

The actual number of vehicles at the unloading areas during the peak periods is estimated to be 150 vehicles per hour. Additional queuing area is provided on the facility site during extra dump weekend events, although queuing of vehicles has occurred off the facility site and on to Caribbean Drive on occasion.

Packer & Roll-Off Trucks

Service Time:	
Time at scale house	1.0 min.
Time to maneuver, unload & exit building	8.0 min.
Miscellaneous delays	<u>1.0 min.</u>
TOTAL:	10.0 min.

Capacity

A total of 18 stalls are available for commercial truck unloading, 6 for non-processible wastes, and 12 for processible wastes.

- For 6 stalls (non-processible residential), the capacity for weekdays at peak hours

$$= \frac{6 \times 60}{10} = 36 \text{ vehicles per hour} \quad \text{which is greater than peak arrival of 7 vehicles per hour.}$$

- For 12 stalls (processable commercial and drop box), the capacity for weekdays

at peak hours

$$= \frac{12 \times 60}{10} = 72 \text{ vehicles per hour}$$

which is greater than the peak arrival of 33 vehicles per hour.

- For weekends, only 1 stall is required for packer and roll-off trucks --the capacity for one stall at peak hours

$$= \frac{1 \times 60}{10} = 6 \text{ vehicles per hour}$$

which is greater than the peak arrival rate of 2 vehicles per hour.

Public Vehicles

Service Time:

Time at scale house	1.0 min.
Time to maneuver, unload & exit the building	15.0 min.
Miscellaneous delays	<u>1.0 min.</u>
TOTAL:	17.0 min.

Public Vehicles - Extra Dump Events

Service Time:

Time at scale house	1.0 min
Time to maneuver, unload & exit the building	10.0 min.
Miscellaneous delays	<u>1.0 min</u>
TOTAL:	12.0 min.

Capacity

- For 11 stalls, the capacity for weekdays at peak hour

$$= \frac{11 \times 60}{17} = 39 \text{ vehicles per hour}$$

which is greater than peak arrival of 26 vehicles per hour.

- for **weekends**, the capacity for the peak hour

$$= \frac{(11 + 15) \times 60}{17} = 92 \text{ vehicles per hour}$$

which is greater than peak arrival of 52 vehicles per hour.

- *for **extra dump weekends**, the capacity for the peak hour

$$= \frac{(28 + 4) \times 60}{12} = 160 \text{ vehicles per hour}$$

which is greater than peak arrival of 150 vehicles per hour.

- The number of 26 stalls is determined by using all of the public stalls (11) plus 15 of the commercial stalls on weekends. The number of 32 stalls is determined by using all of the public stalls (11) plus 17 of the commercial stalls on weekends. An additional 4 stalls are added in the area of the topload conveyor during extra dump events. Service time during extra dump events is reduced through personnel assigned to assist customers in unloading their vehicles.

Summary of Station Capacity

<u>Vehicle</u>	<u>Peak Hourly Arrival Rate</u>	<u># Stalls Provided</u>	<u>Station Capacity</u>
Packer/Roll-off (weekday)	40	18	108
Packer/Roll-off (weekend)	2	1	6
Public (weekday)	26*	11	39
Public (weekend)	52*	26	92
Public Extra Dump Events	150	32	160

*These arrival rates have been reduced by 10% for separate unloading of wood and yard debris.

Queuing Requirements

The previous station capacity analysis has shown that the station has sufficient capacity to handle the peak arrival rates. However, queuing may occur due to the random arrival of vehicles within the peak period. By utilizing the queuing theory for multiple channels as presented in the 1976 edition of the Transportation and Traffic Engineering Handbook, a 95% probability of the maximum queuing length can be calculated. The results of this queuing calculation are as follows:

<u>Vehicle</u>	<u>Peak Arrival</u>	<u>Station Capacity</u>	<u># Stalls Provided</u>	<u>95% Queue</u>	<u>Queue Length Required</u>	<u>Queue Length Provided</u>
Packer/Roll-off (weekday)	40/hr.	108	18	0	0	600 ft.
Public (weekday)	26/hr.	39	11	4	80 ft.	400 ft.
Public (weekend)	52/hr.	92	26	0	0	1200 ft.
Public (weekend) Extra Dump	150	160	32	6	120	1200

The 95% queue represents the 95% probability that the number of vehicles shown in queue will not be exceeded. That is, the possibility of 4 vehicles or 80 ft. being exceeded is likely to occur only 5% of the time. The queuing length total is the length of queue provided prior to the scale house or tollbooth.

Performance Standards

As shown, the station has sufficient capacity so that 95% of the time, no commercial vehicles during the weekdays or public vehicles on weekends require queuing prior to the scale house. The 5% of the time that a queue forms can easily be accommodated in the queuing length provided. During weekdays, there is a 95% probability that up to 4 public vehicles could be in a queue prior to the tollbooth. This maximum value of 4 vehicles can result in a wait time of up to 4 minutes, which is within the Performance Standards established by the City. These standards are described later in this Section.

With respect to the in-bound refuse vehicles, the following times are to be expected:

Queue to scale house	0.0 min.
Time at scale house	1.0 min.
Drive from scale house to process building	2.0 min.
Time to maneuver, unload & exit process building	8.0 min.
Drive from process building to scale	2.0 min.
Time at scale	1.0 min.
Miscellaneous delays	<u>1.0 min.</u>
TOTAL:	15.0 min.

This total is consistent with the Performance Standard required by the City in its contract with the station operator of no longer than 15 minutes from the arrival at the scale house to the exit from the station.

b. Traffic Loading

The traffic analysis presented demonstrates the following:

- The station capacity is sufficient to handle the peak arrival conditions of both commercial and public vehicles during normal operations and extra dump events.
- By applying the theory of queuing due to the random arrival of vehicles in a peak period, the queuing area is still sufficient, even under peak conditions, to prevent the possibility of queuing occurring off the station site during normal operations.
- In-bound refuse vehicles take no longer than 15 minutes from the time they arrive at the scale house until the time they can exit the site.
- Since there are only a maximum of 4 public vehicles in a queue during the peak periods, plus the fact that the scale-house can be utilized during these peak periods, the Performance Standard requiring 4 minute wait for the public vehicles will not be exceeded during normal operations.

APPENDIX J

Photographs

- Plate 1. SMaRT Station Entrance Sign
- Plate 2. Sign Identifying SMaRT Station Participating Agencies
- Plate 3. Scale House and Inbound Scales
- Plate 4. Hazardous Waste Signage at Facility Entrance
- Plate 5. North Residential and Commercial Unloading Areas
- Plate 6. Solid Tire Loader on Tipping Floor
- Plate 7. Source-Separated Recyclables Container Sorting Line
- Plate 8. Rotary Classifier (Trommel)
- Plate 9. Source-Separated Recyclables - Fiber Storage Bunkers
- Plate 10. Eddy Current Separator
- Plate 11. Overs Sorting Line
- Plate 12. South Commercial and Residential Unloading Area – And Dust Control System
- Plate 13. Middlings Sorting Line
- Plate 14. Motor Control Center
- Plate 15. Source-Separated Recyclables Unloading Area
- Plate 16. Primary Disc Screen
- Plate 17. Recovered Scrap Steel Storage Trailer
- Plate 18. Baled Materials Awaiting Shipment to Recycler
- Plate 19. Processed MSW Awaiting Loadout
- Plate 20. View of Residue Compactor
- Plate 21. View of Topload Area and Chute
- Plate 22. Walking Floor Transfer Truck
- Plate 23. SMaRT Station Entrance/Exit Road
- Plate 24. SMaRT Station Entrance Looking Out to Intersection of Caribbean Dr. and Borregas Ave
- Plate 25. Wood Waste and Green Waste Unloading Area
- Plate 26. Public Buyback and Drop-off Area
- Plate 27. Shelter Covering 2,000 Gallon Storage Tank for Used Motor Oil
- Plate 28. Residential Sharps Disposal Container
- Plate 29. View of SMaRT Facility from South Hill
- Plate 30. SMaRT Station Offices and Employee Facilities
- Plate 31. Document Shredding Truck
- Plate 32. Minus 2” MRF Fines

APPENDIX K

**Contract Operator's Organizational Plan
Bay Counties Waste Services**

APPENDIX L

Contract Operator's Health and Safety Plan
Bay Counties Waste Services

APPENDIX M

Contract Operator's Emergency Response Plan

Bay Counties Waste Services

APPENDIX N

Equipment Failure Backup Plan

APPENDIX O

Fire & Environmental Services Permit

APPENDIX P

TPR Amendments during Last 5 Years