San Bernardino County

Source Reduction and Recycling Element and Household Hazardous Waste Element

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EXECUTIVE SUMMARY

SOURCE REDUCTION AND RECYCLING (SRR) ELEMENT AND HOUSEHOLD HAZARDOUS WASTE (HHW) ELEMENT

1.0 INTRODUCTION

The Executive Summary provides synopses of two companion documents developed to guide solid waste management policies in the unincorporated areas of San Bernardino County:

- The San Bernardino County Source Reduction and Recycling (SRR) Element.
- The San Bernardino County Household Hazardous Waste (HHW) Element.

Both elements were developed to meet the requirements of the California Integrated Waste Management Act of 1989 (AB 939), subsequent legislation, and the implementation guidelines of the California Integrated Waste Management Board (CIWMB).

The Executive Summary has been prepared primarily to describe the programs proposed for implementation, the cost of these programs and the extent which the programs will meet the mandates of the legislation which require that 25% of the solid waste generated be diverted from landfills in 1995 and that 50% be diverted by the year 2000.

The proposed SRRE programs identified for implementation, in many cases, require significant financial investment in facilities and long leadtimes to fully develop. The real effectiveness of major programs, such as Material Recovery Facilities (MRFs), compared to the significant development and operations costs are not totally known at this time; however, there is data available that suggests MRFs are not an economically feasible recycling method. The economic climate in California in 1993 is poor and not expected to turn around soon; thereby making significant public financial investments difficult, if not impractical. In the face of hard economic times and greatly reduced operating revenues, the County intends to emphasize source reduction programs and avoid, where possible, major facility investments to achieve AB939 diversion goals.

In recognition that the unincorporated portions of the county differ greatly, and in order to develop SRR programs consistent with those being used in nearby cities, the San Bernardino County Solid Waste Management Department has completed a multijurisdictional planning program to institute SRR and HHW Elements with those developed for cities in three subareas within the County:

- The West Valley: Unincorporated areas in West San Bernardino County adjacent to Ontario, Chino, Chino Hills, Montclair, Upland, and Rancho Cucamonga.

- The East Valley: Unincorporated areas in the eastern portion of the San Bernardino Valley adjacent to Fontana, Rialto, Colton, Loma Linda, Grand Terrace, San Bernardino, Highland, Redlands, and Yucaipa. The West Mountain subregion, which includes the Heaps Peak area, also lies within the East Valley region.

- The Desert and Mountain Area: Unincorporated areas and communities in the vicinity of Adelanto, Apple Valley, Barstow, Big Bear Lake, Lake Arrowhead, Hesperia, Needles, Twentynine Palms, Victorville, and Yucca Valley. This region has been further segmented into the East Desert, North Desert, and Eastern Mountain regions due to geographic and demographic differences in each.

These areas are shown in Figure S-1 and listed in Table S-1. Separate HHW Elements were developed for each of the three regions. For the SRR Elements, the Desert and Mountain area divided itself into the East Desert, North Desert, and East Mountain regions. Thus, a total of five separate SRR Elements were developed. The Unincorporated San Bernardino County HHW and SRR Elements have been constructed from the regional documents to include both Countywide and area-specific programs.

TABLE S-1. UNINCORPORATED AREAS OF SAN BERNARDINO COUNTY

West Valley	North Etiwanda, San Antonio Heights, etc.
East Valley	Bloomington, Muscoy, Devore, Mentone, Crafton Hills, Oak Glen, Forest Falls, Lake Arrowhead, Crestline, Running Springs, Twin Peaks, Lytle Creek, etc.
Desert and Mountain	Big Bear City, Wrightwood, Phelan, Spring Valley Lake, Silver Lakes, Oak Hills, Pinon Hills, Wonder Valley, Landers, Morongo Valley, Joshua Tree, Baker, etc.

2.0 SOURCE REDUCTION AND RECYCLING (SRR) ELEMENT

2.1 BACKGROUND INFORMATION

The SRR Element was prepared to select programs capable of diverting 25% of solid waste from landfills by 1995 and 50% by the year 2000. Essentially, the SRR Element consists of two major parts which are summarized herein:

- Solid waste generation analysis which characterizes the amount and types of waste currently disposed in landfills, the amount and types of materials currently diverted from landfills, and future waste generation forecasts.

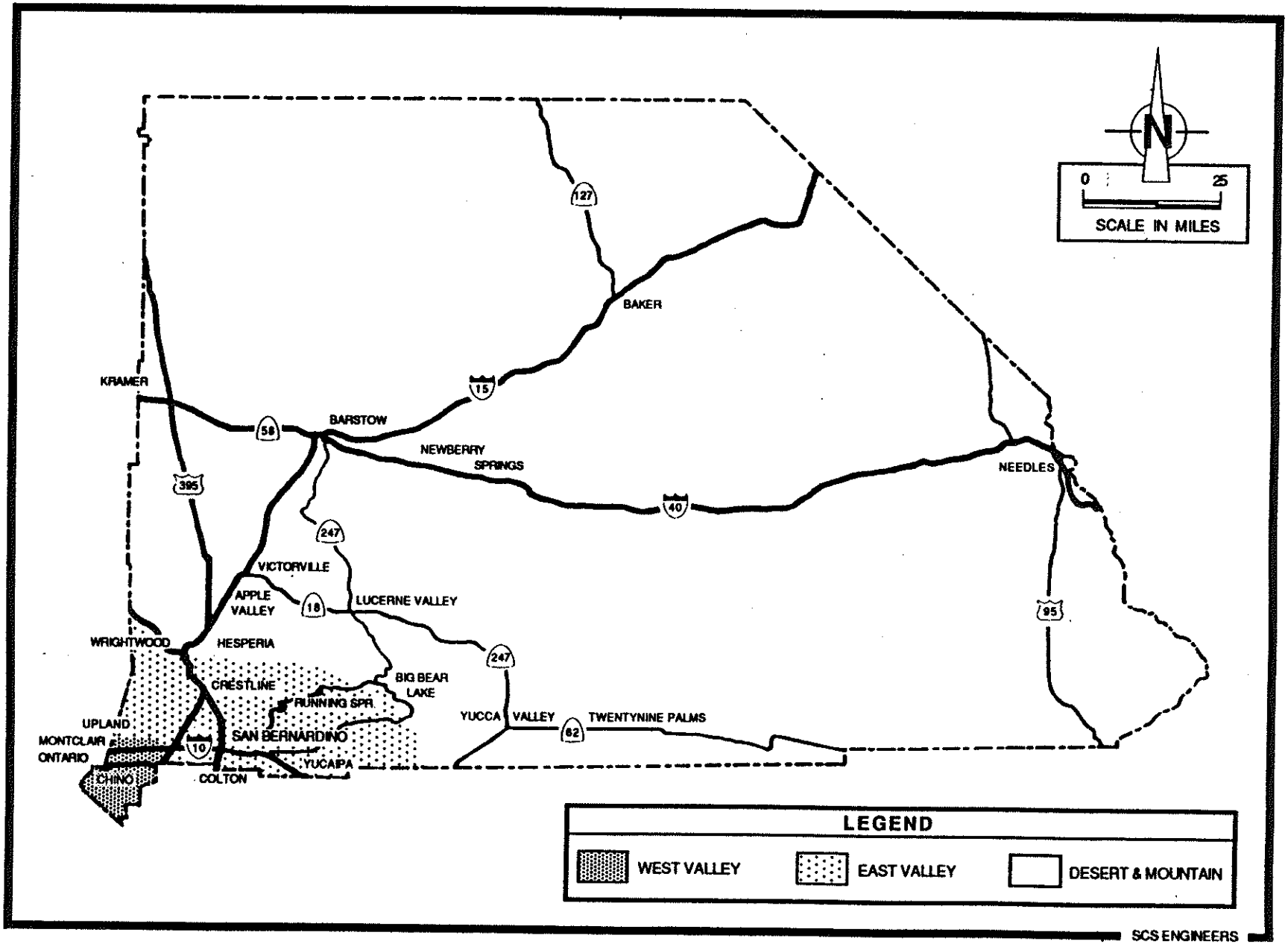


Figure S-1. Map of San Bernardino County Depicting Regions.

Since existing diversion (e.g., recycling) counts towards the 25% and 50% diversion mandates and since it is necessary to know what is currently disposed to target new programs, these studies provide the data base for subsequent program development.

- Solid waste diversion components were developed for source reduction, recycling, composting, and special wastes. Each component includes:

  -- A set of goals and objectives;

  -- A description of existing conditions and programs;

  -- A description of proposed alternative programs;

  -- An evaluation of alternative programs in terms of criteria required by the CIWMB guidelines as well as other criteria selected in some regions;

  -- The rationale for selecting programs to be implemented;

  -- A designation of an agency(ies) to implement each program, implementation schedules and costs;

  -- Recommended measures to monitor and evaluate the effectiveness of each program selected.

Please note that the SRR Element also includes: (1) an Education and Public Information Component to support all diversion programs; (2) a Disposal Facility Capacity Component to project remaining landfill space available for solid waste disposal; (3) a Funding Component which identifies costs and revenue sources for all programs to be implemented; (4) a Plan Integration Component which provides diversion estimates for each program and determines whether anticipated diversion will reach the levels required by the legislation.

2.2 SOLID WASTE GENERATION ANALYSIS

2.2.1 Existing Waste Disposal Rates

The unincorporated regions of San Bernardino County disposed of approximately 287,100 tons of solid waste in 1990, or about 522,000 cubic yards. This total amounts to 5.5 pounds per capita per day. Table S-2 shows the waste disposal estimates for 1990 by generator source for the entire unincorporated County and for each region.

A quantitative field analysis was performed at local landfills in order to characterize the composition of solid wastes currently being disposed by waste generators within the unincorporated areas. These analyses yielded mean waste composition values, in percent by weight, for each waste source and type. Figure S-2 summarizes the results and shows the percentages of each waste category disposed by all sources.

Table S-3 combines the waste disposal estimates with the composition data to show estimates of the tonnages of each waste category disposed by each waste source.

TABLE S-2. 1990 WASTE DISPOSAL ESTIMATES FOR UNINCORPORATED SAN BERNARDINO COUNTY (in Tons)

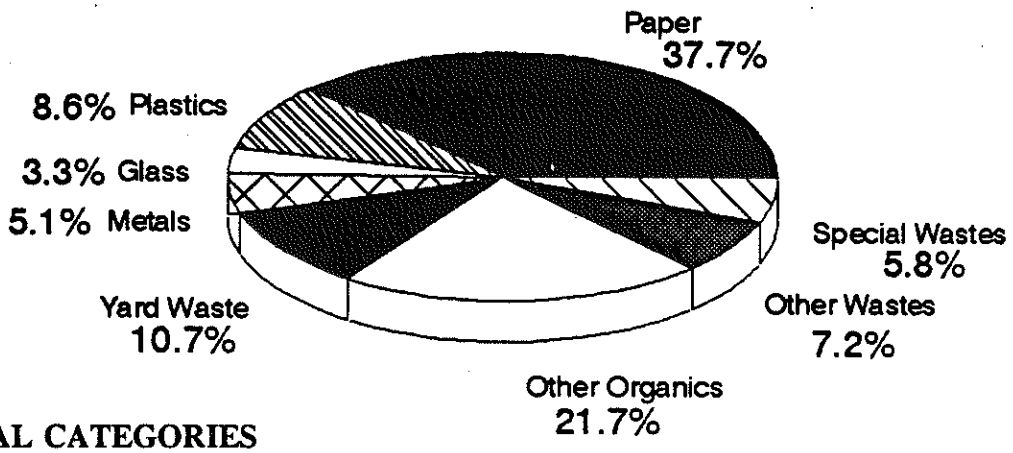
Subregion	Residential	Commercial	Industrial	Other*	Total
East Valley	50,435	29,836	22,340	3,231	105,843
West Valley	25,814	8,898	14,159	2,078	50,950
Mountain	6,445	1,950	1,216	0	9,611
Desert	59,150	48,286	13,277	0	120,712
Countywide	**141,844**	**88,970**	**50,992**	**5,309**	**287,115**

TABLE S-3. 1990 WASTE DISPOSAL RATES BY CATEGORY FOR UNINCORPORATED SAN BERNARDINO COUNTY (in Tons)

Waste Category	Residential	Commercial	Industrial	Other*	Total
Paper	53,863	48,221	5,896	237	108,217
Plastics	12,134	8,086	3,976	113	24,310
Glass	6,475	2,081	961	27	9,545
Metals	9,483	3,003	2,059	181	14,726
Yard Waste	21,113	4,630	2,812	2,245	30,800
Other Organics	32,206	18,351	10,093	1,578	62,227
Other Wastes	6,417	4,428	8,839	919	20,603
Special Wastes	153	170	16,357	8	16,687
TOTAL	**141,844**	**88,970**	**50,993**	**5,308**	**287,115**

* Includes self-haul wastes.

FIGURE S-2
1990 WASTE DISPOSAL BY MATERIAL CATEGORY
UNINCORPORATED SAN BERNARDINO COUNTY



MATERIAL CATEGORIES

Paper
- Newsprint
- Corrugated Containers
- High-Grade
- Mixed
- Contaminated/Other

Plastics
- Containers
- PET
- HDPE
- Film
- Polystyrene
- Other

Glass
- CA Redemption Value
- Containers
- Other

Special Waste
- Asbestos
- Ash
- Bulky Items
- Auto Shredder Waste
- Miscellaneous Special Wastes

Metals
- Aluminum Cans
- Tin Cans
- Ferrous
- White Goods
- Mixed/Other Metals

Other Organics
- Food
- Wood
- Tires/Rubber
- Manure
- Disposable Diapers
- Textiles/Leather
- Other

Other Wastes
- Asphalt
- Concrete
- Other Inert Solids
- Household Haz. Waste
- Fines
- Miscellaneous

Yard Waste
- Grass/Leaves/Prunings

2.2.2 Existing Waste Diversion Rates

Approximately 21,668 tons of solid waste generated in unincorporated San Bernardino County were diverted in 1990. Table S-4 shows the amounts of waste diverted through source reduction, recycling, and composting activities in each of the unincorporated County regions and Countywide. Figure S-3 show the percent of total diversion attributable to each material category.

TABLE S-4. 1990 WASTE DIVERSION ESTIMATES BY REGION AND DIVERSION ACTIVITY

Region	Source Reduction		Recycling		Composting		Total	
	Tons	%	Tons	%	Tons	%	Tons	%
East Valley	15	0.0	14,152	12.4	0	0.0	14,167	12.4
West Valley	0	0.0	4,140	7.9	0	0.0	4,140	7.9
Mountain	145	1.6	52	0.6	0	0.0	197	2.1
Desert	1,340	1.1	1,825	1.6	0	0.0	3,165	2.7
TOTAL	**1,500**	**0.5**	**20,168**	**6.5**	**0**	**0.0**	**21,668**	**7.0**

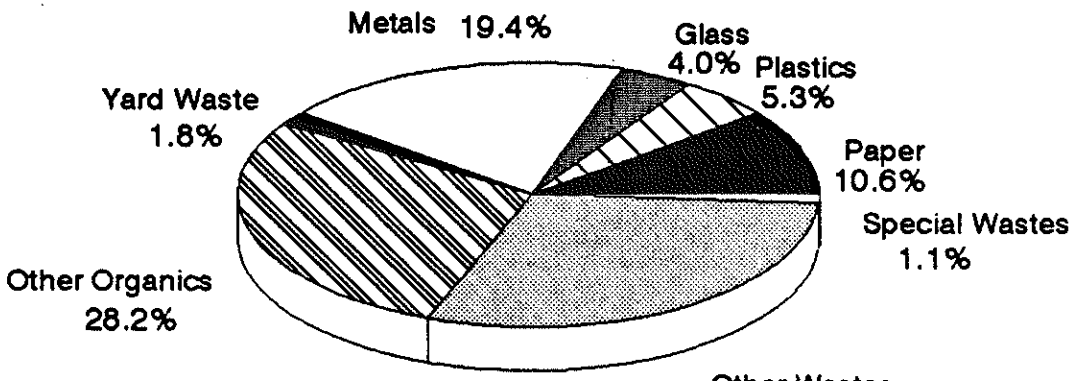
2.2.2 Existing Waste Generation Rates

Combining waste disposal estimates with waste diversion estimates, it was determined that the unincorporated areas generated a total of approximately 308,785 tons of solid waste in 1990. Table S-5 lists, by material category, the quantities of waste generated in 1990 by the West Valley, East Valley, Mountain, and Desert regions of the unincorporated County.

2.2.4 Future Waste Generation Rates

Projections of the annual amounts of waste expected to be generated in unincorporated areas were developed for the 15-year planning period (1990-2005), based on the anticipated population and employment growth for the various unincorporated areas in the County. Table S-6 shows the amounts of waste expected to be generated by each region in 1995 and 2000.

FIGURE S-3
1990 WASTE DIVERSION BY MATERIAL CATEGORY
UNINCORPORATED SAN BERNARDINO COUNTY
(Total Diversion = 21,668 Tons)



MATERIAL CATEGORIES

Paper
- Newsprint
- Corrugated Containers
- High-Grade
- Mixed
- Contaminated/Other

Plastics
- Containers
- PET
- HDPE
- Film
- Polystyrene
- Other

Glass
- CA Redemption Value
- Containers
- Other

Special Waste
- Asbestos
- Ash
- Bulky Items
- Auto Shredder Waste
- Miscellaneous Special Wastes

Metals
- Aluminum Cans
- Tin Cans
- Ferrous
- White Goods
- Mixed/Other Metals

Other Organics
- Food
- Wood
- Tires/Rubber
- Manure
- Disposable Diapers
- Textiles/Leather
- Other

Other Wastes
- Asphalt
- Concrete
- Other Inert Solids
- Household Haz. Waste
- Fines
- Miscellaneous

Yard Waste
- Grass/Leaves/Prunings

TABLE S-5.
1990 WASTE GENERATION RATES BY MATERIAL CATEGORY FOR THE WEST VALLEY; EAST VALLEY, MOUNTAIN, AND DESERT SUBREGIONS

Material Category	West Valley Tons	%	East Valley Tons	%	Mountain Tons	%	Desert Tons	%	Total Tons	%
Paper	12,109	22	32,315	27	3,008	31	60,678	49	108,110	36
Plastics	5,203	9	7,416	6	794	8	12,022	10	25,435	8
Glass	1,398	3	4,274	4	746	8	3,972	3	10,389	3
Metals	4,450	8	8,390	7	914	9	5,554	5	19,308	6
Yard Waste	7,492	14	17,785	15	1,007	10	6,022	5	32,307	10
Other Organics	17,002	31	24,080	20	2,133	22	26,276	21	69,491	22
Other Waste	7,426	13	11,033	9	1,024	10	7,923	6	27,406	9
Special Waste	8	0	14,718	12	182	2	1,431	1	16,339	5
TOTAL	**55,089**	**100**	**120,010**	**100**	**9,808**	**100**	**123,878**	**100**	**308,785**	**100**

TABLE S-6. WASTE GENERATION FORECASTS (in Tons)		
Region	**1995**	**2000**
East Valley	153,000	186,000
West Valley	60,253	65,998
Mountain	11,769	13,730
Desert	140,676	157,476
TOTAL	**365,698**	**423,204**

2.3. SOLID WASTE DIVERSION PROGRAMS PROPOSED FOR IMPLEMENTATION

To meet AB 939 diversion requirements, a series of source reduction, recycling, and composting programs are proposed for implementation during the short-term (1991-1995) and medium-term (1996-200) planning periods. Programs to be implemented in all unincorporated areas and programs specific to each region are described below. It should be noted that several pockets of unincorporated County exist in and among the surrounding cities; in many cases, the waste management policies and procedures of a given municipality are practiced in the adjacent part of the County.

Programs which would hinder economic development of the County, require major changes in the billing structure for charging refuse collection fees, or impose unnecessary burdens on waste generators or haulers were eliminated from the selection process. However, several of the programs selected will require establishment of mandatory waste collection services to be effective.

2.3.1 Source Reduction Program

The following source reduction programs were selected for Countywide implementation:

Waste Exchange -- The County has adopted a resolution supporting the CIWMB proposal for a Waste Exchange program which provides information on buyers and sellers of recyclable materials. The County will promote the program to local businesses and encourage cities to participate in the program.

Quantity-Based Variable Rates for Commercial/Industrial Waste Generators (contingency program) -- In this program, waste haulers would impose variable rate fees for commercial/industrial waste collection which rise rapidly with increasing volume. Such a fee structure would tend to place a strong incentive on reducing the amount of waste disposed.

If the mandated diversion goals are not met, the County will consider implementing this program if a mandatory collection system is implemented.

Quantity-Based Variable Rates for Household -- The County will consider implementing quantity-based variable rates for collecting household waste in certain densely populated unincorporated areas adjacent to cities which have implemented this type of program. The County will also consider the adoption of a mandatory collection program. Variable fate fees for households include charges for the number of trash cans used, the number of bags collected, or the frequency of collection. Adoption of a mandatory collection system in the unincorporated regions would encourage the development of this program.

Waste Evaluation/Waste Minimization -- The County will work with coalitions of jurisdictions within the subregions (East Valley, West Valley, Desert and Mountain) to establish a formal waste audit program to assist businesses with an evaluation the waste generated and the development of waste reduction measures.

Backyard Composting -- Using brochures and demonstration, the County may work with regional groups to educate the general public about methods of composting landscape materials in their own backyards, as well as the use and application of composted materials. The County will provide plans, designs, and information to interested individuals in the unincorporated areas.

Public Education/Information-- Existing education and public information programs will be augmented in the short-term planning period.

Awards and Public Recognition -- The County will present awards to businesses or individuals for source reduction and/or recycling activities.

Nonprocurement Programs -- While the County already utilizes electronic and voice mail systems, these activities will be expanded to serve as a model for residential and commercial/industrial waste generators.

Procurement Policies -- The Solid Waste Management Department may propose procurement policies for adoption by the Board of Supervisors. The procurement policies may consider the purchase of products which have greater durability, reusability, recyclability, recycled content, and minimal packaging. In order to develop and implement these policies, the Solid Waste Management Department will work with the County Purchasing Department to develop a purchasing agent position to coordinate the County's procurement policy and encourage other jurisdictions to develop purchasing cartels.

Waste Reduction Plans (contingency program) -- If other diversion programs fail to achieve targeted goals, the County may require waste reduction planning and reporting for large commercial/industrial generators.

Land Use and Development -- The County may modify land use and development regulations in order to establish incentives and disincentives which would encourage source reduction activities.

Support of State-Level Advance Disposal Fees -- The County will consider implementing a strategy to assist in passage of statewide ADFs meeting County needs. The strategy will include working with the San Bernardino County Solid Waste Management Department, the County Supervisors Association of California, the League of California Cities, and others seeking appropriate endorsements and actions for enactment of an ADF system.

Tipping Fee Differentials -- The County will consider implementing a tipping fee rate structure which will encourage generators to source separate wastes prior to delivery to processing facilities.

2.3.2 Recycling Programs

Countywide Programs

The following recycling programs were selected for Countywide implementation:

Commercial/Industrial Recycling -- The County will consider developing a plan to maximize diversion from the larger waste generators and will contract with private waste haulers to collect selected recyclables from firms producing large amounts of the selected materials. Plans for diverting inert materials, wood waste, and other types of demolition and construction waste will also be developed.

Drop-Off Centers -- The County will encourage the continued operation of private or non-County operated public drop-off centers, which are currently operating at schools, churches, and other volunteer centers.

Buy-Back Centers -- Existing, privately operated buy-back centers in the region will be encouraged to continue offering financial incentives for the delivery of recyclable materials.

Institutional/Office Recycling -- Government agencies, schools, hospitals, and other institutions will be targeted for the recovery of high-grade paper and other recyclable materials.

Manual Materials Recovery Facility -- Residential recycling programs may be developed in conjunction with existing programs in unincorporated areas and will utilize processing facilities selected by the waste haulers serving those communities.

Mechanized Materials Recovery Facility -- The County anticipates working cooperatively with incorporated cities to design and implement comprehensive materials recovery and processing facilities, which are expected to begin operations in 1995.

Landfill Salvaging -- The County may encourage the salvaging of bulky goods, scrap metals, building materials, and other items at disposal facilities. Existing programs at the Milliken Landfill and the Heaps Peak Transfer Station may be expanded and programs at other facilities may be developed.

Residential Curbside Collection -- The County will consider conducting a feasibility study to determine if private waste haulers can provide for the collection of recyclable materials from residences, ranging from single-family units to apartments with five units, that are in unincorporated areas adjacent to incorporated cities with such services. Based on the outcome of this study, the County may formalized these arrangements.

Desert and Mountain Programs

In addition to the programs selected for countywide implementation, the following additional programs were selected for the Desert and Mountain regions:

Public Recycling Receptacles -- The County will place specialized receptacles in public areas in the unincorporated Desert region for the collection of recyclable beverage containers.

Mixed Waste/Intermediate Processing Facilities -- Three facilities are being proposed for construction, each of which may have two units: one capable of processing mixed waste and one that processes commingle recyclables.

2.3.3 Composting Programs

Countywide Programs

The following composting programs were selected for countywide implementation:

Regional Yard Waste Composting Facility -- The County will work with other jurisdictions in the region to contract for the design and development of regional composting facilities which process collected yard waste in windrows during the medium-term (1995-2000) planning period.

Drop-Off Collection of Yard Waste -- The County will encourage the commercial, industrial, and self-haul sectors to source-separate and deliver green waste to drop-off sites in at the regional composting facilities.

Residential Curbside Yard Waste Collection -- The County will consider conducting a feasibility study to determine if private waste haulers can provide for the collection of source-separated yard waste from residences that are in unincorporated areas adjacent to incorporated cities with such services. Based on the outcome of this study, the County may formalize these arrangements.

Desert and Mountain Programs

The following additional programs were selected form implementation by the Desert and Mountain regions:

Supervised Yard Waste Drop-off Sites -- The County may provide drop-off centers at all County transfer stations, landfills, and regional composting facilities, as well as other more urbanized areas, for the delivery of source-separated yard wastes.

Mixed Municipal Solid Waste Composting Facilities -- Two regional facilities capable of separating and composting the organic fraction of the mixed solid waste stream are being considered for development during the medium-term planning period; both will operated in conjunction with planned mixed waste processing facilities.

Market Development Program -- The County will develop a marketing strategy with the regional groups which will encourage or require County residents, commercial landscape businesses, and public agencies to use locally produced compost materials.

2.3.4 Special Waste Program

The County will continue its programs to divert white goods, bulky items and tires, and may increase recordkeeping to quantify the level of diversion. The County may participate, when appropriate, in regional or state market development activities and attempt to expand the recycling of special wastes wherever possible.

Additionally, the County may work with cities to develop information for medical waste generators to assist them in reducing the quantity being managed as medical waste. And finally, the County may adopt the requirements of AB 1760 which bans metallic wastes from solid waste facilities by 1994.

2.3.5 Education and Public Information Programs

Countywide Programs

The following education and public information programs will be administered by the County with input from the Education and Public Information Committee of the Solid Waste Advisory Task Force. Funding for these programs is included in the Countywide tipping fee.

Quarterly Newsletter -- Full Circle newsletter will continue to provide news and information about local regional and national solid waste issues. The newsletter is published and distributed quarterly by the Solid Waste Management Department.

Solid Waste Management Self-Education Guide -- This guide provides information about City and County recycling coordinators, landfill information, buyback centers, and household hazardous waste collection centers.

AB 939 Presentation -- This slide presentation explains AB 939 and documents the County's waste reduction goals. The presentation will be available to government agencies, city recycling coordinators, and interested members of the public.

Museum Feasibility Study -- A feasibility study evaluates the development of a mobile display focusing on the waste crisis and the available options and solutions.

School Mini-Grant Program/Curriculum -- This program administers a competitive grant program for educators to develop innovative, supplemental teaching materials on solid waste issues. The resulting lesson plans will be disseminated to County schools.

Animated Movie Leader -- Characters and a story line for an animated movie leader that addresses solid waste issues will be developed.

Technical Assistance Program -- Seminars are presented for City recycling coordinators and other key staff to assist cities in meeting AB 939 goals, to target key generators and to share information.

Resource Information Center -- A resource information center dedicated to solid waste information will be developed. The center will include resources such as an on-line computer network, electronic mail, videos, trade subscriptions, and other reference materials.

Business Education Program -- Educational materials will be developed and distributed to area businesses. The materials will introduce the various solid waste management issues, such as "buying recycled", and present alternatives that businesses can consider in order to reduce waste.

Unincorporated County Programs

The following education and public information programs were selected for implementation in the unincorporated portions of the County, in addition to the Countywide programs.

Volunteer Program -- The County will analyze the feasibility of implementing a volunteer support program for recycling activities. The volunteers would serve as spokesperson in their neighborhoods or multifamily complexes, receiving and passing on periodic information about the status of recycling programs. Volunteers would also assist in trying to raise participation levels. Existing groups such as home owner associations, neighborhood watch, and block leaders can be utilized.

Commercial/Industrial Recycling -- The County will work with local haulers to assist in educating businesses in unincorporated areas. In most cases, the hauler will have existing methods for promoting recycling services for such businesses and the County will be able to assist in finding methods to distribute the information.

Media Releases/Advertising -- The County will work with regional groups to assist in providing the media with ongoing information about diversion programs and goals. If necessary, the County may purchase advertising as needed to announce new programs, etc.

Community/Special Events -- The County participates in and promotes civic events to promote waste diversion and resource conservation.

Precycling Program -- A supermarket precycling program will be implemented to educate consumers on the direct relationship between consumer purchases, diminishing landfill space, and increasing waste disposal costs. This precycling program will encourage consumers to change their purchasing decisions.

Annual Report -- Annual reports will be prepared towards the end of the short term planning period in order to assist the County in making decisions for the medium term planning period.

2.4 ANTICIPATED PROGRAM COSTS

Table S-7 summarizes annual costs of implementing programs chosen in Sections 4 through 8 of the SRR Element. The costs shown represent the County's portion of the overall costs necessary to implement the programs, based on the tonnages contributed by the unincorporated areas. Table S-7 shows that total costs escalate significantly in the fourth and fifth years, especially in the Desert and Mountain regions which incur the high costs of developing mixed waste processing and composting facilities during that time period.

The inter-regional differences in total program costs indicated in Table S-7 can be attributed to the differing population sizes served and amounts of waste handled, as well as the types of programs selected. In order to more accurately compare relative costs incurred for programs selected for each region, Table S-8 provides region-specific annual per capita costs for implementing the programs.

Funding sources to cover these costs include hauler collection fees and parcel fees. Parcel fees are used to recover waste management costs from the unincorporated areas of the County. Based on the results of a feasibility study, rates for hauler services or parcel fees may be established by the Board of Supervisors. In general, a revenue-neutral, fee-for-service funding system may be established in which residential, commercial, and industrial waste generators will pay for integrated waste management services in proportion to the amount of waste generated and the potential to recover materials from the waste.

2.5 ANTICIPATED DIVERSION

Tables S-9 and S-10 summarize the 1995 and 2000 source reduction, recycling, composting, and total diversion rates forecasted for each region. Based on a compilation of diversion projected for each region, total diversion for the entire unincorporated County is projected for the short- and medium-term planning periods.

The County is expected to surpass the short-term mandate by achieving 27.6 percent diversion in 1995, but is projected to fall short of the medium-term mandate by only achieving 46.4 percent diversion in 2000. This shortfall can largely be attributed to the remoteness and low population densities in the mountain and desert regions. Diversion estimates exceed the 50 percent level in the East and West Valley regions. Figure S-4 provides a visual comparison of the projected diversion rates for each region.

The Board of Supervisors sponsored legislation (AB 2494) to allow for the reduction of the diversion goals for the rural, unincorporated portions of the County. Although a large portion of the total unincorporated population lies within these rural areas, the area encompasses 19,000 square miles. Vast distances lie between each sparsely populated area, causing most typical recycling and composting programs to be prohibitively expensive. Currently, existing regulations would not permit these rural areas to be considered for a reduction in diversion goals because the total population is so high. By granting this reduction, the CIWMB would allow the more densely populated areas to strive for the mandated goals while allowing a more reasonable and realistic approach in the rural areas.

TABLE S-7 TOTAL ANNUAL COSTS FOR IMPLEMENTED PROGRAMS* (all figures in nearest $1000)					
	FY'91-92	**FY'92-93**	**FY'93-94**	**FY'94-95**	**FY'95-96**
West Valley	$ 7,000	$ 174,000	$ 200,000	$ 200,000	$ 834,000
East Valley	$ 3,000	$ 585,000	$1,178,000	$1,181,000	$3,632,000
Desert and Mountain	$ 0	$ 218,000	$ 370,000	$4,127,000	$4,150,000
Unincorporated Countywide	**$ 10,000**	**$ 977,000**	**$1,748,000**	**$5,508,000**	**$8,616,000**

** Does not include Countywide education and public information programs administered by the County with input from the Solid Waste Advisory Task Force, Education and Public Information Committee.*

TABLE S-8 PER CAPITA ANNUAL COSTS FOR ALL IMPLEMENTED PROGRAMS						
Region	**Population**	**FY'91-92**	**FY'92-93**	**FY'93-94**	**FY'94-95**	**FY'95-96**
West Valley	23,855	$ 0.29	$ 7.29	$ 8.38	$ 8.38	$ 34.96
East Valley	124,586	$ 0.02	$ 4.70	$ 9.46	$ 9.48	$ 29.15
Desert and Mountain	135,648	$ 0	$ 1.61	$ 2.73	$ 30.42	$ 30.59
Unincorporated Countywide	**284,089**	**$ 0.04**	**$ 3.44**	**$ 6.16**	**$ 19.39**	**$ 30.33**

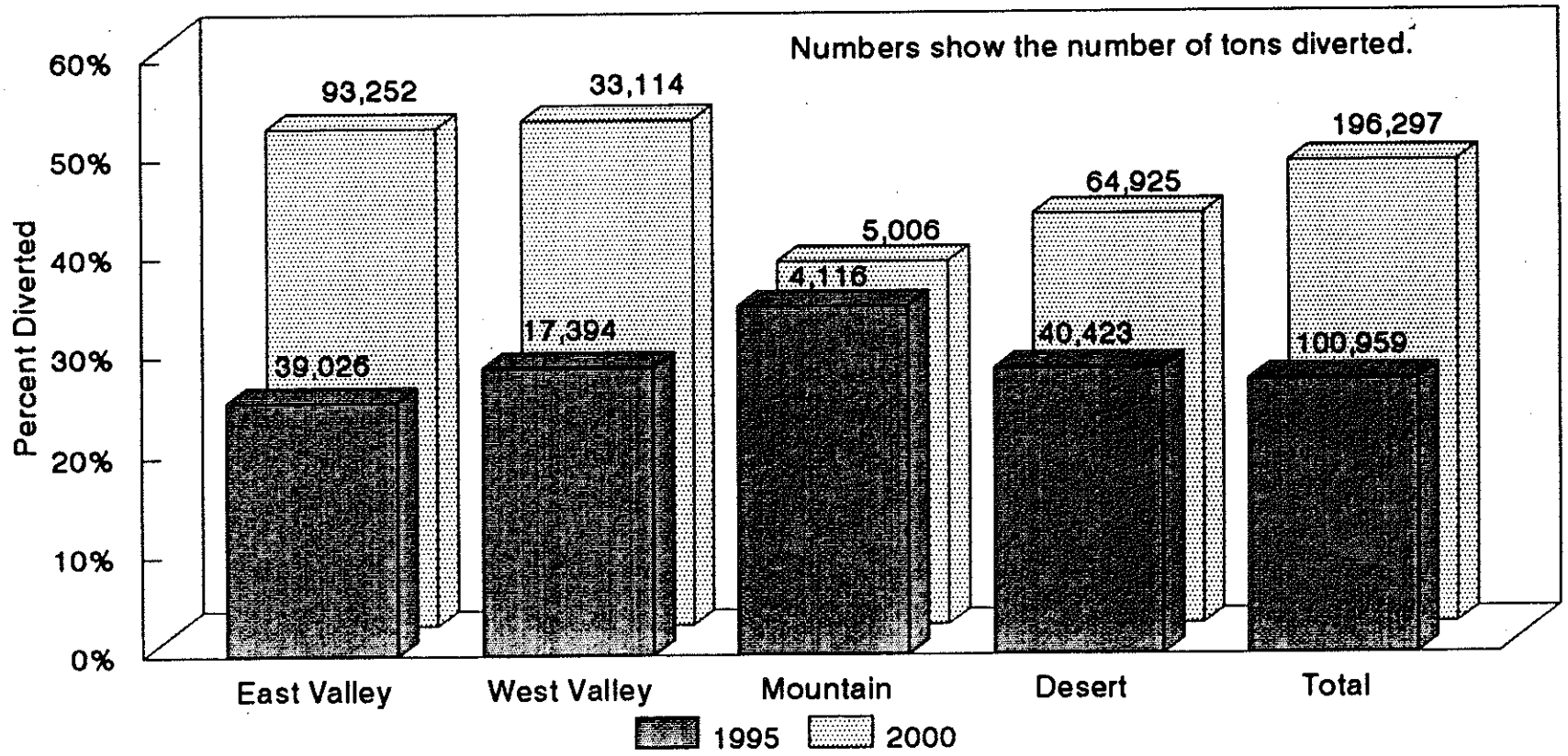
TABLE S-9
1995 WASTE DIVERSION FORECASTS BY DIVERSION ACTIVITY

Subregion	Source Reduction		Recycling		Composting		Total	
	Tons	%	Tons	%	Tons	%	Tons	%
East Valley	3,225	2.1	32,497	21.2	3,303	2.2	39,026	25.5
West Valley	598	1.0	13,420	22.4	3,375	5.6	17,394	29.0
Mountain	303	2.6	3,612	30.7	201	1.7	4,116	35.0
Desert	2,319	1.6	36,924	26.2	1,180	0.8	40,423	28.7
TOTAL	**6,446**	**1.8**	**86,453**	**23.8**	**8,060**	**2.0**	**100,959**	**27.6**

TABLE S-10
2000 WASTE DIVERSION FORECASTS BY DIVERSION ACTIVITY

Subregion	Source Reduction		Recycling		Composting		Total	
	Tons	%	Tons	%	Tons	%	Tons	%
East Valley	5,905	3.2	66,036	35.5	21,311	11.5	93,252	50.1
West Valley	2,009	3.1	25,110	38.5	5,994	9.2	33,114	50.8
Mountain	395	2.9	4,324	31.5	286	2.1	5,006	36.5
Desert	2,951	1.9	43,751	27.8	18,223	11.6	64,925	41.2
TOTAL	**11,261**	**2.7**	**139,222**	**32.9**	**45,814**	**10.8**	**196,297**	**46.4**

Figure S–4.
1995 and 2000 Waste Diversion Rates



2.6 ANTICIPATED IMPLEMENTATION

The following list of programs indicates the targeted implementation start date as well as the region which will be implementing the program. The start date indicates the year when the program will first be implemented. A more detailed task description for each project can be found in the appropriate component section.

2.6.1 Source Reduction

Program	Start Date	Region
Residential Back Yard Composting	1993	All
Government Procurement Policies	1993	All
Nonprocurement	1993	West Valley
Commercial/Industrial Waste Evaluations	1993	West Valley, East Valley
Awards Program	1993	West Valley
Quantify Existing Alternatives	1993	West Valley
Land Use Development	1993	West Valley
Quantity-Based Fees	1993	Desert/Mountain
Reporting Requirements	1993	East Valley
Tipping Fee Differentials	1993	Desert/Mountain
Advance Disposal Fees	1993	Desert/Mountain

2.6.2 Recycling

Program	Start Date	Region
Residential Curbside Recycling	1993	All
Commercial/Industrial/School Recycling	1993	All
Construction/Demolition Debris Recycling	1993	All
Drop-off/Buy-back Centers	1993	All
Residential Telephone Monitoring Survey	1993	All
Market Development	1993	All
Mechanized Material Recovery Facility	1993	All
Inerts & Wood WasteProcessing	1993	All
Public Recycling Receptacles	1993	Desert/Mountain
Intermediate Processing Facility/MRF	1993	Desert/Mountain

2.6.3 Composting

Program	Start Date	Region
Regional Composting Facility with Drop-off	1993	West Valley, East Valley
Residential Yard Waste Collection	1995	All
Yard Waste Composting Facility	1993	Desert/Mountain
Supervised Yard Waste Drop-off sites	1993	Desert/Mountain
Market Development Tasks	1993	Desert/Mountain
MMSW Composting Facility	1993	Desert/Mountain

2.6.4 Special Waste

Program	Start Date	Region
Medical Waste Program	1993	All

2.6.4 Education and Public Information

Program	Start Date	Region
Quarterly Newsletter	Ongoing	Countywide
Self-Education Guide	1992	Countywide
AB 939 Slide Presentation	1993	Countywide
Museum Feasibility Study	1992	Countywide
School Grants For Teachers Program	1991	Countywide
Animated Movie Leader	1993	Countywide
Technical Assistance Seminars	1991	Countywide
Resource Information Center	1991	Countywide
Business Education Program	1992	Countywide
Volunteer Program	1993	Unincorporated
Commercial/Industrial Recycling	1993	Unincorporated
Media Releases/Advertising	1993	Unincorporated
Community/Special Events	1991	Unincorporated
Precycling Program	1993	Unincorporated
Annual Report	1994	Unincorporated

3.0 HOUSEHOLD HAZARDOUS WASTE ELEMENT

3.1 INTRODUCTION

The overall goal of this HHW Element, as defined by the County Department of Environmental Health Services, is to "protect public health and prevent environmental degradation through educational efforts to reduce the generation of household hazardous wastes, and through a program to properly manage household hazardous waste generated in the County through recycling, as feasible, or treatment or disposal as necessary."

3.1.1 Organization of the HHW Element

The HHW Element includes the following components:

- A set of recommended HHW objectives.
- A description of existing HHW programs and conditions.
- A description of proposed HHW management programs.
- For each region:

- -- An evaluation of the proposed programs.
  - -- An identification of the programs to be implemented.
  - -- Implementation schedules, costs, and potential revenue sources for each selected program.

- A funding component.

- A public education and information component.

- A recommended monitoring and evaluation program.

3.1.2 Relationship to Existing County Hazardous waste Management Plan

In February 1990, San Bernardino County adopted the County Hazardous Waste Management Plan (HWMP), which addresses all hazardous waste (household, commercial, and industrial) generated within the County and recommends policies and programs for the proper management of these materials. The HHW Element also recommends management programs but addresses only household-generated hazardous wastes. All existing HHW programs implemented under the HWMP are recommended in the HHW Element to be continued throughout the unincorporated County.

3.2 RECOMMENDED PROGRAMS

3.2.1 Existing Programs

The County HWMP is one of the most comprehensive in California. It includes permanent HHW collection centers, one-day collection events, and an ongoing public education and information program. The County has also developed a load checking program for County-owned landfills. Materials accepted in the County collection programs include: pesticides and herbicides; household cleaners; paint, paint thinners/solvents; furniture polish; fertilizers; acids and caustics; pool chemicals; photochemicals; hobby supplies; used oil; and lead-acid batteries. Waste oil is also collected and recycled by private service station operators.

Permanent Drop-off Facilities

Permanent drop-off facilities are currently located in eight cities throughout the County and are staffed by personnel trained in hazardous waste handling and emergency response. During the 1990-91 fiscal year, over 11,000 County residents delivered their HHW materials to one of these sites; of this waste, approximately 76,000 gallons, was recycled. Recycling methods included reprocessing and reuse of latex paints, bulking of other paints and solvents for use as alternative fuels, battery reconditioning, and waste oil reclamation. Nonrecyclable materials were packaged and transported to a Class I disposal facility.

For the East and West Valley regions, the County will continue this program, consider adding new collection centers, and improve safety features at existing facilities. To serve the Desert and Mountain regions, the County will consider a new collection center in Yucca Valley and has established a collection center in Big Bear.

Periodic Collection Events

In addition to the permanent collection centers, the County department of Health Services (DEHS) cosponsors 1-day collection events, or "Roundups," with cities, fire districts, and community groups. During these widely publicized events, County residents are encouraged to deliver HHW materials to one of the permanent drop-off facilities. The County co-sponsored or assisted with 16 1-day events in fiscal year 1989-90.

The County will continue this program and explore the following modifications:

- Expand the hours of operation during special community collection events.
- Improve and expand safety procedures employed at the one-day events.
- Focus some of the events on the collection of specific recyclable wastes that make up a significant percentage of the HHW stream. This would save disposal and permitting costs associated with the events.

Public Education and Outreach

The County has an extensive public information and education program, emphasizing not only the safe disposal of HHW through the use of drop-off centers, but also the use of nontoxic alternatives. This program a HHW curriculum for grades four through six, presentations at community meetings, and displays at fairs. The educational programs include information about the collection centers, encourage proper management of HHW, and provide information on ways to reduce HHW generated through the use of alternative products and wise buying practices.

The County plans to continue and expand existing public education programs which will reduce the health risks to residents through better home management of hazardous materials and reduce the risk to sanitation workers through improved disposal practices.

Load-Check Program

The County, along with the contract landfill operator in the County, developed a load check program designed to identify and remove from the municipal waste stream hazardous and other prohibited wastes which may be delivered to the landfills. The program consists of the following:

- Customer notification through the use signs, notices, decals, and verbal inquiries.
- Site surveillance, including initial screening of loads by scale house personnel and load inspections by spotters at the working of the landfill.
- Random selection and inspection of a minimum of five loads per week at each landfill.

Any materials found during the inspections which are suspected of being hazardous are rejected for disposal and returned to the customer.

Periodic load-checking at solid waste landfills is required by Title 23 regulations. The County plans to continue and expand upon the existing program to include new materials recovery facilities and transfer stations in the Desert and Mountain region.

3.2.2 Proposed Contingency Programs

The unincorporated County regions will consider implementing additional programs during the medium-term planning period, depending on the effectiveness of the existing programs. These contingency programs include mobile HHW collection services and curbside or door-to-door HHW collection. No program costs for contingency programs have been estimated.

Mobile Collection Services

Under this program, a public collection service or a licensed private hauler would provide mobile collection vehicles to collect HHW from residents on a periodic basis. The mobile collection unit(s) would provide collection services in those areas of the County not being adequately served by the permanent collection facilities or roundups. In the East and West Valley regions, the mobile collection service would provide periodic access o mobile units within a 15- to 20-minute drive or major residential areas. In the Desert and Mountain regions, the mobile collection unit would travel through the area on an established schedule, setting up collection for two days per week each month at one of several established sites.

Curbside or Door-to-Door Collection

The County could provide curbside collection of HHW on a regular or occasional basis through contracting with a private (licensed) hauler. This program would require the following:

- Use of specialized collection vehicles.
- Implementation of a public education program to instruct residents on how to handle hazardous materials prior to collection.
- Availability of permanent facilities for the temporary storage of hazardous materials prior to their transport to recycling, treatment, or disposal facilities.

A variation this program being considered for implementation in the East Valley region would be to provide customized, door-to-door collection service on a by-appointment basis.

Both curbside and door-to-door collection could target those areas of the County where residents are not adequately serviced by the permanent facilities or roundups.

3.3 PROGRAM IMPLEMENTATION

3.3.1 Multijurisdictional HHW Efforts

The County, through a Memorandum of Understanding, will participate with other jurisdictions in the region to develop and implement a Countywide HHW management program. The County can work with other cities in San Bernardino or adjoining counties to purchase large quantities of educational materials to reduce costs. Regional efforts can also be used as a cost-effective approach to sponsoring radio announcements and cable television news.

3.3.2 Implementation Responsibilities

The lead agency for HHW programs in the County will continue to be the DEHS. Various municipalities also participate in the program through the operation of collection centers. The County Solid Waste Management Department will continue to be responsible for load checking programs at solid waste landfills. Load checking at new materials recovery facilities and transfer stations may be operated by the County or by individual facility operators (with inspection oversight by the County as the State-designated local enforcement agency).

3.3.3 Implementation Schedule

Most of the tasks required to implement the HHW Element involve continuing and expanding programs already established under the County's HWMP, and monitoring and evaluating the programs on an ongoing basis. The East and West Valley regions are scheduled to develop a Memorandum of Understanding with other jurisdictions in the area during 1992. The implementation schedule for the Desert and Mountain regions includes a timetable for identifying potential sites for permanent HHW collection facilities (1992), for constructing the facilities (1993-94), and for training personnel, publicizing, and starting operations (1994). A contingency plan for developing a mobile HHW collection program is also scheduled for possible implementation by 1997-98 in the Desert and Mountain regions.

3.4 PROGRAM COSTS

3.4.1 Existing Costs

The total cost to operate the County's HHW program for fiscal year 1991 is estimated at $863,000. This cost is estimated to increase to $1,440,000 for fiscal year 1992. Revenues are derived from a surcharge on landfill tipping fees and from parcel fees. It may be necessary to increase these fees to pay for new programs. If available, additional funds will continue to be sought through local and state grant programs.

3.4.2 Additional Costs

Although the HHW Element recommends that the East and West Mountain regions consider expanding certain existing programs, no modifications to the existing programs are specifically proposed. Therefore, there are no incremental costs associated with implementing the HHW program in these areas. However, for the Desert and Mountain regions, a number of modifications to the existing program are recommended for implementation.

- Expanded load check program is anticipated to increase costs by $140,000 per year, starting in 1994, and be paid for by tipping fee increases.

- New permanent collection facilities to be sited in Yucca Valley and Big Bear a anticipated to increase program costs from $140,000 in 1992 to $420,000 in 1995.

- HHW collection events are proposed to be phased out by 1993. At an estimated costs of $1.40 per capita, it is estimated that the existing costs is $23,800. These costs would not be incurred in 1994 and 1995.

Table S-11 shows the estimated total implementation costs for this region.

TABLE S-11.
HHW PROGRAM COSTS FOR DESERT AND MOUNTAIN REGIONS
(in 1990$)

Program	1992	1993	1994	1995
Public Education	15,000	15,000	15,000	15,000
Load Checking (additional costs)	N/A	N/A	140,000	140,000
Permanent Collection Facility	140,000	280,000	420,000	420,000
Periodic Collection Events	23,800	23,800	0	0
TOTAL	**178,000**	**318,000**	**575,000**	**575,000**

SECTION 1
BACKGROUND INFORMATION

1.1 INTRODUCTION

The San Bernardino County Source Reduction and Recycling (SRR) Element was prepared to meet the requirements of the Integrated Waste Management Act of 1989 (AB 939), subsequent legislation, and implementing guidelines for all unincorporated areas in the County.

In accordance with this legislation, the major objective of this plan is to provide an integrated approach to the disposition of solid wastes and discarded resources. Central to this integrated approach is the mandate that programs must be adopted that will lead to a 25 percent diversion of materials from landfills by 1995, with an increase to 50 percent diversion by the year 2000.

In recognition that unincorporated portions of the county differ greatly, and in order to develop SRR programs consistent with those being used in nearby cities, the San Bernardino County Solid Waste Management Department has completed a multijurisdictional planning program to institute SRR Elements with those developed for cities in three subareas within the County:

- The West Valley: Unincorporated areas in West San Bernardino County adjacent to Ontario, Chino, Chino Hills, Montclair, Upland, and Rancho Cucamonga.

- The East Valley: Unincorporated areas in the eastern portion of the San Bernardino Valley adjacent to Fontana, Rialto, Colton, Loma Linda, Grand Terrace, San Bernardino, Highland, Redlands, and Yucaipa. The East Valley includes the West Mountain area.

- The Desert and Mountain Area: Unincorporated areas and communities in the vicinity of Adelanto, Apple Valley, Barstow, Big Bear Lake, Hesperia, Needles, Twentynine Palms, Victorville, and Yucca Valley. This region has been further segmented into the East Desert, North Desert, and Eastern Mountain regions due to geographic and demographic differences in each.

These areas are shown in Figure 1-1. The SRR Elements for the unincorporated areas are listed in Table 1-1 and were originally prepared in separate documents. This SRR Element has been constructed from those three regional documents to form one single San Bernardino County SRR Element which includes both Countywide and area-specific programs.

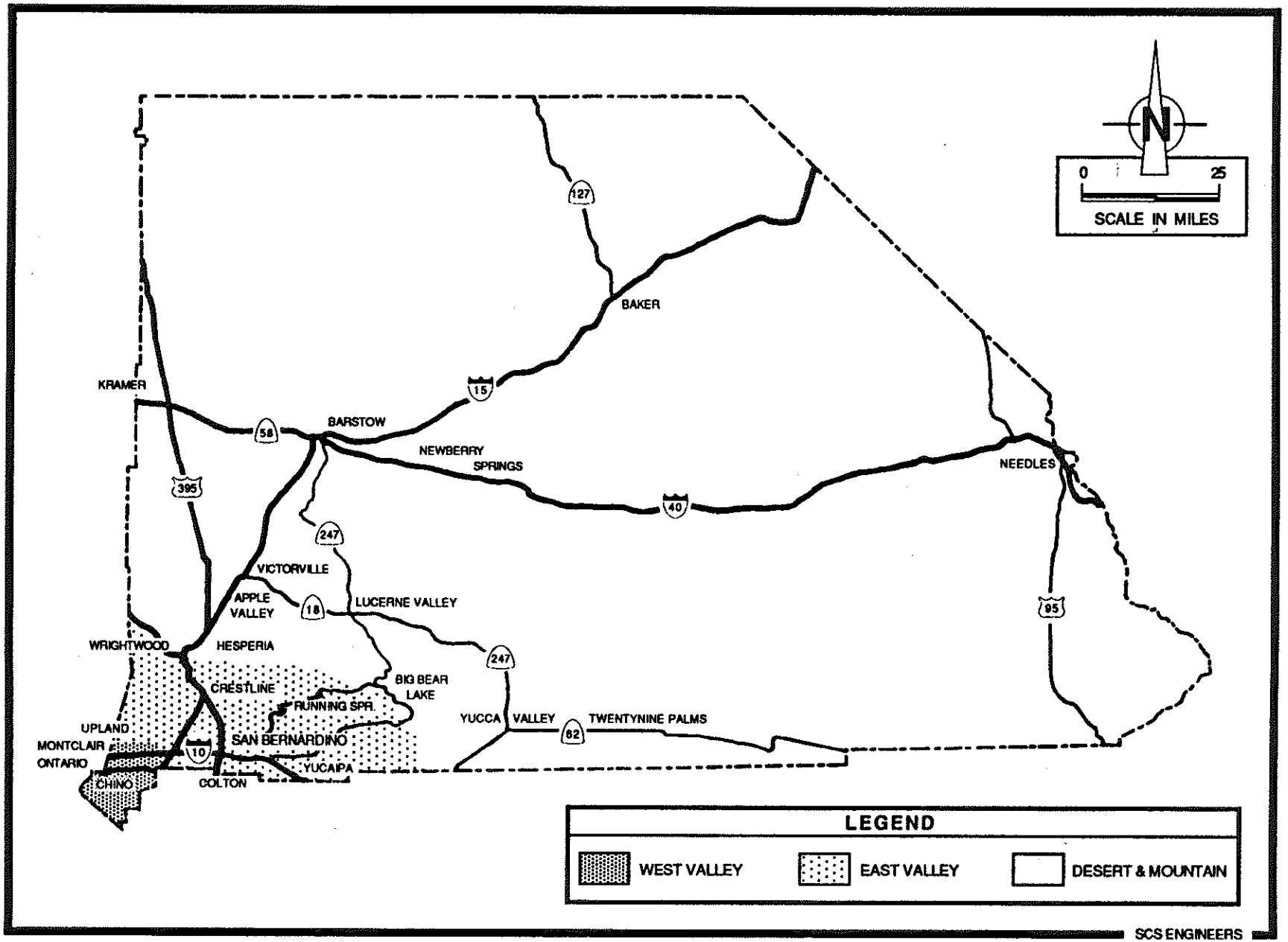


Figure 1-1. Map of San Bernardino County Depicting Regions.

TABLE 1-1. UNINCORPORATED AREAS OF SAN BERNARDINO COUNTY	
West Valley	North Etiwanda, San Antonio Heights (etc.).
East Valley	Bloomington, Muscoy, Devore, Mentone, Crafton Hills, Oak Glen, Forest Falls, Lake Arrowhead, Crestline, Running Springs, Twin Peaks, Lytle Creek (etc.).
Desert and Mountain	Big Bear City, Wrightwood, Phelan, Spring Valley Lake, Silver Lakes, Oak Hills, Pinon Hills, Wonder Valley, Landers, Morongo Valley, Joshua Tree, Baker (etc.).

1.2 ORGANIZATION OF SRR ELEMENT

In accordance with the implementation guidelines issued by the California Integrated Waste Management Board, this SRR Element includes the following:

- Summary results of the waste disposal characterization, waste diversion characterization, and waste generation forecasts for all unincorporated areas and for unincorporated areas within each of three subareas that are described above.
- Four waste diversion components: Source Reduction, Recycling, Composting, and Special Wastes.
- An Education and Public Information Component.
- A Disposal Facility Capacity Component.
- A Funding Component.
- A Plan Integration Component.

1.3 PUBLIC REVIEW PROCESS

This SRR Element will undergo extensive review prior to its final adoption by San Bernardino County. The preliminary draft was circulated by San Bernardino County for comments to the CIWMB, the Local Task Force, all cities within the County, and interested groups and individuals in the community. After any suggested modifications to the SRR Element have been made, the document will be submitted for formal adoption by the County and included in the Integrated Solid Waste Management Plan for San Bernardino County. The CIWMB will again review this plan, along with SRR Elements being prepared for cities, as part of the integrated plan for the County. The public review process for the SRR Element is the same as that for the Household Hazardous Waste Element, a companion document published under separate cover. Both Elements are required under AB 939 and subsequent follow-up legislation enacted by the State.

SECTION 2
GOALS AND OBJECTIVES

2.1 INTRODUCTION

Section 2 establishes Source Reduction and Recycling (SRR) Element overall goals and objectives for the unincorporated regions of San Bernardino County. Component-specific goals and objectives are also provided. Because of the similar and overlapping goals and objectives set by the West Valley, East Valley, Desert, and Mountain regions, only Countywide goals and objectives are discussed here. Specific goals and objectives to be achieved by each region are included within the program components. This section also provides the diversion levels anticipated to be achieved through each component program.

2.2 ELEMENT GOALS AND OBJECTIVES FOR THE SHORT- AND MEDIUM-TERM PLANNING PERIODS

The following is a summary of the goals and objectives to be achieved through implementation of this SRR Element and several of its components. Together, they establish the foundation for the County's program to meet the waste diversion goals mandated by AB 939.

2.2.1 Overall Element Goals and Objectives

The following goals and objectives are to be achieved by this SRR Element during the short- and medium-term planning periods:

Goal

- The maximization of solid waste diversion toward meeting the source reduction and recycling diversion requirements of Section 41780 of the Public Resources Code, within economic feasibility.

Objectives

- The source reduction, recycling, and composting of at least 25 percent of the solid waste generated by individual regions within the unincorporated County by 1995.

- The source reduction, recycling, composting, and transformation of at least 50 percent of the solid waste generated by individual regions within the County by 2000.

- The maximization of diversion from regions within the County that cannot attain the 50 percent diversion due to economic and geographic conditions.

2.2.2 Source Reduction Component Goals and Objectives

The following Source Reduction component goals and objectives are to be achieved during the short- and medium-term planning periods:

Goal

- Maximization of the waste reduction potential of source reduction activities in the County.

Objectives

- Reduction of waste generation by 1 to 3 percent, depending upon region-specific conditions within the County, by 1995.
- Reduction of waste generation by 1 to 4 percent, depending upon region-specific conditions within the County, by 2000.
- Implementation of source reduction programs selected by each unincorporated County region for the short-term planning period by 1995.
- Continued operation and expansion of source reduction programs selected in the short term by 2000.
- Education of residents and businesses about source reduction (during both planning periods).
- Development of methods to quantify source reduction by 1995.
- Reduction of the use of nonrecyclable materials (during both planning periods).
- Replacement of disposable materials and products with reusable materials and products (during both planning periods).
- Reduction of excess packaging (during both planning periods).
- Reduction of residential yard wastes (during both planning periods).
- Improved efficiency of office paper use (during both planning periods).
- Increased purchase of repairable products (during both planning periods).
- Increased useful product life (during both planning periods).

2.2.3 Recycling Component Goals and Objectives

The following Recycling component goals and objectives are to be achieved during the short- and medium-term planning periods:

Goal

- Maximization of the waste diversion potential of recycling activities in the County.
- Implementation of economically feasible recycling programs.

Objectives

- Recycling of 21 to 31 percent of the waste stream, depending upon region-specific conditions within the County, by 1995.
- Recycling of 27 to 39 percent of the waste stream, depending upon region-specific conditions within the County, by 2000.
- Implementation of recycling programs selected by each unincorporated County region for the short-term planning period by 1995.
- Continued operation and expansion of recycling programs selected in the short term by 2000.
- Participation in planning regional materials recovery facilities and a mixed waste processing facility.
- Modification of purchasing procedures to increase markets for recyclable materials (during both planning periods).

2.2.4 Composting Component Goals and Objectives

The following Composting component goals and objectives are to be achieved during the short- and medium-term planning periods:

Goal

- To maximize the waste diversion potential of composting activities in the County.
- Implementation of economically feasible programs to divert green waste from landfills.

Objectives

- To compost between 0.8 and 6 percent of the waste stream, depending upon region-specific conditions within the County, by 1995.

- To compost between 2 and 12 percent of the waste stream, depending upon region-specific conditions within the County, by 2000.

- Implementation of recycling programs for each region of the unincorporated County for the short-term planning period by 1995.

- Continued operation and expansion of recycling programs selected in the short term by 2000.

- Development of high public participation in the source separation of green waste by 2000.

- Expansion of markets for compost by 2000.

2.2.5 Special Waste Component Objectives

The following Special Waste component objectives are to be achieved during the short- and medium-term planning periods:

- Minimization of the hazard potential of any special waste generated (during both planning periods).

- Diversion of special waste from disposal whenever possible (during both planning periods).

2.2.6 Education and Public Information Component Goals and Objectives

Goal

- To achieve maximum public awareness and participation in source reduction, recycling, and composting activities through educational activities.

Objectives

- Achievement of at least 60 percent public awareness of and 50 percent public participation in source reduction, recycling, and composting programs in the County by 1995.

- Achievement of at least 90 percent public awareness of and 75 percent public participation in source reduction, recycling, and composting programs in the County by 2000.

- Implementation of education and public information programs selected by each unincorporated County region for the short-term planning period by 1995.

- Continued operation and expansion of all education and public information programs selected in the short term by 2000.

- Development of source reduction, recycling, and composting education curricula to be utilized by unincorporated County schools (during both planning periods).

2.2.7 Market Development Goals and Objectives

Goal

- Assistance in the development of local, regional and Statewide markets for materials collected and processed through implementation of the programs adopted in the SRR Element.

Objectives

- Consider institution of market development zones within the County to encourage the establishment of industries that use recyclable materials.

- Promotion of the development of local, regional, and statewide markets for materials recovered through the County's recycling and composting programs.

- Increased markets for products containing recycled materials through government procurement policies and technical assistance for businesses.

2.3 SUMMARY OF DIVERSION ACHIEVED THROUGH EACH COMPONENT PROGRAM

Table 2-1 summarizes the Countywide diversion levels anticipated to be achieved through each component. Program-specific diversion rates have been provided for each region within the County unincorporated area in the Integration Component (Section 11). Table 2-1 shows how unincorporated San Bernardino County is expected to exceed the 25 percent diversion mandate by 1995, but is not expected to attain 50 percent diversion by 2000. Reasons for non-attainment of the 50 percent diversion rate and plans for addressing this shortfall are discussed in the Executive Summary and in Section 11.

TABLE 2-1. UNINCORPORATED SAN BERNARDINO COUNTY WASTE DIVERSION GOALS BY COMPONENT		
	1995	**2000**
Source Reduction	1.8%	2.7%
Recycling	23.8%	32.9%
Composting	2.0%	10.8%
UNINCORPORATED COUNTYWIDE	27.6%	46.4%

SECTION 3
SOLID WASTE GENERATION ANALYSIS

3.1 INTRODUCTION

AB 939 Solid Waste Generation Analyses were conducted for each of the three unincorporated regions. The summary that follows provides information specific to each of the regions that is pertinent to planning source reduction, recycling and composting programs.

These analyses include the following estimates of the types and quantities of wastes:

- Currently disposed in permitted landfills and transformation facilities;
- Currently diverted from landfill or transformation by source reduction, recycling and/or composting efforts;
- Which *could* be diverted from disposal;
- Which *cannot* be diverted from disposal by recommended diversion programs.

3.1.1 County Demographics

According to the Estimates of 1990 Unincorporated Population by Census Tract (revised), the population of the unincorporated areas of San Bernardino County, excluding incorporated Chino Hills, Yucca Valley, and Yucaipa, was 284,089. A breakdown of the populations by subregion is as follows:

- West Valley: 23,855
- East Valley: 124,586
- Desert and Mountain: 135,648.

The unincorporated areas of San Bernardino County include widely diverse regions. Population densities are fairly high in the East and West Valley regions which border municipalities and in the Victor Valley region. Much of the remaining area of the county consists of desert or mountainous regions and are primarily rural in character.

3.1.2 Waste Collection and Disposal

The unincorporated region of San Bernardino County is served by 35 haulers utilizing 20 permitted landfills within the County. Of these 20 landfills, 19 are operated by the County, and one is operated by the City of Needles. Table 3-1 summarizes the permitted haulers and the landfills in each subregion. Because there is no mandatory collection in unincorporated

TABLE 3-1. WASTE MANAGEMENT STRUCTURE FOR THE SAN BERNARDINO COUNTY UNINCORPORATED REGIONS

Subregion	Haulers	Disposal Facilities
Desert	Baker Community Serv. Dist. Boron Valley Sanitation Del Rosa Hog Ranch Lucerne Valley Disposal, Inc. Silver Valley Disposal Tri-State Refuse Disposal Trona Sanitation Victorville Disposal Advance Disposal Desert Disposal Avco Disposal Co. Sun Star Disposal Waste Mgmt. of the Desert Laid Law Waste Systems	Apple Valley Landfill Barstow Landfill Hesperia Landfill Needles Landfill * Twentynine Palms Landfill Victorville Landfill Baker Landfill Landers Landfill Lenwood-Hinkley Landfill Lucerne Valley Landfill Morongo Valley Landfill Newberry Springs Landfill Phelan Landfill Trona-Argos Landfill Yermo Landfill
Mountain	Big Bear City Community Service District Big Bear Disposal Inc. Running Springs Disposal	Big Bear Landfill
West Valley	Western Waste Disposal Universal Disposal Service Duran Environmental Rancho Disposal Monte Vista Disposal Waste Management of Pomona Modera Service Tri-County Briggeman Disposal Mt. Baldy Disposal Disposal Control Service	Milliken Landfill Colton Landfill Mid-Valley Landfill San Timoteo Landfill
East Valley	Cal Disposal Company Curran's Rubbish Disposal Jack's Disposal Service Loma Linda Disposal, Inc. (BFI) Marks Disposal National Environmental Waste Yucaipa Disposal	Colton Landfill Mid-Valley Landfill San Timoteo Landfill Heaps Peak Transfer Station

* This site is leased from the Bureau of Land Management and operated by the City of Needles

areas, there is a traditionally heavy reliance on self-haul trips in unincorporated areas. For example, historically residents in the West Mountain areas bring waste, via self haul, to the Heaps Peak Transfer Station from which it is transferred to the San Timeteo Landfill in eastern San Bernardino County.

3.2 WASTE DISPOSAL CHARACTERIZATION

The solid waste disposal characterization study was designed to characterize both the quantity and composition of wastes that are currently being disposed by generators within the unincorporated areas of San Bernardino County.

3.2.1 Methodology for Estimating Disposal Quantities and Composition

In order to determine the quantities of solid waste disposed, information was gathered by means of interviews, phone contacts, and surveys with the following data sources: local permitted solid waste haulers, the San Bernardino County Solid Waste Management Department, County landfill personnel, and self-haulers. In addition, the amount of industrial waste disposed in the Desert and Mountain subregions of the County was determined using per employee waste generation rates for various SIC code groupings, the number of firms in the region within each SIC code group, and the number of employees per firm.

Based on the above sources of information, it was estimated that the Unincorporated areas of San Bernardino County disposed of approximately 287,100 tons of solid waste in 1990, or about 522,000 cubic yards (assuming an in-place density of 1,100 lbs per cu-yd). Given the population of the region, this total amounts to 5.5 pounds per capita per day. Table 3-2 shows the waste disposal estimates for 1990 by generator source for the entire unincorporated region and for each subregion.

TABLE 3-2. 1990 WASTE DISPOSAL ESTIMATES FOR UNINCORPORATED SAN BERNARDINO COUNTY (in Tons)

Subregion	Residential	Commercial	Industrial	Other*	Total
Countywide	141,844	88,970	50,992	5,309	287,115
East Valley	50,435	29,836	22,340	3,231	105,843
West Valley	25,814	8,898	14,159	2,078	50,950
Mountain	6,445	1,950	1,216	0	9,611
Desert	59,150	48,286	13,277	0	120,712

* Note that "other" waste sources include self-haul.

Results of the Countywide Waste Characterization Studies

In each of the subregions of the study area, a quantitative field analysis was performed in order to characterize the composition of solid wastes currently being disposed by waste generators within the unincorporated areas. These analyses included manually sorting representative samples of residential, commercial, and industrial refuse in accordance with AB 939, AB 1820, and the Planning Guidelines issued by the CIWMB. In the East Valley and West Valley subregions, visual surveys of self-haul vehicles and industrial roll-off containers were also conducted to determine the composition of these wastes. In the Mountain and Desert Subregions, industrial waste composition was determined using data on the amounts and types of solid waste generated per employee by SIC code classification, as well as data on the number of employees and firms within each SIC code grouping in the study area.

For all subregions and waste sources, these analyses yielded mean waste composition values, in percent by weight, for each waste type. Combining the data on the percentages of each waste type found in the waste stream with data on waste quantities yielded estimates of the tonnages of each waste type disposed.

3.2.2 Results of Countywide Waste Disposal Characterization

The combined results of the waste characterization analyses conducted for each of the subregions in the study area are shown in Table 3-3, which describes the amounts and percentages of each of the eight solid waste categories disposed by residential, commercial, and industrial sources. (Note that the totals shown in Table 3-3 are slightly different than the totals in Table 3-2 due to rounding errors.) Additional information on the composition of the unincorporated County waste is provided in Table 3-4, which shows the amounts of wastes disposed in the unincorporated areas of San Bernardino County by material category and source. A breakdown of the total waste disposed in percentage generated by each source is shown graphically in Figure 3-1. The percentages of each waste category disposed by all sources has been described in Figure 3-2.

3.2.3 Waste Disposal Characterization by Subregion

The numbers in Tables 3-3 and 3-4 were derived from combining waste disposal estimates from each of the subregions of the unincorporated County. Separate disposal estimates for each subregion may also be useful for solid waste planning purposes. Accordingly, Table 3-5 shows 1990 waste disposal estimates by material category and source for the West Valley, East Valley, Mountain, and Desert subregions.

TABLE 3-3. 1990 COUNTYWIDE WASTE DISPOSAL CHARACTERIZATION BY MATERIAL CATEGORY AND SOURCE

Material Category	Residential Tons	Residential %	Commercial Tons	Commercial %	Industrial Tons	Industrial %
Paper	53,863	38.0	48,221	54.2	5,896	11.6
Plastics	12,134	8.5	8,086	9.1	3,976	7.8
Glass	6,475	4.6	2,081	2.3	961	1.9
Metals	9,483	6.7	3,003	3.4	2,059	4.0
Yard Waste	21,113	14.9	4,630	5.2	2,812	5.5
Other Organics	32,206	22.7	18,351	20.6	10,093	19.8
Other Wastes	6,417	4.5	4,428	5.0	8,839	17.3
Special Wastes	153	0.1	170	0.2	16,357	32.1
TOTAL	**141,844**	**100.0**	**88,970**	**100.0**	**50,993**	**100.0**

TABLE 3–4. 1990 WASTE DISPOSAL RATES BY MATERIAL TYPE AND SOURCE
(All figures in tons)

	RESIDENTIAL	COMMERCIAL	INDUSTRIAL	OTHER	TOTAL
PAPER Subtotal	53,863	48,221	5,896	237	108,217
Newsprint	12,001	8,240	372	39	20,651
Corrugated Containers	10,954	17,082	1,967	82	30,084
High–grade	4,607	2,868	700	8	8,183
Mixed	10,663	7,289	1,810	41	19,802
Contaminated/Other	15,639	12,742	1,046	69	29,496
PLASTICS Subtotal	12,134	8,086	3,976	113	24,310
Containers	118	15	144	0	277
PET	478	157	31	3	670
HDPE	2,120	611	215	11	2,956
Film	5,037	3,498	1,987	21	10,543
Polystyrene	634	471	33	6	1,145
Other	3,747	3,336	1,566	71	8,720
GLASS Subtotal	6,475	2,081	961	27	9,545
Ca. Redemption Value	1,497	835	343	6	2,682
Containers	4,330	992	284	21	5,629
Other	648	253	334	0	1,234
METALS Subtotal	9,483	3,003	2,059	181	14,726
Aluminum Cans	1,644	507	27	2	2,181
Tin cans	2,605	762	745	0	4,111
Ferrous	2,593	1,119	772	147	4,632
Nonferrous	577	132	85	3	797
White Goods	885	268	173	29	1,356
Mixed/other metals	1,177	216	257	0	1,650
YARD WASTE Subtotal	21,113	4,630	2,812	2,245	30,800
Grass/Leaves/Prunings	21,113	4,630	2,812	2,245	30,800
OTHER ORGANICS Subtotal	32,206	18,351	10,093	1578	62,227
Food	17,833	12,463	891	56	31,243
Wood	3,941	2,995	7,823	1,349	16,108
Tires and Rubber	499	971	210	47	1,727
Manure	827	300	0	0	1,127
Disposable Diapers	1,392	178	0	13	1,583
Textiles/leather	4,554	510	860	83	6,006
Other	3,160	934	309	30	4,433
OTHER WASTES Subtotal	6,417	4,428	8,839	919	20,603
Asphalt	0	178	309	0	488
Concrete	318	634	2,575	114	3,641
Other Inert Solids	3,808	2,138	5,372	801	12,118
Household Haz. Waste	1,933	1,330	380	4	3,647
Fines	241	64	203	0	508
Misc.	118	84	0	0	202
SPECIAL WASTES Subtotal	153	170	16,357	8	16,687
Asbestos	0	0	0	0	0
Ash	3	4	0	0	7
Bulky Items	0	0	1,239	8	1,246
Auto Shredder Waste	0	0	15,118	0	15,118
Misc. Special Wastes	150	166	0	0	316
TOTAL	141,844	88,970	50,993	5,308	287,115

Figure 3–1. 1990 Waste Disposal by Source Unincorporated San Bernardino County

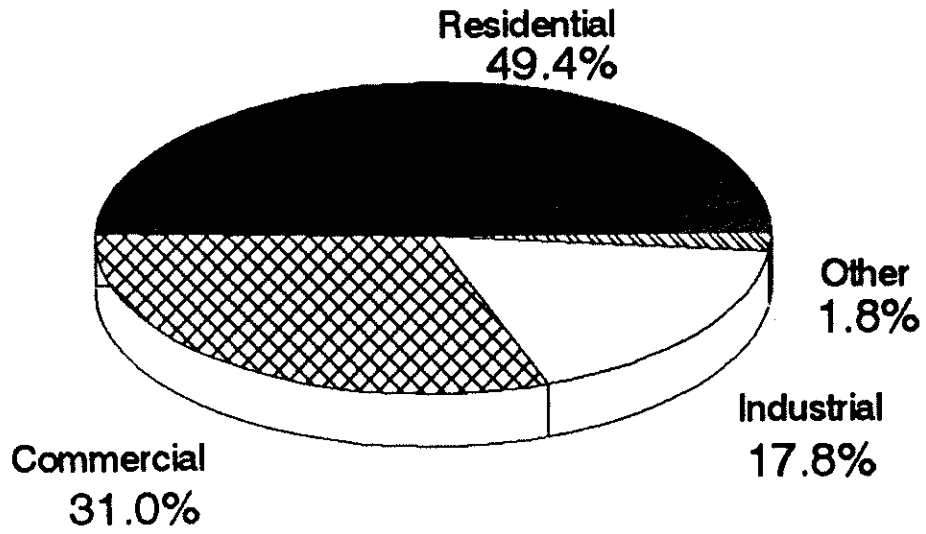


Figure 3–2. 1990 Waste Disposal by Material Category Unincorporated San Bernardino County

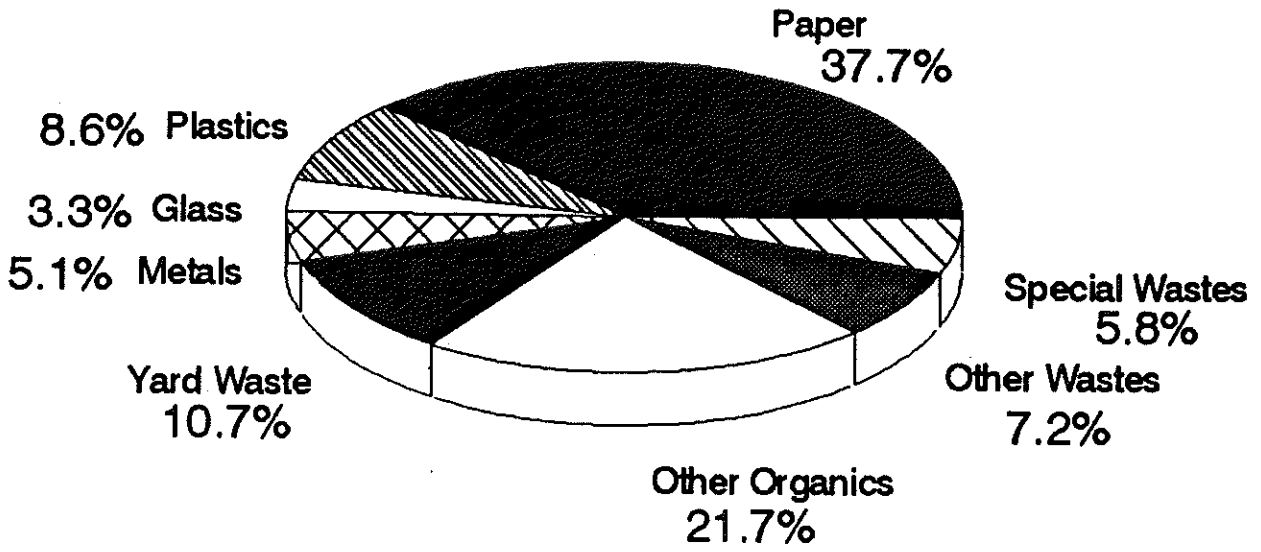


TABLE 3-5.
1990 WASTE DISPOSAL QUANTITIES BY MATERIAL CATEGORY FOR THE WEST VALLEY, EAST VALLEY, MOUNTAIN, AND DESERT SUBREGIONS

Material Category	West Valley Tons	%	East Valley Tons	%	Mountain Tons	%	Desert Tons	%
Paper	11,948	23	31,107	29	2,997	31	59,897	50
Plastics	5,196	10	6,330	6	793	8	12,011	10
Glass	1,272	2	4,211	4	717	7	3,358	3
Metals	4,010	8	5,213	5	887	9	5,057	4
Yard Waste	7,492	15	17,413	16	1,007	10	6,022	5
Other Organics	13,595	27	22,030	21	2,033	21	25,218	21
Other	7,427	15	4,821	5	1,024	11	7,923	7
Special	9	0	14,718	14	153	2	1,225	1
Total	**50,950**	**100**	**105,843**	**100**	**9,611**	**100**	**120,712**	**100**

3.3 WASTE DIVERSION CHARACTERIZATION

The purpose of the solid waste diversion characterization study is to identify the types and quantities of wastes which are generated within the unincorporated areas of San Bernardino County and diverted from landfills or transformation facilities through recycling, source reduction, or composting activities. Because existing waste diversion will count towards the AB 939 diversion mandates, documentation of existing diversion levels is essential in determining the need for new diversion programs.

3.3.1 Methodologies for Estimating Waste Diversion

Estimates of the amount of solid wastes diverted from landfills or transformation facilities is based on data compiled from written surveys and/or phone interviews with various sources, including the following:

- State of California Department of Conservation.
- Permitted waste haulers serving the study region.
- Major commercial and industrial firms in the study region.
- Recycling centers in the study region and in nearby areas.
- Shopping centers and malls in the study region.

Information on the quantities of wastes reduced, recycled, or composted by these diversion sources was converted to units of tons or pounds per year and compiled to yield overall diversion estimates. Waste reduction, recycling, and composting activities identified during the surveys and interviews included the following:

- Source reduction: Food distribution programs; thrift stores and charitable collection services; use of refillable beverage bottles; tire retreading.
- Recycling: Commercial recycling programs; tree service operations; salvage operations; buy-back centers.
- Composting: None identified in the unincorporated portions of the County.

3.3.2 Results of Countywide Waste Diversion Studies

Based on the compilation of the results of the waste diversion studies conducted for each subregion, the total quantities of wastes being diverted in unincorporated County areas were estimated. Table 3-6 shows diversion estimates by generator source and type of diversion activity. Table 3-7 shows the amount of wastes diverted by diversion activity and material type.

TABLE 3-6. 1990 WASTE DIVERSION ESTIMATES BY SOURCE AND DIVERSION ACTIVITY

Waste Source	Source Reduction		Recycling		Composting		Total	
	Tons	%	Tons	%	Tons	%	Tons	%
Residential	983	0.3	5,895	1.9	0	0.0	6,877	2.2
Commercial	517	0.2	6,003	1.9	0	0.0	6,520	2.1
Industrial	0	0.0	8,270	2.7	0	0.0	8,270	2.7
Other	0	0.0	0	0.0	0	0.0	0	0.0
TOTAL	**1,500**	**0.5**	**20,168**	**6.5**	**0**	**0.0**	**21,668**	**7.0**

Diversion rates in unincorporated San Bernardino County can also be summarized in graphic form. Figure 3-3 describes the relative contribution of each generator source to total diversion in 1990. Figure 3-4 shows the percent of total diversion attributable to each material category.

TABLE 3–7.
1990 WASTE DIVERSION BY MATERIAL TYPE AND DIVERSION ACTIVITY
(All figures in tons)

Waste Categories/Types	SOURCE REDUCTION	RECYCLING	COMPOSTING	TOTAL
PAPER	23	2,278	0	2,300
Newspaper	0	317	0	317
Corrugated Containers	0	1,857	0	1,857
High–grade Ledger	11	5	0	16
Mixed Paper	0	94	0	94
Other Paper	12	5	0	16
PLASTICS	2	1,139	0	1,141
PET Containers	0	13	0	13
HDPE Containers	0	1,101	0	1,101
Film	0	0	0	0
Polystyrene	2	0	0	2
Other Plastics	0	24	0	24
GLASS	282	588	0	870
CA Redemption Value	0	338	0	338
Refillable Containers	282	250	0	532
Other Glass Containers	0	0	0	0
METALS	250	3,962	0	4,212
Aluminum Cans	0	476	0	476
Ferrous	0	2,977	0	2,977
Non–ferrous	0	509	0	509
White Goods	250	0	0	250
YARD WASTE	0	384	0	384
Yard Waste	0	384	0	384
OTHER ORGANICS	709	5,392	0	6,101
Textiles and Leather	488	18	0	506
Tires and Rubber	216	523	0	740
Wood	0	4,332	0	4,332
Food	5	518	0	523
OTHER WASTES	0	6,424	0	6,424
Inert Solids	0	6,424	0	6,424
SPECIAL WASTES	234	0	0	234
Bulky Waste	234	0	0	234
TOTAL	1,500	20,166	0	21,666

Note that totals shown do not exactly match Tables 3–6 and 3–8 due to rounding errors.

Figure 3–3. 1990 Waste Diversion by Source
Unincorporated San Bernardino County
(In Tons)

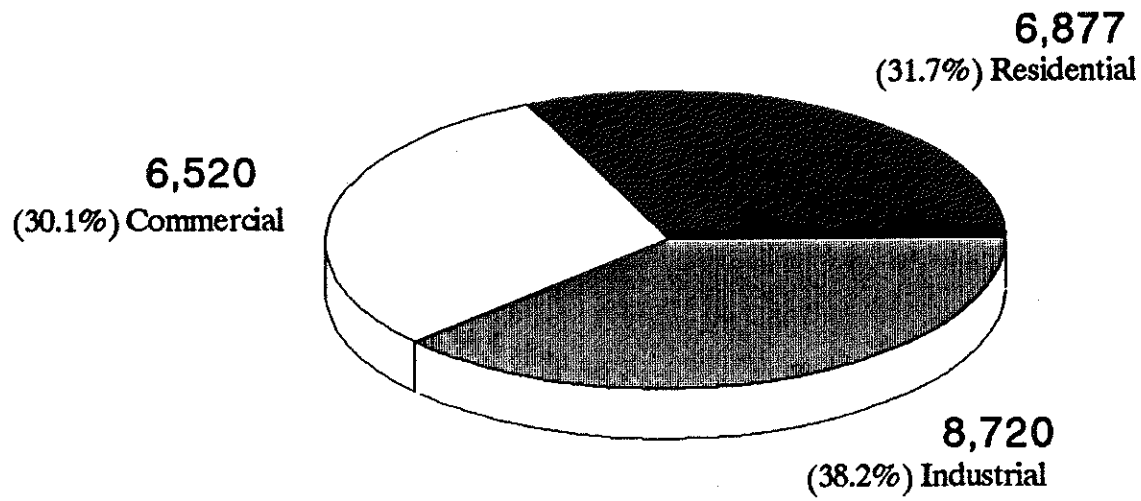
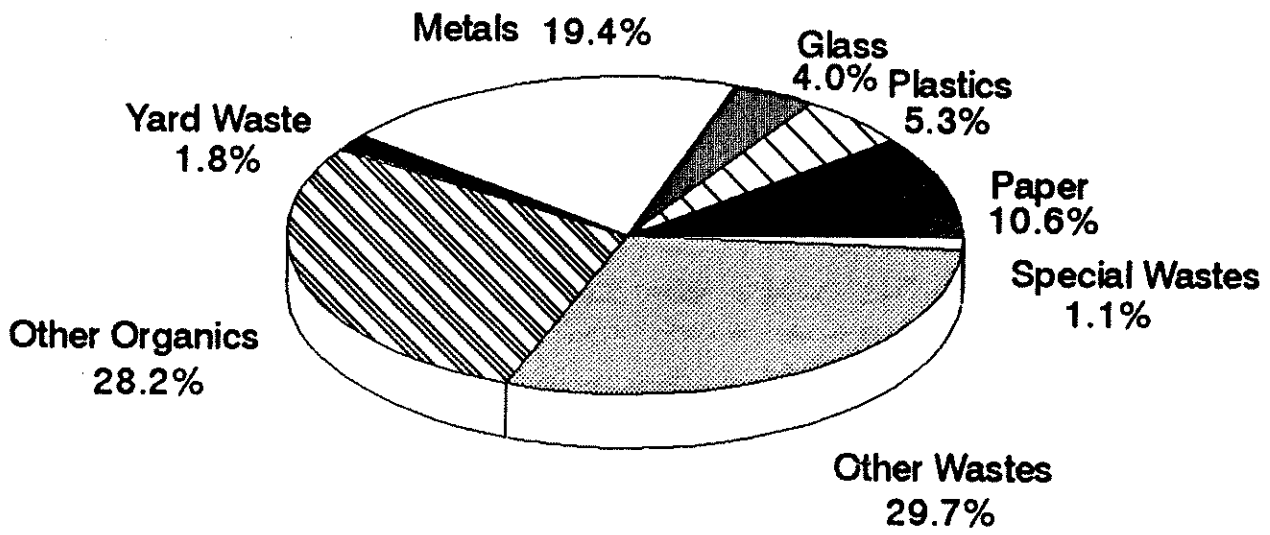


Figure 3–4. 1990 Waste Diversion by Material Category
Unincorporated San Bernardino County
(Total Diversion = 21,668 Tons)



3.3.3 Waste Diversion Characterization by Subregion

Existing levels of waste diversion shows some variation between subregions. Table 3-8 shows the amounts of waste diverted through source reduction, recycling, and composting in each of the subregions.

TABLE 3-8. 1990 WASTE DIVERSION ESTIMATES BY SUBREGION AND DIVERSION ACTIVITY

Subregion	Source Reduction		Recycling		Composting		Total	
	Tons	%	Tons	%	Tons	%	Tons	%
East Valley	15	0.0	14,152	4.6	0	0.0	14,167	4.6
West Valley	0	0.0	4,140	1.3	0	0.0	4,140	1.3
Mountain	145	0.0	52	0.0	0	0.0	197	0.1
Desert	1,340	0.4	1,825	0.6	0	0.0	3,165	1.0
TOTAL	**1,500**	**0.5**	**20,168**	**6.5**	**0**	**0.0**	**21,668**	**7.0**

3.4 COUNTYWIDE WASTE GENERATION RATES

Combining waste disposal estimates for the unincorporated County areas (Tables 3-2 through 3-5) with waste diversion estimates (Tables 3-6 through 3-8) yields total waste generated, according to the formula:

WASTE DISPOSED + WASTE DIVERTED = WASTE GENERATED

Table 3-9 shows waste generation rates in unincorporated areas for 1990 by material category and generator source, in tons and percent. Table 3-10 provides a complete picture of the quantities of waste disposed, diverted, and generated in 1990 by material type and source. These tables show that a total of 308,785 tons of solid waste was generated in the unincorporated areas of San Bernardino County.

3.4.1 Waste Generation Rates by Subregion

The countywide waste generation rates shown in Tables 3-9 and 3-10 reflect a combination of separate waste generation estimates for the four subregions. Table 3-11 lists, by material category, the quantities of waste generated in 1990 by the West Valley, East Valley, Mountain, and Desert subregions.

TABLE 3–9. 1990 WASTE GENERATION RATES BY MATERIAL CATEGORY AND SOURCE

Material Category	Residential Tons	Residential %	Commercial Tons	Commercial %	Industrial Tons	Industrial %	Other Tons	Other %	Total Tons	Total %
Paper	53,154	35.8%	48,844	51.3%	5,881	9.8%	231	4.3%	108,110	35.0%
Plastics	12,146	8.2%	8,029	8.4%	5,141	8.6%	119	2.2%	25,435	8.2%
Glass	6,949	4.7%	2,498	2.6%	917	1.5%	25	0.5%	10,389	3.4%
Metals	10,962	7.4%	3,974	4.2%	4,180	7.0%	193	3.6%	19,308	6.3%
Yard Waste	21,901	14.7%	5,332	5.6%	2,879	4.8%	2,196	41.4%	32,307	10.5%
Other Organics	32,905	22.2%	20,426	21.5%	14,554	24.3%	1,606	30.3%	69,491	22.5%
Other Wastes	10,128	6.8%	5,895	6.2%	10,452	17.5%	931	17.5%	27,406	8.9%
Special Wastes	372	0.3%	158	0.2%	15,801	26.4%	8	0.2%	16,339	5.3%
TOTAL	**148,516**	**100.0%**	**95,155**	**100.0%**	**59,804**	**100.0%**	**5,309**	**100.0%**	**308,785**	**100.0%**

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TABLE 3–10. 1990 WASTE DISPOSAL, DIVERSION, AND GENERATION RATES BY MATERIAL TYPE AND SOURCE
(All figures in tons)

	RESIDENTIAL			COMMERCIAL			INDUSTRIAL			OTHER			TOTAL		
	Disposed	Diverted	Generated	Disposed	Diverted	Generated	Disposed	Diverted	Generated	Disposed	Diverted	Generated	Disposed	Diverted	Generated
PAPER Subtotal	**53,063**	**91**	**53,154**	**47,255**	**1,589**	**48,844**	**5,402**	**479**	**5,881**	**231**	**0**	**231**	**105,950**	**2,160**	**108,110**
Newsprint	12,308	68	12,374	7,935	66	8,001	359	172	531	35	0	35	20,636	306	20,942
Corrugated Containers	10,955	6	10,961	16,395	1,424	17,819	1,882	294	2,176	88	0	88	29,320	1,724	31,044
High–grade	4,368	3	4,370	2,988	6	2,994	615	8	623	7	0	7	7,977	17	7,994
Mixed	10,437	1	10,437	7,275	91	7,365	1,599	4	1,602	37	0	37	19,348	95	19,442
Contaminated/Other	14,996	14	15,012	12,663	2	12,665	947	2	948	63	0	63	28,670	18	28,688
PLASTICS Subtotal	**12,128**	**18**	**12,146**	**8,024**	**4**	**8,029**	**4,059**	**1,082**	**5,141**	**119**	**0**	**119**	**24,330**	**1,105**	**25,435**
Containers	153	0	153	20	0	20	180	0	180	0	0	0	353	0	353
PET	454	12	465	180	0	180	36	0	36	3	0	3	672	12	684
HDPE	2,140	6	2,147	649	1	650	224	1,059	1,283	10	0	10	3,022	1,066	4,088
Film	5,003	0	5,003	3,458	0	3,458	1,869	0	1,869	20	0	20	10,350	0	10,350
Polystyrene	689	0	690	519	1	520	33	1	34	6	0	6	1,247	3	1,250
Other	3,688	0	3,688	3,199	2	3,201	1,718	21	1,739	81	0	81	8,686	23	8,710
GLASS Subtotal	**6,512**	**437**	**6,949**	**2,111**	**387**	**2,498**	**910**	**7**	**917**	**25**	**0**	**25**	**9,558**	**831**	**10,389**
Ca. Redemption Value	1,562	288	1,851	848	40	888	340	0	340	5	0	5	2,756	329	3,084
Containers	4,267	148	4,415	1,007	347	1,354	259	7	266	20	0	20	5,553	502	6,055
Other	683	0	683	256	0	256	311	0	311	0	0	0	1,249	0	1,249
METALS Subtotal	**9,665**	**1,296**	**10,962**	**3,186**	**788**	**3,974**	**2,123**	**2,057**	**4,180**	**193**	**0**	**193**	**15,167**	**4,141**	**19,308**
Aluminum Cans	1,514	339	1,853	545	97	641	26	15	40	2	0	2	2,087	450	2,537
Tin cans	2,530	0	2,530	738	0	738	648	0	648	0	0	0	3,916	0	3,916
Ferrous	2,813	671	3,484	1,268	379	1,646	914	1,900	2,814	155	0	155	5,149	2,950	8,099
Nonferrous	568	37	605	135	313	447	82	142	224	3	0	3	788	492	1,280
White Goods	899	249	1,148	282	0	282	166	0	166	33	0	33	1,381	249	1,630
Mixed/Other metals	1,341	0	1,341	220	0	220	286	0	286	0	0	0	1,846	0	1,846
YARD WASTE Subtotal	**21,896**	**5**	**21,901**	**4,973**	**359**	**5,332**	**2,871**	**8**	**2,879**	**2,196**	**0**	**2,196**	**31,936**	**372**	**32,307**
Grass/Leaves/Prunings	21,896	5	21,901	4,973	359	5,332	2,871	8	2,879	2,196	0	2,196	31,936	372	32,307
OTHER ORGANICS Subtotal	**32,193**	**712**	**32,905**	**18,584**	**1,842**	**20,426**	**10,493**	**4,061**	**14,554**	**1,606**	**0**	**1,606**	**62,876**	**6,615**	**69,491**
Food	17,130	0	17,130	12,107	452	12,559	863	0	863	51	0	51	30,151	452	30,603
Wood	4,072	187	4,259	3,207	690	3,898	8,169	4,054	12,223	1,384	0	1,384	16,832	4,931	21,764
Tires and Rubber	484	38	523	1,235	677	1,912	186	7	193	43	0	43	1,949	722	2,671
Manure	820	0	820	303	0	303	0	0	0	0	0	0	1,123	0	1,123
Disposable Diapers	1,639	0	1,639	240	0	240	0	0	0	12	0	12	1,891	0	1,891
Textiles and Leather	4,857	487	5,344	512	22	534	974	0	974	89	0	89	6,433	509	6,942
Other	3,190	0	3,190	979	0	979	301	0	301	27	0	27	4,497	0	4,497
OTHER WASTES Subtotal	**6,250**	**3,878**	**10,128**	**4,680**	**1,216**	**5,895**	**9,534**	**1,118**	**10,652**	**931**	**0**	**931**	**21,195**	**6,212**	**27,406**
Asphalt	0	0	0	240	0	240	386	0	386	0	0	0	626	0	626
Concrete	413	0	413	853	0	853	3,210	0	3,210	133	0	133	4,606	0	4,606
Other Inert Solids	3,559	3,878	7,437	2,041	1,216	3,256	5,148	1,118	6,266	794	0	794	11,541	6,212	17,752
Household Haz. Waste	1,812	0	1,812	1,347	0	1,347	337	0	337	4	0	4	3,500	0	3,500
Fines	313	0	313	87	0	87	253	0	253	0	0	0	653	0	653
Misc.	153	0	153	113	0	113	0	0	0	0	0	0	266	0	266
SPECIAL WASTES Subtotal	**137**	**234**	**372**	**158**	**0**	**158**	**15,801**	**0**	**15,801**	**8**	**0**	**8**	**16,104**	**234**	**16,339**
Asbestos	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ash	3	0	3	4	0	4	0	0	0	0	0	0	7	0	7
Bulky Items	0	234	234	0	0	0	1,083	0	1,083	8	0	8	1,091	234	1,326
Auto Shredder Waste	0	0	0	0	0	0	14,718	0	14,718	0	0	0	14,718	0	14,718
Misc. Special Wastes	134	0	134	154	0	154	0	0	0	0	0	0	288	0	288
TOTAL	**141,845**	**6,672**	**148,516**	**88,969**	**6,186**	**95,155**	**50,992**	**8,812**	**59,804**	**5,309**	**0**	**5,309**	**287,116**	**21,669**	**308,785**

TABLE 3-11.
1990 WASTE GENERATION RATES BY MATERIAL CATEGORY FOR THE WEST VALLEY, EAST VALLEY, MOUNTAIN, AND DESERT SUBREGIONS

Material Category	West Valley Tons	%	East Valley Tons	%	Mountain Tons	%	Desert Tons	%	Total Tons	%
Paper	12,109	22	32,315	27	3,008	31	60,678	49	108,110	35
Plastics	5,203	9	7,416	6	794	8	12,022	10	25,435	8
Glass	1,398	3	4,274	4	746	8	3,972	3	10,389	3
Metals	4,450	8	8,390	7	914	9	5,554	5	19,308	6
Yard Waste	7,492	14	17,785	15	1,007	10	6,022	5	32,307	10
Other Organics	17,002	31	24,080	20	2,133	22	26,276	21	69,491	23
Other Waste	7,426	13	11,033	9	1,024	10	7,923	6	27,406	9
Special Waste	8	0	14,718	12	182	2	1,431	1	16,339	5
TOTAL	**55,089**	**100**	**120,010**	**100**	**9,808**	**100**	**123,878**	**100**	**308,785**	**100**

3.5 WASTE DIVERSION POTENTIAL

3.5.1 Disposed Wastes Targeted for Diversion by Selected Programs

Based on the waste characterization studies, wastes currently disposed which could potentially be diverted through the implementation of programs described in this document include the following:

- Paper:
  - Newsprint.
  - Corrugated containers.
  - High-grade.
  - Mixed.
  - Contaminated/other.

- Plastics:
  - PET.
  - HDPE.
  - Film.
  - Other.

- Glass:
  - California Redemption Value.
  - Containers.

- Metals:
  - Aluminum cans.
  - Tin cans.
  - Ferrous.
  - Nonferrous.
  - White goods.
  - Mixed/other metals.

- Yard waste:
  - Grass/leaves/prunings.

- Other organics:
  - Food.
  - Wood.
  - Tires and rubber.
  - Manure.
  - Disposable diapers.
  - Textiles and leather.

- Other wastes:
  - Asphalt.
  - Concrete.
  - Other inert solids.
  - Household hazardous waste.

- Special wastes:
  - Bulky items.

Estimates of the amounts and types of materials that could reasonably be expected to be diverted through implementation of each of the proposed programs are presented throughout the subsequent sections of this report.

3.5.2 Disposed Wastes Not Targeted for Diversion by Selected Programs

Materials which cannot be readily diverted from disposal through programs discussed in this plan include the following:

- Other glass.

- Other organics.

- Other wastes:
  - Fines.
  - Miscellaneous.

- Special wastes:
  - Asbestos.
  - Ash.
  - Miscellaneous.

These materials are not targeted for diversion for a variety of reasons, including:

- Lack of available markets.

- Lack of available cost-effective recovery methods.

- Difficulty of collection.

- Inability of many of these materials to be recycled and/or composted. For example, there are no known recycling programs for asbestos or other (sheet) glass.

Potential programs to divert these types of materials are shown in Table 3-11a.

TABLE 3-11a. DIVERSION PROGRAMS WHICH TARGET SPECIFIC MATERIALS	
Materials	**Programs**
Paper (other than mixed or contaminated/other)	Residential curbside, drop-off, buyback, commercial/industrial.
Paper (mixed, contaminated/other)	Mixed waste processing, mixed waste composting.
Plastics (film, polystyrene, other)	Mixed waste processing, various source reduction programs (audits, procurement policies, variable rates)
Glass (CRV and containers)	Residential curbside, drop-off, buyback, mixed waste processing.
Metals (aluminum and tin)	Commercial/industrial, landfill salvaging.
Yard Waste and Other organics	Composting, mulching.
Other organics (food)	Rendering, mixed waste composting.
Other organics (wood)	Commercial/industrial, demolition/ construction, salvaging, mulching, mixed waste processing.
Other organics (tires and rubber)	Landfill salvaging.
Other organics (disposable diapers)	Source reduction (education, variable rates)
Other organics (textiles and leather)	Source reduction (education, variable rates), mixed waste processing.
Other Wastes (asphalt, concrete, other inerts)	Commercial/industrial, salvaging, mixed waste processing.

3.6 WASTE GENERATION FORECASTS

AB 939 and its implementing guidelines require that a 15-year projection be prepared to estimate the quantities of waste (by category and type) which could be expected to be generated, diverted, and disposed by the Unincorporated County regions under existing conditions and under conditions proposed in this SRR Element.

3.6.1 Forecast Methodology

The waste generation forecasts are based on projected growth rates determined for each subregion from the following data sources:

- California Department of Finance, San Bernardino County Population and Housing Estimates, January 1, 1990.
- Southern California Association of Governments (SCAG), Small Area Forecasting Data (1987 and 2010 population, housing, and employment data and projections).
- Land use maps.
- Existing waste generation rates and projected diversion rates by material type.

Countywide waste generation forecasts for Unincorporated San Bernardino County were compiled from forecasts provided for each subregion.

3.6.2 Forecast Results

Table 3-12 presents the projected waste quantities for Unincorporated San Bernardino County from 1991 through 2005. The 15-year projection shows the amounts of wastes disposed, diverted, and generated under existing and proposed (AB 939) conditions.

TABLE 3-12. UNINCORPORATED SAN BERNARDINO COUNTY WASTE GENERATION FORECASTS (All figures in tons)

	YEAR 1991 UNDER EXISTING CONDITIONS			YEAR 1991 UNDER PROPOSED CONDITIONS			YEAR 1992 UNDER EXISTING CONDITIONS			YEAR 1992 UNDER PROPOSED CONDITIONS		
	Disposed	Diverted	Generated	Disposed	Diverted	Generated	Disposed	Diverted	Generated	Disposed	Diverted	Generated
PAPER												
Newsprint	21,542	334	21,876	21,375	501	21,876	22,252	352	22,604	20,400	2,205	22,604
Corrugated Containers	31,454	1,932	33,386	31,430	1,956	33,386	32,502	2,001	34,503	30,363	4,140	34,503
High-grade	8,551	18	8,570	8,540	30	8,570	8,886	19	8,905	8,138	768	8,905
Mixed	20,618	99	20,716	20,603	113	20,716	21,344	106	21,450	20,250	1,200	21,450
Contaminated/Other	30,931	12	30,943	30,931	12	30,943	32,101	12	32,113	31,230	883	32,113
PLASTICS												
Containers	275	0	275	275	0	275	280	0	280	280	0	280
PET	696	20	715	689	27	715	722	20	742	657	85	742
HDPE	3,076	1,154	4,230	3,050	1,180	4,230	3,188	1,217	4,406	3,030	1,376	4,406
Film	10,905	0	10,905	10,905	0	10,905	11,273	0	11,273	11,206	67	11,273
Polystyrene	1,211	4	1,215	1,211	4	1,215	1,268	4	1,272	1,229	42	1,272
Other	8,940	25	8,965	8,940	25	8,965	9,211	26	9,237	9,207	30	9,237
GLASS												
Ca. Redemption Value	2,791	351	3,141	2,767	375	3,141	2,897	360	3,257	2,686	571	3,257
Containers	5,859	595	6,453	5,854	600	6,453	6,092	613	6,705	5,850	855	6,705
Other	1,279	0	1,279	1,279	0	1,279	1,332	0	1,332	1,332	0	1,332
METALS												
Aluminum Cans	2,265	493	2,759	2,260	499	2,759	2,342	508	2,850	2,327	522	2,850
Tin Cans	4,209	0	4,209	4,188	21	4,209	4,330	0	4,330	3,945	385	4,330
Ferrous	4,774	3,121	7,895	4,762	3,133	7,895	4,973	3,276	8,249	4,891	3,357	8,249
Nonferrous	831	535	1,366	830	536	1,366	862	564	1,426	858	568	1,426
White Goods	1,517	298	1,815	1,517	298	1,815	1,593	306	1,899	1,498	400	1,899
Mixed/Other Metals	1,688	0	1,688	1,688	0	1,688	1,735	0	1,735	1,697	38	1,735
YARD WASTE												
Grass/Leaves/Prunings	32,130	405	32,534	32,130	405	32,534	33,443	428	33,871	32,903	968	33,871
OTHER ORGANICS												
Food	32,650	542	33,192	32,650	542	33,192	33,810	556	34,367	33,809	557	34,367
Wood	16,020	4,458	20,478	15,979	4,499	20,478	16,537	4,576	21,112	15,527	5,586	21,112
Tires and Rubber	1,799	811	2,610	1,799	811	2,610	1,853	848	2,700	1,853	848	2,700
Manure	1,189	0	1,189	1,189	0	1,189	1,246	0	1,246	1,207	39	1,246
Disposable Diapers	1,639	0	1,639	1,639	0	1,639	1,696	0	1,696	1,686	10	1,696
Textiles and Leather	6,112	601	6,713	6,130	583	6,713	6,307	617	6,925	6,273	652	6,925
Other	4,679	0	4,679	4,679	0	4,679	4,927	0	4,927	4,927	0	4,927
OTHER WASTES												
Asphalt	485	0	485	480	5	485	490	0	490	477	13	490
Concrete	3,559	0	3,559	3,360	199	3,559	3,598	0	3,598	3,100	498	3,598
Other Inert Solids	12,346	6,762	19,107	12,325	6,782	19,107	12,765	7,130	19,896	11,940	7,955	19,896
Household Haz. Wst	3,813	0	3,813	3,813	0	3,813	3,965	0	3,965	3,965	0	3,965
Fines	509	0	509	509	0	509	518	0	518	518	0	518
Miscellaneous	208	0	208	208	0	208	212	0	212	212	0	212
SPECIAL WASTES												
Asbestos	0	0	0	0	0	0	0	0	0	0	0	0
Bulky Items	1,219	280	1,499	1,219	280	1,499	1,256	287	1,543	1,256	287	1,543
Ash	8	0	8	8	0	8	8	0	8	8	0	8
Autoshredder	15,262	0	15,262	15,262	0	15,262	16,084	0	16,084	16,084	0	16,084
Misc. Special Wastes	330	0	330	330	0	330	339	0	339	339	0	339
TOTAL	297,370	22,846	320,216	296,802	23,414	320,216	308,233	23,827	332,060	297,155	34,905	332,060
PERCENT DIVERTED UNDER PROPOSED CO					7.3%						10.5%	

TABLE 3-12 (Continued)

	YEAR 1993 UNDER EXISTING CONDITIONS			YEAR 1993 UNDER PROPOSED CONDITIONS			YEAR 1994 UNDER EXISTING CONDITIONS			YEAR 1994 UNDER PROPOSED CONDITIONS		
	Disposed	Diverted	Generated	Disposed	Diverted	Generated	Disposed	Diverted	Generated	Disposed	Diverted	Generated
PAPER												
Newsprint	22,921	370	23,291	18,124	5,167	23,291	23,569	386	23,954	16,077	7,878	23,954
Corrugated Containers	33,467	2,074	35,541	25,913	9,627	35,541	34,415	2,140	36,555	21,584	14,971	36,555
High-grade	9,206	20	9,226	7,374	1,852	9,226	9,504	21	9,525	6,606	2,919	9,525
Mixed	22,030	111	22,140	19,422	2,719	22,140	22,686	115	22,801	18,495	4,306	22,801
Contaminated/Other	33,209	12	33,221	31,228	1,993	33,221	34,256	13	34,268	31,165	3,104	34,268
PLASTICS												
Containers	284	0	284	284	0	284	289	0	289	284	5	289
PET	746	21	767	581	186	767	770	21	791	504	287	791
HDPE	3,298	1,280	4,578	2,985	1,593	4,578	3,399	1,333	4,732	2,866	1,867	4,732
Film	11,617	0	11,617	11,452	166	11,617	11,950	0	11,950	11,678	272	11,950
Polystyrene	1,325	4	1,329	1,223	106	1,329	1,373	4	1,378	1,207	171	1,378
Other	9,462	27	9,489	9,431	58	9,489	9,711	28	9,739	9,636	103	9,739
GLASS												
Ca. Redemption Value	3,001	369	3,370	2,338	1,032	3,370	3,096	378	3,474	1,848	1,626	3,474
Containers	6,315	631	6,946	5,116	1,830	6,946	6,523	648	7,171	4,290	2,881	7,171
Other	1,384	0	1,384	1,384	0	1,384	1,431	0	1,431	1,431	0	1,431
METALS												
Aluminum Cans	2,411	523	2,934	2,198	736	2,934	2,479	537	3,017	1,925	1,092	3,017
Tin Cans	4,438	0	4,438	3,606	832	4,438	4,551	0	4,551	3,188	1,363	4,551
Ferrous	5,174	3,430	8,604	4,988	3,615	8,604	5,348	3,562	8,910	4,933	3,976	8,910
Nonferrous	891	593	1,484	885	599	1,484	919	618	1,537	909	627	1,537
White Goods	1,668	314	1,982	1,431	550	1,982	1,732	322	2,054	1,352	703	2,054
Mixed/Other Metals	1,780	0	1,780	1,696	85	1,780	1,824	0	1,824	1,688	137	1,824
YARD WASTE												
Grass/Leaves/Prunings	34,740	450	35,190	33,561	1,629	35,190	35,895	469	36,364	33,348	3,016	36,364
OTHER ORGANICS												
Food	34,894	571	35,466	34,891	575	35,466	35,940	586	36,526	35,858	668	36,526
Wood	17,038	4,692	21,730	14,581	7,148	21,730	17,504	4,795	22,299	12,731	9,568	22,299
Tires and Rubber	1,904	885	2,789	1,904	885	2,789	1,952	917	2,870	1,947	922	2,870
Manure	1,301	0	1,301	1,205	96	1,301	1,350	0	1,350	1,196	154	1,350
Disposable Diapers	1,753	0	1,753	1,729	24	1,753	1,803	0	1,803	1,757	46	1,803
Textiles and Leather	6,495	634	7,129	6,408	721	7,129	6,673	650	7,322	6,540	783	7,322
Other	5,174	0	5,174	5,174	0	5,174	5,387	0	5,387	5,387	0	5,387
OTHER WASTES												
Asphalt	495	0	495	469	26	495	499	0	499	459	41	499
Concrete	3,638	0	3,638	2,642	996	3,638	3,676	0	3,676	2,082	1,594	3,676
Other Inert Solids	13,164	7,494	20,658	11,320	9,338	20,658	13,548	7,807	21,355	10,675	10,680	21,355
Household Haz. Wst	4,109	0	4,109	4,109	0	4,109	4,244	0	4,244	4,244	0	4,244
Fines	527	0	527	527	0	527	535	0	535	535	0	535
Miscellaneous	216	0	216	216	0	216	220	0	220	220	0	220
SPECIAL WASTES												
Asbestos	0	0	0	0	0	0	0	0	0	0	0	0
Bulky Items	1,287	295	1,582	1,287	295	1,582	1,321	303	1,624	1,321	303	1,624
Ash	8	0	8	8	0	8	9	0	9	9	0	9
Autoshredder	16,906	0	16,906	16,906	0	16,906	17,611	0	17,611	17,611	0	17,611
Misc. Special Wastes	347	0	347	347	0	347	356	0	356	356	0	356
TOTAL	318,624	24,800	343,423	288,944	54,479	343,423	328,349	25,652	354,001	277,940	76,061	354,001
PERCENT DIVERTED UNDER PROPOSED CONDITIONS					15.9%						21.5%	

TABLE 3-12. (Continued)

	YEAR 1995 UNDER EXISTING CONDITIONS			YEAR 1995 UNDER PROPOSED CONDITIONS			YEAR 1996 UNDER EXISTING CONDITIONS			YEAR 1996 UNDER PROPOSED CONDITIONS		
	Disposed	Diverted	Generated	Disposed	Diverted	Generated	Disposed	Diverted	Generated	Disposed	Diverted	Generated
PAPER												
Newsprint	24,270	404	24,673	14,079	10,594	24,673	24,971	422	25,392	13,390	12,002	25,392
Corrugated Containers	35,427	2,213	37,640	17,202	20,438	37,640	36,439	2,285	38,725	16,115	22,609	38,725
High-grade	9,832	22	9,854	6,047	3,807	9,854	10,160	23	10,183	5,682	4,502	10,183
Mixed	23,398	120	23,517	17,591	5,927	23,517	24,110	124	24,234	16,377	7,857	24,234
Contaminated/Other	35,398	13	35,411	31,003	4,409	35,411	36,540	14	36,554	31,871	4,683	36,554
PLASTICS												
Containers	294	0	294	284	10	294	299	0	299	250	49	299
PET	795	22	817	433	384	817	820	22	843	403	440	843
HDPE	3,513	1,395	4,908	2,787	2,121	4,908	3,626	1,457	5,083	2,654	2,429	5,083
Film	12,309	0	12,309	11,961	348	12,309	12,668	0	12,668	11,798	870	12,668
Polystyrene	1,431	5	1,435	1,221	214	1,435	1,488	5	1,493	1,133	360	1,493
Other	9,974	30	10,004	9,865	139	10,004	10,237	31	10,268	9,943	325	10,268
GLASS												
Ca. Redemption Value	3,203	388	3,590	1,497	2,094	3,590	3,309	397	3,706	1,423	2,284	3,706
Containers	6,753	666	7,419	3,540	3,879	7,419	6,983	684	7,667	3,440	4,227	7,667
Other	1,485	0	1,485	1,485	0	1,485	1,538	0	1,538	1,538	0	1,538
METALS												
Aluminum Cans	2,552	553	3,105	1,644	1,461	3,105	2,625	568	3,193	1,624	1,569	3,193
Tin Cans	4,668	0	4,668	2,797	1,871	4,668	4,784	0	4,784	2,821	1,962	4,784
Ferrous	5,552	3,716	9,268	5,126	4,141	9,268	5,756	3,870	9,626	4,748	4,877	9,626
Nonferrous	950	646	1,596	931	665	1,596	980	675	1,656	920	735	1,656
White Goods	1,808	330	2,138	1,331	807	2,138	1,883	338	2,221	1,269	952	2,221
Mixed/Other Metals	1,873	0	1,873	1,675	198	1,873	1,921	0	1,921	1,710	211	1,921
YARD WASTE												
Grass/Leaves/Prunings	37,216	491	37,707	29,979	7,728	37,707	38,538	512	39,050	26,545	12,505	39,050
OTHER ORGANICS												
Food	37,067	601	37,668	36,703	965	37,668	38,193	616	38,809	36,218	2,591	38,809
Wood	18,020	4,913	22,933	11,199	11,734	22,933	18,535	5,032	23,567	10,480	13,087	23,567
Tires and Rubber	2,006	954	2,959	1,978	981	2,959	2,058	991	3,049	1,943	1,106	3,049
Manure	1,406	0	1,406	1,213	193	1,406	1,461	0	1,461	1,101	361	1,461
Disposable Diapers	1,863	0	1,863	1,800	63	1,863	1,923	0	1,923	1,833	90	1,923
Textiles and Leather	6,871	666	7,537	6,451	1,086	7,537	7,069	682	7,752	6,562	1,190	7,752
Other	5,635	0	5,635	5,635	0	5,635	5,882	0	5,882	5,882	0	5,882
OTHER WASTES												
Asphalt	505	0	505	453	51	505	510	0	510	438	72	510
Concrete	3,719	0	3,719	1,729	1,990	3,719	3,763	0	3,763	1,525	2,238	3,763
Other Inert Solids	13,960	8,171	22,131	9,779	12,352	22,131	14,372	8,535	22,907	9,556	13,351	22,907
Household Haz. Wst	4,392	0	4,392	4,392	0	4,392	4,539	0	4,539	4,539	0	4,539
Fines	545	0	545	545	0	545	555	0	555	555	0	555
Miscellaneous	224	0	224	224	0	224	228	0	228	228	0	228
SPECIAL WASTES												
Asbestos	0	0	0	0	0	0	0	0	0	0	0	0
Bulky Items	1,355	310	1,666	1,356	310	1,666	1,389	318	1,708	1,389	318	1,708
Ash	9	0	9	9	0	9	9	0	9	9	0	9
Autoshredder	18,432	0	18,432	18,432	0	18,432	19,254	0	19,254	19,254	0	19,254
Misc. Special Wastes	364	0	364	364	0	364	373	0	373	373	0	373
TOTAL	339,071	26,627	365,698	264,739	100,959	365,698	349,791	27,603	377,394	257,542	119,852	377,394
PERCENT DIVERTED UNDER PROPOSED CONDITIONS					27.6%						31.8%	

TABLE 3-12. (Continued)

	YEAR 1997 UNDER EXISTING CONDITIONS			YEAR 1997 UNDER PROPOSED CONDITIONS			YEAR 1998 UNDER EXISTING CONDITIONS			YEAR 1998 UNDER PROPOSED CONDITIONS		
	Disposed	Diverted	Generated	Disposed	Diverted	Generated	Disposed	Diverted	Generated	Disposed	Diverted	Generated
PAPER												
Newsprint	25,669	440	26,109	12,710	13,399	26,109	26,341	455	26,796	12,000	14,796	26,796
Corrugated Containers	37,449	2,358	39,807	15,048	24,759	39,807	38,414	2,425	40,839	13,930	26,909	40,839
High-grade	10,488	24	10,512	5,320	5,192	10,512	10,789	25	10,813	4,930	5,883	10,813
Mixed	24,821	129	24,950	15,168	9,782	24,950	25,488	133	25,621	13,915	11,706	25,621
Contaminated/Other	37,681	14	37,696	32,743	4,952	37,696	38,736	15	38,751	33,529	5,222	38,751
PLASTICS												
Containers	304	0	304	216	88	304	309	0	309	183	127	309
PET	846	23	869	373	496	869	869	23	893	341	552	893
HDPE	3,739	1,520	5,258	2,524	2,735	5,258	3,843	1,573	5,416	2,376	3,041	5,416
Film	13,026	0	13,026	11,635	1,392	13,026	13,366	0	13,366	11,453	1,913	13,366
Polystyrene	1,545	5	1,550	1,045	505	1,550	1,596	5	1,601	950	651	1,601
Other	10,499	32	10,532	10,021	511	10,532	10,753	34	10,787	10,090	697	10,787
GLASS												
Ca. Redemption Value	3,415	407	3,822	1,350	2,472	3,822	3,513	417	3,930	1,270	2,659	3,930
Containers	7,213	702	7,914	3,343	4,571	7,914	7,423	719	8,142	3,227	4,916	8,142
Other	1,591	0	1,591	1,591	0	1,591	1,640	0	1,640	1,640	0	1,640
METALS												
Aluminum Cans	2,698	583	3,281	1,605	1,676	3,281	2,767	598	3,365	1,583	1,782	3,365
Tin Cans	4,899	0	4,899	2,847	2,052	4,899	5,016	0	5,016	2,875	2,141	5,016
Ferrous	5,958	4,024	9,982	4,373	5,609	9,982	6,139	4,156	10,295	3,954	6,341	10,295
Nonferrous	1,011	704	1,715	910	805	1,715	1,039	729	1,768	894	874	1,768
White Goods	1,959	346	2,305	1,208	1,096	2,305	2,023	355	2,378	1,137	1,241	2,378
Mixed/Other Metals	1,969	0	1,969	1,745	224	1,969	2,018	0	2,018	1,781	237	2,018
YARD WASTE												
Grass/Leaves/Prunings	39,855	534	40,389	23,114	17,274	40,389	41,044	553	41,597	19,553	22,044	41,597
OTHER ORGANICS												
Food	39,319	630	39,950	35,733	4,217	39,950	40,375	645	41,020	35,178	5,842	41,020
Wood	19,047	5,148	24,195	9,766	14,428	24,195	19,524	5,253	24,777	9,008	15,770	24,777
Tires and Rubber	2,111	1,027	3,139	1,909	1,230	3,139	2,162	1,060	3,222	1,868	1,353	3,222
Manure	1,517	0	1,517	989	528	1,517	1,566	0	1,566	870	696	1,566
Disposable Diapers	1,983	0	1,983	1,866	116	1,983	2,039	0	2,039	1,896	143	2,039
Textiles and Leather	7,266	698	7,964	6,671	1,293	7,964	7,456	715	8,170	6,774	1,396	8,170
Other	6,130	0	6,130	6,130	0	6,130	6,343	0	6,343	6,343	0	6,343
OTHER WASTES												
Asphalt	514	0	514	422	92	514	520	0	520	408	112	520
Concrete	3,803	0	3,803	1,320	2,483	3,803	3,848	0	3,848	1,120	2,728	3,848
Other Inert Solids	14,782	8,900	23,682	9,345	14,337	23,682	15,168	9,212	24,380	9,056	15,324	24,380
Household Haz. Wst	4,687	0	4,687	4,687	0	4,687	4,822	0	4,822	4,822	0	4,822
Fines	565	0	565	565	0	565	575	0	575	575	0	575
Miscellaneous	233	0	233	233	0	233	237	0	237	237	0	237
SPECIAL WASTES												
Asbestos	0	0	0	0	0	0	0	0	0	0	0	0
Bulky Items	1,423	326	1,749	1,423	326	1,749	1,457	334	1,791	1,457	334	1,791
Ash	9	0	9	9	0	9	10	0	10	10	0	10
Autoshredder	20,076	0	20,076	20,076	0	20,076	20,781	0	20,781	20,781	0	20,781
Misc. Special Wastes	382	0	382	382	0	382	391	0	391	391	0	391
TOTAL	360,483	28,575	389,058	250,418	138,640	389,058	370,399	29,433	399,832	242,404	157,428	399,832
PERCENT DIVERTED UNDER PROPOSED CONDITIONS					35.6%						39.4%	

TABLE 3–12. (Continued)

	YEAR 1999 UNDER EXISTING CONDITIONS			YEAR 1999 UNDER PROPOSED CONDITIONS			YEAR 2000 UNDER EXISTING CONDITIONS			YEAR 2000 UNDER PROPOSED CONDITIONS		
	Disposed	Diverted	Generated	Disposed	Diverted	Generated	Disposed	Diverted	Generated	Disposed	Diverted	Generated
PAPER												
Newsprint	27,039	473	27,512	11,319	16,193	27,512	27,742	491	28,233	10,527	17,706	28,233
Corrugated Containers	39,424	2,498	41,922	12,863	29,059	41,922	40,437	2,570	43,007	11,591	31,415	43,007
High–grade	11,116	26	11,142	4,568	6,574	11,142	11,445	27	11,471	4,158	7,313	11,471
Mixed	26,199	138	26,338	12,707	13,630	26,338	26,910	143	27,053	11,395	15,658	27,053
Contaminated/Other	39,878	15	39,893	34,402	5,491	39,893	41,020	16	41,035	35,236	5,799	41,035
PLASTICS												
Containers	314	0	314	149	166	314	320	0	320	114	206	320
PET	895	24	919	311	607	919	920	25	944	277	668	944
HDPE	3,956	1,635	5,591	2,245	3,346	5,591	4,069	1,697	5,767	2,090	3,676	5,767
Film	13,724	0	13,724	11,290	2,434	13,724	14,083	0	14,083	11,108	2,975	14,083
Polystyrene	1,653	5	1,658	863	796	1,658	1,710	6	1,716	768	948	1,716
Other	11,016	35	11,051	10,168	883	11,051	11,280	36	11,316	10,240	1,076	11,316
GLASS												
Ca. Redemption Value	3,619	426	4,045	1,198	2,847	4,045	3,726	436	4,162	1,106	3,055	4,162
Containers	7,653	737	8,390	3,130	5,260	8,390	7,883	755	8,638	2,996	5,641	8,638
Other	1,693	0	1,693	1,693	0	1,693	1,746	0	1,746	1,746	0	1,746
METALS												
Aluminum Cans	2,840	613	3,453	1,564	1,889	3,453	2,913	628	3,541	1,532	2,009	3,541
Tin Cans	5,131	0	5,131	2,901	2,231	5,131	5,248	0	5,248	2,912	2,336	5,248
Ferrous	6,343	4,310	10,653	3,580	7,073	10,653	6,546	4,464	11,010	3,154	7,856	11,010
Nonferrous	1,070	756	1,827	884	944	1,827	1,100	786	1,887	867	1,020	1,887
White Goods	2,099	363	2,461	1,076	1,385	2,461	2,174	371	2,545	1,006	1,539	2,545
Mixed/Other Metals	2,066	0	2,066	1,815	250	2,066	2,114	0	2,114	1,850	265	2,114
YARD WASTE												
Grass/Leaves/Prunings	42,362	575	42,937	16,124	26,813	42,937	43,683	597	44,280	12,488	31,792	44,280
OTHER ORGANICS												
Food	41,501	660	42,161	34,694	7,467	42,161	42,627	675	43,302	34,149	9,153	43,302
Wood	20,039	5,372	25,411	8,301	17,111	25,411	20,553	5,490	26,043	7,469	18,574	26,043
Tires and Rubber	2,215	1,097	3,312	1,835	1,477	3,312	2,265	1,134	3,399	1,787	1,612	3,399
Manure	1,622	0	1,622	758	864	1,622	1,678	0	1,678	639	1,038	1,678
Disposable Diapers	2,099	0	2,099	1,930	169	2,099	2,159	0	2,159	1,962	197	2,159
Textiles and Leather	7,653	731	8,383	6,885	1,499	8,383	7,853	747	8,599	6,987	1,612	8,599
Other	6,590	0	6,590	6,590	0	6,590	6,838	0	6,838	6,838	0	6,838
OTHER WASTES												
Asphalt	525	0	525	393	133	525	530	0	530	375	154	530
Concrete	3,892	0	3,892	918	2,973	3,892	3,933	0	3,933	693	3,240	3,933
Other Inert Solids	15,580	9,576	25,156	8,846	16,310	25,156	15,991	9,940	25,932	8,520	17,411	25,932
Household Haz. Wst	4,970	0	4,970	4,970	0	4,970	5,118	0	5,118	5,118	0	5,118
Fines	585	0	585	585	0	585	595	0	595	595	0	595
Miscellaneous	242	0	242	242	0	242	246	0	246	246	0	246
SPECIAL WASTES												
Asbestos	0	0	0	0	0	0	0	0	0	0	0	0
Bulky Items	1,491	342	1,833	1,491	342	1,833	1,525	349	1,874	1,523	352	1,874
Ash	10	0	10	10	0	10	10	0	10	10	0	10
Autoshredder	21,602	0	21,602	21,602	0	21,602	22,424	0	22,424	22,424	0	22,424
Misc. Special Wastes	399	0	399	399	0	399	408	0	408	408	0	408
TOTAL	381,106	30,408	411,514	235,298	176,216	411,514	391,821	31,382	423,204	226,907	196,297	423,204
PERCENT DIVERTED UNDER PROPOSED CONDITIONS					42.8%						46.4%	

TABLE 3-12. (Continued)

	YEAR 2001 UNDER EXISTING CONDITIONS			YEAR 2001 UNDER PROPOSED CONDITIONS			YEAR 2002 UNDER EXISTING CONDITIONS			YEAR 2002 UNDER PROPOSED CONDITIONS		
	Disposed	Diverted	Generated	Disposed	Diverted	Generated	Disposed	Diverted	Generated	Disposed	Diverted	Generated
PAPER												
Newsprint	28,450	509	28,959	10,786	18,173	28,959	29,160	527	29,687	11,047	18,641	29,687
Corrugated Containers	41,455	2,643	44,099	11,876	32,222	44,099	42,473	2,716	45,189	12,161	33,029	45,189
High-grade	11,774	28	11,802	4,262	7,540	11,802	12,103	29	12,132	4,365	7,767	12,132
Mixed	27,628	148	27,776	11,686	16,090	27,776	28,344	153	28,497	11,977	16,520	28,497
Contaminated/Other	42,165	16	42,181	36,244	5,938	42,181	43,311	16	43,327	37,251	6,076	43,327
PLASTICS												
Containers	325	0	325	116	209	325	331	0	331	118	213	331
PET	946	25	971	284	687	971	971	26	997	291	705	997
HDPE	4,184	1,759	5,943	2,148	3,796	5,943	4,298	1,822	6,120	2,205	3,915	6,120
Film	14,445	0	14,445	11,363	3,082	14,445	14,806	0	14,806	11,619	3,188	14,806
Polystyrene	1,766	8	1,774	792	982	1,774	1,826	6	1,832	816	1,016	1,832
Other	11,545	38	11,582	10,470	1,112	11,582	11,810	39	11,849	10,701	1,148	11,849
GLASS												
Ca. Redemption Value	3,833	446	4,279	1,139	3,140	4,279	3,941	456	4,396	1,171	3,225	4,396
Containers	8,114	773	8,886	3,082	5,805	8,886	8,345	791	9,135	3,167	5,968	9,135
Other	1,800	0	1,800	1,800	0	1,800	1,854	0	1,854	1,854	0	1,854
METALS												
Aluminum Cans	2,986	644	3,630	1,568	2,062	3,630	3,059	660	3,719	1,604	2,115	3,719
Tin Cans	5,365	0	5,365	2,979	2,386	5,365	5,482	0	5,482	3,045	2,437	5,482
Ferrous	6,753	4,618	11,371	3,250	8,121	11,371	6,959	4,772	11,731	3,346	8,385	11,731
Nonferrous	1,131	815	1,946	889	1,057	1,946	1,162	844	2,006	912	1,094	2,006
White Goods	2,249	379	2,628	1,039	1,589	2,628	2,325	387	2,712	1,072	1,640	2,712
Mixed/Other Metals	2,164	0	2,164	1,894	271	2,164	2,214	0	2,214	1,938	276	2,214
YARD WASTE												
Grass/Leaves/Prunings	45,017	619	45,636	12,843	32,793	45,636	46,351	641	46,991	13,198	33,794	46,991
OTHER ORGANICS												
Food	43,758	690	44,448	35,099	9,349	44,448	44,889	705	45,593	36,048	9,545	45,593
Wood	21,074	5,609	26,683	7,644	19,039	26,683	21,592	5,728	27,320	7,818	19,502	27,320
Tires and Rubber	2,323	1,170	3,493	1,828	1,665	3,493	2,376	1,207	3,584	1,865	1,719	3,584
Manure	1,733	0	1,733	657	1,076	1,733	1,789	0	1,789	675	1,114	1,789
Disposable Diapers	2,222	0	2,222	2,018	204	2,222	2,285	0	2,285	2,075	210	2,285
Textiles and Leather	8,054	763	8,817	7,163	1,655	8,817	8,257	779	9,037	7,340	1,697	9,037
Other	7,086	0	7,086	7,086	0	7,086	7,333	0	7,333	7,333	0	7,333
OTHER WASTES												
Asphalt	536	0	536	380	156	536	541	0	541	384	158	541
Concrete	3,980	0	3,980	701	3,279	3,980	4,025	0	4,025	709	3,316	4,025
Other Inert Solids	16,403	10,305	26,708	8,734	17,973	26,708	16,815	10,669	27,484	8,948	18,536	27,484
Household Haz. Wst	5,265	0	5,265	5,265	0	5,265	5,413	0	5,413	5,413	0	5,413
Fines	606	0	606	606	0	606	617	0	617	617	0	617
Miscellaneous	251	0	251	251	0	251	256	0	256	256	0	256
SPECIAL WASTES												
Asbestos	0	0	0	0	0	0	0	0	0	0	0	0
Bulky Items	1,559	357	1,916	1,557	359	1,916	1,593	365	1,958	1,591	367	1,958
Ash	11	0	11	11	0	11	11	0	11	11	0	11
Autoshredder	23,246	0	23,246	23,246	0	23,246	24,068	0	24,068	24,068	0	24,068
Misc. Special Wastes	417	0	417	417	0	417	425	0	425	425	0	425
TOTAL	402,623	32,360	434,982	233,173	201,809	434,982	413,411	33,335	446,746	239,431	207,314	446,746
PERCENT DIVERTED UNDER PROPOSED CONDITIONS					46.4%						46.4%	

TABLE 3-12. (Continued)

	YEAR 2003 UNDER EXISTING CONDITIONS			YEAR 2003 UNDER PROPOSED CONDITIONS			YEAR 2004 UNDER EXISTING CONDITIONS			YEAR 2004 UNDER PROPOSED CONDITIONS		
	Disposed	Diverted	Generated	Disposed	Diverted	Generated	Disposed	Diverted	Generated	Disposed	Diverted	Generated
PAPER												
Newsprint	29,840	542	30,382	11,300	19,082	30,382	30,553	560	31,113	11,559	19,555	31,113
Corrugated Containers	43,443	2,782	46,225	12,435	33,790	46,225	44,463	2,855	47,319	12,718	34,601	47,319
High-grade	12,404	30	12,434	4,464	7,970	12,434	12,733	31	12,764	4,565	8,199	12,764
Mixed	29,014	157	29,171	12,252	16,919	29,171	29,732	162	29,894	12,541	17,353	29,894
Contaminated/Other	44,367	17	44,384	38,175	6,210	44,384	45,514	17	45,531	39,183	6,348	45,531
PLASTICS												
Containers	336	0	336	120	216	336	342	0	342	122	220	342
PET	994	26	1,021	298	722	1,021	1,020	27	1,047	306	741	1,047
HDPE	4,404	1,875	6,279	2,259	4,020	6,279	4,519	1,937	6,456	2,316	4,139	6,456
Film	15,147	0	15,147	11,868	3,279	15,147	15,509	0	15,509	12,124	3,386	15,509
Polystyrene	1,877	6	1,883	838	1,046	1,883	1,935	6	1,942	862	1,080	1,942
Other	12,065	40	12,105	10,926	1,179	12,105	12,330	41	12,372	11,157	1,215	12,372
GLASS												
Ca. Redemption Value	4,040	466	4,505	1,201	3,304	4,505	4,148	476	4,623	1,234	3,390	4,623
Containers	8,556	808	9,364	3,247	6,117	9,364	8,788	826	9,613	3,333	6,280	9,613
Other	1,902	0	1,902	1,902	0	1,902	1,956	0	1,956	1,956	0	1,956
METALS												
Aluminum Cans	3,128	675	3,803	1,639	2,164	3,803	3,202	690	3,892	1,675	2,217	3,892
Tin Cans	5,600	0	5,600	3,112	2,488	5,600	5,718	0	5,718	3,178	2,539	5,718
Ferrous	7,142	4,903	12,045	3,430	8,615	12,045	7,349	5,057	12,406	3,526	8,880	12,406
Nonferrous	1,191	869	2,059	933	1,126	2,059	1,221	898	2,119	956	1,163	2,119
White Goods	2,390	395	2,785	1,101	1,684	2,785	2,465	403	2,868	1,134	1,734	2,868
Mixed/Other Metals	2,265	0	2,265	1,983	282	2,265	2,316	0	2,316	2,028	288	2,316
YARD WASTE												
Grass/Leaves/Prunings	47,549	659	48,208	13,525	34,684	48,208	48,887	681	49,568	13,880	35,688	49,568
OTHER ORGANICS												
Food	45,947	719	46,667	36,926	9,741	46,667	47,079	734	47,813	37,876	9,937	47,813
Wood	22,069	5,833	27,902	7,980	19,923	27,902	22,589	5,952	28,540	8,154	20,386	28,540
Tires and Rubber	2,425	1,240	3,665	1,899	1,766	3,665	2,480	1,276	3,756	1,937	1,819	3,756
Manure	1,838	0	1,838	691	1,147	1,838	1,894	0	1,894	709	1,185	1,894
Disposable Diapers	2,343	0	2,343	2,127	216	2,343	2,407	0	2,407	2,185	222	2,407
Textiles and Leather	8,451	796	9,247	7,511	1,736	9,247	8,656	812	9,468	7,689	1,779	9,468
Other	7,546	0	7,546	7,546	0	7,546	7,794	0	7,794	7,794	0	7,794
OTHER WASTES												
Asphalt	546	0	546	387	159	546	552	0	552	391	161	552
Concrete	4,070	0	4,070	717	3,353	4,070	4,116	0	4,116	725	3,391	4,116
Other Inert Solids	17,200	10,981	28,182	9,150	19,031	28,182	17,612	11,346	28,958	9,364	19,593	28,958
Household Haz. Wst	5,548	0	5,548	5,548	0	5,548	5,696	0	5,696	5,696	0	5,696
Fines	628	0	628	628	0	628	639	0	639	639	0	639
Miscellaneous	261	0	261	261	0	261	266	0	266	266	0	266
SPECIAL WASTES												
Asbestos	0	0	0	0	0	0	0	0	0	0	0	0
Bulky Items	1,627	373	2,000	1,625	374	2,000	1,661	380	2,041	1,659	382	2,041
Ash	11	0	11	11	0	11	11	0	11	11	0	11
Autoshredder	24,773	0	24,773	24,773	0	24,773	25,594	0	25,594	25,594	0	25,594
Misc. Special Wastes	434	0	434	434	0	434	443	0	443	443	0	443
TOTAL	423,373	34,192	457,565	245,222	212,343	457,565	434,187	35,168	469,356	251,484	217,872	469,356
PERCENT DIVERTED UNDER PROPOSED CONDITIONS					46.4%						46.4%	

TABLE 3-12. (Continued)

	YEAR 2005 UNDER EXISTING CONDITIONS			YEAR 2005 UNDER PROPOSED CONDITIONS		
	Disposed	Diverted	Generated	Disposed	Diverted	Generated
PAPER						
Newsprint	31,269	578	31,847	11,821	20,026	31,847
Corrugated Containers	45,485	2,928	48,414	13,003	35,411	48,414
High-grade	13,063	32	13,095	4,668	8,426	13,095
Mixed	30,450	167	30,617	12,832	17,785	30,617
Contaminated/Other	46,661	18	46,678	40,192	6,487	46,678
PLASTICS						
Containers	348	0	348	124	224	348
PET	1,045	27	1,073	310	763	1,073
HDPE	4,634	1,999	6,633	2,372	4,262	6,633
Film	15,872	0	15,872	12,380	3,492	15,872
Polystyrene	1,993	7	2,000	886	1,114	2,000
Other	12,597	43	12,640	11,389	1,250	12,640
GLASS						
Ca. Redemption Value	4,256	486	4,742	1,263	3,478	4,742
Containers	9,019	843	9,863	3,416	6,446	9,863
Other	2,010	0	2,010	2,010	0	2,010
METALS						
Aluminum Cans	3,275	706	3,981	1,710	2,271	3,981
Tin Cans	5,836	0	5,836	3,242	2,593	5,836
Ferrous	7,557	5,211	12,768	3,621	9,148	12,768
Nonferrous	1,252	926	2,179	979	1,200	2,179
White Goods	2,541	411	2,952	1,167	1,785	2,952
Mixed/Other Metals	2,367	0	2,367	2,074	293	2,367
YARD WASTE						
Grass/Leaves/Prunings	50,229	703	50,932	14,232	36,700	50,932
OTHER ORGANICS						
Food	48,212	749	48,961	38,828	10,133	48,961
Wood	23,112	6,073	29,184	8,328	20,857	29,184
Tires and Rubber	2,533	1,313	3,847	1,974	1,872	3,847
Manure	1,950	0	1,950	727	1,223	1,950
Disposable Diapers	2,471	0	2,471	2,242	229	2,471
Textiles and Leather	8,863	828	9,691	7,870	1,821	9,691
Other	8,041	0	8,041	8,041	0	8,041
OTHER WASTES						
Asphalt	558	0	558	393	165	558
Concrete	4,164	0	4,164	731	3,433	4,164
Other Inert Solids	18,024	11,710	29,734	9,576	20,158	29,734
Household Haz. Wst	5,844	0	5,844	5,844	0	5,844
Fines	650	0	650	650	0	650
Miscellaneous	271	0	271	271	0	271
SPECIAL WASTES						
Asbestos	0	0	0	0	0	0
Bulky Items	1,695	388	2,083	1,694	389	2,083
Ash	12	0	12	12	0	12
Autoshredder	26,416	0	26,416	26,416	0	26,416
Misc. Special Wastes	452	0	452	452	0	452
TOTAL	445,026	36,147	481,173	257,738	223,435	481,173
PERCENT DIVERTED UNDER PROPOSED CONDITIONS					46.4%	

SECTION 4
SOURCE REDUCTION COMPONENT

4.1 INTRODUCTION

Source reduction is defined by the California Integrated Waste Management Board (CIWMB) as "any action which causes a net reduction in the generation of solid waste. Source reduction includes, but is not limited to, reducing the use of nonrecyclable materials, replacing disposable materials and products with reusable materials and products, reducing packaging, reducing the amount of yard wastes generated, establishing garbage rate structures with incentives to reduce the amount of wastes that generators produce, and increasing the efficiency of the use of paper, cardboard, glass, metal, plastic, and other materials. Source reduction does not include steps taken after the material becomes solid waste or actions which would impact air or water resources in lieu of land, including, but not limited to, transformation."

Source reduction has the highest priority in the waste management hierarchy (reduce, reuse, recycle, landfill). It represents an approach that precedes waste management, and addresses how products are designed, manufactured, purchased, and used, in order to reduce the quantity and toxicity of the wastes produced when products are purchased, as well as when the end of their period of usefulness is reached. Technical options for communities considering source reduction include product reuse, material volume reduction, reduced toxicity, increased product life, and decreased consumption.

Conscientious source reduction efforts are just beginning to be implemented; therefore, it is difficult to quantify the actual impact that source reduction programs will have on the waste stream. Source reduction may be practiced in businesses and households through selective buying patterns and the reuse of products and materials. Because it requires increased awareness and changes in attitude and behavioral patterns, a major effort must focus on education. Source reduction programs often require research, financial incentives and disincentives, regulations, and technological developments. Many alternatives that emphasize reduced packaging are best applied at the state or national level to merge with product advertising and sales trends.

It should also be kept in mind that the unincorporated parts of the County are often noncontiguous. Several pockets of unincorporated County exist in and among the surrounding cities; in many cases, the waste management policies and procedures of a given municipality are practiced in the adjacent part of the County.

4.2 OBJECTIVES

Source reduction is an essential first step in an overall integrated waste management plan. By taking steps to prevent waste from entering the waste stream, costly programs that will recycle, compost, or transport and dispose of the material can be avoided.

The SRR Element must include source reduction programs that work well at the municipal level, while providing support for activities which can best be accomplished on a larger scale at the state and federal levels. With this in mind, the County has adopted eight broad objectives to be accomplished during the short-term and medium-term planning periods. These objectives are:

- To educate residents and businesses regarding the concept and practice of source reduction.
- To devise methods of quantifying source reduction.
- To reduce the use of nonrecyclable materials.
- To replace disposable materials and products with reusable materials and products.
- To reduce packaging.
- To reduce the amount of residential yard wastes.
- To improve the efficiency of office paper use.
- To purchase repairable products.
- To increase the longevity of the materials utilized in industrial operations by considering durability, reusability, and recyclability as product selection criteria.

Materials to be targeted for source reduction include paper products, all types of yard wastes, white goods, leather products, textiles, and other one-use items. Short-term and medium-term planning period objectives for each of the jurisdictions are as shown in Table 4-1.

4.3 EXISTING CONDITIONS

At present, no structured source reduction programs have been implemented in San Bernardino County. While source reduction activities are taking place at thrift stores (textiles and appliances), appliance repair shops (electronics and other durables), pallet repair businesses, diaper services, tire retreaders, beverage distributors (refillable beverage bottles), food banks, and landscapers or homeowners (xeriscaping and backyard composting), detailed records of wastes diverted as a result of these activities are not available.

The County currently employs two education specialists who provide educational services regarding recycling and source reduction. These employees will continue to provide assistance and information on recycling and source reduction activities.

TABLE 4-1 SOURCE REDUCTION GOALS BY REGION FOR THE SHORT- AND MEDIUM-TERM PLANNING PERIODS		
Jurisdiction	**Short-term Objective**	**Medium-term Objective**
Unincorporated East Desert	2%	2%
Unincorporated North Desert	2%	2%
Unincorporated East Mountain	3%	3%
Unincorporated East Valley	2%	3%
Unincorporated West Valley	1%	3%
Unincorporated Countywide	2%	3%

The CIWMB has proposed a waste exchange program whereby businesses can exchange information regarding the materials they discard and the materials they can use in their processes. Discards can then go directly to another business to be used as a raw material, without having the material processed by collectors and/or recyclers. The businesses would save money in disposal costs and in obtaining materials that would have to have been purchased on the market. San Bernardino County supports this proposal and will assist in building the program locally.

Current amounts of materials diverted through source reduction are assumed to be very small, relative to the total amount of waste generated in the County (less than 1 percent). No measurable source reduction activities were found in the West Valley.

4.4 DESCRIPTION OF ALTERNATIVES

4.4.1 Introduction

This section describes 20 source reduction programs to be considered in this Component of the SRR Element. Each program is evaluated by criteria specified by the CIWMB and criteria added by County staff.

Source reduction can be achieved in a variety of ways, such as reducing the amount of material used in products and packaging, increasing product durability, reuse or repair of products, and the complete use of products, as in using both sides of paper or using a durable good rather than a disposable good.

TABLE 4-2
EXISTING SOURCE REDUCTION DIVERSION - TONS PER YEAR (1990)

Waste Types	Unincorp. East Desert	Unincorp. North Desert	Unincorp. East Mountain	Unincorp. East Valley	Total
PAPER Subtotal	0.6	0.7	11.2	11.9	24.4
Corrugated Paper					0.0
Newspaper					0.0
High Grade Paper				11.9	11.9
Mixed Paper					0.0
Other Paper	0.6	0.7	11.2		12.5
PLASTIC Subtotal	0.0	0.0	0.0	3.1	3.1
HDPE Containers					0.0
PET Containers					0.0
Film Plastic					0.0
Other Plastic				3.1	3.1
GLASS Subtotal	108.0	149.1	22.9	0.0	280.0
Refillable Glass Bev Containers	108.0	149.1	22.9	0.0	280.0
CA Redemption					0.0
Other Recyclable Glass					0.0
Non-Recyclable Glass					0.0
METAL Subtotal	96.8	133.6	17.5	0.0	247.9
Aluminum Cans					0.0
Bi-metal Containers					0.0
Tin Cans					0.0
Non-ferrous Metals					0.0
White Goods	96.8	133.6	17.5	0.0	247.9
Other Metals					0.0
YARD WASTES Subtotal	0.0	0.0	0.0	0.0	0.0
Yard Wastes					0.0
OTHER ORGANICS Subtotal	269.5	382.1	64.2	0.0	715.8
Food Wastes	2.1	3.0	0.0	0.0	5.1
Tires and Rubber Products	83.2	114.9	17.1	0.0	215.2
Wood Wastes					0.0
Agricultural Crop Residue					0.0
Manure					0.0
Textiles and Leather	184.2	254.4	47.1	0.0	485.7
Others					0.0
OTHER WASTES Subtotal	0.0	0.0	0.0	0.0	0.0
Inert Solids					0.0
Household Hazardous					0.0
SPECIAL WASTES Subtotal	85.9	118.6	29.2	0.0	233.6
Ash					0.0
Asbestos					0.0
Auto Bodies					0.0
Bulky Wastes (furniture)	85.9	118.6	29.2	0.0	233.6
Plastic Mixed Materials					0.0
Metal Mixed Materials					0.0
Other Special Wastes					0.0
TOTAL	**560.7**	**779.3**	**145.0**	**15.0**	**1,500.0**

Source reduction alternatives presented in this section fall into four categories: rate structure modifications, other economic incentives, technical assistance, and regulatory programs. Rate structure modifications provide motivation to reduce the amount of solid waste generated in homes, businesses, and industries. Other economic incentives are manifested through the establishment of grants, loans, and loan guarantees. Technical assistance programs teach businesses, industries, and consumers to recognize and reduce waste at the source. Regulatory programs refer to policies, laws, and regulations adopted by the County of San Bernardino and by State or Federal agencies which limit waste generation. The 20 source reduction alternatives described in this section are listed by category below. Programs designated with an asterisk have been selected for implementation.

- Rate structure modifications:

  - Quantity-based variable rates for commercial/industrial waste generators.
  * Quantity-based variable rates for households.
  * Tipping fee differentials.
  * Special disposal fees.

- Economic incentives:

  - Loans, loan guarantees, grants, and contributions.
  - Deposits, refunds, rebates.
  - Reduced business license fee.
  * Recycling market development zones.

- Technical assistance:

  * Waste evaluations and waste minimizations.
  * Backyard composting programs.
  * Educational efforts.
  * Awards and public recognition.
  * Nonprocurement source reduction programs by the County government.

- Regulatory programs:

  * Adopting County government procurement policies.
  - Waste reduction plans.
  - Product bans.
  - Advance disposal fees.
  * Reporting requirements.
  * Land use and development requirements.
  - Fines and penalties.

4.4.2 Quantity-Based Variable Rates for Commercial/Industrial Waste Generators

Set rates for pickups of commercial/industrial waste are presently charged to waste generators in San Bernardino County. These rates are based on the size of the container and the frequency of collection.

Quantity-based variable rates may be used to foster source reduction at commercial/industrial sources. It should be noted that program design has a major effect on the potency of any variable rate program. Most systems that currently charge a variable fee do so according to volume. This could be accomplished in a commercial/industrial context by establishing a baseline volume for a given business, and charging for increased numbers of pickups or larger sized waste containers which exceed the baseline limits. If a weight-based system were employed, waste haulers would be required to use an on-board method of weighing containers, a cumbersome procedure at best.

Variable rate fees that rise rapidly with increasing volume tend to place a strong economic incentive on reducing the amount of waste, thus providing an excellent impetus for participation in source reduction and recycling programs. This alternative is somewhat limited by the fact that generators can compact their wastes up to a certain point. However, variable rate fees are the most viable tool for source reduction, and may be practically applied to all waste types (industrial, commercial, and residential). Variable rate structures may require both antidumping and antiscavenging ordinances to deter these activities, since variable rates and recycling programs will tend to provide incentives for both dumping and scavenging.

Materials targeted for source reduction through this alternative include paper products (including high-grade paper, mixed paper, and corrugated cardboard), plastics (film and polystyrene), and disposable products (pens, batteries, paper towels, eating utensils, diapers, etc.).

4.4.3 *Quantity-Based Variable Rates for Households

Currently, the County does not mandate waste pickup. Variable rate fees for households include charges for the number of cans used, the number of bags collected, or the frequency of collection. These fees are similar in principle to other service-based utility charges such as water and electricity. Variable rate fees are directly proportional to actual disposal costs; consequently, residents have the opportunity to reduce the expense by generating less waste. Collection variables require some flexibility in the delivery of service to households, and will lead to the following decisions: whether containers should be provided by the collector or the generator; the types and sizes of the containers used; and the utilization of stickers or special tags to identify legitimate containers.

Most systems that currently charge a variable rate fee do so according to volume. The City of Seattle has a well-developed program which uses this approach. However, given that not every container in the County is necessarily full, and the densities of some wastes are

different from others, the argument is made that weight-based systems would be more equitable (overshadowing this position are factors of time, effort, and expense involved in weighing each waste container).

Jurisdictions implementing variable rate programs may find that these programs result in reduced quantities of waste; therefore, revenues generated by waste collection may be overestimated and insufficient to cover the fixed costs of the hauler. The solution to this dilemma is a fixed subscription fee to cover fixed costs, plus a variable rate fee for the actual quantities of waste collected. Rate structure modifications can provide a financial impetus for residents to participate in source reduction, recycling, and yard waste programs. In fact, rate structure modifications of this nature should be viewed as adjuncts to recycling and yard waste programs developed in other components of the SRR Element. Residential materials targeted for source reduction through this alternative include paper and plastic packaging, disposable products (pens, diapers, etc.), food waste, yard waste, and wood.

4.4.4 *Tipping Fee Differentials

This alternative establishes tipping fee differentials at all disposal and processing facilities in the County. Tipping fee differentials can be used to promote source-separation by distinguishing among the quality of materials brought into processing and disposal facilites. Processing costs for clean loads of source-separated materials would be less than processing costs for mixed waste. Likewise, disposal costs for loads of mixed refuse would be more expensive than disposal costs for refuse which has had recyclable and compostable materials removed.

This alternative will further promote source-separation by setting up the tip fees for using drop-off sites which collect yard waste, inerts, and wood waste lower than the tip fees at disposal facilities. In this system, the cost to deposit large quantities of source-separated yard waste, inerts, and wood waste at a drop-off site would be cheaper than to dispose of a similar quantity of material at a disposal facility.

4.4.5 *Special Disposal Fees for Selected Items

This alternative has already been established in the County. Special disposal fees for hard-to-dispose items, such as mattresses, appliances, and tires, are charged either per load or per ton. Additional fees could be levied at the point of processing or disposal, either at the processing facility, transfer station, or landfill.

4.4.6 Loans, Loan Guarantees, Grants, and Contributions

Loans, loan guarantees, grants, and contributions enhance the effectiveness of other programs and alternatives. Under this alternative, the County would provide loan guarantees or grants to encourage the economic development of businesses, nonprofit groups, or associations that promote source reduction. In addition, the County can lend its support in exploring and developing other funding sources such as grants, industry financial support, in-kind donations (composting bins or the use of facilities for workshops and seminars), and private foundation contributions to be utilized in developing and implementing source reduction methods.

Targeted materials for this alternative depend on the source reduction activity planned by the community group. For example, if the community group is the 4-H Club, and the project is a backyard composting workshop, then the targeted source would be residential generators of yard wastes. Potentially, any element of the waste stream may be diverted, including paper products, plastic packaging, food waste, yard waste, and wood.

4.4.7 Deposits, Refunds, and Rebates

Another possible incentive program involves the use of deposits, refunds, or rebates to encourage the reuse of selected products and materials. This might include reusing containers and shopping bags or repairing automobile batteries, small appliances, and power tools. Rebates, for example, could be offered to entice consumers to buy used or refurbished merchandise. These programs can be difficult to administer on a local level and are not likely to have a significant impact on consumer behavior.

4.4.8 Reduced Business License Fees

Under this program, business license fees would be reduced for certain types of businesses who engage in source reduction activities (e.g. second hand stores, used furniture).

4.4.9 Recycling Market Development Zones

The County has already decided to pursue this program which involves designation of certain areas as recycling market development zones to encourage the location of recycling related businesses, outlets for secondary materials and solid waste management facilities. The Agua Mansa area, in the south west part of the County was recently designated as a Recycling Market Development Zone by the California Integrated Waste Management Board.

4.4.10 *Waste Evaluations and Waste Minimization

Under this alternative, the County would encourage larger commercial/industrial waste generators to conduct waste evaluations to identify what types and amounts of wastes are being generated, and would assist these generators in identifying and implementing waste minimization techniques. The County could contract to provide such assistance, or could prequalify consultants or businesses to offer these services. The primary purpose of the waste evaluation alternative is to increase commercial awareness of the need for, and benefits of, waste reduction programs, and to assist businesses in the design and implementation of such programs.

Data collected from the waste evaluations could be used for several purposes: (1) assessing proper waste disposal fees; (2) controlling the disposal of banned wastes into the waste stream (e.g., some organic wastes, household hazardous wastes, and some special wastes); and (3) establishing a waste generation database from which to measure future progress in waste reduction. Waste evaluations could be required periodically to provide information on the generator's progress. This alternative targets large commercial and institutional generators. Materials diverted through the program might include paper, plastic, packaging, food waste, yard waste, scrap metals, and wood.

4.4.11 *Backyard Composting Programs

This alternative involves the development of technical assistance programs to encourage backyard composting of yard waste and other organic wastes by homeowners or farmers. Yard, wood, and food wastes are large components of the waste stream; source reduction programs targeted at these wastes can significantly affect the amount of waste going to the landfills.

While backyard composting programs focus on residential yard waste, they could also apply to commercial and institutional generators. Although residential generators contribute a greater proportion of yard waste to the waste stream, they are also more numerous and require widespread educational and technical assistance programs. Both institutional and residential generators may respond to economic and regulatory incentives.

Under this alternative, the County would encourage all generators of yard wastes (especially homeowners) to separate such wastes from the waste stream, and to reuse these materials through composting. The County can foster this approach through a number of activities designed to support backyard composting, as illustrated in the following examples:

- Provide yard waste generators with low-cost bins designed for composting, as well as a flyer on how to start this process.
- Develop and/or support educational awareness (e.g., demonstration projects) and technical assistance programs related to backyard composting.
- Impose a very high fee for yard waste collection, providing an incentive for the generator to compost the wastes on site.
- Require all grounds keeping and other landscape maintenance companies operating within the County to provide a composting service to customers, while banning the disposal of yard wastes.

The fundamental assumption of this alternative is that the targeted organic, compostable waste will not enter the waste stream, and is not collected, processed, or disposed of by the County or its contractors. This alternative must meet these requirements in order to qualify as a source reduction program. Programs that rely on the County to provide collection and composting services for yard wastes do not qualify as source reduction programs, and are treated separately.

This distinction serves to highlight the purpose of source reduction alternatives, which is to encourage reduction in the generation of wastes so that community waste disposal programs are not required to collect, process, or dispose of wastes. While these approaches to composting programs serve different goals (reduction versus composting diversion), they may be complementary when implemented with appropriate rate structures. Further information on alternatives for community composting programs and services is included in the Composting Component of this report.

4.4.12 *Educational Efforts

This alternative involves: (1) educating the public about the need for, and the benefits of, source reduction; (2) providing information to the public on ways to implement source reduction techniques in their personal and business activities; and (3) educating the commercial/industrial sector on methods to quantify source-reduced wastes so that the County may claim these quantities as a diversion credit.

Educational efforts involve the development and/or sponsoring of consumer awareness programs, school curricula, seminars, and public forums that will increase awareness of the solid waste problem, the economic and environmental benefits of source reduction programs, and any regulatory requirements that mandate certain types of source reduction activities. Educational efforts should also seek to change consumer purchasing patterns to reflect source reduction concerns by introducing the concept of "source reduction" to the community. This alternative requires the County to act as a catalyst for the implementation of source reduction efforts within the community. The County would serve as a clearinghouse for information on source reduction techniques, and would provide a means for promotion of rapid and effective expansion of source reduction activities.

The County would also support the commercial/industrial sector in devising and implementing methods of quantifying the amounts of waste minimization achieved through source reduction activities. Quantification could be estimated through the development of a brief questionnaire that could be filled out by a company and sent back to the proper County agency.

This questionnaire might list the categories of waste, the steps taken to reduce these wastes, and a rough quantification of the diverted materials. This information could subsequently be used as a diversion credit.

Educational efforts are vital to the success of other source reduction alternatives. These efforts should target all waste generators within the County.

4.4.13 *Awards and Public Recognition

This alternative involves the generation of public support for source reduction by recognizing individuals, groups, or businesses that actively engage in source reduction and/or waste minimization efforts, and that support the community's source reduction programs. This alternative serves as a complement to public education, technical assistance, and grant programs.

Approaches developed for the alternative could range from local pride programs which emphasize waste reduction and environmental awareness, to the use of local newspapers to report exemplary source reduction programs as well as noncompliance. These programs could increase compliance with other alternatives such as waste audits and reporting requirements for source reduction programs.

This alternative targets all waste generators, both residential and commercial. The materials diverted through this alternative would depend on which programs have received awards or statements of public recognition.

4.4.14 *Nonprocurement Source Reduction Programs by the County Government

Nonprocurement programs involve all methods of source reduction that are not associated with purchasing decisions. This alternative requires that the County develop a number of programs aimed at altering the behavior of its personnel to reduce the amount of waste generated on a daily basis. These programs could include familiarizing personnel with source reduction practices such as double-sided copying; increasing the use of scratch paper; making fewer drafts of reports; utilizing electronic mail; etc. The alternative provides an opportunity for the County itself to develop and implement a model source reduction program that can be used as an example for private, public, and commercial entities within the area. The alternative targets the County's administrative offices, road maintenance, parks departments, and vehicle maintenance departments, and works to curtail their use of paper, organic materials, tires, and other substances.

4.4.15 *Adopting County Government Procurement Policies

This alternative involves the adoption of procurement policies by the County Board of Supervisors which include concepts of reusability and reduced material content. The County could specify that any business or organization under contract with the County must have a source reduction plan or program, and could adopt purchasing preferences for recycled products as part of its program (though this would not qualify as "source reduction"). The alternative targets those materials used by the County administrative offices, as well as equipment purchased by other operations such as the police, public works, etc.

The materials that will be diverted through source reduction include paper products and packaging, plastic products and packaging, all disposable items, stationery, office supplies, tires, batteries, and food service items.

4.4.16 Waste Reduction Plans by Commercial and Industrial Generators

Similar to State requirements for cities and counties (AB 939), the County may necessitate waste reduction planning and reporting for large commercial, industrial, and/or institutional waste generators within its jurisdiction; thus, the County would delegate responsibility for implementing source reduction programs to larger waste generators in the community. Like the County itself, these businesses would report their progress regularly (e.g., when applying for permits or paying taxes, or before the city or any private waste hauler renews a waste disposal agreement, etc.). Implementation of this alternative assumes that the County would cover the administrative costs of either hiring staff or retaining consultants to review plans developed by major generators.

Restricting or selecting the number of entities that must complete these evaluations allows the community to reduce the administrative burden and cost to both public and private sectors.

For example, waste evaluations might be restricted to certain categories of commercial generators according to the Standard Industrial Code, employee size, or the quantity and type of wastes known to be generated by those enterprises.

4.4.17 Product Bans

The County may ban targeted products and packaging techniques to reduce waste at the source and to provide a net environmental benefit. Bans on products and packaging that do not lend themselves to recycling or source reduction may be considered. The criteria for product bans are similar to those used to determine the applicability of advance disposal fees. Examples include disposability, difficulty in reuse or recycling, and availability of environmentally sound substitutes (such as disposable razors, nonrefillable pens, and nonreusable beverage containers). Some communities (such as Berkeley, California) have banned polystyrene foam packaging from fast food restaurants, while other communities have restricted the use of items such as nonrecyclable beverage containers. Communities that pursue this kind of alternative often adopt a time limit or phaseout period for the ban to take effect, providing time for residential and commercial consumers to adjust to the policy and to identify substitutes.

4.4.18 Advance Disposal Fees

Under this alternative, the County would impose advance disposal fees (ADFs) on certain products that are either nonrecyclable or disposable and nonreusable. Products that have excess packaging could also be made economically unattractive. The fee charged for these products should approximate the reasonable costs of disposing of the product; an advance disposal fee could also be placed on disposable products such as pens, razors, cameras, beverage containers, and diapers. This alternative could be applied to products that have a range of useful life spans, with fees imposed against those products with shorter lives in order to induce consumers to purchase the longer-lasting products. Examples of such products are car tires, batteries, and appliances.

The fee structure for this alternative seeks to create a hierarchy of incentives to alter consumer behavior, as follows: first, buy reusable, recyclable, and durable products; second, repair older items such as white goods (replacement may carry a fee); and finally, purchase only what is necessary of products which are disposable and have no substitutes.

4.4.19 *Reporting Requirements

The County could require businesses and industry to include source reduction planning and progress reporting in its land use regulations. The County could target large waste generators to adopt plans for waste reduction and require periodic reports on progress being made to reduce waste. The reporting requirements can also extend to the private haulers serving the area. The hauler information could be used to document changes in waste disposal practices.

4.4.20 *Land Use and Development

This alternative involves the establishment of incentives and disincentives as part of land use and development regulations, in order to encourage the implementation of source reduction and other diversion programs. For example, the County could enact regulations stating that an entity could not open a new business or relocate an old one; build or otherwise develop property for commercial or residential purposes without presenting a plan which describes how much and what type of waste (yard, residential, commercial, etc.) will be added to the waste stream; and what programs will be implemented to encourage source reduction within the new development. Requirements could also be imposed to require that space be set aside for on-site composting or the utilization of compost for landscaping or other uses.

Larger commercial and institutional generators, as well as real estate development corporations, will primarily be targeted by this alternative. Materials diverted through this program might include paper, plastic, food, yard waste, and wood.

4.4.21 Fines and Penalties

A system of fines and penalties, which are dependent on the programs selected by the County, should be viewed as a supplement to other chosen source reduction alternatives. Penalties on commercial/industrial as well as residential generators of waste materials could be assessed.

The imposition of fines or penalties may be used to enforce source reduction programs and to ensure compliance; in addition, the collected fines could be allocated to fund programs conducted by local community groups, such as those designed to provide education and technical assistance for backyard composting programs.

4.5 EVALUATION OF ALTERNATIVES

4.5.1 Countywide Evaluation

Each alternative was evaluated by the Solid Waste Management Department with the following criteria:

- Effectiveness of the program.
- Hazards created by the alternative.
- Ability to accommodate change.
- Consequences to the waste stream.
- Timing.
- Need for expanded or new facilities.
- Consistency with local policies, plans, and ordinances.
- Ease of implementation.
- Cost of implementation.
- Availability of markets/end-uses.

4.6 EVALUATIVE DISCUSSIONS

The discussions in this section evaluate the source reduction alternatives considered in this component in terms of the criteria from the Model Component Format and other specific requirements for the Source Reduction Component, as outlined in AB 939 Regulations.

4.6.1 Effectiveness

Source reduction diversion rates are difficult to quantify for individual alternatives, due both to the lack of program experience, to the variety of implementation methods, and to the lack of records kept on amounts of material reduced. The following discussion provides information on the potential effectiveness individual programs may offer in reducing Countywide waste.

Residential backyard composting has the potential to reduce the total amount of yard and food waste disposed Countywide. However, the effectiveness of this type of program depends entirely on resident participation, which is often low. While backyard composting programs have existed in the United States for several years, quantification of diverted wastes has not yet been achieved.

Commercial and industrial technical assistance aimed at modifying basic consumer buying habits may be very effective in reducing packaging, paper, and one-time-use products, as well as decreasing the toxicity of the waste generated. Such programs can be educationally beneficial but require substantial modification of consumer behavior.

Government procurement policies incorporated into bid specifications may result in a reduction of waste quantity. In addition, a procurement policy's educational and promotional value may have greater impact in overall source reduction activities by vendors and manufacturers.

Product bans have minimal impact on a local level because residents may go outside their community to purchase the banned product. However, if local actions cause similar bans at the regional or state level, or stimulate private-sector development of low-waste alternatives, the impact may be significant.

Government waste reduction programs in local government office buildings would reduce waste, especially paper. Waste audits and plans at major local facilities such as the civic centers, regional jails, and city halls could reduce waste disposal and provide a visible means of expanding public awareness. The ***waste reduction requirement for all businesses*** would be effective in reducing the amount of waste disposed of, if local businesses and jurisdictions work cooperatively. It is difficult to estimate the actual quantities of materials that could be reduced.

Variable can rates have been shown to effectively promote source reduction, if the cost of putting out additional cans or using large cans is significant. For example, a variable can rate program in High Bridge, New Jersey reported a 25 percent reduction in residential

waste. In Seattle, Washington, a system of steep volume-based rates has resulted in 86 percent of residents using one 30-gallon can or less.

Under the Seattle program, variable can rates and curbside yard waste collection have virtually eliminated yard waste from residential waste disposal: its proportion has been reduced from 20 percent before the program to less than 1 percent. A ***tipping fee differential*** at disposal and processing facilities would reduce solid waste sent to landfills within the County. By creating an incentive to separate loads into recyclable and non-recyclable materials, or to separate large or bulky items, a fee differential would effectively reduce amounts of recyclables, compostables, and bulky items found in the waste stream.

Special disposal fees may have limited effectiveness in the County. First, special disposal fees could only be applied to a few selected products. Second, residents wishing to dispose of materials that have been assessed with a special fee, and want to avoid paying that fee, may dump illegally or go to another disposal facility.

Advance Disposal Fees (ADF) properly structured to internalize disposal and recycling costs could reduce the generation of waste. However, fees and rates which do not properly reflect disposal/recycling costs could be ineffective or counterproductive. To achieve the objective of reducing the volume and cost of waste, the ADF should differ by material type, for administrative ease. The complexities of collecting such fees from distant manufacturers make ADF implementation difficult for cities and counties. Statewide imposition of such fees may be more cost-effective.

The effectiveness of ***land use requirements*** would depend on the kinds of land use and types of materials targeted. This type of program can also be developed in a way that "rewards" businesses which source reduce or provide reduction services.

Loans, grants, and awards to promote successful source reduction programs would have a positive but limited effect on the reduction of solid waste within the County. The educational and promotional benefits of such programs, though, may be significant in overall source reduction awareness by the general public. This type of program also reduces County costs while forming an alliance between the community and waste management authorities.

4.6.2 Hazards

The "hazard" criteria established by AB 939 Regulations is interpreted to relate to a given alternative's potential environmental and human safety/health impacts. Potential hazards identified for source reduction alternatives include the possibility of an increase in illegal disposal due to implementation of alternatives that would result in an increase in collection costs, such as ***variable can rates, special disposal fees, and tipping fee differentials***. Odors and vectors (flies and rats), public health risks, and fires are potential hazards associated with improper ***backyard composting*** activities. Implementation of ***ADF*** and product bans may have unintended environmental consequences, as product or packaging changes are made.

No hazards were identified for any of the other alternatives considered in this evaluation.

4.6.3 Ability to Accommodate Change

All of the source reduction alternatives considered in this analysis are deemed to be flexible and capable of accommodating economic, technological, and social changes.

4.6.4 Consequences to the Waste Stream

All of the source reduction alternatives discussed in this analysis will encourage residents and businesses to reduce waste generation. ***Backyard composting*** would reduce the amount of yard waste, food waste, and other organic materials in the residential waste stream and not add any substitute products to the waste stream. ***Loans, grants, and awards, product bans, special disposal fees*** and ***ADFs*** would decrease generation of excessive packaging and other disposable products while encouraging citizens to purchase durable, reusable goods. However, substitute products may cause a negative effect to the waste stream. A ***commercial and industrial technical assistance program*** will reduce the waste types generated by the businesses participating in the program (most likely high grade paper and non-reusable machinery parts, but possibly toxic materials as well).

Land use requirements, and business waste reduction requirements may reduce the disposal of a number of items including textiles, furniture, appliances, construction materials, high grade paper, and reusable machinery parts. ***Variable can rates and tipping fee differentials*** would encourage residents to purchase products which are packaged in recyclable containers and to actively participate in recycling programs, thus reducing the total volume of nonrecyclable and paper packaging and bulky items entering the waste stream. In addition, ***variable can rates*** should reduce the disposal of yard, food waste, and other organics by encouraging participation in the backyard composting program. If the program is volume-based, it is likely that there will be an increased use of compactors, creating a high-density, low-volume waste stream.

Government procurement policies and government waste reduction programs should result in the reduction of wastes generated by the public sector in any of a number of waste materials categories.

4.6.5 Time Frame for Implementation

All of the alternatives considered in this analysis can be implemented in the short- or medium-term planning period. However, if the County adopts a resolution recommending statewide ***ADFs***, the adoption and implementation of ADFs may not occur (if it occurs at all) until the medium-term planning period. The local adoption of ADFs would require lead time necessary to conduct a study to determine the appropriate fee system. The California Integrated Waste Management Board is expected to conduct such a study in 1991 and recommend appropriate action to the State legislature.

A ***backyard composting*** program can be started once funding, trained staff, and educational materials are available, usually within one year. Community participation can be increased over time through promotional and volunteer efforts.

The ***commercial and industrial technical assistance program*** should recognize significant source reduction achievements, perhaps with a ceremony or newspaper article, which could be initiated to commemorate the first full year of educational and promotional efforts, i.e., sometime in the short term. *Variable can rates* have been instituted in other jurisdictions in the short term to provide economic incentives, not only for waste reduction but also as an incentive for residents to participate in recycling and composting programs. However, without recycling and composting alternatives, variable can rates may be viewed as premature or punitive. This alternative also requires negotiation with existing haulers and, depending on capital requirements, can require significant lead time for implementation. ***Tipping fee differentials*** can only begin when recycling and composting processing facilities are operating in the area, and may also require significant lead time.

Business waste reduction requirements, product bans, and special disposal fees could be imposed upon approval of the County Board of Supervisors or a regional group, once it has been found that these measures are necessary to achieve the state-mandated diversion targets. These alternatives would also take time to effect changes in the amounts and types of materials disposed. **Land use requirements** can be implemented in the short term, however, it will take some time for projects to have any kind of reduction effect on the waste stream.

Loans, grants, and awards could be established in the short term upon approval of the Board of Supervisors or a regional group, once funding sources become available. ***Government waste reduction programs and government procurement policies*** could be implemented any time in the short term.

4.6.6 Facility Need

Implementation of ***variable can rates*** will require facilities for storage and distribution of various sized containers. In order to be effective, this alternative also needs the development of recycling and composting processing facilities.

The ***tipping fee alternative*** would also require the development of recycling and composting processing facilities.

None of the other source reduction alternatives evaluated in this component require special facilities.

4.6.7 Consistency with Local Policies, Plans, and Ordinances

Tipping fee differentials, special disposal fees, land use requirements, reduction requirements for businesses, ADFs, procurement policy, and ***product ban*** alternatives may require the enactment of enabling legislation by local ordinances. Nearby Riverside County recently enacted similar legislation requiring waste haulers to phase in recycling collection for both residential and commercial customers at a specific rate and by a specific date. Similar legislation can be easily adoped by San Bernardino County as well. Inconsistencies with existing plans and ordinances have not been identified, except that variable can rates are inconsistent with current haulers' policies of uniform pricing.

Variable rates would be difficult to implement because the unincorporated areas do not have mandatory collection. The County would need to conduct a study that will determine what areas of the County should be designated for mandatory collection based on population and density. Then the County needs to assess the value of the franchise hauler agreements or contract hauler agreements before setting any variable rates.

Loans, grants, and awards, backyard composting, commercial and industrial technical assistance, and ***government waste reduction*** alternatives appear to be consistent with current local policy. ***Commercial/Industrial technical assistance*** would likely require adoption of a policy or ordinance as well as a method for handling situations that dealt with violations of laws, codes, or ordinances. ***Backyard composting*** may require an amendment of health ordinances, zoning or building codes, and neighborhood covenants or restrictions.

The implementation of an ***ADF*** program would require the establishment of an administrative infrastructure to collect, enforce, and audit payments of the fees.

4.6.8 Institutional Barriers to Implementation

Commercial and industrial technical assistance may require a neutral third party to insure cooperation. The County would have to insure that it has the authority for this action before allowing a third party to perform the audits.

Most local franchise hauler agreements would require modification to establish flat or progressive fee structures for the ***variable can rate*** alternative, as would the current Refuse Rate Adjustment Policy established by the Board of Supervisors.

For ***ADFs,*** a collection and auditing system would need to be established. In addition, local businesses may object to the fees as well as the reporting requirements they would entail. Similarly, it can be expected that local businesses would resist a ***business waste reduction requirement*** of mandatory waste audits and source reduction plans.

Institutional barriers may stem from nuisance factors if ***backyard composting*** sites are improperly managed, creating odor and vector problems which may require intervention by local building officials or law enforcement personnel. Other related problems could occur from lack of yard space and residents to participate.

For the ***government procurement policy*** alternative, an institutional barrier may result if certain products used by local jurisdictions are only available in one-time-use packaging. For example, toner cartridges for copy machines may be only available in throwaway dispensers. Additionally, large stocks of materials already purchased may also delay the implementation.

Loss of sales tax revenue from a ***product ban*** may be an institutional barrier to that alternative, although substitution of other products may counteract this loss. Loss of business license fee revenue from reduced a business license fee program would also impact the County.

Residents and businesses may object to the increased disposal costs associated with ***tipping fee differentials, variable can rates,*** and ***special disposal fees***, which may lead to illegal dumping.

No institutional barriers have been identified for the ***land use requirements, loans, grants and awards, and government waste reduction*** alternatives.

4.6.9 Implementation Costs in the Short and Medium Terms

Overall coordination costs will be incurred for all source reduction alternatives. A ***variable can rate*** program and a tipping fee differential program would require Rate Study ($50,000 - $75,000), public education materials, and costs associated with tracking and billing. The ***ADF*** program could entail large administrative revenues as well as costs resulting from higher fees or rates.

Costs will be incurred to subsidize ***loans, grants, and awards*** or other economic incentive programs depending on the type of program adopted (cash award vs. free "press coverage"). State, federal, and private funding may be available to offset costs. There would be costs involved with implementing a ***commercial and industrial technical assistance*** program, such as expenses for an annual dinner or ceremony, and preparing educational materials and costs for processing data.

The only costs associated with the ($4,000 to $15,000) ***backyard composting*** alternative, include staff costs and costs for producing educational materials.

Government procurement policies and government waste reduction program may require increased administrative costs both in the design of the program and in the actual costs of the products.

In addition to administrative and capital costs, several alternatives would result in increased enforcement costs to the local jurisdictions. ***These are tipping fee differentials, special disposal fees, backyard composting, land use requirements, local product bans,*** and ***waste reduction requirements*** for all businesses.

4.6.10 Market Availability

This criterion is not applicable to source reduction alternatives.

4.7 SELECTED ALTERNATIVES

Program selection was based on discussion with County personnel and the apparent applicability of each alternative to specific circumstances in the unincorporated sections of the County. A summary of the reasons for each selection is provided below. In general, alternatives that appeared to have the greatest diversion potential, and that appeared to be most cost-effective, were selected. Programs which would hinder economic development in the County, require major changes in the billing structure for charging refuse collection fees,

or impose unnecessary burdens on waste generators or haulers were eliminated from the selection process.

Existing programs, including thrift shops, appliance repair stores, pallet repair businesses, and diaper services, expect to continue operations throughout the planning period. While it does not have direct control of these kinds of facilities, the County will devise methods to quantify the wastes diverted. For further details, see the Education and Waste Evaluation/Waste Minimization alternatives.

Proposed Waste Exchange

The County previously adopted a resolution supporting the CIWMB proposal for a Waste Exchange program. The County will promote the program to local businesses and encourage participation in the program. Waste exchanges benefit all involved.

Quantity-Based Variable Rates for Commercial/Industrial Generators

This program was not selected because of logistical constraints (such as the lack of accounting and billing systems, the need to assess mandatory collection, and the large number of waste haulers operating in the unincorporated County). However, this measure will be reconsidered if and when a mandatory collection system is implemented.

Quantity-Based Variable Rates for Households

This alternative was selected for Countywide implementation because this method has proven to be effective. If a neighboring community decides to implement quantity-based variable rates for households, and that community is adjacent to a densely populated unincorporated area, the County will consider the implementation of this program especially if the County adopts mandatory collection in the any unincorporated areas.

Loans, Loan Guarantees, Grants, and Contributions

This program was not selected for implementation, since the County staff feels that its efforts would be more effectively devoted to other source reduction and recycling programs.

Waste Evaluation/Waste Minimization

This alternative is selected for the short term, because of its anticipated effectiveness in diverting wastes, its comparative ease of implementation, and its potential effects on the commercial/industrial waste stream.

The County will work with other jurisdictions (East Valley, West Valley, and the Desert and Mountain) to establish a formal program of assisting businesses with an evaluation of the waste it generates. The waste auditor can provide help in identifying methods to reduce not only the quantity but the toxicity of the waste generated and products used.

The alternative could provide insight into the dynamics of the commercial/industrial waste stream, while it could also represent a method of increasing social awareness and incentive among the business community and waste haulers, and provide rough estimates for the County's allocation of source reduction diversion credits.

Backyard Composting

Backyard composting was selected for the short term, because it is a cost-effective method of removing yard and food wastes from the residential waste stream. The County's efforts will result in the implementation of a model backyard system demonstration program which utiliizes various educational materials and information on effective backyard composting techniques.

Using brochures and demonstrations, the County will educate the general public about methods of composting landscape materials in their own backyards as well as the use and application of composted materials. The County will provide plans, designs, and information to interested individuals.

The program centers around education and technical assistance, with minimal funding, to encourage residents to convert yard wastes such as grass clippings and shrubbery trimmings into compost or mulch for home gardening use. System costs for centralized yard waste collection and composting are substantial, and to the extent that residents can themselves manage this portion of the waste stream by backyard composting, costs are reduced. This program will complement other source reduction alternatives by discouraging the transportation and disposal of yard wastes at landfill and transfer station facilities.

This program will consist of the following activities:

- Provide residents a "how-to" packet explaining the most cost-effective methods for building and using the compost bins.

- Distribute "how-to" brochures on backyard composting and mulching. Include information on where to obtain technical assistance.

- Develop a model backyard composting system demonstration at all regional composting facilities. This demonstration site will feature various techniques and materials in action, as well as an information kiosk or center.

Public Education/Information

Existing education and public information programs will be augmented in the short-term planning period, and will target all producers of solid waste. An increased emphasis will be placed on three key areas:

- Public education concerning reduction techniques.
- Implementation of source reduction programs.
- Ways of quantifying source reduction in the commercial/industrial sector.

Educational efforts are designed to support source reduction activities, and are considered to be a very key alternative. The County will pursue an integrated education and information program for all potential diversion activities including source reduction, recycling, composting, special wastes, and household hazardous waste. The program will include publishing articles about source reduction in the County's quarterly newsletter, participating in Earth Day events, working with the school districts, providing technical assistance to businesses, and working with the cities in the area. Further discussion is provided in the Education and Public Information Component of this SRR Element.

Awards and Public Recognition

This program will be developed in the short-term planning period, and will serve to recognize businesses or individuals for recycling and/or source reduction activities. The program will be called the Green Arrow Awards and consist of annual presentations by the Board of Supervisors. Businesses will be nominated for the award by the Source Reduction and Recycling Committee of the Solid Waste Advisory Task Force. A short-term goal will be to decide the program rules and regulations for an awards program towards the end of 1993.

Nonprocurement Source Reduction Programs by the County

This program will be implemented during the short-term planning period, and will target materials in the local government's waste stream. While the County already utilizes electronic and voice mail systems, these activities will be expanded to serve as a model for residential and commercial/industrial waste generators. This alternative will allow the County to provide a strong example in implementing source reduction techniques.

The County's Purchasing Office will develop a position for a purchasing agent to work with other County departments to insure that recycled and source reduction products be considered in County procurement practices.

Adoption of the County's Procurement Policies

This program will be implemented during the short-term planning period. The primary intent of this program will be to reduce the County's waste generation and to support recycling markets by including products which have greater durability, reusability, minimal packaging, and recycled content. Government procurement policy programs are selected for three reasons: first, they directly reduce waste generation by government offices; second, they encourage vendors to carry and promote products that reduce waste and have high recycled content; and third, they provide an example for businesses and other public agencies throughout the County.

This program will consist of the following activities:

- Develop policy guidelines for procurement practices which are preferential to waste reducing products. These guidelines will be presented in written materials to all government agencies.

- Notify vendors that the policy guidelines are being put into effect, and inform them of how they can bid for government business. Identify qualifying products.

- Develop a directory listing of regional vendors who supply products that are waste-reducing or have recycled material content. Distribute lists to governmental agencies and local businesses.

- Report on successful program results to businesses and public agencies, utilizing the waste exchange newsletter discussed in the Education and Public Information Component.

- Using retreaded tires on fleet vehicles whenever feasible.

- Purchasing more durable goods and selling unwanted used items at auctions.

Regulatory programs will include reporting requirements to institutionalize and measure source reduction programs. Businesses may be required to report source reduction activities when reporting information annually to the County Assessor's Office.

Waste Reduction Plans

This alternative will be selected as a contingency program if other source reduction or recycling activities fail to achieve the targeted diversion rates. The objectives of this alternative are sufficiently addressed within the Waste Evaluation/Waste Minimization alternative described above. Any formalized program would provide a last resort, should diversion goals fall short.

Product Bans

Product bans were not selected as an alternative, because this program's design and implementation reach beyond the capability and scope of the County. Effective product bans would need to be implemented at the regional, if not the Statewide or national level.

Support of State-Level Advance Disposal Fees

ADFs, when instituted at the state or federal level, can minimize waste. It is difficult to effectively administer ADFs at the local level. Since the State is the level of government requiring jurisdictions to implement Source Reduction and Recycling Elements, and since private industry designs most of the products which would be targeted for reduction, local governments have cause to ask the State and private industry for assistance in this regard. The County has already adopted a resolution supporting an advance disposal fee.

The County will implement a strategy to assist in passage of statewide ADFs meeting County needs. The strategy will include working with the San Bernardino County Solid Waste Management Department, the County Supervisors Association of California, the League of

California Cities, and others seeking appropriate endorsements and actions for enactment of an ADF system that, to the extent feasible, meets the following criteria:

- The fees will be established on material types (such as paper or plastic) rather than specific products (such as finished paper and plastic beverage containers) whenever possible, for administrative ease.

- The fees will approximate the average cost for recycling the materials through municipal programs.

- Proceeds from the fees will be paid to local jurisdictions, cities, and counties as direct offset to pre-existing municipal integrated waste management costs. This will provide for the above financial incentives for source reduction, while helping to insure that the total costs for integrated waste management are minimized.

Land Use and Development

This measure is currently being implemented on a limited basis, and will be continued in the review of CEQA Initial Studies and EIR sections for development projects which may have a significant effect on the capacity of waste management facilities. Should diversion efforts fall short, the County may consider mandatory waste reduction programs.

Fines and Penalties

This program was not selected for implementation. Fines and penalties would be difficult to establish, enforce, and administer, and they should not be necessary. However, if diversion efforts fall short, the County may wish to reconsider this alternative.

Tipping Fee Differentials

The Recycling and Composting Components of this plan recommend the development of processing facilities to process waste materials for recovery. To the extent that these facilities receive loads that are source-separated and free from contaminants, processing costs are cut and marketing potential is increased. Tipping fee differentials provide a direct economic incentive for generators to bring in source-separated loads to processing facilities. For example, at yard waste composting facilities, clean loads would be tipped at a reduced rate while contaminated loads or loads containing hard-to-handle materials such as stumps would tip at higher rates. Similarly, at processing facilities, tipping fees would vary depending on the content and level of contamination of mixed loads. Thus, clean loads of source-separated materials would tip at low rates while loads contaminated by large quantities of putrescible wastes such as food waste would have high tip fees. These types of tipping fee differentials will increase recovery rates and provide a direct incentive to facility users to bring in source-separated or clean loads.

A large portion of the region's diversion tonnages are received through drop-off sites, and it is therefore important to set up economic incentives encouraging the use of these drop-off sites. Tip fees at drop-off sites for yard waste, inerts, and wood wastes will be set lower

than tip fees for disposing these items. As a result, these types of tipping fee differentials will encourage the use of drop-off sites by generators who produce large quantities of yard waste, inerts, and wood waste.

An initial rate study will be conducted to determine a rate structure and schedule of implementation. Rates will be formulated for two distinct phases of program development. Phase one will formulate tipping fee differentials that encourage large scale generators to use drop-off sites instead of disposal facilities. Phase two will formulate tipping fee differentials that encourage generators to bring source-separated loads into processing facilities.

4.8 ANTICIPATED DIVERSION

All regions expect between 1.0 and 2.6 percent reduction in the short-term planning period, and between 1.9 and 3.2 percent reduction in the medium-term planning period. Because so little data have been maintained in the past regarding source reduction, it is difficult to project specific rates of waste reduction for each of the alternatives selected and for each of the material types. Table 4-3 shows the anticipated reduction for each region.

TABLE 4-3
ANTICIPATED UNINCORPORATED SOURCE REDUCTION DIVERSION

Region	Short-Term		Medium-Term	
	Tons/Year	Percent	Tons/Year	Percent
West Valley	598	1.0	2,009	3.1
East Valley	3,225	2.1	5,905	3.2
East Desert	974	1.6	1,239	1.9
North Desert	1,345	1.6	1,712	1.9
East Mountain	303	2.6	395	2.9
Unincorporated Countywide	6,446	1.8	11,261	2.7

4.9 PROGRAM IMPLEMENTATION

The short-term implementation plan for the selected alternatives, including specific tasks, start and finish dates, and staff responsible for implementation are shown in the following tables for each region.

Task No.	Projected Start	Task Description	Responsibility
Residential Backyard Composting			
1	1993	Design program.	County Solid Waste Dept.
2	1993	Educate the public.	County Solid Waste Dept.
Government Procurement Policies			
1	1993	Program design.	County Solid Waste Dept.
2	1993	Present model program to local government agencies for review and approval.	County Solid Waste Dept.
3	1993	Review and revise until adopted by the Board of Supervisors.	County Solid Waste Dept.
4	1993	Monitor and evaluate effectiveness.	County Solid Waste Dept.
Nonprocurement			
1	1993	Program development.	County Solid Waste Dept.
2	1993	Education programs.	County Solid Waste Dept.
Commercial/Industrial Waste Evaluations/Waste Minimization			
1	1993	Program development.	County Solid Waste Dept.
2	1993	Distribute questionnaire.	County Solid Waste Dept.
3	1993	Create database.	County Solid Waste Dept.
4	1993	Evaluate information.	County Solid Waste Dept.
Awards Program			
1	1993	Design awards criteria.	County Solid Waste Dept. /DEHS
2	1993	Coordinate and implement awards program.	County Solid Waste Dept. /DEHS

Task No.	Projected Start	Task Description	Responsibility
Quantify Existing Alternatives			
1	1993	Initiate contacts to quantify existing efforts.	County Solid Waste Dept.
2	1993	Quantify existing source reduction.	County Solid Waste Dept.
Land Use and Development			
1	1993	Program development.	County Solid Waste Dept./ County Planning Dept.
2	1994	Education programs.	County Solid Waste Dept./ County Planning Dept.
Quantity-Based Fees			
1	1993	Evaluate mandatory refuse collection.	County Solid Waste Dept.
2	1994	Develop rate structures.	County Solid Waste Dept.
3	1994	Adopt rate structures.	Board of Supervisors
Reporting Requirements			
1	1993	Develop reporting system.	County Solid Waste Dept.
2	1994	Develop reporting ordinance.	County Solid Waste Dept.
3	1994	Train Staff (County Assessor's Office).	County Solid Waste Dept.
4	1994	Adopt reporting ordinance.	Board of Supervisors
Tipping Fee Differentials			
1	1993	Rate study to determine appropriate fee structure.	County Solid Waste Dept.
2	1994	Approval of revised fee schedules.	County Solid Waste Dept.
3	1994	Fees established as facilities and drop-off sites come on-line.	County Solid Waste Dept.

Task No.	Projected Start	Task Description	Responsibility
Advance Disposal Fees			
1	1993	Development of ADF resolutions supporting State-level action in consultation with individual jurisdictions, the County Supervisors Association of California, the League of California Cities, and interested representatives of the business community.	County Solid Waste Dept.
2	1993	Approval of resolutions suporting State-level ADFs.	County Solid Waste Dept.

4.10 SUMMARY OF FUNDING REQUIRED

Costs of implementing the selected alternatives are shown in Tables 4-4 through Table 4-7.

TABLE 4-4
ESTIMATED SOURCE REDUCTION PROGRAM COSTS
UNINCORPORATED WEST VALLEY REGION
(in nearest 1990 $1000)

Program	1991-92	1992-93	1993-94	1994-95	1995-96
Existing Programs	1,000				
Waste Audit/Evaluations		1,000	1,000	1,000	1,000
Backyard Composting		2,000	2,000	2,000	2,000
Awards and Public Recognition			1,000	1,000	
Government Nonprocurement	1,000	1,000	1,000	1,000	1,000
Government Procurement	1,000				
Land Use and Development		2,000			
ESTIMATED TOTALS	**3,000**	**6,000**	**5,000**	**5,000**	**4,000**

Notes: Except for the $4,000 costs of backyard composting education, program costs shown are for Solid Waste Management Department staff time only. Additional costs will depend on the scope of each program. Education program costs are indicated in Section 8.

TABLE 4-5 ESTIMATED SOURCE REDUCTION PROGRAM COSTS UNINCORPORATED EAST VALLEY REGION (in nearest 1990 $1000)					
Program	**1991-92**	**1992-93**	**1993-94**	**1994-95**	**1995-96**
Backyard Composting	*	*	*	*	*
Waste Audit/Evaluation	*	*	*	*	*
Governmental Procurement Policy	0	1,000	1,000	1,000	1,000
Reporting Requirements	2,000#	0	0	0	0
ESTIMATED TOTAL	**2,000**	**1,000**	**1,000**	**1,000**	**1,000**

Notes to Table 4-5:

* Costs of backyard composting and waste audits are included in Technical Assistance costs, which are shown in Section 8.

\# Capital costs are assumed to be incurred during the first year of program implementation.

TABLE 4-6 ESTIMATED SOURCE REDUCTION PROGRAM COSTS UNINCORPORATED DESERT REGION (in nearest 1990 $1000)					
Program	**1991-92**	**1992-93**	**1993-94**	**1994-95**	**1995-96**
Residential Backyard Composting		9,000	10,000	10,000	11,000
Waste Audit/Evaluations		*	*	*	*
Governmental Procurement Policy		4,000	4,000	4,000	4,000
Variable Can Rates		3,000	3,000	0	0
Tipping Fee Differential		3,000	3,000	0	0
Advance Disposal Fees		2,000	0	0	0
ESTIMATED TOTAL	**0**	**21,000**	**20,000**	**14,000**	**15,000**

Notes to Table 4-6:

* Costs of waste audit/evaluations are included in Technical Assistance costs, which are shown in Section 8.

TABLE 4-7 ESTIMATED SOURCE REDUCTION PROGRAM COSTS UNINCORPORATED MOUNTAIN REGION (in nearest 1990 $1000)					
Program	1991-92	1992-93	1993-94	1994-95	1995-96
Residential Backyard Composting		1,000	1,000	1,000	1,000
Waste Audit/Evaluations		*	*	*	*
Governmental Procurement Policy		1,000	1,000	1,000	1,000
Variable Can Rates		1,000	1,000	0	0
Tipping Fee Differential		1,000	1,000	0	0
Advance Disposal Fees		0	0	0	0
ESTIMATED TOTAL		**4,000**	**4,000**	**2,000**	**2,000**

Notes to Table 4-7:

* Costs of waste audit/evaluations are included in Technical Assistance costs, which are shown in Section 8.

4.11 MONITORING AND EVALUATION

This section explains how selected programs will be monitored and evaluated to assure that source reduction programs are operating effectively. Continual monitoring and evaluation are necessary to measure the success of these programs, and to provide a standard by which adjustments can be made to increase program effectiveness if diversion goals are not met.

4.11.1 Countywide

The following methods will be used to monitor the achievement of the source reduction objectives identified: 1) random telephone surveys, and 2) County Assessor's Office reporting.

Random Telephone Survey

An annual random telephone survey will be instituted to sample the residential population to determine source reduction, recycling, and composting activity. This survey will evaluate the community's awareness of and participation in the various waste management programs.

Assessor's Office Reporting

Businesses in the unincorporated areas are surveyed annually by the County Assessor's Office and may be required to complete a survey form as part of the assessing procedures. This survey form will ask questions regarding the business community's level of awareness about the SRR element programs. Specific questions may address whether the business received a waste audit, whether they found it useful, and how they might improve the program.

Written Criteria to Evaluate Effectiveness

The County will evaluate the effectiveness of its source reduction program by the following criteria:

Criterion 1: Are the source reduction goals being achieved?

Criterion 2: Were activities implemented on schedule?

Criterion 3: Does the community have a greater understanding of the concept of source reduction?

Criterion 4: Are County businesses practicing source reduction?

Criterion 2 can be evaluated by comparing the actual activities with the schedule identified. Random telephone surveys will be used to monitor Criteria 3 and 4. The Solid Waste Management Department will be responsible for monitoring and evaluating the effectiveness of the source reduction programs.

Backyard Composting

The success of this program can be measured in terms of participation. A regional group or the County Solid Waste Management Department will track annual distribution of composting "how-to" brochures.

Government Procurement Policy

Program success can be measured in terms of the reduction in government waste generation rates. Success can also be measured by the increase in contracts and purchase orders for recycled or recycled-content products. The County will be responsible for preparing and annual monitoring report for the unincorporated areas which may be participating in conjunction with regional groups. The report should contain:

- For each government agency and division, quantitative measurements in terms of waste quantity reduction and purchase quantity and dollar volume for recycled-content products.

- Analysis of the fiscal impacts of program implementation.

If monitoring reveals a shortfall in the attainment of the reduction or procurement objectives, the report should also contain:

- Recommendations for additional measures needed to maintain or improve the program within individual agencies or divisions.

- Identification of any potential new source reduction measures that could be taken to increase waste reduction.

Variable Can Rates

Written criteria for evaluation include data submitted to the County Solid Waste Management Department by waste haulers, identifying changes in average waste volumes per generator type for participants, before and after the initiation of the program. Should monitoring show a shortfall, programs can be compared among franchise areas, and recommendations can be made that franchisors adopt the most successful method(s). Program changes can be made in consultation with haulers, through development and testing of the system, and by adopting refinements system-wide when superior results are demonstrated.

Tipping Fee Differentials

The success of tipping fee differentials can be judged largely on a comparison of the quantity of materials received at solid waste disposal facilities compared with the quantity received at drop-off facilities over time. This program can also be judged by the quality of materials (source-separated versus mixed waste) received at processing facilities. Tracking jurisdictional origin of incoming materials will be an additional monitoring requirement for all receiving facilities. The facility operators will be responsible for data gathering, analysis, and annual reporting to the regional group and County SWMD.

Advance Disposal Fees

The County Solid Waste Management Department will track development of State-level ADFs through regular contact with the California Integrated Waste Management Board. Should the State fail to adopt an ADF system by 1995, the County may wish to consider implementing local ADFs during the 1995 Source Reduction and Recycling Element revision.

Existing Privately Operated Source Reduction Activities

A regional group or County SWMD staff person will work with businesses to develop and maintain a system to monitor the quantities of waste reduced through existing source reduction activities. These existing activities include:

- Thrift Stores.
- Refillable Bottles.
- Food Distribution Programs.
- Recapped Tires.

- Diaper Services.
- Xeriscaping.

Private operators, like public operators, should keep records that provide data on the quantity of materials source-reduced by waste type and generator type. The regional group will need to develop monitoring mechanisms which provide the needed information without establishing overly burdensome requirements. It is likely that some type of formal reporting requirements will have to be adopted in the form of, for example, a condition for receiving business licenses.

4.12 CONTINGENCY MEASURES

If the County fails to make reasonable progress toward its 1995 source reduction objectives, three steps will be taken:

Step 1 Assumes the source reduction program objectives are reasonable and that the selected alternatives are adequate to achieve the objectives. In this case, the monitoring and evaluation program will be re-evaluated to determine if sufficient and timely information is available to accurately evaluate the program's progress. If the monitoring and reporting program is adequate, then Step 2 will be followed. If the monitoring and reporting program is inadequate, then adjustments will be made (e.g., more frequent reporting, different qualification techniques).

Step 2 Assumes the monitoring and evaluation procedures are adequate and the program alternatives are properly selected but the identified objectives are not achievable within the planning period. Under this scenario, the objectives will be revised downward and the difference in diversion will be taken up with other increases in the targets set for the other components.

Step 3 Assumes that the monitoring and evaluation program is adequate and the objectives are attainable, however, the alternatives selected for implementation are inadequate to reach the objectives. Under this scenario, the County will consider the following:

- Expansion of the County's procurement policies.
- Implementation of mandatory source reduction reporting programs for business and industry.
- Restructuring business license fees to provide incentives for businesses that participate in source reduction programs.

If the County fails to make reasonable progress toward its year 2000 objectives, three steps will be taken. These three steps are identical to those for the short-term planning period with the exception of Step 3.

Step 3 Assumes that the monitoring and evaluation program is adequate and the objectives are attainable, however, the alternatives selected for implementation are inadequate to reach the objectives. Under this scenario, the County will consider the following:

- Implementing an economic incentive reward program.
- Refining and enhancing designated source reduction programs.
- Mandating waste reduction plans for commercial businesses.
- Instituting a fines and penalties system.
- Mandating source reduction reporting programs.
- Developing a variable rate structure for businesses.

SECTION 5
RECYCLING COMPONENT

5.1 INTRODUCTION

Recycling is the process by which materials otherwise destined for disposal are collected, reprocessed or remanufactured, and reused. The purpose of recycling is to preserve the natural resources that go into manufactured goods. Recycling also may reduce the increasing costs and environmental impacts associated with solid waste disposal.

The recycling process includes four elements: separation, collection, processing, and marketing. A program must include each of the elements for genuine recycling to take place. Many alternatives exist for each element of recycling. Collection programs, for example, can encompass curbside pickup, commercial or public buy-back/drop-off centers, and nonprofit fund-raising drives for newspaper or aluminum cans.

All basic design elements of the recycling programs have been addressed, including administration, materials handling (separation, collection, and marketing), education/public information, and financing.

5.2 OBJECTIVES

The primary objective of this component is to engage in all recycling activities which are economically feasible. This may result in different programs throughout the region because of varying collection, processing, and market conditions. A second recycling objective is, where feasible, for the County to work cooperatively with neighboring cities to provide the same recycling programs. Haulers expanding city programs to include residents in the County would benefit from a larger customer base, and the County would benefit from the diversion activity.

Table 5-1 summarizes the recycling objectives, in terms of percentage of the total waste stream to be diverted, for each of the regions within the County.

5.2.1 Countywide

Based on data from the Waste Generation Study, the following objectives have been established for the short- and medium-term planning periods:

- Begin audits and development of commercial/industrial recycling.
- Initiate institutional/office recycling programs.
- Modify appropriate County zoning and building codes to require space for recycling containers.

TABLE 5-1 REGION-SPECIFIC RECYCLING COMPONENT OBJECTIVES		
Region	**Short Term (1991-1995)**	**Medium Term (1996-2000)**
Unincorporated East Desert Region	25%	27%
Unincorporated North Desert Region	27%	28%
Unincorporated East Mountain Region	31%	32%
Unincorporated West Valley Region	22%	39%
Unincorporated East Valley Region	21%	35%
Unincorporated Countywide	**24%**	**33%**

- Modify purchasing procedures to increase the markets for recyclable materials.
- Recycle between 10% and 40% of the waste stream and maximize diversion for the unincorporated area, when fiscally possible, in an attempt to meet the short-term planning goals.
- Continue to operate and expand all recycling programs selected in the short term by 2000.
- To provide public recycling receptacles at parks and high-traffic public areas by 1995.
- To evaluate the feasability of an inerts and wood waste recycling program by 1995.
- To offer ongoing recycling services to all newly established residential units, businesses, industries and the government sector through the year 2000.
- To expand, as necessary, drop-off services to include additional materials and/or generator types as needed to meet the waste-reduction goals through the year 2000.
- To encourage haulers to promote curbside recycling programs in conjunction with neighboring jurisdictions or populated areas.

The materials targeted for diversion through recycling are corrugated containers, mixed paper, newspaper, ledger paper and other paper, HDPE and PET plastic, film plastic, glass, ferrous and nonferrous metals, tires, rubber, wood, manure and inert solids. These materials

were chosen based on volume, weight, hazard of the material, presence of existing programs, and consumption of nonrenewable resources considerations.

5.2.2 West Valley

In addition to the countywide objectives, the following programs have been selected by the County for implementation in the West Valley region:

- Consider establishing curbside recycling programs to serve single-family households.
- Participate in planning of a regional multijurisdiction materials recovery and processing facility.
- Expand the types of materials collected in the curbside programs.
- Expand commercial/industrial recycling programs to accept additional materials and to insure that all appropriate establishments are being serviced.

5.2.3 East Valley

In addition to the countywide objectives, the following programs have been selected by the County for implementation in the East Valley region:

- Implement the following recycling programs: Public recycling receptacles and regional recycling processing center.
- Recycle between 20 and 30 percent of the waste stream by 2000.

5.2.4 Desert and Mountain

In addition to the countywide objectives, the following program has been selected by the County for implementation in the Desert and Mountain region:

- To develop drop-off sites for collection of recyclable materials throughout the Desert and Mountain region by 1995.

5.3 EXISTING CONDITIONS

The San Bernardino County Solid Waste Management Department is one of the most active agencies in California that promote resource recovery, source reduction, and recycling. A primary effort of the Department is to provide a wide range of informational materials designed to aid all citizens in their recycling efforts. Full Circle is the name of the quarterly newsletter published in conjunction with the twenty-four cities in the County by the Solid Waste Management Department, the Local Task Force, and the County's landfill operator. Each issue focuses on a range of source reduction and recycling activities, current legislation,

and special seminars and events. In addition to the newsletter, the Department produces extensive information on recycling centers and buy-back operations, as well as other data to assist residents. Informational materials are produced for specific programs regarding such topics as household hazardous waste, used motor oil recycling, and source reduction techniques and education.

The County Solid Waste Advisory Task Force and its five committees are committed to developing a range of plans and programs designed to assist the County and its citizens in achieving AB 939 diversion goals. This multijurisdictional, public/private alliance has identified specific strategies as critical to the process of developing successful programs:

- Encourage collective participation which is essential in overcoming "resistance to change."
- Establish a "sense of community" which fosters the contribution of cities, community groups, and the public.
- Develop "active" learning opportunities.
- Allow for a regional approach that will maximize resources while it maintains the integrity of local actions.

At present, wood waste recycled for animal bedding makes up the major source of diversion in the unincorporated area. The County sponsors a Christmas tree recycling program. whereby the trees are shredded and chipped for use as ground cover or mulch material.

Significant amounts of diversion also occurs at the Heap's Peak Transfer Station in the West Mountain (East Valley) region. The County is subsidizing a private salvage operation, as part of a pilot program, which recovers scrap steel, aluminum, cardboard, mixed paper, glass, plastic bottles, yard waste (mulch), wood, tires, and mattresses, which are sold to markets for recycling or energy recovery. Excluding the wood and tires, which are burned as fuel, the pilot program recycled a total of 1,400 tons of materials in 1991. Depending on the continued success of this program, it may be expanded and implemented at other transfer stations or landfills.

In addition to the pilot recycling program described above, the salvage operation at the Heap's Peak Transfer Station supports an ongoing flea market enterprise called "Another Man's Treasure." The privately owned and operated program sells a wide range of items to the general public for re-use in a large warehouse adjacent to the transfer facility. It is a cost-effective, unsubsidized program that diverts large amounts of materials, most of which cannot be recycled by means of conventional types of diversion programs. This successful program demonstrates the importance of salvage and re-use as forms of recycling which should be implemented at other transfer stations and landfills throughout the county.

AB 2020 redemption centers also account for a substantial amount of current recycling. There are numerous centers throughout the County that divert California Redemption Value

beverage containers, as well as other materials. Additionally, some of the certified redemption centers are also recyclers who accept a broad range of materials, from mixed metals to white goods to various types of paper.

There are a few curbside recycling programs in the early implementation stages for residents. For businesses, many contract with haulers for recycling collection of various materials. Rendering facilities also produce tallow from restaurant grease and butcher shop scraps.

To encourage local markets for recycled products, the County will evaluate the feasibility of implementing a purchasing preference policy, initially targeting paper products. The policy will allow the County to purchase recycled products rather than virgin products if the cost is not more than 10 percent higher. Currently, all of the County's business cards are printed on recycled paper.

Tables 5-2 and 5-3 show each region's existing diversion rates by waste type and by program, respectively. There are no anticipated decreases, phase-outs, or closures for the recycling programs that exist in the County at the present. However, when curbside recycling is implemented, it has the potential to have some negative effect on local and regional recycling centers. It also has the potential to assist participation in other recycling programs due to the high visibility of curbside recycling programs and the increased level of awareness about recycling that occurs with promoting curbside.

5.4 DESCRIPTION OF ALTERNATIVES

The alternatives that were evaluated can be divided into 2 general categories: collection and processing. Programs that have been selected are indicated by an asterisk.

Collection:

* Residential Curbside (source-separated and commingled).
- Multifamily Recycling.
- Mobile Recycling.
* Drop-off Centers.
* Buy-back Centers.
* Public Recycling Receptacles.
* Commercial/Industial Recycling.

Processing:

* Inert and Wood Waste.
* Intermediate Processing Facility (manual or mechanized).
* Mixed Waste Processing Facility (manual or mechanized).
* Landfill Salvaging.

TABLE 5-2
1990 RECYCLING DIVERSION RATES BY MATERIAL TYPE
(Tons per year)

Waste Types	West Valley	East Valley	Desert	Mountain	Total
PAPER					
Corrugated Paper	145	801	779		1,724
Newspaper		307			307
High Grade Paper		5			5
Mixed Paper	15	79			94
Other Paper		6			6
PLASTIC					
HDPE Containers		1,060			1,060
PET Containers	6		11	1	18
Film Plastics					0
Other Plastics		23			23
GLASS					
Refillable Glass Bev. Cont.					0
Recyclable Containers		62	158		220
CA Redemption	126		198	7	331
Other Glass					0
METAL					
Aluminum Cans	113	63	266	8	449
Bi-metal Containers					0
Tin Cans					0
Ferrous	328	2,623			2,950
Non-ferrous Metals		492			492
White Goods					0
Other Metals					0
YARD WASTES					
Yard Wastes		372			372
OTHER ORGANICS					
Food Wastes		1	410	37	447
Tires and Rubber Products		506			506
Wood Wastes	3,385	1,542	4		4,931
Agricultural Crop Residue					0
Manure					0
Textiles and Leather	23				23
Others					0
OTHER WASTES					
Inert Solids		6,211			6,211
Household Hazardous					0
SPECIAL WASTES					
Ash					0
Asbestos					0
Auto Bodies					0
Bulky Wastes (furniture)					0
Plastic Mixed Materials					0
Metal Mixed Materials					0
Other Special Wastes					0
TOTAL	**4,140**	**14,152**	**1,825**	**52**	**20,169**

TABLE 5-3. 1990 RECYCLING DIVERSION RATES BY PROGRAM (Tons per year)					
Program Type	**West Valley**	**East Valley**	**Desert**	**Mountain**	**Total**
Buy-back Centers			633	15	**648**
AB 2020 Redemption	246				**246**
Commercial/ Industrial	202	12,570	1,188		**13,960**
Wood Waste Recovery	3,120				**3,120**
Rendering				37	**37**
Tree Services			4		**4**
Landfill Salvage	572	1,582			**2,154**
TOTAL	**4,140**	**14,152**	**1,825**	**52**	**20,169**

*Residential Curbside (Source-Separated and Commingled)

This alternative would provide for the collection of recyclable material from single-family residences, including duplexes through 5 units. Residents are usually provided with containers to handle source-separated or commingled materials. Recyclables collected with mixed waste can also be picked up at the curb. Residential curbside programs are most efficient and cost-effective in densely populated areas, where routes are concentrated and afford more collection stops per mile. Materials collected usually include newspaper, glass, aluminum and tin cans, and plastics. The most appropriate way for the unincorporated areas to develop residential curbside programs would be to establish independent collection in highly populated areas and to add on to programs that exist in nearby incorporated cities.

Multifamily Recycling

This alternative provides collection of recyclables to those residents who live in multifamily dwellings (usually more than 5 units). Variables which influence the success of a such program include the number of units in a complex, the availability of locations for a

"recycling station," the distance from apartments to the recycling area(s), and the number of collections per week. For most buildings, a 90-gallon wastewheeler may be sufficient to implement recycling, while for smaller apartment buildings (usually 10 units or less) several curbside bins will suffice. For the multifamily residence, program design is not as standardized as residential curbside recycling, and will have to be tailored to the specific needs of each complex.

Mobile Recycling

Generally appropriate for rural areas or when other alternatives are not available, mobile collection systems follow two basic formats. A collection vehicle (a truck, trailer, or combination) enters a community or neighborhood according to a predetermined schedule. Residents can then drop off presorted materials for deposit. In other instances, unattended containers are left at specified locations for a limited time, allowing residents to deposit these materials.

*Drop-Off Centers

Drop-off centers are repositories for donated recyclable items from the general public. The most popular means of recycling in recent years, as well as one of the least expensive to operate, drop-off facilities can accept single items or a full range of recyclable materials. Many drop-off centers are maintained by charitable or civic organizations, and are unattended. At present, there are periodic newspaper drop-off programs at schools and shopping centers.

*Buy-back Centers

Buy-back centers purchase recyclable items directly from the public. By providing an economic incentive, buy-back operations often focus on aluminum and other commodities of high value. A wide range of recyclable items can be redeemed at this kind of facility. Residents of the unincorporated area may use buy-back centers in the surrounding cities.

*Public Recycling Receptacles

This alternative provides for the placement of specialized containers in high-traffic public areas for the collection of recyclable beverage containers. Containers would be placed next to existing litter receptacles in public areas and at special events, fairs and parks.

*Commercial/Industrial Recycling

A commercial/industrial recycling program provides collection services for businesses, industries, supermarkets, bars, restaurants, shopping centers, schools, hospitals, and other institutions that generate large quantities of uniform wastes such as newsprint, high-grade office paper, corrugated cardboard, aluminum, and glass. Commercial/industrial businesses are a consistent source of fairly contaminant-free materials that command good market prices. A commercial/industrial collection program is generally operated in conjunction with

residential and multifamily collection programs, coordinating the use of vehicles, facilities, personnel, and buyers. Once collected, the recyclables are delivered to a processing facility where they are further segregated and prepared for sale to brokers or directly to manufacturers which use the materials to create their products.

The plan for recovering recyclable material varies with each business. Each program should have a designated in-house coordinator who is responsible for implementation and supervision. Once the targeted materials have been determined, the size and location of containers are selected. It is important that both the janitorial service and the waste hauler be involved in the design and implementation of a business recycling program.

*Inerts and Wood Waste

This alternative establishes processing capabilities for wood waste and inert materials. Materials such as concrete, asphalt, dirt, and wood waste would be stockpiled and periodically processed to meet market specifications. On-site separation of construction and demolition debris allows for critical collection of selected materials. Substantial volumes of materials can be diverted, and economic incentives result from reduced tipping fees for the generator.

*Intermediate Processing Facility (Manual or Mechanized)

This alternative provides for the development of intermediate processing facilities whose operations would include sorting separated recyclables and baling or crushing those materials for efficient transport to markets. This facility could also be combined with tipping fee incentives so that it is more costly for these generators to dispose of their materials than it is to recycle them. Processing can be accomplished using "low-tech" manual technologies which are labor-intensive, or "high-tech" mechanical processing which is capital intensive. The technologies range from a single conveyor belt and manual sorting that can process 10 to 30 tons per shift, to large technical operations that utilize a combination of sophisticated mechanical and manual sorting to process 200 to 300 tons per shift.

*Mixed Waste Processing Facility (Manual or Mechanized)

This alternative provides for the development of mixed waste processing facilities whose operations would include processing mixed residential and commercial solid waste to recover recyclables fit for sale. Such materials would include paper, metals, glass, and plastics. Residual materials remaining after processing would require landfill disposal. Mixed waste processing can be accomplished using "low-tech" manual technologies (labor-intensive) or "high-tech" mechanical processing (capital-intensive). In some cases, this operation would produce a refuse-derived fuel or a mixture of organic materials that can be composted.

Mixed waste usually requires a large system with trommels, air classifiers, shredders, magnets, and some manual segregation that can process several hundred to over 1,000 tons per shift of material.

*Landfill Salvaging

Landfill salvaging operations manually recover bulky goods or other items from the mixed waste after it arrives at the landfill site or transfer station. Targeted commodities include scrap metals, building materials, and wood, which are usually not recycled efficiently in other programs. The salvaging process requires adequate space and traffic flow control, it is labor intensive, and it is limited in terms of diversion volumes. At present, the contract operator provides this service at one of the local landfills (Milliken) on a small scale.

5.5 EVALUATION OF ALTERNATIVES

Each alternative was evaluated with the following criteria by all regions:

- Effectiveness of the program.
- Hazards associated with the alternative.
- Ability to accomodate change.
- Consequences to the waste stream.
- Implementation timing.
- Need for new or expanded facilities.
- Consistency with local policies, plans, and ordinances.
- Ease of implementation.
- Cost of implementation.
- Availability of markets/end-uses.

5.6 EVALUATIVE DISCUSSIONS

The discussions in this section evaluate the recycling alternatives considered in this component in terms of the criteria and the specific requirements for the Recycling Component outlined in the AB 939 Regulations.

5.6.1 Effectiveness

In terms of participation, ***residential curbside collection programs*** are generally effective in suburban areas, consisting primarily of single-family households in traditional neighborhood groupings. Much of the County's population lives in unincorporated areas, scattered over wide distances throughout the county. Collection routing, as a result, may not be effective Countywide. Generally, participation rates are higher in collection programs serving single family dwellings than those serving ***multi-family*** dwellings. This is because of the more mobile patterns of apartment renters and limited storage space in most apartments.

A ***mobile collection system*** is generally most effective in rural, low-density housing areas, where it may not be feasible to implement a curbside collection program. Also, there are problems with unattended systems leading to litter or illegal disposal at and around the site.

Drop-off centers are effective in capturing recyclables from residential self-haul loads, as well as from some commercial generators. ***Buyback centers*** are often effective because they offer economic incentives for recycling. Drop-off and buyback centers may complement the recycling activities of curbside collection programs if they accept material types which curbside collection programs do not.

Public recycling receptacles are not effective in diverting large amounts of materials, but they are valuable for program promotion and education.

Commercial, industrial and government recycling has the potential to divert recyclable materials. If combined with a tipping fee incentive, (which makes the cost of disposing non-separated or otherwise recyclable material at a landfill higher than the cost of taking separated recyclable materials to an appropriate processing facility) these program alternatives may be more effective in diverting waste. ***Inerts and wood waste processing*** is an effective means of diverting a large quantity of materials from the waste stream. Inert materials can be reused in other construction applications and wood waste has manufacturing and power generation markets.

An ***intermediate processing facility*** (***IPF***) is the destination point for material collected by source-separation collection programs and cannot be evaluated in terms of its effectiveness at diverting material. However, intermediate processing is effective at reducing transportation costs and increasing the marketability of recovered materials.

A ***mixed waste processing facility*** can be very effective in terms of the percent of the waste stream potentially diverted. This type of facility does not rely upon education, participation, or promotion for effectiveness. It also has the ability to remove and recycle a wide variety of waste types from the waste stream. A mixed waste processing facility can also serve as a processing facility for source separated recyclables.

Salvage operations have the capabilities to remove certain large, bulky items from the waste stream, e.g., white goods and mattresses. However, they have minimal impact on reducing the overall waste stream.

5.6.2 Hazards

All of the collection alternatives including ***curbside collection, multifamily recycling, mobile collection, drop-off centers, buyback centers, public recycling receptacles, and commercial, industrial and government recycling*** may increase transportation requirements and, as a result, may also increase noise, air pollution, and the potential for traffic accidents.

All of the processing alternatives would result in potential health and safety hazards to workers. For example, recyclables processed at an ***intermediate processing facility*** would expose workers to hazards from noise, processing equipment, sharp objects, and vehicles. ***Inerts and wood waste processing*** would generate dust and noise. A low-technology ***mixed waste processing facility***, which uses extensive dump-and-pick or hand-sorting lines, has hazard potential due to worker exposure to noise from processing equipment operations and

vehicles, pathogens, vectors, sharp objects and hazardous wastes. ***Salvage operations*** can expose workers to hazards from noise, equipment, pathogens, vectors, sharp objects, and hazardous material. For all of the processing alternatives, operating procedures can be established to minimize hazardous working conditions.

5.6.3 Ability to Accommodate Change

All of the alternatives under consideration are able to accommodate economic, social and technological change. These potential changes can affect the composition of the waste stream as well as the programs and technologies used to divert recyclable materials from disposal. In general, however, those programs with the greatest initial capital investment may be less adaptable to short-run change.

Generally, ***curbside collection, multifamily recycling and commercial, industrial and government recycling*** programs can be modified to accommodate changes to the materials collected. More time may be required if additional collection vehicles are required.

Mobile collection systems, drop-off centers and ***buyback centers*** can accommodate changes to the types of recyclable materials collected. For example, the size and number of containers at drop-off centers could be altered relatively easily and at relatively low cost. At supervised drop-off centers, it is easier to explain program changes than at unsupervised or unattended centers. It should be noted that California Redemption ***buyback centers*** are less flexible than other types of buyback centers because of the institutional barriers associated with adding materials to those that currently have redemption value. In addition, space restrictions limit the ability of these centers to expand since they are often located in shopping center parking lots.

It is relatively easy to either provide additional or remove unnecessary ***public recycling receptacles*** from high-traffic, public areas.

Intermediate processing facilities and ***mixed waste processing facilities*** can be designed to allow expansion and to increase the variety and quantity of materials which are handled. Generally, low technology facilities, which typically require a smaller capital investment, are more adaptable. For example, sort crews can be directed to discontinue extracting materials which cannot be marketed. ***Inerts and wood waste processing*** systems are not capital intensive and operations can be changed to meet market specifications. ***Salvage operations*** are flexible to change as well.

5.6.4 Consequences to Waste Stream

All of the recycling collection alternatives would increase the relative percentage of putrescible materials in the waste stream by reducing the amount of corrugated cardboard, office paper, mixed waste paper, newsprint, metals, tin cans, glass, aluminum, and plastics present in the waste stream.

A ***mixed waste processing facility*** would divert additional quantities of the recyclable materials discussed above and, depending upon the facility, other materials such as yard waste and wood waste from the waste stream. A landfill ***salvage operation*** could divert white goods (enameled appliances), mattresses, and other reusable goods. ***Inerts and wood waste processing*** would divert wood, concrete, dirt, asphalt and other aggregates.

5.6.5 Time Frame for Implementation

All alternatives could be implemented within the short term, although more time may be required to site, permit and construct either an ***intermediate processing facility*** or a ***mixed waste processing facility***. Time constraints could be reduced for either of these alternatives by expanding an existing processing facility instead of constructing a new facility.

5.6.6 Facility Needs

Access to a processing center is usually a necessary component of a most recycling programs including ***residential curbside collection, multifamily recycling, mobile collection systems, drop-off centers, buyback centers, public recycling receptacles, and commercial, industrial and government recycling***. A facility is needed to further segregate and process (i.e. remove contaminants, bale paper, crush and bale cans, and grind glass) the materials collected through these programs. Initial processing is also necessary to make transportation requirements for recyclable materials more cost-effective.

Inerts and wood waste processing would require a secured site for stockpiling and equipment to screen, grind and crush materials.

Salvage operations at landfill and transfer station sites would not require major facility development since such operations are usually small scale and generally focus on removing bulky items from the waste stream. Salvaged materials are typically sent to large, specialized processing facilities.

5.6.7 Consistency with Local Policies, Plans, and Ordinances

Collection alternatives may require changes in local waste management ordinances for all jurisdictions.

Both ***drop-off and buyback centers*** are consistent with the local policies of all jurisdictions.

Public recycling receptacles are consistent with local policies and plans.

Intermediate processing facilities, mixed waste processing facilities and inerts and wood waste processing will require consistency with the local jurisdiction's general plan and other land use requirements where either facility siting or expansion could occur.

Salvage operations are not consistent with local policies and plans. Existing franchise agreements grant exclusive "ownership" of all recyclables within a specific franchise area and preclude salvage operations at landfills.

5.6.8 Institutional Barriers to Implementation

The collection containers necessary for ***multifamily recycling*** programs often take up parking lot spaces. If existing multifamily complexes require a certain number of parking lot spaces per apartment unit, there may not be additional spaces available to allocate to recycling containers.

One barrier associated with ***mobile collection systems*** is the possibility of neighborhood resistance to the placement of the mobile centers near residential units.

A barrier associated with increasing either the number of ***buyback*** and ***drop-off centers*** or increasing the number of materials collected by the centers is private vendor ownership of these centers. The area may not have a means to require changes in the existing drop-off and buyback centers. Neighborhood resistance to siting centers, as well as zoning requirements can also be barriers for these program alternatives, particularly for larger operations.

There are no institutional barriers associated with installing ***public recycling receptacles*** in public places within the County.

Commercial, industrial, and government recycling may require the placement of additional dumpsters for recyclable materials, thus space constraints may be a problem. It may be necessary to renegotiate service contracts with haulers in order to implement source-separation programs.

Intermediate processing facilities and ***mixed waste processing facilities*** will have the problems associated with the siting of any major facility. These considerations include land use, neighborhood acceptance and concerns of competing recyclers about the monopolization of wasteflow. If sited at an existing facility, ***inerts and wood waste processing*** may be deemed an insignificant change in operations, thus minimizing permit requirements.

5.6.9 Implementation Costs in the Short and Medium Terms

Estimated costs have been developed for comparison purposes only and are based on a number of broad assumptions. It should be noted that because alternatives serve different purposes, such as collection versus processing, costs per ton for the various alternatives may not be directly comparable.

Curbside collection services cannot be financed solely through the sale of recovered materials and some type of residential collection fee or subsidy would be required. Typical costs for curbside recyclables collection services range from $1.50 to $2.50 per household per month. Costs can vary substantially depending on the level of participation and housing density in the areas receiving curbside service.

Mobile collection system costs will vary depending upon the containers used and the distance to processing facilities. Capital costs for collection containers range from $3000 to $4500 per container alone. Annual costs to maintain and operate the system is minimal.

Drop-off centers would consist of low-profile collection containers for recyclable food and beverage containers, newspaper, yard waste, cardboard and other recyclables. This system has an estimated cost of about $30 to $50 per ton collected.

Buyback centers are a private sector activity. Therefore, no direct public sector costs are associated with the operation of buyback centers in the City. However, the estimated annual cost to construct and operate a buyback is $175 to $250 per ton collected.

Public recycling receptacles placed in clusters at high-traffic and recreational areas throughout the City would cost approximately $100 to $200 per ton collected.

Commercial, industrial and government recycling programs include collection of source separated materials, such as cardboard and glass. These costs are estimated to be approximately $75 to $750 per account.

For ***inerts and wood waste processing,*** the market value of materials can nearly offset the cost of materials recovery and processing.

The cost of an ***intermediate processing facility*** can vary greatly depending upon the type of technology utilized by the facility (manual intensive vs. capital intensive). The estimated operation costs for an intermediate processing facility range from $25 to $45 per ton processed. Capital investment for a new facility is estimated to be between $1,000,000 and $5,000,000 depending on capacity and complexity.

Similar to an intermediate processing facility, the costs for a ***mixed waste processing facility*** varies widely with the technology utilized and the amount of material to be processed. Capital recovery and operation costs, including residue disposal, are estimated to be approximately $50 to $100 per ton processed.

5.6.10 Other Required Discussions

The AB 939 Regulations require each jurisdiction to consider other program options to encourage recycling within the community. These considerations include:

- Public Versus Private Ownership and Operation.
- Zoning and Building Code Changes.
- Rate Structure Modifications.
- Market Development.
- Material Handling Methods.

Public Versus Private Ownership and Operation

In the County, it is anticipated that most recycling programs for residents, businesses, and schools will be operated by private haulers. These haulers have established collection routes and have invested in collection vehicles. Generally, processing facilities can either be publicly owned and operated, owned and operated by a private firm, or owned by government and privately operated. Although publicly owned facilities may give the County the greatest degree of control for coordinating waste management programs, private ownership could minimize financial risk.

Zoning and Building Code Changes

If multifamily recycling programs are implemented, jurisdictions may have to consider revising building or zoning codes to require that space be allotted in new construction of multifamily complexes for interim storage of source-separated materials. Economic zones could be developed to encourage construction and operation of recycling centers through private enterprise. By allowing subsidies, tax relief, and zoning variances, jurisdictions can provide incentives for the establishment of new recycling businesses, such as processing facilities, brokers and materials handlers.

Rate Structure Changes

Tipping fee differentials between landfill disposal and recycling could be established in the County to encourage recycling. In addition to encouraging voluntary participation in recycling, economic incentives also tend to more accurately reflect "true costs" for disposal at transfer stations and landfills. Program alternatives evaluated, such as commercial and industrial recycling and drop-off centers, may be more effective if combined with a tipping fee incentive. Tipping fee differential programs are discussed in the Source Reduction Component.

Variable can rates are another option which allow for different fees for residents depending on the number or size of refuse cans that are collected. Variable can rates are evaluated in the Source Reduction Component.

Market Development

The County will continue to evaluate programs and activities to enhance market development for recycled materials. The region has access to significant quantities of recyclable materials, and has a business climate for growth in technology and manufacturing. One important program to pursue is the State supported ***Recycling Market Development Zone***, which provides for economic and technical support of designated zones.

The Source Reduction Component explained that the region also plans to encourage market development for recycled materials by instituting a government procurement policy that gives purchase preference to products that are recyclable, encourage recycling or have recycled content. Specific implementation tasks associated with the completion of this alternative are

discussed in the Source Reduction Component. Market development objectives established by the region specific to recycling programs are discussed in the previous sections.

Material Handling Methods

The County encourages handling methods which preserve the integrity of recovered materials so that the materials can be utilized in the manufacture of recycled content products. Existing collection programs that accept source-separated recyclables will be expanded.

5.7 SELECTED ALTERNATIVES

5.7.1 Countywide

This section describes the alternatives for recycling which were selected by the unincorporated area of the County to be implemented during the short- and medium-term planning periods. Decisions leading to these selections were based on data from the Waste Generation Study, and an evaluation of the recycling alternatives. The alternatives are as follows:

- Residential.
- Commercial/industrial.
- Drop-off centers.
- Buy-back centers.
- Institutional/office recycling.
- Construction/demolition debris.
- Manual MRF.
- Mechanized MRF.
- Landfill salvaging.
- Public recycling receptacles.

Residential Curbside Collection

In unincorporated areas, residents and businesses contract for all residential and commercial waste hauling. It is the intent of the County to work cooperatively with the incorporated cities to develop residential recycling programs. In addition to providing recycling services to County residents, the cooperative effort should be cost effective for all involved.

The County will conduct a feasibility study in order to establish which areas would be best suited for residential curbside. Based on the results of the feasibility study, the County will proceed to work with local haulers. For example, the major contract haulers serving Rancho Cucamonga and Upland provide residential curbside recycling. The more densely populated unincorporated areas near Upland and Rancho Cucamonga could participate in the collection programs of those cities as well. The East Valley areas near Fontana may also be feasible. Most cities in the East Valley have or are planning to have partial or pilot curbside programs. The cities of San Bernardino, Highland and Redlands all have pilot or partial

curbside collection service. The cities of Loma Linda, Grand Terrace and Colton have conducted curbside recycling.

Currently, a pilot curbside collection program is being implemented in the unincorporated cities of Highland and Big Bear. The unincorporated area in Big Bear City is currently involved in a curbside program funded by a grant awarded by the Division of Recycling. The grant was obtained from the self governed Big Bear Community Service District. In the Desert and Mountain areas, areas near Victorville and Twentynine Palms may be feasible. The County will encourage participation in curbside recycling programs in conjunction with programs in neighboring cities throughout the short term period.

Commercial/Industrial Recycling

Due to a high diversion potential, this alternative was selected for implementation. The program will be developed after the feasibility study. A strategic plan which targets firms producing large amounts of accessible materials will be put into effect. The phase-in plan will continue to be implemented until all appropriate commercial and industrial accounts have recycling programs in place.

Audits of all major generators of commercial and industrial waste will be conducted, and specific programs will be developed for those who can divert substantial amounts of material through recycling. Those accounts which demonstrate large quantities of recyclable material that can easily be separated will be targeted first; other businesses will follow over the phase-in period. Markets exist for all items targeted for collection in this program.

Drop-Off Centers

Drop-off operations have been selected because they currently exist at several schools, churches, and other volunteer centers. In addition to providing possibilities for waste diversion and supplementary income, drop-off centers are an important part of ongoing educational programs in schools and among the public. The County will offer educational materials about these sites once they have been identified. There are no plans to develop County sponsored centers, although the County will encourage the pickup of white goods and other special items during periodic cleanup collection programs.

Buy-Back Centers

California-certified and privately operated buy-back centers exist in the area. Outlets that reclaim additional items such as newspaper, used motor oil, scrap metal, and other miscellaneous recyclable items are available for public use. The financial incentive related to recycling is important to many residents, and the redemption concept is perceived as an important factor in the achievement of diversion goals.

Institutional/Office Recycling

The County's Purchasing Department operates the oldest governmental office recycling paper program in the United States. The County will encourage the expansion of this type of program with governmental agencies, schools, hospitals, and other institutions as the primary focus. These efforts will be followed by the development of operations designed for commercial and business enterprises.

In addition to high-grade and other qualities of paper, recycling efforts will target other materials, where appropriate. These items could include newspaper, glass and beverage containers in break areas, or other materials unique to a particular business. Though the potential for waste diversion may be low, a valuable education may be gained from source separation programs in the workplace.

Manual Materials Recovery Facility

Residential recycling programs will be developed in conjunction with existing programs in incorporated communities. The County expects that materials collected in its jurisdictions shall be processed by the respective haulers. One hauler maintains an 85-ton-per-day facility which is located in the City of Chino. The capacity of this facility will insure that County wastes collected by the hauler will be processed and marketed at least through the short-term planning period. It is anticipated that programs in unincorporated areas near Upland and Rancho Cucamonga will utilize processing facilities selected by the haulers in those communities.

Mechanized Material Recovery Facility

The County anticipates working cooperatively with neighboring jurisdictions to design and implement comprehensive materials recovery and processing facilities. This type of facility is not expected to be operational until the beginning of the medium-term planning period.

Landfill Salvaging

At present, a limited amount of salvaging occurs at the Milliken Landfill, the County's west end disposal site. This activity will be encouraged by the County as long as the facility remains open. Landfill salvaging is particularly effective in diverting bulky goods, scrap metals, building materials, and other items difficult to recycle. Plans have not yet been developed for alternatives to be implemented at the closure of the Milliken Landfill. The County will encourage a program to salvage recyclable wastes during operations at any new facility.

Multifamily Recycling

Multifamily recycling was not selected for the short term. Limited diversion potential and high costs did not make it viable at the present time. However, where multifamily recycling

programs can be cost effectively expanded into the unincorporated area, the County will support and encourage such efforts.

Mobile Collection System

Mobile collection systems were not selected for the short term. With the development of residential, curbside, and other recycling programs, the cost and limited effectiveness of this alternative did not seem appropriate for the County.

The program planned for the medium term reflects more the need to deal with specific waste types remaining in the waste stream which must be diverted if the County is to achieve its year 2000 goal. Attitudes toward recycling are expected to become more supportive as the public becomes more and more familiar with the solid waste problem and the tools available to solve it. The County will also benefit from improved regional, national, and international markets for commodities now regarded as low value to valueless or hard to recycle.

5.7.2 Desert and Mountain

The Desert and Mountain region covers a large land area, much of which is undeveloped and rural. The few cities and towns are spread out across the regions; therefore, multiple programs are required to satisfy the needs of the whole area.

Public Recycling Receptacles

The purchase and installation of public recycling receptacles is selected for implementation in the Desert region. Although not a significant source of diversion, the receptacle program is selected for its educational and promotional value. This will have direct benefits in terms of reducing litter and disposal costs in public areas, as well as indirect benefits for other recycling programs in the area. The recycling habit will be reinforced throughout the area's parks and recreation sites, as well as in locations in downtown districts.

Processing Facilities

There will be an increased need for processing capabilities as a result of the recycling plans that are being adopted countywide. Five facilities are being considered for development in the area to accommodate all processing needs. Two of these facilities will have only intermediate processing capability for source-separated recyclables; the other three facilities will have both mixed waste processing capability (to recover recyclables from the mixed waste stream and prepare them for market) as well as intermediate processing capability.

Based on the results of the curbside recycling feasibility study, specific sites will be chosen. General locations for processing facilities are Victor Valley, Twentynine Palms, Unincorporated East Desert, Big Bear Lake and Needles. In the future, a mixed waste processing facility may also be considered for Barstow. In order to insure that diversion goals are met, a constant flow of waste is required to be processed at the facilities. Mixed

waste processing will not begin until the curbside feasibility study is conducted, with results substantiating the need for mandatory collection programs (and the facilities to process the material) in urbanized unincorporated areas.

Recycling on a large scale is essential if the Desert and Mountain areas are to meet the state-mandated diversion goals. Overall, recycling programs selected can be implemented quickly and cost-effectively to achieve diversion goals. However, sustainable local and regional markets are necessary for successful program developments.

Each of the population centers will coordinate efforts to achieve efficiency in economies of scale. The region is subdivided into four population centers. The Victor Valley region includes Victorville, Apple Valley, Hesperia, Adelanto, Barstow, and the Unincorporated North Desert. The East Desert region includes Twentynine Palms and the Unincorporated East Desert area. The Mountain region includes Big Bear Lake and the Unincorporated East Mountain area. Needles is a singular population center and is remote in location to other areas of County.

5.8 ANTICIPATED DIVERSION

Table 5-4 shows the anticipated diversion for each of the regions for the short-term (1991-1995) planning period and for the medium-term (1996-2000) planning period.

TABLE 5-4
ANTICIPATED RECYCLING DIVERSION

Jurisdiction	1995		2000	
	Tons	Percent	Tons	Percent
West Valley	13,420	22.4	25,110	38.5
East Valley	32,497	21.2	66,036	35.5
East Desert	15,075	25.5	17,891	27.1
North Desert	21,849	26.8	25,860	28.3
East Mountain	3,612	30.7	4,324	31.5
Unincorporated Countywide	86,453	23.8	139,222	32.9

5.9 PROGRAM IMPLEMENTATION

The short-term implementation plan for the selected alternatives are shown in the following sections by region. All of the regions will adopt anti-scavenging policies and/or ordinances to protect recyclables from being removed from collection sites. Precautions, such as locking storage containers for recyclables, will also be implemented where applicable.

5.9.1 Countywide

The implementation schedule for the entire unincorporated County area, including implementation responsibility, tasks, and schedules appears below.

Task No.	Projected Start	Task Description	Responsibility
Residential Curbside Recycling			
1	1993	Conduct feasibility study to determine where curbside programs can be implemented	County Solid Waste Dept.
2	1993	If feasible, issue RFP for material processing, marketing and collection (if applicable)	County Solid Waste Dept.
3	1993	Award contract	County Solid Waste Dept.
4	1993	Purchase bins and vehicles; distribute containers	Hauler(s)
5	1993	Begin collection service	County Solid Waste Dept.
6	1993	Monitor and evaluate curbside program	County Solid Waste Dept.
7	1993	Education program for all customers to encourage participation	County Solid Waste Dept.
Commercial, Industrial and School Recycling			
1	1993	Work with haulers on establishing high grade/selective routing/collection program	County Solid Waste Dept.
2	1993	Provide technical assistance to encourage targeting materials for source separation	County Solid Waste Dept.
3	1993	Notify businesses on selective routing and collection options	County Solid Waste Dept.
4	1993	Begin high-grade collection routes and deliver to a processing facility	Hauler(s)
5	1993	Monitor and evaluate program	County Solid Waste Dept.

Task No.	Projected Start	Task Description	Responsibility
Construction/Demolition Debris Recycling			
1	1993	In conjunction with surrounding cities, determine feasibility to implement programs	County Solid Waste Dept.
2	1993	If feasible, outline program, program tasks, responsible parties	Hauler(s)/County Solid Waste Dept.
3	1993	Provide technical assistance to generators/contractors	Hauler(s)/County Solid Waste Dept.
4	1993	Acquire necessary equipment and/or operating permits	Hauler(s)
5	1993	Begin operations	Hauler(s)
6	1993	Monitor and evaluate program	Hauler(s)/ County Solid Waste Department
Drop-Off and Buy-back Centers			
1	1993	Determine existing drop-off and buyback sites	County Solid Waste Dept.
2	1993	Publicize drop-off/buyback programs	County Solid Waste Dept.
3	1993	Provide educational materials	County Solid Waste Dept.
4	1993	Update existing list of facilities	County Solid Waste Dept.
5	1993	Provide for annual update of educational materials	Hauler(s)/County Solid Waste Dept.
6	1993	Monitor and evaluate programs	Hauler(s)/County Solid Waste Dept.
Residential Telephone Monitoring Survey			
1	1993	Develop telephone survey	County Solid Waste Dept.
2	1993	Hire temporary help and perform survey	County Solid Waste Dept.
3	1993	Evaluate data obtained	County Solid Waste Dept.
4	1993	Produce report (annually)	County Solid Waste Dept.

Drop-Off and Buy-back Centers			
Task No.	**Projected Start**	**Task Description**	**Responsibility**
Market Development			
1	1993	Develop Procurement Policy	County Solid Waste Dept./ Regional Groups
2	1994	Implement policy	County Solid Waste Dept./ Regional Groups
3	1994	Monitor and evaluate	County Solid Waste Dept./ Regional Groups

Mechanized Materials Recovery Facility			
1	1993	Determine feasibility of regional MRFs.	County Solid Waste Dept.
2	1994	If feasible, issue RFP.	County Solid Waste Dept.
3	1994	Select consultant	County Solid Waste Dept./ Regional Groups
4	1994	Conduct siting study	County Solid Waste Dept./ Regional Groups
5	1994	Select site; obtain conceptual design	County Solid Waste Dept./ Regional Groups
6	1994	Develop detailed costs and design facility	County Solid Waste Dept./ Regional Groups
7	1994	Review and permit facility	Local Enforcement Agency/ CIWMB/County Solid Waste Dept.
8	1995	Construct facilities	Contractors/County Solid Waste Dept./Regional Groups
9	1995	Begin facility operation	County Solid Waste Dept./ Regional Groups
10	1995	Monitor and evaluate MRF	County Solid Waste Dept./ Regional Groups

Task No.	Projected Start	Task Description	Responsibility
Inerts and Wood Waste Processing			
1	1993	Determine locations for interim processing sites	Regional Group
2	1994	Determine material market specifications	Regional Group
3	1994	Issue RFP for periodic processing of wood waste and inerts	Regional Group
4	1994	Acquire necessary development and/or operating permits	Operators
5	1994	Begin operations	Operators

5.9.2 Desert and Mountain

The implementation schedule for the public recycling receptacles, the intermediate processing centers and materials recovery facilities in the desert and mountain region appears below.

Task No.	Projected Start	Task Description	Responsibility
Public Recycling Receptacles			
1	1993	Determine number of containers, and location for placement	County Solid Waste Dept./ Regional Groups
2	1994	Purchase containers	County Solid Waste Dept./ Regional Groups
3	1994	Arrange for collection	County Solid Waste Dept./ Regional Groups
4	1994	Install receptacles and begin program	County Solid Waste Dept./ Regional Groups

Task No.	Projected Start	Task Description	Responsibility
Intermediate Processing Centers/Materials Recovery Facilities			
1	1993	Determine feasibility of a regional MRF.	County Solid Waste Dept.
2	1994	If feasible, issue RFP.	County Solid Waste Dept.
3	1994	Establish or expand mandatory solid waste collection	County Solid Waste Dept./ Regional Group
4	1994	Award contract	County Solid Waste Dept./ Regional Group
5	1994	Review and permit facility	Local Enforcement Agency/ CIWMB/County Solid Waste Dept./RWQCB
6	1995	Construct facilities	Private operators
7	1995	Begin facility operation	Private operators

5.10 SUMMARY OF FUNDING REQUIRED

The following tables depict the estimated costs for the recycling programs selected by region.

TABLE 5-5. ESTIMATED RECYCLING COSTS UNINCORPORATED WEST VALLEY REGION (in nearest 1991 $1000)

	1991-92	1992-93	1993-94	1994-95	1995-96
Residential Curbside	1,000	100,000	80,000	80,000	80,000
Commercial/Industrial	1,000	63,000	43,000	43,000	43,000
Office/Institutional	1,000	1,000	1,000	1,000	1,000
Mechanized Recovery	0	0	0	0	509,000
Drop-off/Buy-back Centers	N/A	N/A	N/A	N/A	N/A
Construction/ Demolition	1,000	1,000	1,000	1,000	1,000
TOTAL	**4,000**	**165,000**	**125,000**	**125,000**	**634,000**

Notes to Table 5-5:

Costs of drop-off and buy-back centers have not been listed as these programs will continue to be operated by private entities.

TABLE 5-6. ESTIMATED RECYCLING COSTS UNINCORPORATED EAST VALLEY REGION (in nearest 1991 $1000)					
	1991 - 92	1992 - 93	1993 - 94	1994 - 95	1995 - 96
Market Development	1,000	1,000	1,000	1,000	1,000
Residential Curbside	0	424,000	691,000	691,000	691,000
Commercial/Industrial	(a)	(a)	(a)	(a)	(a)
Mechanized Recovery	0	0	0	0	2,288,000
Drop-off/Buy-back Centers	(b)	(b)	(b)	(b)	(b)
Rate Structure Modifications	(c)	(c)	(c)	(c)	(c)
TOTAL	1,000	425,000	692,000	692,000	2,980,000

Notes to Table 5-6:

(a) Technical assistance program costs are considered in Section 8, Public Education; reporting requirements are considered in Section 4, Source Reduction.

(b) All costs are to be assumed by franchise hauler. Private costs for six centers include: $9,000 for containers and $100,000 annual costs for operation.

(c) Costs are considered in Section 4, Source Reduction.

TABLE 5-7 ESTIMATED RECYCLING PROGRAM COSTS UNINCORPORATED DESERT REGION (in nearest 1991 $1000)					
Program	1991-92	1992-93	1993-94	1994-95	1995-96
Drop-Off Centers	0	78,000	156,000	163,000	163,000
Public Recycling Receptacles	0	6,000	29,000	29,000	29,000
Commercial, Industrial and Government Recycling	0	6,000	13,000	43,000	54,000
Processing Facilities	0	78,000	78,000	3,339,000	3,339,000
Inerts and Wood Waste Processing	0	0	0	0	0
ESTIMATED TOTAL	0	168,000	276,000	3,574,000	3,585,000

TABLE 5-8 ESTIMATED RECYCLING PROGRAM COSTS UNINCORPORATED MOUNTAIN REGION (in nearest 1991 $1000)					
Program	1991-92	1992-93	1993-94	1994-95	1995-96
Public Recycling Receptacles	0	1,000	4,000	4,000	4,000
Commercial, Industrial, and Government Recycling	0	1,000	1,000	3,000	3,000
Processing Facilities	0	9,000	9,000	432,000	432,000
Inerts and Wood Waste Processing	0	0	0	0	0
ESTIMATED TOTAL	0	11,000	14,000	439,000	439,000

5.11 MONITORING AND EVALUATION

The County will take primary responsibility to monitor and evaluate all of the recycling programs selected by each region. Waste diversion will be reported in terms of volume or weight by percent of total waste generated. Funding for monitoring and evaluation for all three regions is included in the Funding Component.

5.11.1 Evaluation Criteria

The following questions will be used to evaluate the progress or each recycling program.

1. Were objectives for overall diversion attained?

   - Identify reasons why goals are not being met.
   - If not attained, review goals and objectives. Were they realistic? Should they be modified?
   - If diversion not attained, was there a cost-benefit analysis done that did not permit the program from proceeding?
   - Are there any methods which could be used to increase efficiency of the collection system?
   - Investigate employee training and performance.
   - Investigate new incentives or programs to recycle.

- Review any new technologies or procedures which may increase efficiency.
- Increase frequency of monitoring and review.

2. Were anticipated levels of materials recovered similar to their proportion in the waste stream?

   - Identify reason for target not being achieved.
   - Is lack of recovery due to improper training?
   - Are levels of materials coming into the MRF lower than anticipated?

3. Were targeted materials effectively marketed?

   - Identify reasons for ineffective marketing.
   - Evaluate external markets and whether demand levels are changing.
   - Seek alternative markets.

4. Are targeted materials delivered according to market quality standards?

   - If materials are dirty, review handling methods.
   - Request explanation from broker/end-user as to why materials do not conform, and what can be done.

5. Were all activities performed in an approved manner? Were all applicable federal, state, and local laws and ordinances observed?

   - Identify different operating procedures which will restore compliance.
   - Is targeted material or procedure contributing significantly to diversion goals? If not, discontinue.
   - Seek conditional exception to regulation if needed for program integrity.

6. Are there any hazards posed by the working environment or the products coming out of the MRF?

   - Identify reasons for problems.
   - If material or procedures are not vital to meeting goals and objectives, discontinue.
   - It vital, seek alternate methods to attain compliance.

7. Are all parties performing according to terms of agreements?

- Evaluate adequacy of staffing levels.
- Review contract of operator (if contracted out).

Reporting Procedures

Residential Curbside Recycling--

The authorized haulers will be responsible for providing the County with monthly reports on the results of this program. The reports will provide the number of daily pickups and the total number of homes serviced during a given month. A concurrent list of recyclables diverted during the month will be included, broken down by category (type) and weight. The total for residential waste generated versus amounts diverted will be compiled.

Drop-Off Centers--

This entity is responsible for the marketing and sales of materials, and will make data available to the County.

Buy-Back Centers--

Buy-back centers are privately operated. To obtain a business license, centers are required to report the type and volume of materials collected and sold (diverted) on a monthly basis.

Commercial/Industrial Recycling--

Each business will be audited to determine the types and volumes of materials diverted, and the methods of diversion. In accordance with the development of each plan, a monitoring system will be designed to insure that each business receives credit for its efforts, and that the County is provided with accurate information on the materials diverted.

Multifamily Recycling--

The monitoring system will be developed for these programs, using the same methods as those for commercial/industrial recycling.

Institutional/Office Recycling--

The monitoring system will be developed for these programs, using the same methods as those for commercial/industrial recycling.

Material Recovery Facilities--

The facility that handles the recycling and diversion activities for the County will maintain accurate records of all programs. Daily logs, as well as other required reports, will be available to County administrative staff.

5.11.2 Reporting Programs

The County of San Bernardino will establish a variety of reporting programs to accurately quantify and monitor the progress being achieved in recycling by all segments of its population. The following methods will be used: 1) random telephone survey, 2) County purchasing practices, and 3) monthly recycling reports.

Telephone Survey

An annual random telephone survey will be instituted to sample the residential population to determine recycling activity.

County Purchasing Practices

The County's purchasing practices will be surveyed annually to ensure compliance with the stated objective of encouraging the purchase of products containing recycled content.

Monthly Recycling Reports

Periodic reporting of recycling activity at all recycling operations in the area will be required. In addition, the County will require monthly reports from the collection programs implemented by the waste haulers.

5.12 CONTINGENCY MEASURES

5.12.1 Countywide

Should monitoring of the recycling objectives show a shortfall, the following measures would be taken:

- User Fee. In all cases where user fees are involved, program shortfalls may necessitate evaluations and increases in order to stimulate the financial incentive to participate.

- Promotion. Through County administration and the structure of the education component, new and expanded advertising, promotion, and publicity campaigns may be developed and implemented.

- Materials Recovery Facility. Critical monitoring of this operator will be necessary to insure that diversion goals are being met. Should a shortfall develop, expanded and intensified practices for the separation and recovery of recyclable materials will be implemented. The County may also consider "flow control" measures to insure that all appropriate materials are received at the MRF.

In addition to those programs which can be monitored through documented information, the County may undertake a Waste Generation Study to determine the effectiveness of all diversion efforts.

5.12.2 East Valley

The East Valley region of the County will take two additional steps if the County fails to make reasonable progress toward its recycling objectives:

- Step 1 assumes the recycling program objectives are reasonable and that the selected alternatives are adequate to achieve the objectives. In this case the monitoring and evaluation program will be re-evaluated to determine if sufficient and timely information is available to accurately evaluate the recycling program's progress. If the monitoring and evaluation program is adequate, Step 2 will then be followed. If the monitoring and evaluation program is inadequate, then adjustments will be made (e.g., more frequent reporting, different quantification techniques).

- Step 2 assumes the monitoring and evaluation procedures are adequate and the program alternatives are properly selected, but the identified objectives are not achievable within the planning period. Under this scenario the objectives will be revised downward and the difference in diversion will be taken up with increases in other targets set for the other components (i.e., source reduction and composting).

SECTION 6
COMPOSTING COMPONENT

6.1 INTRODUCTION

Composting is a process of biological decomposition of organic debris, such as leaves, grass clippings, prunings, animal manures, food wastes, sewage sludge, and other organics. The end product of composting is a disinfected, stable humus or soil-like material that can be used as a soil conditioner, mulch, or fertilizer, depending on its physical properties. Although composting occurs naturally, several environmental factors must be controlled to maximize the rate of microbial activity. These factors include temperature, oxygen, nutrient availability, moisture, and pH. With proper controls, the composting process can occur very rapidly, yield a quality product, and reduce the original volume of the organic material by 50 to 80 percent. High program participation, coupled with successful marketing of compost, should result in elevated diversion rates.

Controlled composting is essentially a management program for natural processes to encourage growth of organisms that consume organic materials. Controlled composting usually occurs under aerobic (oxygen-rich) conditions. Aerobic processing systems are designed to maintain moisture, oxygen, and temperature at levels adequate to sustain the microorganisms that consume the organic materials. Composting can also occur under anaerobic (oxygen-starved) conditions, but is typically more difficult to control and decomposition takes longer. Combination systems with anaerobic digesting and aerobic composting are in the research and development phase.

Composting can play a key role in an integrated waste management system because yard waste and other organics typically make up a significant portion of the total waste stream. In the United States, most composting programs use sewage or wastewater sludge, yard waste, or a combination of the two (co-composting) as part of the overall solid waste management system. A few facilities compost mixed municipal solid waste and other segregated organic portions of the waste stream such as food and paper wastes.

Interest in composting began in the U.S. in the 1950's, when research was initiated by a number of universities and government agencies. Since that time, knowledge about the composting process has continued to increase. As a result, the composting process is now well enough understood to be applied on a large scale.

Section 3 presented a discussion of backyard composting as a Source Reduction alternative. While backyard composting can result in a reductin in the residential waste stream, large scale composting is usually able to achieve greater diversion amounts. Composting, as discussed in this section, refers to the processing at a local or regional facility of green waste from residential and commercial/industrial sources.

6.2 OBJECTIVES

Because the population density, climate, and collection logistics vary for each of these regions of the County, the diversion goals and objectives also vary for each region. This section presents overall countywide objectives, followed by specific objectives outlined by each region.

Table 6-1 summarizes the composting objectives for each of the regions within the County in terms of the percentage of total waste generated by the subregion.

TABLE 6-1
OBJECTIVES FOR THE SHORT- AND MEDIUM-TERM PLANNING PERIODS

Jurisdiction	Short-term Objective	Medium-term Objective
Unincorporated East Desert Region	1%	11%
Unincorporated North Desert Region	1%	12%
Unincorporated Eastern Mountain Region	2%	2%
Unincorporated East Valley Region	2%	3%
Unincorporated West Valley Region	6%	9%
Unincorporated Countywide	2%	11%

6.2.1 Countywide Objectives

- In the short-term and medium-term planning periods, develop and expand public and private sector markets for compost products to coincide with the development of composting programs. Expand markets for green waste compost through the use of this material in municipal projects and encourage its use in agriculture as a soil amendment.

- Evaluate the potential of mandatory collection of compostable materials separate from mixed solid waste, as necessary to achieve state-mandated diversion targets.

- Develop and implement a public education and information program that encourages participation and stresses the importance of keeping green waste free of contaminants, at the same time that programs are implemented to divert waste to compost facilities.

- Target residential, commercial, and self-haul yard waste and wood waste for diversion during both the short-term (1990-1995) and medium-term (1995-2000) planning periods.

- Where available, utilize the programs developed by haulers in neighboring cities to maximize the diversion of compostable materials.

6.2.2 West Valley

The following goals are to be achieved in the West Valley region:

- In the short-term planning period (1991-1995), to site and build a composting facility capable of processing green waste collected in the western region of the County.

- In the medium-term planning period (1995-2000), divert through composting 75 to 80 percent of the green waste generated to windrow composting facilities.

Target materials were identified using the following criteria:

- Volume of the solid waste.

- Weight of the solid waste.

- Hazard of the solid waste when disposed.

- Ease of separate collection and availability for composting process, as measured by the costs and the level of public effort required.

Based on this criteria, the West Valley portion of the County selected green waste (grass clippings, leaves, plant, and tree prunings) for diversion through composting. Green waste represents one of the largest single items in the waste stream by both weight and volume, and is relatively easy to collect. Other organic materials, such as food waste and contaminated paper, are also generated in large amounts, but are more difficult and costly to collect and process; therefore, other organic materials have not been identified as priority materials for diversion through composting at this time.

6.2.3 East Valley

The following goals are to be achieved in the East Valley region:

- By 1995, compost between 1 percent and 4 percent of the waste stream.

- By 1999, work with other jurisdictions to site and operate a windrow composting facility in the region.

The solid waste generation study for the East Valley area identified several materials that are commonly incorporated into municipal composting programs: yard waste, wood waste, and food waste. In addition, sewage sludge, while not specifically identified in the solid waste generation study, could also be considered for composting.

Of these materials, yard waste represents the largest single organic compound in the waste stream; in fact, the residential waste stream alone is estimated to contain 25 percent yard waste. Therefore, a composting program for residential yard waste is considered essential to meeting the state-mandated diversion goals. Wood waste, comprising 4 percent of the waste stream, is also a targeted material because it can be used as a bulking agent in the composting process after it has been chipped or shredded. Due to the high costs associated with food waste composting, this material is not targeted during the planning period.

6.2.4 Desert and Mountain

The following goal is to be achieved in the Desert and Mountain regions:

- To target residential and commercial mixed waste for mixed municipal solid waste (MMSW) composting in the medium-term (1996-2000) planning period.

Yard waste represents 9.5 percent of the Desert and Mountain area's solid waste stream and could provide an important source of material for diversion. Yard waste is also easy to identify, source separate, and compost efficiently and cost-effectively, and market for both commercial and residential sectors. Likewise, wood waste makes up a substantial portion of the waste stream and can be composted, chipped for mulch, or utilized in transformation facilities.

Food waste is also a large percentage of the residential waste stream. Food waste is difficult to separately collect, and contaminates other recyclable materials, such as paper, when collected with recyclables. Food and wet wastes could, however, serve as the major input to a mixed waste composting system.

Other paper and organic materials also make up large portions of the waste stream and are difficult to target for diversion, other than through mixed waste composting.

6.3 EXISTING CONDITIONS

There are only two existing composting activities identified in the County. Big Bear Lake currently operates a governmental composting operation which processes yard waste collected from City parks. There is also a commercial composting operation in Hesperia which processes yard waste collected from commercial landscaping businesses in the city.

Some yard waste (such as discarded Christmas trees) are chipped and used as mulch. However, this is not considered as a composting program, and is discussed in the Recycling Component.

Since the existing programs are not for materials generated in unincorporated County areas or operated under the auspices of the County, no diversion is currently being achieved. There are no large scale mixed or yard waste composting programs in the County, and there are no plans to phase out, decrease in scope, or close existing composting programs in the cities of Big Bear Lake and Hesperia.

6.4 DESCRIPTION OF ALTERNATIVES

The County considered the following composting alternatives. These alternatives can be divided into five general categories: collection, processing, regulatory actions, siting, and marketing. Programs designated with an asterisk have been selected for implementation.

Collection:

* * Curbside collection of residential yard waste.
* * Supervised drop-off sites for yard waste.
* \- Unsupervised drop-off sites for yard waste.
* * Central processing facility separation of yard wastes.

Processing:

* * Windrow composting of yard waste.
* \- Mixed municipal solid waste composting.
* \- Yard waste and sewage sludge co-composting.
* \- Mixed municipal solid waste and sewage sludge co-composting.

Regulatory Actions:

* * Mandatory source separation of yard waste.
* \- Landfill disposal bans on yard waste.

Siting:

* \- Local, decentralized composting facility.
* * Regional, centralized composting facility.

Marketing:

* * Market development for finished compost product.

6.4.1 Collection Alternatives

<u>*Curbside Collection of Residential Yard Waste</u>

To develop an effective collection program, mandatory refuse pickup appears necessary. With no mandatory pickup or franchising system, the development of a curbside program

will require cooperation and coordination among many waste haulers. Many of these haulers plan to implement separate programs in the cities they serve. To develop an effective program, the County would work with the cities' waste haulers to develop a collection system for the areas of the County adjacent to and served by the haulers. For areas not directly adjacent to or served by the given cities' franchised waste haulers, the County will work with the waste haulers in those areas to develop a collection infrastructure.

AB 939 defines the term "yard waste" as "any wastes generated from the maintenance or alteration of public, commercial or residential landscapes, including, but not limited to, yard clippings, leaves, tree trimmings, prunings, brush, and weeds." Curbside collection of yard waste involves source separation by residents into containers or placement in the street. Containers may be bags made of paper or plastic, or rigid plastic bins. The green waste is then collected by a front-end loader and truck or by a standard municipal waste collection vehicle. Participation can be voluntary or mandatory, as determined by local officials.

If the yard waste is placed in the street without a container, it must be picked up by a front-end loader with a "claw" attachment and truck. A street sweeper usually follows the collection to remove any material that was not picked up by the collection crew. This collection system is used successfully by the cities of Davis and Sacramento for all types of yard waste (grass clippings, leaves, brush, and prunings), but is generally more expensive than containerized collection with a standard refuse truck.

Some problems that have been observed with loose collection are blowing yard waste, cars driving over the yard waste, automobile catalytic converters starting fires, vehicles parked on top of the yard waste, sewer drain blockages, and contamination by rocks, glass, sticks, and oil.

Containerized collection of yard waste involves separate collection from containers at residential units. This type of collection system is widely used and cheaper than loose collection. All types of green waste can be collected in containers (grass clippings, leaves, brush, and prunings) but large pieces of brush and prunings will either need to be trimmed to fit in the container or bundled together separately and placed next to the container.

Problems that have been reported with containerized yard waste collection include trash placed in collection containers, plastic bags falling apart, crew members injuring themselves lifting heavy bags, increased labor requirements to open plastic bags, and vandalism of bags placed at the curb.

For either collection system, the yard waste should be collected once per week. The City of San Jose, California, has examined a monthly pickup of yard waste but results indicated a lower participation rate for monthly rather than weekly collection. The material that is collected will be delivered to either a transfer station or directly to a green waste processing facility.

*Supervised Drop-Off Sites for Yard Waste

A drop-off collection system consists of a site, or sites, where yard waste that is generated within the County is placed. Yard waste is then transferred to a processing facility (although a drop-off site can be located at the compost processing facility).

If the drop-off site is located away from the processing facility, staff members should be present to observe material as it is deposited and to divert potential non-yard waste contaminants. Once the materials are deposited, they would then be loaded onto transfer vehicles. If the drop-off site is located at the processing facility, then the yard waste is moved directly to the processing area.

A drop-off program can be designed to complement a residential curbside yard waste collection service. This would reduce the number of drop-offs as well as residential traffic to and from the sites. A drop-off program in conjunction with a residential curbside program would primarily serve the commercial, industrial, and self-haul sectors but allows residents, who do not receive curbside service or who generated more than can be collected at the curb, to also use the site.

Unsupervised Drop-Off Sites for Yard Waste

This collection alternative is the same as the supervised drop-off except that there are only signs and bins at the drop-off locations, allowing for cost savings. However, there are drawbacks which include the absence of trained people at the site to answer questions, check the material for cleanliness or pureness, or prevent illegal dumping. This type of collection site would have to be frequently checked for cleanliness, the need for transferring the material, and vandalism.

Central Processing Facility Separation*

With this alternative, green waste would be collected mixed with normal refuse and transported to a MRF, where a combination of manual and mechanical sorting would separate the green waste for composting. Experience with the sorting of green waste from a mixed waste stream at a MRF indicates that only a 20 percent recovery rate can be expected. Green waste recovery can be increased by requiring the use of identifiable bags to contain the green waste and prevent mixing it with other refuse. Bagging green waste would limit material contamination and aid in identification and separation. It is estimated that up to 80 percent of the green waste that is delivered to the MRF could be diverted if the grass and leaves are properly bagged in a conspicuous manner and the prunings are bundled together. Other materials, such as food waste, can be targeted for recovery depending on the processing capabilities of the recovery facility.

6.4.2 Processing Alternatives

*Windrow Composting of Yard Waste

This alternative would take yard wastes to a facility that would process the material and create a marketable soil amendment. This type of facility would also be able to process wood waste, which is inappropriate for composting into various products such as mulch, animal bedding, and possibly even fuel products.

In the windrow composting process, organic materials are placed in windrows (elongated piles) that are between 8 and 15 feet wide, 5 to 10 feet high, and as long as necessary. The size of the windrows depends on equipment used and on local weather conditions.

Windrow composting entails mechanical turning and monitoring to provide aeration and to assure biological decomposition. Turning can take place as little as once per year, but to control odors, maintain aerobic conditions, and speed up the biological process, windrows are usually turned once a week when new, tapering off to once per month as the compost matures. The equipment utilized for composting is largely dependent upon the quantity and type of waste materials to be processed and the area available for composting. After the composting process is complete, further processing is recommended to screen out uncomposted wood chips or contaminants such as rocks, glass, or plastic bags. This final processing step improves compost quality and appearance, which makes the product more readily marketable. The final composting product can be available within 4 to 18 months, depending on how often the compost piles are turned.

Mixed Municipal Solid Waste Composting

Mixed municipal solid waste (MMSW) composting utilizes the large portions of organic material in the municipal waste stream to create a compost product. Due to the nature of the materials included in this compost operation, these compost facilities are generally enclosed to alleviate problems with odors and vectors. There are currently 16 MMSW composting facilities in the United States ranging in production from 5 to 1,000 tons per day.

Yard Waste and Sewage Sludge Co-Composting

In this alternative, yard wastes are collected and combined with sewage sludge to produce a compost product. Adding yard waste to sewage sludge facilitates aeration of the material necessary for aerobic (controlled, oxygen-rich) digestion. Additionally, sludge and yard waste are often available in abundance, free of other types of materials that can often contaminate the end-product.

The CIWMB does not allow (at the present) composting of wastewater treatment sludge to contribute towards the State's 25 and 50 percent diversion mandates. However, the County is attempting to work with the CIWMB on this matter.

Mixed Municipal Solid Waste and Sewage Sludge Co-Composting

MMSW can also be added to sewage sludge to allow for aerobic composting. Enclosed vessels are generally used for this process. Care must be taken to test the compost end-product to insure that the levels of heavy metals are not too high. The U.S. EPA will redefine acceptable contaminant levels in sludge compost, which will assist in the marketing of the final product.

6.4.3 Regulatory Action Alternatives

*Mandatory Source Separation of Yard Waste

In order to insure the quantity and quality of yard waste collected for composting, the County could require all yard waste generators to participate in a particular collection program. This could be accomplished much in the same way that mandatory garbage or recycling collection has been implemented in other jurisdictions, with fines or other mechanisms for citing those who do not participate. Mandatory source separation could also be required, but has no teeth without enforcement.

Landfill Disposal Bans on Yard Waste

This regulatory alternative could assist in enforcing a mandatory source separation program by not allowing yard waste to go to landfills. Other collection systems and alternatives for disposing these materials would have to be in place in order to prevent illegal dumping and irate residents, landscapers and haulers.

6.4.4 Siting Alternatives

Siting local composting facilities involves establishing several sites where materials can be composted, most likely using static piles or windrows to compost the materials. Local facilities are less likely to compost materials other than yard waste, due to the expense and necessary technology. High costs do not allow for a great number of such facilities.

*Regional (Centralized) Composting Facility

Regional composting facilities have many advantages, such as economies of scale in processing and administration, the ability to use technology to compost other types of materials besides yard wastes, and the ability to control the flow of materials and decisions about siting, processing alternatives, etc. A disadvantage is greater transportation costs from collection points to a processing facility.

Either local or regional composting facilities can be owned and/or operated by the County or by a private owner and/or operator. Sites can be located on unused portions of landfills or transfer stations, so that equipment and personnel can be shifted relatively easily between landfill and composting sites as necessary.

6.4.5 Marketing Alternative

*Market Development for Finished Compost Product

In this alternative, various market development activities would be undertaken including developing procurement policies which require the use of locally produced compost material for all public land maintenance activities, and developing educational activities targeting single-family homeowners, managers of multifamily complexes, and commercial landscape businesses.

6.5 EVALUATION OF ALTERNATIVES

Each alternative was evaluated with the following criteria by all regions:

- Effectiveness of the program.
- Hazards associated with the program.
- Ability to accommodate change.
- Consequences to the waste stream.
- Implementation timing.
- Need for new or expanded facilities.
- Consistency with local policies, plans, and ordinances.
- Ease of implementation.
- Cost of implementation.
- Availability of markets/end-uses.

6.6 EVALUATIVE DISCUSSIONS

The discussions in this section evaluate the composting alternatives in terms of each of the required criteriafor the entire unincorporated County.

6.6.1 Effectiveness of the Program

A significant amount of organic waste currently disposed in the County could be diverted from disposal through composting. Although yard waste generation in the unincorporated County area represents less than 10 percent of the waste stream, ***yard waste composting*** offers an opportunity for diversion and production of a high quality compost product with a number of potential beneficial uses. Yard waste composting will not only divert these organic materials from disposal, but will also reduce their volume. A survey of 11 yard waste composting programs across the country was conducted in 1990. Of the seven programs that could estimate volume reduction through yard waste composting, two claimed rates above 75 percent, three reported rates of 70 percent, and two others reported rates between 35 percent and 50 percent. Typical volume reductions are greater than 50 percent of the original volume of the organic wastes.

MMSW composting offers an opportunity to achieve significant diversion. However, the compost products from MMSW composting are more difficult to market due to contamination.

The California Integrated Waste Management Board staff have indicated that no credit toward the state's waste diversion goals could be taken for either ***yard waste or MMSW co-composting with sewage sludge***. However, this can be effective in diverting waste from landfill disposal.

Curbside collection systems for yard waste usually recover greater quantities of residential yard waste than dropoff systems because curbside systems only require participants to place their separated yard waste at a designated pickup point (usually a curb or alley). However, curbside programs do not target yard waste in the commercial and self-haul waste streams. Most curbside yard waste collection programs collect materials weekly, at least during periods of high generation. Participation may be increased by collecting yard waste on the same day as garbage. However, some studies have indicated that this may not always be true, possibly because yard waste is generally collected at a single time during a specific week or month, not regularly throughout the period.

A survey of 12 yard waste curbside collection programs across the country was conducted in 1989. Of the 10 programs that could estimate participation, four claimed rates above 90 percent, three others had rates of 70 percent or more, and one claimed a participation rate of 50 percent. All of these programs reportedly have voluntary participation. The two programs which reported participation rates of less than 50 percent were established in communities where several private haulers collect garbage allowing residents easy access to an alternative collection method.

Commercial landscape businesses and self-haulers would be the most likely candidates to use ***supervised yard waste drop-off sites*** located at transfer stations, landfills and composting facilities. ***Supervised yard waste drop-off sites*** scattered throughout the County area would make yard waste drop-off more convenient to citizens and businesses that do not regularly self-haul their refuse, thus possibly resulting in larger quantities of materials being collected. Attendants at these supervised sites could control blowing debris and prevent illegal dumping of other refuse at the sites. During seasons of high yard waste generation, the attendants could also control traffic if necessary.

Household participation rates for dropoff collection programs are usually lower than for curbside programs because they are considered to be less convenient. Typical participation rates for voluntary drop-off programs range from 5 percent to 30 percent. The amount of yard waste collected at dropoffs from commercial and self-haulers would depend on the willingness of yard waste generators to source-separate their yard wastes, as well as the convenience of the dropoff locations.

Locating ***unsupervised yard waste drop-off sites*** throughout the County area in addition to those other supervised drop-off sites would increase the convenience of using the drop-off system, thus possibly resulting in larger quantities of materials being collected. However,

more problems with illegal dumping, contamination of the yard waste, and blowing debris would probably be experienced at the unsupervised drop-off sites. Because of these factors and because no person would be available to answer questions or direct traffic, the unsupervised drop-off sites might be perceived as less convenient than the supervised drop-offs. Therefore, the amount of clean yard waste received would probably be less than at supervised sites.

A ***central processing facility*** could separate approximately 20% of the yard waste generated. If the green waste was bagged separately, up to 80% of the yard waste generated could be targeted for composting.

An ordinance ***mandating source separation of yard waste*** could be passed in the County to require yard waste generators to separate their yard wastes from the rest of the waste stream. This type of ordinance in itself, however, would not insure that the yard waste generated in the County is diverted from disposal. Also, this ordinance would not affect generators of yard waste that import waste into the County.

In general, it is anticipated that larger quantities of yard waste would be source-separated if this were made mandatory. Ordinances, however, must be enforced to be effective. The key to higher yard waste diversion rates in mandatory programs is the enforcement mechanism and the severity with which it is imposed. In addition, it is necessary to provide relatively convenient alternatives for collection and management of the source-separated yard waste.

On one end of the "severity spectrum" are mandatory source separation ordinances that are enacted to state a community's commitment to diverting waste from disposal. In this case, the ordinance is not enforced and no penalties are applied. This type of mandatory program is relatively inexpensive to implement and requires no additional staffing.

On the other end of the severity spectrum, inspectors or "garbage police" could be used to make random checks of household and commercial trash to see if residents and businesses are source-separating their yard waste. Citizens, landlords or business owners could be cited and/or fined for noncompliance. Enforcement of mandatory programs can be time-consuming and expensive, and risks alienating certain segments of the public.

A ***yard waste disposal ban*** in the County could potentially divert a large quantity of yard waste from disposal. This ban would affect all yard waste generators both inside and outside the County using the County's disposal facilities. However, it would not stop yard waste from being disposed outside the County. The amount of yard waste diverted from disposal would depend on the enforcement mechanism used and associated penalties imposed. In general, a landfill disposal ban would be more easily enforced than a mandatory source separation ordinance. Relatively convenient alternatives for collection and disposal of yard waste would need to be provided.

Market development activities are essential to the success of any yard waste composting program.

Both local and regional facilities are able to process wastes into compost. If more than windrow composting is chosen, it would be better to opt for a regional facility in order to share the costs of equipment and operations.

6.6.2 Hazards

Aerobic windrow ***yard waste composting*** processes produce heat, carbon dioxide, water, and other byproducts. If the process is allowed to go anaerobic (i.e., proceed without sufficient oxygen), methane, hydrogen sulfide, and other byproducts will be produced. The typical pattern of odor production during composting is an evolution from the odor of the raw waste to the odor of ammonia and eventually to an earthy smell. Both aerobic and anaerobic processes involve some level of odor. However, anaerobic processes may produce the "rotten egg" smell associated with hydrogen sulfide gas. In particular, grass must be managed appropriately to avoid odors.

Intermittent noise from yard waste composting equipment or central processing facilities may be produced. Surface water quality in the vicinity of a composting site can become contaminated if surface water runoff is not controlled properly. Ground water quality could also be affected if surface water runoff is allowed to leach into the ground water. Airborne dust settlement on surface waters is also a consideration. Dust and particulate emitted during yard waste handling and exhaust emissions from equipment used at the composting site are potential air pollutants associated with yard waste composting. Yard waste collection and transfer activities could also result in increased traffic activities in the area of the yard waste composting facility.

Workers at yard waste composting facilities and at central processing facilities that separate yard wastes may be exposed to some health and safety risks due to the use of heavy equipment such as tub grinders, windrow turners, or front-end loaders.

The hazards which could potentially be created by ***MMSW composting*** facilities are similar to those potentially produced by yard waste composting facilities. The potential for generating odor problems is significantly greater at an MMSW composting facility, however. For this reason, MMSW composting operations are often enclosed in buildings, unless they are located at very remote sites. Depending on the amount of pre-processing and post-processing performed, MMSW composting facilities may be more equipment-intensive than yard waste composting facilities, thus potentially emitting more noise and equipment emissions and providing more health and safety risks to workers.

Increased traffic could result in the area of the composting facility as a result of refuse collection and transfer activities. Surface water runoff from MMSW composting facilities may contain more harmful contaminants than runoff from yard waste composting facilities due to the types and toxicity of materials such as household hazardous waste found in MMSW.

The hazards which could potentially be created by ***yard waste and sewage sludge co-composting facilities*** or MMSW and sewage sludge co-composting facilities are similar to

those potentially produced by yard waste composting facilities. Surface water runoff from yard waste co-composting facilities may contain more or higher concentrations of contaminants than runoff from yard waste composting facilities due to the presence of sludge.

Concern has been expressed over the presence of some potentially harmful substances in compost products, including herbicides, pesticides, PCBs, PCPs, heavy metals, and pathogens. A limited amount of data is available regarding the presence of these substances in MMSW, yard waste and sludge composts; however, the results of a study performed by the Portland Metropolitan Service District (Metro) does allow for a general comparison of the characteristics of these compost products.

The Metro testing program suggests that many pesticides break down during composting if the system is properly controlled and monitored. Another recent study which also found that pesticides were not a significant problem was the study conducted in Croton-on-Hudson, about 20 miles from New York City. In this study, only four pesticides were detected in the finished leaf compost and they were all at the low end of the range one would expect to find in typical suburban soil.

In the Metro study, the highest concentration of PCBs was found in the MMSW compost, followed by the sewage sludge compost. PCBs were not detected in the yard waste compost. The highest concentration of PCPs was found in the yard waste compost. Lower concentrations of PCPs were detected in the MMSW and sewage sludge composts. In comparison with sewage sludge compost, approximately equivalent concentrations of relatively high E. coli and fecal coliforms were found in the MMSW compost, while lower concentrations of total coliform were found. All analyses for pathogenic organisms were negative.

The Metro testing program showed relatively low concentrations of metals in the yard waste compost tested. Concentrations of heavy metals in the sewage sludge compost were substantially higher. Root deformation and slow growth of seedlings in mulch medium indicated toxicity of the MMSW compost. Relatively high concentrations of sodium, calcium, magnesium and sulfur were detected in the MMSW compost.

If the ***yard waste curbside collection*** program is done separately from refuse collection, increased truck traffic will occur, causing associated local noise and exhaust emission increases. The addition of collection vehicles and staff for curbside collection of yard waste will increase the potential for accidents to occur. If yard waste is collected manually, injuries to collection crews could occur from lifting heavy containers.

The potential hazards resulting from ***supervised yard waste dropoff sites*** include the possibility of increased vehicle traffic as a result of collection vehicles delivering yard waste separately and transferring it to a composting facility, increasing associated noise and exhaust emissions. If automobiles use the same dropoff areas as trucks, the potential for accidents will be greater. Staff at the transfer and disposal facilities may be required to direct traffic and/or remove contaminants from the yard waste, increasing health and safety concerns.

Potential hazards for ***unsupervised yard waste drop-off sites*** are similar to those for supervised drop-off sites. Additionally, at unsupervised sites, no attendants would be available to direct traffic during busy periods or to assure that contaminants and/or potentially harmful substances are not illegally dumped at the dropoff sites, increasing health and safety concerns.

Landfill disposal bans could result in waste exportation from the County, thereby reducing revenues at existing transfer and/or disposal facilities in the County. ***Mandatory source separation requirements*** can be unpopular and may produce unwanted results such as an increase in improper waste disposal or illegal dumping.

Hazards associated with local facilities could be greater than for regional facilities if the local facilities are near highly populated areas, thereby creating more problems with traffic, noise, odors, etc.

There are no hazards associated with ***market development*** activities.

6.6.3 Ability to Accommodate Change

Yard waste composting facilities, whether local or regional, can be designed to be fairly flexible in accommodating quantity and composition changes in the waste stream. If yard waste quantities are expected to increase in the future, additional windrow and/or static pile composting and curing space can be reserved to meet increasing capacity needs over the planning period. These areas can be developed as the need arises. Also, the rate of composting and curing can often be increased through operational changes, to effectively increase a composting facility's capacity.

Yard waste processing equipment can be sized for existing capacity requirements or estimated future capacity requirements. If expansion of capacity will be required in the future, additional equipment can be added. However, space for additional equipment should be reserved in the original facility design. Processing equipment is often mobile and useful in other types of municipal operations, adding flexibility. Processing equipment and operational procedures can be upgraded or downgraded relatively easily to meet changing market specifications or yard waste compositions.

If only grass and leaves are composted initially and brush is added later as a feedstock, the County could purchase and install the associated processing equipment when brush composting is incorporated.

Yard waste is a more homogeneous material than MMSW, thus its characteristics are more consistent, and product quality can be more easily controlled.

MMSW composting facilities must be designed to process a heterogeneous feedstock with more contaminants than yard waste composting facilities, and the designs of the MMSW composting facilities often incorporate other functions such as recovery of recyclables and/or refuse-derived fuel preparation. Thus, the design and operational requirements of MMSW

composting facilities are often more complex and less flexible in accommodating waste quantity and composition changes, and variations in MMSW composition have caused difficulties with producing consistently high-quality products that meet market specifications.

However, the ability to incorporate recyclable materials recovery and refuse-derived fuel production capabilities into the design of an MMSW composting facility makes this type of facility more versatile and increases the potential for waste diversion. If recyclables are separated primarily by manual rather than mechanical sorting at the facility, facility operators are able to respond to volatile fluctuations in recyclable materials demand and material prices.

In ***yard waste co-composting and MMSW co-composting*** processes, nitrogen-rich wastes such as sewage sludge can be added to yard waste to enhance decomposition and to increase the nutrient content of the compost product. Other types of nitrogen-rich wastes such as animal manure or partially decomposed or composted wastes (with low carbon:nitrogen ratios) could be substituted for sewage sludge, if necessary. The amount of sewage sludge utilized in a yard waste co-composting facility will depend on the characteristics of the sewage sludge and the characteristics and quantity of the yard waste available.

Yard waste curbside collection **and central processing facility** programs can be expanded or reduced to accommodate changing local demographics and waste quantities by adding or subtracting staff and collection vehicles. The design of the collection and processing systems will determine how easily changes can be accommodated. For instance, adding brush to the types of yard waste materials collected in an existing program may or may not require (1) the addition of grinding and/or screening capabilities to the composting facility and (2) participants to break the brush into smaller pieces before setting it out for collection.

Both ***supervised and unsupervised yard waste dropoff sites*** can be expanded or reduced to accommodate changing local demographics and waste quantities through (1) changing collection frequencies or (2) adding or subtracting dropoff sites. The design of the collection and processing systems will determine how easily changes in the types and quantities of yard waste collected can be accommodated at dropoff sites.

Mandatory source separation requirements and ***landfill disposal bans*** could be repealed or modified fairly easily if required. The primary concern would be educating the public about changes in source separation or disposal requirements.

Market development activities can be easily modified.

6.6.4 Consequences to the Waste Stream

One of the main objectives of all processing, collection, and regulatory Composting Component alternatives is to divert putrescible and biodegradable wastes from landfill disposal. This diversion will decrease both the quantity of waste which is landfilled and the production of gaseous and water soluble pollutants in the landfill.

In comparison to ***yard waste composting*** and ***yard waste co-composting*** alternatives, ***MMSW composting*** and ***MMSW co-composting facilities*** have the potential to divert more putrescible wastes from disposal. ***Yard curbside collection and central processing facility separation*** programs typically capture more putrescible yard waste than either ***supervised or unsupervised yard waste dropoff sites.***

The regulatory alternatives for yard waste may promote source reduction of yard waste, thus decreasing the amount of yard waste in the generated waste stream.

Market development activities have no effect on waste stream composition.

6.6.5 Timing of Implementation

The time required to implement any composting facility will depend on the associated permitting requirements, the siting and site approval process, market identification process, procurement method and public acceptance. Composting and facilities for yard waste and MMSW can typically be implemented in less than 5 years. However, it is anticipated that a ***yard waste composting*** or ***yard waste co-composting*** facility would require less time to implement than an ***MMSW composting*** or ***MMSW co-composting*** facility, or a central processing facility for separation of yard waste, due to better public acceptance, lower costs, smaller land requirements and less complex design and operation requirements.

The CIWMB is expected to release new regulations establishing the operating and permitting requirements for compost processing operations in the future. Based on conversations with Board staff, it is anticipated that these regulations will affect the time frame for composting program implementation as follows:

- The CIWMB will have permit authority for all composting facilities.
- It will be necessary to develop a Report of Composting Station Information (RCSI) for any new composting facility; the RCSI will be similar in content to other reports currently required for permitting of solid waste transfer and disposal facilities.
- The CIWMB's current time frame for review of other types of solid waste facility permits will also apply to composting operations.

It may be possible to obtain the necessary permits for composting operations at existing solid waste transfer and disposal facilities in less time than for new facilities. Existing permits can be modified or revised. Both permit modification and permit revision should involve a more limited permit review process than that required for issuance of new permits.

Yard waste curbside collection programs can typically be implemented in less than 5 years. When developing a large curbside collection program, it is often desirable to accomplish it in phases. This would increase the time required to implement a Countywide curbside collection program. The required time frame can also depend on factors such as

procurement methods, number of households serviced, type of service, availability of equipment and staff, etc.

Both ***supervised and unsupervised yard waste dropoff sites*** evaluated in this plan can be implemented in less than five years. The amount of time will depend on procurement methods, number of locations, availability of equipment and staff, need to acquire or revise siting and use permits and zoning ordinances, etc.

Public Resource Code section 40200 (2)(b) provides for exemptions from CIWMB permit requirements for source-separation programs of materials not requiring disposal or processing. In upcoming regulations, it is anticipated that the CIWMB will not require permits for dropoff programs for yard wastes that do not require processing prior to composting. This should apply to dropoff programs collecting yard waste but not for those dropoffs also collecting stumps since stumps must be processed prior to composting.

It is not clear at this time whether the above exemption will be applicable to yard waste drop-offs at existing transfer and disposal facilities. The CIWMB traditionally views any change in facility operation as potentially requiring permit review. In any case, the slow step for establishment of a compost program is not collection but rather the development of a processing facility.

Before any yard waste collection program can be established, a composting facility must be available to process the material. The lead time needed to establish a composting facility will most likely be greater than the lead time needed to begin any of the yard waste collection methods.

Regional facilities would probably take longer to implement than local facilities, due to the number of agencies involved.

Both of the regulatory alternatives under consideration could be adopted within a relatively short period of time. ***Market development*** could also be implemented as soon as compost products are ready to be marketed.

6.6.6 Need for Expanded or New Facilities

Although small-scale facilities are operating in the Big Bear and Hesperia areas, no large-scale composting facilities currently exist in the County. Therefore, all of the processing alternatives would require development of new facilities or, alternatively, the addition of these facilities at an existing transfer or disposal site.

Implementing ***supervised yard waste dropoff sites*** at transfer stations and landfills would primarily involve minor expansion of existing facilities to add additional tipping areas for yard waste. Other ***supervised and unsupervised yard waste dropoff sites*** located throughout the County would require additional equipment maintenance and storage facilities, transfer facilities, vehicles, and containers. The ***curbside collection alternative*** would also have similar requirements.

Neither of the regulatory alternatives or the ***market development*** activities requires new or expanded facilities.

6.6.7 Consistency with Local Policies, Plans, and Ordinances

If developed in an agricultural zone, a publicly owned and publicly or privately operated composting facility should be consistent with current zoning and general plan policies. If developed in a manufacturing zone, a privately owned facility would be consistent with current zoning and policies.

In general, ***curbside collection*** and ***supervised yard waste dropoff sites*** at transfer stations, landfills, and composting facilities are consistent with local policy, plans, and ordinances. If dropoff sites are established at the existing transfer and disposal facilities, modifications to existing permits may be required. Establishment of other ***supervised and unsupervised yard waste dropoff sites*** may conflict with local land use policies and zoning ordinances; however, Waste Board permits should not be required.

No current local policies, plans, or ordinances require mandatory separation of yard waste or ban yard waste from landfill disposal.

Under California State law, the County can require ***mandatory source separation*** and ***landfill bans*** on yard waste by passing local ordinances.

Market development activities appear to be consistent with local policies, plans, and ordinances.

6.6.8 Institutional Barriers

The greatest barriers to developing ***composting*** and ***co-composting*** facilities are: (1) uncertain and undeveloped markets; (2) lack of established product quality standards and testing procedures; and, (3) identifying a site and obtaining the necessary development permits.

Potential markets exist for the compost products, but there is a need for product quality standards and testing procedures to be developed at the State and/or local levels. Potential customers want to be assured of the quality, composition, nutrient value, and physical properties of compost products. The U.S. EPA's proposed regulations that redefine acceptable contaminant levels in sludge compost products could have a significant impact on marketing compost products derived in whole or in part from sewage sludge. Development of some ***co-composting*** facilities is being delayed until these regulations are finalized.

Existing state regulations do not encourage diversion of sludge through co-composting, since the diversion of sludge does not count toward the State's waste diversion goals.

A lack of proven experience in the U.S. with ***MMSW composting*** and ***MMSW co-composting*** has resulted in a reluctance to seriously consider these solid waste management composting methods. If either the County, the private sector, or the County and the private

sector acting together establish composting facilities to meet local or regional needs, some type of mechanism, either economic or regulatory, will be needed to ensure the economic viability of the facility. Without an assured flow of waste for processing, and thus a guaranteed income stream, it will be very difficult to attract the capital investment needed to develop such a facility.

Effective control over the flow of waste helps to ensure constant tipping fee revenues and/or revenues from marketed products, and is often necessary to finance capital-intensive solid waste management facilities. Therefore, the County may need to establish flow control measures when developing a composting or co-composting facility. Flow control can be accomplished via permit conditions, ordinance, contracts, tipping fee differentials or other means.

Siting will eventually become an important consideration in developing any composting or co-composting facility. The selected site must be technically, environmentally, and socially acceptable.

With the passage of AB 3992 in 1990, the definition of solid waste facilities was revised to include composting facilities. Pursuant to this legislation, the CIWMB will, as of January 1, 1992, have permit review authority for composting facilities, and Solid Waste Facilities Permits (SWFP) will be required. In addition, AB 2296 requires that solid waste facilities be consistent with local plans. Thus, issuance of SWFPs will require a finding that the compost processing operation is consistent with an approved General Plan and County Integrated Waste Management Plan. For the purposes of evaluation, these consistency and permit requirements are considered institutional barriers that will delay the implementation of the ***yard waste composting*** and ***MMSW composting*** alternatives. These permit requirements and institutional barriers to implementation are less onerous if existing solid waste facilities are used as the site of processing operations. As discussed previously for implementation time frames, existing permit modification or revision should involve less delay than that involved in permitting new facilities.

An institutional barrier may result from the private haulers' resistance to offering ***curbside collection programs*** for yard waste. Each jurisdiction in the County may mandate that the haulers provide curbside collection as part of their franchise agreement, though this can be a very time-consuming and political process.

A major institutional barrier to the effective development of any type of yard waste collection program is community participation. The amount of yard waste recovered in a collection program depends largely on the number of households that participate in the program. Household participation rates are typically higher for ***curbside collection programs*** than ***supervised or unsupervised yard waste dropoff programs.*** In addition, an effective program will require extensive educational efforts to reduce contamination of yard waste by other solid and hazardous wastes.

Establishing educational or informational programs to encourage participation will be necessary to ensure the success of any yard waste collection program.

Both of the regulatory alternatives considered could be unpopular and may produce unwanted results such as increased or illegal dumping.

A ***mandatory source separation*** ordinance would not ensure that the yard waste generated is diverted from disposal, nor would it affect generators of yard waste outside the County who import waste into the County.

Landfill disposal bans could result in illegal disposal and waste exportation from the County, thereby ultimately reducing revenues at existing transfer and/or disposal facilities in the County.

There are no institutional barriers associated with ***market development*** activities.

6.6.9 Implementation Costs

The cost to develop and operate a ***composting*** or a ***co-composting*** facility depends on many factors including technology utilized, siting and permit requirements, procurement methods, ownership and operating arrangements, desired product quality, labor costs, land purchase costs, equipment costs, revenues received from the sale of the compost product, etc. ***MMSW composting*** and ***MMSW co-composting*** facilities are typically more costly to develop and operate than yard waste composting and yard waste co-composting facilities for several reasons including: greater complexity, more stringent siting and permitting requirements, lower public acceptability, lower product marketability, and higher capital costs (and therefore fewer financing options).

Cost data on existing ***yard waste composting*** programs were gathered in a 1988 EPA-funded study characterizing eight yard waste composting programs in the U.S. Reported gross processing costs ranged from $3.60 to $33.33 per ton in 1988 dollars, the average being approximately $19 per ton. The average net processing cost (after revenues were deducted) was approximately $15 per ton (*Taylor and Kashmanian, EPA/530-SW-89-038, April 1989*).

Another survey of twelve yard waste composting facilities conducted in 1990 found capital costs ranged from approximately $80,000 to $2,000,000; the capital costs of larger facilities (processing around 60,000 tons per year) ranged from $1,500,000 to $2,000,000 *(Biocycle, Sept. 90, p.36)*. This same survey found that operating costs were around $4 per cubic yard, or, assuming 250 lbs/cubic yard, about $32 per ton processed *(Biocycle, Sept. 1990, p.36)*.

Cost data on existing ***MMSW composting programs*** were gathered in a 1989 survey of seven MMSW composting programs in the U.S. Of the seven programs surveyed, four provided data on their tipping fees, which ranged from $22 to $50 per ton, the average being approximately $39 per ton.

No comparable data are currently available for yard waste co-composting and MMSW co-composting facilities; however, composting operations that include sludge can be expected to cost slightly higher than each alternative without sludge additions. In general terms, sludge

co-composting should require increased operational costs for more frequent turning and higher capital costs for improved leachate and runoff management systems.

The costs to develop and operate yard waste collection programs also depend on many factors, including type of program, equipment used, availability of existing equipment, participation, labor costs, distance to composting facility, procurement methods, ownership and operating arrangements, support programs, etc. Collection costs for ***yard waste curbside collection*** programs typically range from $2 to $5 per household per month. Curbside collection programs are typically more costly to develop and operate than dropoff programs, primarily because they require more equipment and staffing. Collection costs for ***supervised and unsupervised yard waste dropoff*** programs vary widely, depending on many variables, but are typically lower on a per-ton basis than curbside collection programs.

The costs to implement ***mandatory source separation*** and ***landfill disposal bans*** would depend largely on the enforcement methods implemented.

Costs associated with ***market development*** activities include costs for advertising the availability of the compost products to interested consumers.

6.6.10 Market Availability

The availability of markets is an important criterion in the evaluation of compost processing alternatives. In general, many potential uses for compost products currently exist. Public sector uses for compost include parks development and maintenance, road and highway maintenance, and various landfill cover applications. However, as with some recyclable materials, markets for compost products must be developed and product quality is often the major concern.

In the private sector, landscape contractors, nurseries and residential users are frequent horticultural compost users. The luxury horticulture industry typically requires a high-quality, consistent product similar to peat moss, so would probably prefer yard waste compost products to MMSW compost products.

Although agriculture may be a potential large volume application for compost, it has not been a good market to date. Agriculture does not typically demand a high quality compost, because the material is used for erosion control and topsoil stabilization. Agricultural applications, however, limit metals and organic compounds and may also limit glass, plastics, and other non-biodegradable components.

Currently, land reclamation has the least demanding market specifications. Because most land reclamation is in remote locations where the existing soil lacks ingredients essential to promote vegetative growth or prevent erosion, certain impurities not tolerated by other markets could be contained in compost intended for this use. The volume of reclamation, specification of needed materials, and transportation costs will determine the viability of this potential use.

Yard waste composting should offer the best market development opportunity for compost because of the potential to collect relatively uncontaminated yard waste as a raw material for composting. The major product quality concern of yard waste compost has been the level of pesticides or pesticide residues that might be present in grass. This potential problem may be addressed by appropriate compost product testing to measure pesticide levels in finished compost, through education and consumer awareness efforts to promote proper pesticide application measures, and if necessary, through regulatory measures to restrict the application of pesticides to compost feedstocks.

MMSW composting has been used for a number of years in Europe, where experience is somewhat mixed. Due to contamination from any of a number of materials, it has been used extensively in vineyards where the uptake of water-soluble contaminants into the grape is minimal. Some European efforts are now concentrating on source separation methods for both food and yard wastes to overcome the contamination problems of mixed composts. MMSW composting is relatively new in the U.S. Most MMSW composting operations active in the U.S. have had major difficulties establishing markets, largely due to the level of contamination present in the finished product.

MMSW co-composting systems typically compound the marketing problem due to the presence of heavy metals in many wastewater sludges. The major markets for MMSW composting are in those applications where quality and contamination levels are not important, such as for landfill cover systems and in land reclamation. The major benefit of mixed waste composting may be the volume reduction achieved through the process and the resulting decrease in landfill capacity requirements.

It is possible that in the medium-term planning period, mixed waste composting (possibly combined with a recovery module for recyclable materials or one for the production of refuse- derived fuel) will become necessary to meet the state's 50 percent diversion requirement by the year 2000.

6.7 SELECTED ALTERNATIVES

6.7.1 Countywide

The following sections describe and provide the rationale for selecting composting alternatives in the West Valley, East Valley, and Desert and Mountain Area. Although the timing in each area differs, the development of subregional green waste composting facilities intended to divert waste generated in unincorporated areas and in neighboring cities would occur in each of the three areas in the County. The development of these facilities will require a concentrated inter-governmental effort to site and permit these facilities and inter-jurisdictional agreements concerning the operation of these facilities. It is further recommended, as facilities are developed, that the County work jointly with local jurisdictions to implement education and public information programs to encourage the use of composting facilities and market development programs to insure that diversion levels can be sustained in the unincorporated areas of the County.

6.7.2 East and West Valley

The following composting alternatives have been selected to help meet diversion goals:

- Short-term
  - Initiate mandatory collection of yard waste, based on results of the feasibility study.
  - Form regional groups.
  - Evaluate the feasibility of a regional composting facility (with dropoff capability).
  - Establish a differential gate fee system for clean loads of compostable material.
- Medium-term
  - Participation in residential curbside collection of yard waste in conjunction with programs in neighboring jurisdictions.
  - Windrow yard waste composting.
  - Encourage commercial, industrial, and self-haul generators to deliver source-separated green waste to the facility.

Reasons for Choosing Selected Alternatives

A regional facility was chosen because it will be more cost-effective for the region to compost its green waste together than for the County and each city in the area to individually compost.

Curbside collection was chosen because it has the potential to remove a large portion of the green waste generated within the County and will involve residents directly in a solution to future waste disposal problems.

Windrow composting was chosen because it is the most cost-effective yard waste composting system in areas where space is not severely limited.

Encouraging the commercial, industrial, and self-haul sectors to source-separate and deliver green waste to a dropoff location at the regional composting facility will be a low-cost method of green waste diversion. The County may allow drop-off to take place at County landfills, but staffing for other drop-off locations would have to be provided by the regional group.

Proposed Markets for Diverted Materials

A green waste processing facility will reduce the volume of incoming material by over 50 percent, but there will be a significant amount of remaining material that will need to be reused. Grass, leaves, and small twigs will compost into a soil amendment that augments soil structure and fertility. Typical end-users of compost include nurseries, landscapers, sod growers, greenhouses, golf courses, cemeteries, and farms. Municipalities can use the material internally through parks and highway maintenance programs and it can be sold or given to the public for home use. In some cases, compost can be used as daily cover at landfills. Processing branches and larger brush yields wood chips that can be used as mulch, a bulking agent for sewage sludge, composting, animal bedding, or boiler fuel.

Area soil brokers (composters) and local and State governments will be targeted as the primary market for compost and mulch products. Secondary markets consist of additional potential large-scale users and buyers of organic material, including other soil brokers, garden supply stores, nurseries, landscape contractors, sod growers, tree farms, and golf courses. The development of agriculture as a significant market should also be considered.

Residuals from the composting of yard waste will include occasional contaminants, such as rocks, and yard waste not suitable for composting, such as large stumps. Where possible, these contaminants will be recycled or processed into other reusable materials; otherwise, they will be landfilled.

The County will maximize its own use of compost and encourage its residents to do the same, while actively working to develop markets with area businesses that could utilize compost. The County will also work with the State and other cities in the region on joint market development activities.

Proposed Handling of Material and Disposal of Residuals

Yard waste will be size-reduced in a grinder. Oversized wood chips may be screened out of the size-reduced material and marketed separately. The remaining material will be composted. Windrows will be turned frequently in the first month and once per month thereafter. The finished compost will be screened and oversized pieces will be reincorporated into the next series of windrows. The resulting compost will be marketed in bulk. Any residual contaminants such as glass, paper, or plastic that are screened out will be landfilled.

Required Facilities

A composting facility would be needed to implement this alternative if a privately owned facility could not be used. The facility location would need to meet the following siting criteria:

- Vacant, flat land with a 1 percent to 4 percent slope.

- Open field with adequate space for buffer area and plantings.
- Sufficient size, approximately 1 acre per 50,000 to 80,000 loose cubic yards annually of materials collected and processed.
- Low residential population density.
- Meets typical siting criteria such as no wetlands, above the flood plain, deep ground water, no historic sites, and no endangered species.
- Good transportation access with minimal impact to existing transportation uses.
- Potential to develop visual buffer zone, if necessary.
- Availability of water and other related utilities.
- No drainage problems.

Runoff should not be allowed to enter ground or surface waters. Collected leachate and runoff may either be stored and treated on-site or diverted into a nearby sewer, if the local wastewater treatment plant agrees to accept it. A site access road, preferably paved to permit year-round use, is needed.

Approximately 1 acre of usable working space per 7,000 cubic yards of waste (assuming a 1-year processing period) will be needed for the operation. A buffer of at least 200 feet should shield sensitive land uses.

Ideally, the composting facility should have on-site water and electrical power, although rudimentary operations do not require them. A water truck may be used to moisten windrows if direct access to water is not available.

A small office and a sanitation facility for employees are recommended to serve as a workplace for administrative activities, an eating place, a shelter in inclement weather, and a storage site for small tools. A mobile trailer is commonly used. A fence around the equipment storage area or the entire site may be appropriate.

6.7.3 Desert and Mountain

The following composting programs will be implemented in the short-term planning period:

- Yard Waste Composting Facilities.
- Supervised Yard Waste Dropoff Sites at County landfills and transfer stations.
- Participation in yard waste collection programs in neighboring jurisdictions.
- Market Development Program.

The following composting program will be implemented in the medium-term planning period:

- MMSW Composting.

If the Composting Component objectives and/or State waste diversion goals are not being met in the medium-term planning period, the County will re-evaluate the following composting alternative:

- Yard Waste Landfill Disposal Bans.

Yard Waste Composting Facilities

Yard waste composting was the processing method chosen for implementation in the short-term period for the Desert and Mountain unincorporated County regions for several reasons. Yard waste composting, particularly leaf composting, is considered to be a proven technology which can be relied upon to achieve diversion requirements in an efficient and cost-effective manner. Additionally, if relatively uncontaminated yard waste material is used, yard waste composting produces a quality compost product which is typically versatile and marketable. Although MMSW composting is also selected for implementation in the medium-term, yard waste composting is an important component for achieving the County's waste diversion mandates because of the readily marketable compost products produced by this process.

Four yard waste composting facilities will be developed to serve the Desert and Mountain regions, one in the Victor Valley area, one in the East Desert (Landers) area, one in the Big Bear Lake area, and one near the City of Needles. The first three facilities will be sited in conjunction with the three material recovery facilities selected in the Recycling Component.

Supervised Yard Waste Drop-Off Sites at County Landfills and Transfer Stations

Supervised yard waste drop-off sites are particularly suitable for sparsely populated regions such as the Desert and Mountain area, since this type of collection alternative does not require regular curbside collection services. Additionally, since the County is located in a predominantly high-desert environment and therefore produces reduced quantities of yard waste, using supervised drop-off sites as the primary yard waste collection method will allow the County to be flexible with capital investment and staffing hours.

After encouraging participation in dropoff programs in nighboring jurisdictions, this alternative will locate yard waste drop-off centers at all transfer stations, landfills, and composting facilities as well as at other, more urbanized areas in the County. Supervised yard waste drop-off sites located at transfer stations, landfills and composting facilities will, most likely, be used principally by commercial landscape businesses and self-haulers, since such generators are already hauling their refuse to disposal facilities. Supervised yard waste drop-off sites scattered throughout other more urbanized areas of the County will make yard waste drop-off more convenient to citizens and businesses who do not regularly self-haul

their refuse. It is anticipated that these supervised yard waste drop-off sites will be sited in conjunction with the recyclables drop-off sites selected in the Recycling Component.

The tipping fee differential and the variable can rate alternatives selected in the Source Reduction Component may complement and reinforce this alternative by providing economic incentives for source-separating yard waste from mixed waste.

It is anticipated that large-scale producers of yard waste, such as commercial landscape businesses, will be particularly affected by the tipping fee differential, since these generators produce large enough quantities of yard waste to make disposing of the yard waste in a landfill a costly alternative to utilizing supervised drop-off sites.

Market Development for Compost Materials

An effective composting system depends upon three types of activities: collection, processing, and marketing. The availability of markets for locally produced compost products will be essential for the success of the County's composting programs.

The composting market development program selected for the County includes several market development activities:

- Submit application to the Integrated Waste Management Board for the State-supported ***Recycling Market Development Zone program***. This program is designed to provide jurisdictions with the economic and technical support needed to attract private sector recycling and composting investments to the area.

- Require use of locally produced compost materials by local agencies and by private contractors conducting land maintenance, park development and maintenance, road and highway maintenance, and land reclamation projects for the area.

- Direct retail sale of bulk quantities of compost to consumers.

- Develop market development education program targeting single-family homeowners, managers of multi-family complexes, commercial landscape businesses, and developers. Written materials will be provided to all targeted audiences explaining the benefits of using locally produced compost product, information on the quality of the compost product, how compost can be a valuable product for use in home lawns and gardens, and how consumers can obtain the product.

Mixed Municipal Solid Waste Composting

MMSW composting has been selected due to the high desert environment; it is needed to reach the 50 percent diversion mandate. Yard waste makes up less than 10 percent of the waste stream for most of the jurisdictions, and, as a result, yard waste composting can only

contribute so much to meeting the diversion mandates. MMSW composting, however, has the capacity to compost food waste and other organics, such as paper, in addition to yard waste.

Most MMSW composting operations active in the United States have had major difficulties establishing markets, largely due to the level of contamination present in the finished product.

In the high desert environment, however, it is anticipated that the public sector can use MMSW compost products for a variety of uses including park development and maintenance, road and highway maintenance, and land reclamation projects.

Two MMSW composting facilities could be proposed to be in operation in the Desert and Mountain region of the County by 1997; one in the Victor Valley area and one in the East Desert (Landers) area. In order to insure that diversion goals are met, a constant flow of waste is required to be processed at the facilities. Therefore, mandatory collection of solid waste will be analyzed for implementation and/or expansion in all incorporated jurisdictions, as well as in the unincorporated, urbanized areas of the Desert and Mountain Area before mixed waste composting programs begin.

End-Uses for Diverted Materials--

The market development program selected for implementation develops the following local markets for County-produced compost materials:

- Use by public agencies and by private contractors conducting land maintenance, park development and maintenance, road and highway maintenance, and land reclamation projects for the County.

- Use by County residents, multi-family complexes, and commercial landscape businesses as a result of education efforts and direct retail sale of bulk quantities of compost.

- Use by local developers in all new residential, commercial, and industrial landscaping projects as a result of educational efforts and direct retail sale of bulk quantities of compost.

It is anticipated that finished compost product will be sold in bulk quantities directly to consumers at compost facilities, and a front-end loader may be needed to dispense the compost product.

Handling and Disposal--

The compost facility will accept yard waste material from the various dropoff sites located throughout the County, as well as directly from commercial haulers (gardeners, landscapers, etc.) and self-haul customers. Size and layout of the receiving area and access roads will be dependent on the number and type of trucks entering the facility each day.

After the loads are dropped off, they must be inspected for "contaminants" including inert solids (concrete, soil, brick, etc,), trash, large stumps, metal objects, plastics, household hazardous waste, etc.; the objective of the load check is to remove large objects and materials that may damage the shredder, inhibit the composting process, or contaminate the finished product. The load check may also identify loads comprised primarily of grass clippings and/or leaves small enough to be put directly into a windrow, bypassing the shredder.

After the Victor Valley and East Desert (Landers) mixed waste processing facilities recover the recyclable portion of the waste stream, the remaining portion will be processed at the adjoining MMSW composting facilities.

MMSW composting facilities can employ either a windrow or an in-vessel system. In a windrow system, the material can be shred and screened either before or after the formation of windrows. In either case, the organic materials will decompose and the residuals will be disposed. Like windrow composting, residuals can be screened either before or after composting.

Facilities Needed--

A composting facility is necessary to process the source-separated yard waste collected. This facility may consist of a small office and equipment maintenance building, a paved equipment area, paved traffic lanes, a yard waste receiving area for temporary storage of materials prior to processing, a windrow area for active composting, a curing area for composted materials, areas for screening incoming materials prior to composting, an area for screening compost prior to marketing, and a buffer zone surrounding the operation to reduce visual and noise impacts from operations. The composting facilities can either be publicly owned and operated, owned and operated by a private firm, or owned by the County and privately operated.

Yard waste dropoff sites may be provided at the the County's transfer stations, landfills, and composting facilities as well as at other more urbanized locations throughout the County. The design and costs for development of these dropoff sites will depend on many factors, including the existing site layouts, availability of access roadways to dropoff site locations, and the amount of site development work required. It is anticipated that the drop-off site areas will consist primarily of asphalt or concrete slabs, fencing and rolloff bins.

Since finished compost product will be sold in bulk quantities directly to consumers at compost facilities, some type of storage area and distribution center will have to be constructed at the compost facilities.

The County will implement the following contingency measures should adverse market conditions occur for compost materials:

- If approved by the CIWMB, utilize compost products as daily cover at the landfills serving the County.

- Make the compost products available to homeowners, commercial landscape businesses, and developers.

6.8 ANTICIPATED DIVERSION

Table 6-2 shows the anticipated diversion for each of the regions for the short-term (1991-1995) planning period and for the medium-term (1996-2000) planning period.

TABLE 6-2
ANTICIPATED COMPOSTING DIVERSION

	1995 Tons	1995 Percent	2000 Tons	2000 Percent
West Valley	3,375	5.6	5,994	9.2
East Valley	3,303	2.2	21,311	11.5
East Desert	496	0.8	7,252	11.0
North Desert	684	0.8	10,971	12.0
East Mountain	201	1.7	286	2.1
Unincorporated Countywide	8,060	2.0	45,814	10.8

6.9 PROGRAM IMPLEMENTATION

6.9.1 East and West Valley

The implementation schedule for the East and West Valley area appears below, including implementation responsibility, tasks, and schedules.

Task No.	Projected Start	Task Description	Responsibility
Regional Composting Facility with Drop-off			
1	1993	Determine feasibility of a regional facility.	County Solid Waste Dept./Local Jurisdictions
2	1993-1997	Site and permit yard waste composting facility.	Local enforcement agencies/ County Solid Waste Dept./ CIWMB/RWQCB/Regional Group
3	1996	Procure equipment.	County Solid Waste Dept./ Regional Group
4	1997	Construct yard waste composting facility.	County Solid Waste Dept./ Regional Group
5	1995	Start operating yard waste composting facility with pilot and in conjunction with nighboring jurisdictions and evaluate.	County Solid Waste Dept./ Regional Group
6	1998 - Ongoing	Begin full-scale composting and evaluate periodically.	County Solid Waste Dept./ Regional Group
Residential Yard Waste Collection (Implementation in conjunction with neighboring jurisdictions)			
1	1995	Identify locations for collection and establish collection system.	County Solid Waste Dept.
2	1995	Educate participating residents.	County Solid Waste Dept.
3	1995	Begin pilot collection	County Solid Waste Dept.
4	1995	Evaluate pilot collection.	County Solid Waste Dept.
5	1996	Reevaluate public education.	County Solid Waste Dept.
6	1996	If feasible, begin full-scale collection to eventually include entire West Valley County areas.	County Solid Waste Dept.

6.9.2 Desert and Mountain

The information below shows the implementation schedule for the Desert & Mountain area, including implementation responsibility, tasks, and schedules.

Task No.	Projected Start	Task Description	Responsibility
Yard Waste Composting Facilities			
1	1993	Negotiate with neighboring cities and develop agreement	Regional Group/County Solid Waste Dept.
2	1993	Issue an RFP for yard waste composting facility siting, design, construction, and (if applicable) operations	Regional Group/County Solid Waste Dept.
3	1993	Award contract	Regional Group/County Solid Waste Dept.
4	1993	Review and permit yard waste composting facility	Regional Group/ Local Enforcement Agency/ County Solid Waste Dept./ CIWMB/ RWQCB
5	1994	Construct yard waste composting facility	Regional Group/County Solid Waste Dept./Private Operators
6	1994	Start operating yard waste composting facility	Private Operators/Regional Group/County Solid Waste Management Dept.
Supervised Yard Waste Drop-off Sites			
1	1993	Identify locations for drop-off centers	Regional Group/Individual Jurisdictions
2	1993	Modify Solid Waste Facilities Permits as necessary	County Solid Waste Management Dept.
3	1993	Construct drop-off sites	Regional Group/County Solid Waste Management Dept./ Private Operators
4	1993	Purchase containers	Regional Group
5	1994	Educate participants	Regional Group
6	1994	Begin operation of yard waste drop-off sites	Existing facility operators

Market Development Tasks			
1	1993	Develop procurement policies and landscape maintenance procedures that require the use of locally produced compost materials by regional group's agencies and by private contractors conducting land maintenance, park development and maintenance, road and highway maintenance, and land reclamation projects for the regional group.	Regional Group/County Solid Waste Management Dept.
2	1993	Prepare and submit application for the State-supported ***Recycling Market Development Zone program*** to the Integrated Waste Management Board.	Regional Group/County Solid Waste Management Dept.
3	1994	Educate participants	Regional Group/County Solid Waste Management Dept.

Note: Market development zones and tasks are not exclusive to one region and the County may apply with various neighboring cities by region which may result in Tasks 1 through 3 being repeated several times throughout the years.

MMSW Composting Facilities			
1	1993	Determine feasibility of a regional facility.	Regional Group/County Solid Waste Management Dept.
2	1993	Establish or expand mandatory solid waste collection	Regional Group/County Solid Waste Management Dept.
3	1994	Issue an RFP for MMSW composting facility siting, design, construction, and (if applicable) operations	Regional Group/County Solid Waste Management Dept.
4	1994	Award contract	Regional Group/County Solid Waste Management Dept.
5	1995	Review and permit MMSW composting facility	Local Planning Department/ County Solid Waste Dept./ CIWMB/RWQCB
6	1995-1997	Construct MMSW composting facility	Private Operators
7	1997	Start operating MMSW facility	Private Operators/Regional Group/County Solid Waste Management Dept.

6.10 SUMMARY OF FUNDING REQUIRED

Tables 6-3 through 6-6 summarizes the funding necessary to implement the alternatives selected by each region.

TABLE 6-3
ESTIMATED COMPOSTING PROGRAM COSTS
UNINCORPORATED WEST VALLEY REGION
(in nearest 1991 $1000)

Program	1991-92	1992-93	1993-94	1994-95	1995-96
Residential Yard Waste Collection	0	0	0	0	125,000
Regional Composting Facility (with Drop-off)	(a)	(a)	68,000	68,000	68,000
ESTIMATED TOTAL	**(a)**	**(a)**	**68,000**	**68,000**	**193,000**

Notes to Table 6-3:

(a) Cost of negotiation with jurisdictions in the region included in current County staff salaries. Total annual costs of a regional facility are approximately $3,000,000. Costs to the County will depend on the amount of material sent to the facility and how many cities participate.

TABLE 6-4
ESTIMATED COMPOSTING PROGRAM COSTS
UNINCORPORATED EAST VALLEY REGION
(in nearest 1991 $1000)

Program	'91 -'92	'92 -'93	'93 -'94	'94 - 95	'95 - 96
Residential Yard Waste Collection	0	0	0	0	163,000
Regional Composting Facility (with Drop-off)	0	146,000	471,000	471,000	471,000
ESTIMATED TOTAL	**0**	**146,000**	**471,000**	**471,000**	**634,000**

TABLE 6-5
ESTIMATED COMPOSTING PROGRAM COSTS
UNINCORPORATED DESERT REGION
(in nearest 1991 $1000)

Program	'91-92	'92-93	'93-94	'94-95	'95-96
Yard Waste Composting Facilities	0	0	38,000	72,000	83,000
Drop-off Sites	0	0	0	(a)	(a)
Market Development	0	0	(b)	(b)	(b)
ESTIMATED TOTAL	**0**	**0**	**38,000**	**72,000**	**83,000**

TABLE 6-6 ESTIMATED COMPOSTING PROGRAM COSTS UNINCORPORATED MOUNTAIN REGION (in nearest 1991 $1000)					
Program	1991-92	1992-93	1993-94	1994-95	1995-96
Yard Waste Composting Facilities	0	0	3,000	7,000	8,000
Market Development	0	0	(b)	(b)	(b)
ESTIMATED TOTAL	0	0	3,000	7,000	8,000

Notes to Tables 6-5 and 6-6:

(a) Drop-off costs for yard wastes included in drop-off costs in Section 5 (Recycling Component).

(b) Costs included in administration costs presented in Section 10 (Funding Component). Administrative costs are for Desert/Mountain Regional Groups. County may administer its own program with current staff.

6.11 MONITORING AND EVALUATION

The composting program will incorporate ongoing monitoring, evaluation, and program modifications (as necessary) to improve the program on a continuing basis. The Solid Waste Management Department will need to maintain records on the number of tons of green waste delivered to processing or composting facilities, the amount successfully processed, the amount rejected, and the amount used for other purposes.

All records will be kept on a monthly basis because it is anticipated that there will be significant seasonal variation in quantities and composition of these wastes. These records will be maintained as part of the day-to-day operation for all yard waste composting facilities and supervised yard waste dropoff sites. The records will be used to quantify total diversion, guide the County Solid Waste Management Department in calibrating the composting operations schedule, and assist in the development of compost marketing arrangements.

Yard waste composting facilities

The yard waste composting facilities will keep records that identify the quantity of finished compost product produced and the residual quantity of materials which requires disposal. Residuals quantities can then be subtracted proportionally from diversion totals for each jurisdiction. Additionally, the yard waste composting facilities will keep records quantifying the amount of yard waste received from each individual supervised yard waste drop-off site.

Supervised yard waste drop-off sites

Data will be kept at all supervised yard waste drop-off sites identifying the origin and quantity of all yard waste materials received. These records will be used to credit diversion tonnages for each jurisdiction using the drop-off sites. It is anticipated that most of the yard

waste generators using a drop-off site will be from a single jurisdiction, thus simplifying the monitoring process.

Market development

Composting facilities will also keep records identifying the quantity and type of product sold to each type of several potential consumers: governmental agencies and their contractees, single-family homeowners, managers of multi-family complexes, commercial landscape businesses, and developers. Records of the types of buyers using the County's compost material will help the County expand its market and adapt its final compost products to local needs.

MMSW composting facilities

The MMSW composting facilities will keep records that identify the jurisdictional origins of incoming mixed waste, the quantity of finished compost product produced, and the residual quantity of materials remaining after composting which requires disposal. Residual quantities can then be subtracted proportionally from diversion totals for each jurisdiction.

Existing privately operated composting activities

The County SWMD and the regional groups will work with existing and any new private sector composting operations that develop in the coming years to establish recordkeeping systems that will, at a minimum, allow the County to receive appropriate diversion credit for these activities. It is likely that some type of formal requirements will have to be adopted by the County in order to ensure adequate private sector monitoring. One potential method the County will consider is to require monitoring activities as a condition of receiving an operating permit or a business license.

The County Solid Waste Management Department will use the information collected through both public sector and private sector monitoring activities to determine overall diversion rates, to meet State reporting requirements, and as a means to determine which generators should be targeted for increased education and promotion.

Evaluation Criteria

Criteria to be used in determining the effectiveness of the program are as follows:

- What percentage of targeted generators participated in the program?
- What methods are appropriate to increase the participation rate?
- Were the anticipated diversion objectives obtained?
- Did the responsible entities execute tasks as scheduled?

- Was the recovered product (compost) successfully marketed?

- Were all activities executed in an environmentally sound manner? Were environmental impacts associated with composting (vectors, odors, etc.) successfully mitigated?

Agencies responsible for monitoring, evaluation, and reporting

The Solid Waste Management Department will monitor the recordkeeping conducted by the waste haulers, and will be responsible for data analysis, monitoring and evaluation, and annual reporting of program effectiveness. It is estimated that ongoing staff resources of approximately 200 hours (10 percent of one person's time) per year will be needed to monitor and evaluate this program. This converts to a cost of approximately $5,000 per year.

6.12 CONTINGENCY MEASURES

If monitoring of the County's composting program shows a shortfall in the attainment of green waste diversion objectives, the Solid Waste Management Department will reassess the diversion alternatives in this or other components in this element as needed to attain the mandated diversion goals. Possible remedial strategies that would be considered include:

- Targeting additional materials for composting.

- Allocating greater resources for administrative staff time and public education and publicity.

- Placing (or raising) a user fee on collection of trash and lowering (or eliminating) the user fee on collection of materials targeted for diversion, to encourage participation in either municipal composting or home composting programs.

- Mandating refuse collection to residents of the area.

- Mandating (or enforcing with fines) the source separation of green waste.

- Evaluating the feasibility of composting MSW.

- Adding alternative feedstocks such as food wastes or other organics.

- Increasing market development activities.

- Using composted material as alternative cover material at County landfills.

SECTION 7
SPECIAL WASTE COMPONENT

7.1 INTRODUCTION

Special waste includes any solid waste which, because of its source of generation, its physical, chemical or biological characteristics or its unique disposal practices, is specifically conditioned in a solid waste facilities permit for handling and/or disposal. Special wastes are those non-hazardous solid wastes that require special handling, treatment, or disposal practices. The AB 939 Regulations definition of special wastes specifically includes the following wastes:

- Ash.
- Sewage sludge.
- Industrial sludge.
- Asbestos.
- Auto bodies.
- Auto shredder waste.

The focus of the Special Waste Component is not necessarily to institute any type of diversion mechanism for special wastes, but rather to reduce the hazard posed by these wastes. If current management practices and facilities are in compliance with applicable regulations and are adequate for the next 15-year planning period, then no new management programs need to be developed, evaluated, selected, or implemented.

7.2 OBJECTIVES

San Bernardino County has established the following objectives for special waste:

- To provide technical assistance in the proper management of medical waste to generators in the area.

- To minimize the hazard potential of any special wastes generated.

- To review existing special waste management methods and determine if they adequately meet the needs of the County in the short and medium terms.

- To maintain or develop programs to divert special wastes from disposal whenever possible.

7.3 EXISTING CONDITIONS

Each individual special waste in this section will, where applicable, be discussed in terms of identification of generators, generation quantity, diversion quantity, disposal quantity, and the future of existing programs.

Ash

Ash disposal is regulated under federal and state hazardous waste control laws which, in general, require ash toxicity to be measured to determine the appropriate management method. If the ash contains toxic constituents above prescribed levels, the ash must be managed as a hazardous waste, in most cases through landfilling at a Class I landfill. All of the incinerators located in the County are regulated for emissions and issued operating permits by the San Bernardino County Air Pollution Control District. There are also EPA emission and ash regulations for the Santa Fe Railway incinerator.

The only incinerator located in an unincorporated area is just outside the Needles city limits, in the Unincorporated Desert Region. The Needles Agriculture Inspection Station operates this facility for the purpose of burning wood, plants, and other organic materials. Only organic material is burned, therefore, the ash is considered nontoxic. The incinerator burns approximately 4.5 tons of material a year, which results in approximately 3 tons of ash each year. The ash is put into a dumpster, picked up by Turco Disposal, and hauled to the Needles Landfill. Personnel at the station do not predict any major operation changes in the next 15 years that would significantly alter incinerator operation or ash disposal.

Sewage Sludge

The Chino Basin Treatment Plant, which is operated within the Chino Basin Municipal Water District (CBMWD), is located in the unincorporated county just south of the City of Chino. It is a small facility that processes appropriately 5 of the 42.5 million gallons per day of raw wastewater from throughout the district. It generates about 14 wet tons per day of sludge. The sludge is delivered to two composting facilities that process it into soil amendments for use as fertilizer. Only if these facilities are unable to take the sludge is it disposed of in local landfills. Prior to landfill disposal, the sludge must achieve a 50 percent solids content. Since this is both difficult and expensive to accomplish, landfill disposal is used only as a last resort.

CBMWD has also begun development of a composting facility in the West Valley to handle both municipal sludge and dairy manure. Operation of the co-composting facility is expected to begin in early 1992. Within 2 years of operation, all sludge produced by CBMWD plants (between 110 and 130 wet tons per day) will be composted at the facility. The resulting products will be used on agricultural crops as fertilizer and soil conditioners.

Current AB 939 regulations do not include sludge as part of the base solid waste stream and do not give credit for its diversion. However, this decision is under review and will probably not be resolved until the spring of 1992. In any case, because existing procedure and future plans will ensure that all sludge generated by the CBMWD is diverted from landfill disposal, it will not be discussed further in this component.

Landfill Septage Ponds

The AB 939 Regulations do not list septage ponds as a category, therefore it is not necessary to evaluate the waste management methods in this component. However, most of the Unincorporated Desert region of San Bernardino County use septic tanks exclusively to handle wastewater. For this reason, the category of septage ponds is discussed in this report.

Any liquid waste taken from septage tanks or portable toilets must be transported by a hauler licensed by the County and must be disposed of at a permitted treatment facility. The Chino Basin treatment facility located in an unincorporated area of the County will take septage for a fee.

The potential hazards of septage ponds have been recognized as a problem in the County area. In a previous study performed by R. W. Beck and Associates, the following recommendations were made:

- The septage that is currently going to the Apple Valley and Victorville Landfills' septage ponds will be redirected to the Victor Valley Wastewater Treatment Plant.

- The septage that is currently going to the Barstow and Lenwood-Hinkley Landfills' septage ponds will be redirected to the Barstow Wastewater Treatment Plant.

There have also been discussions with the Marine Base indicating that they would be willing to accept septage from the Twentynine Palms and the Yucca Valley area at the Marine Base wastewater treatment plant. For the existing remote disposal sites, lined ponds would be adequate.

Industrial Sludge

Nonhazardous industrial sludge is generated by industries which operate pretreatment plants or otherwise treat industrial wastewaters before the water is released. Pretreatment is required when the industrial wastewater contains materials which can pose a hazard to the safe and effective operation of publicly owned wastewater treatment plants. Industrial sludges may or may not contain constituents which require the associated sludge to be classified as a hazardous waste. If the sludge is considered a hazardous waste, then it must be disposed in a Class I landfill and, for the purposes of this document, it is not considered special waste.

The Santa Fe Railway Company operates a pretreatment plant at the Barstow railyard for the purpose of removing oils and solids from the water before the water is discharged into the sewer system. Approximately 10.9 million gallons of water were treated in 1990. The water is first treated by skimming free-floating oils, then it is chemically treated and aerated to remove lighter oils, and mixed media filters provide final treatment before the water is discharged. During 1990, 709 tons or 842 cubic yards of 'dry' sludge were generated through this process. The sludge is disposed at the Fort Irwin Road land treatment facility, which is owned and operated by Santa Fe. The sludge is diced into the surface of the soil

where microbes biodegrade the hydrocarbons. The pre-treatment plant is located in the City of Barstow; the land treatment facility is located in the unincorporated County north of Barstow.

The facility operates under a permit issued by the Lahonton Regional Water Quality Control Board and maintains a discharge permit with the City of Barstow. A sludge filter press was recently installed which will extract free water from the sludge, thereby reducing the volume of sludge requiring disposal. No other major operational changes are predicted within the next 15 years that would significantly alter sludge disposal.

There were no other industrial pretreatment plants nor were there any drinking water treatment plants identified within the County. There are, however, industrial facilities that produce an industrial wastewater and possibly an industrial sludge that are located in the County. These facilities include mines, chemical mills, and power generation plants. The sludge produced is either toxic and disposed in a Class I landfill, or is disposed by company personnel in private, nonpermitted disposal sites, therefore is not in the scope of work and will not be evaluated further.

Asbestos

There are two categories of asbestos, friable and nonfriable. Friable asbestos is considered a hazardous waste by the AB 939 Regulations and is therefore out of the scope of work. Non-friable asbestos can be disposed of in a Class I landfill, or any landfill specifically permitted to dispose of asbestos. The term asbestos, for this section, is defined as nonfriable asbestos.

All the landfills in the County are Class III landfills, some accepting Class II liquids. None of the landfills are licensed to accept asbestos for disposal. The closest landfill to the County that accepts asbestos is the BKK Landfill in West Covina. The BKK Landfill is a Class III landfill permitted by the Los Angeles Regional Water Quality Control Board to accept both friable and nonfriable asbestos.

The BKK Landfill only keeps records of the amount of asbestos disposed, not the generator's jurisdiction, therefore it is not possible to quantify the amount of asbestos coming from the County. If and when this facility is closed, San Bernardino County shall designate another disposal site for the region.

Due to its hazardous nature, asbestos is handled by licensed contractors and disposed in a permitted out-of-county landfill. Removal, handling, and transport are regulated by the U.S. EPA, the Department of Labor, the Occupational Safety & Health Administration, and most recently the South Coast Air Quality Management District, which adopted Rule 1403 that mandates notification and asbestos control procedures during renovation and demolition activities. In addition, the Solid Waste Management Department of San Bernardino County has plans to implement full-time monitoring at the landfills to prevent illicit disposal of asbestos and other impermissible wastes.

No new management programs are recommended in this plan since the existing management method is deemed appropriate and adequately meets the needs of the County.

Auto Bodies

Auto bodies are not allowed for disposal at the transfer stations, but are allowed at all of the landfills in the County jurisdiction with certain provisions. Auto bodies may not contain any fluids (motor oil, fuel, etc.) or batteries. Generally, any auto bodies disposed of in the County area have been stripped and only the hulk is landfilled.

There are approximately 26 auto wrecking yards in the County. The main process in the County for recycling auto bodies is through bidding. Auto wrecking yards find out which scrap metal dealers are paying the highest amount for auto bodies, then sell auto bodies to that business. Wrecking yards crush the bodies or a scrap metal dealer will bring a portable crusher when picking up the bodies for shipping. Auto bodies are shipped to numerous locations for further processing, such as Fontana, Long Beach, Arizona, and Utah.

The County of San Bernardino Environmental Health Services (EHS) has had a fully implemented vehicle abatement program since August 1989. They have contracts with the Unincorporated Mountain Region and the Unincorporated Desert Region.

Approximately 70 percent of the abandoned vehicles impounded are claimed. The remaining vehicles are disposed of through the same bidding process as auto wreckers. The vehicle abatement program collected 240 vehicles in the County in 1989/90. Approximately 60 vehicles were seized in the year 1990.

No new auto body program is recommended in this plan since the existing management method is deemed appropriate and adequately meets the needs of the County. However, by January 1, 1994, auto bodies will be prohibited from disposal in solid waste landfills. It will be necessary for the County to make sure that this ban has been publicized.

Auto and White Goods Shredder Waste

Shredder waste is generated when automobiles, trucks, appliances and sheet metal are shredded in a mechanical shredding machine. Ferrous and nonferrous metals are shredded, separated, and sold for remelting. The remaining materials, consisting largely of upholstery, paint, plastics, and other nonmetallic materials are referred to as "shredder waste" or "fluff." There are only eight shredder facilities in the state of California, none of which are in the County. Ferromet Inc, located in Fontana, is the closest auto shredder, and the shredder waste is usually shipped overseas. No new shredder waste program is recommended in this plan since the existing management method is deemed appropriate and adequately meets the needs of the County. However, as with auto bodies, these shredder wastes will be regulated by AB 1760 which bans metallic materials from landfill. The CIWMB will be required to make further study and determinations, and it is possible that non-hazardous materials may be used as cover material.

White Goods

White goods refer to refrigerators, washers, dryers, air conditioners, and other large appliances. These materials may pose hazards or disposal problems for a number of reasons. Electric appliances produced or repaired prior to 1979 may contain polychlorinated biphenyls (PCBs) in their electrical capacitors. PCBs are classified as hazardous wastes. White goods are included in the list of materials that cannot be disposed in a solid waste facility by January 1, 1994.

Chlorofluorocarbons (CFCs), which when released cause damage to the ozone layer, are found in refrigeration and cooling systems. Bulky items refer to wastes too large to fit into a covered 30-gallon trash can, such as furniture made of wood or metal, do-it-yourself construction waste, and upholstered items like sofas, mattresses, and box springs. None of this material is hazardous, but it is awkward to handle and dispose. AB 1760 will ban the disposal of metallic materials, so many of these bulky items will be recycled.

Tires

Most old tires are returned to and disposed of by tire service stores when new tires are purchased. Those businesses which generate large quantities of tires are generally provided with separate bins for tire collection. They pay a premium for these bins to cover an extra disposal charge at the landfill. This surcharge is $78.06 per ton at the valley landfills and $84.08 ton at the desert and mountain landfills. Nevertheless, an undetermined number of tires are set out by individuals for regular collection. The County routinely disposes of County-owned tires through its tire distributors or local haulers. The Solid Waste Characterization Study for the Desert and Mountain region found 2 percent tires and rubber products, all of it in commercial waste. Additional work may be necessary to quantify the number of tires in the waste stream.

7.4 DESCRIPTION OF ALTERNATIVES

All of the programs discussed above will be continued for the foreseeable future. Accordingly, no existing programs will be phased out or decreased during the short- and medium-term planning periods.

During the solid waste generation study, medical wastes were observed to be present in the wastes being disposed in local landfills. The observed wastes appeared to have been properly managed in that they were contained in specially marked red bags that had apparently been autoclaved, a process involving steam sterilization of materials. Medical wastes were not included in the random samples taken during the solid waste generation study.

Furthermore, due to concerns for worker health and safety, the field crew would not have handled such wastes to obtain weights or composition even if a grid had been selected.

According to the San Bernardino County Environmental Health Department (County), there are less than 100 facilities within its jurisdiction that are subject to regulation as medical

waste generators. This number may increase due to new legislation that went into effect in January 1991.

The proposed medical waste program would consist of providing educational materials to generators of medical wastes (e.g., hospitals, medical clinics, and doctors' offices) to assist them in identifying ways to reduce the amount of waste that must be specially handled. Reduction techniques may include improvement of housekeeping procedures such as carefully separating refuse from other wastes that must be managed as medical wastes. Information developed by the state or other local jurisdictions can be used in this effort.

The County will continue to operate existing programs to divert special wastes. However, alternatives are available to increase the recycling of white goods, bulky items, and tires.

7.5 EVALUATION OF ALTERNATIVES

The 10 standard criteria used for evaluating each alternative are as follows:

- Effectiveness of the program.
- Hazards associated with the program.
- Ability to accomodate change.
- Consequences to the waste stream.
- Timing.
- Need for expanded or new facilities.
- Consistency with local plans, policies, and ordinances.
- Institutional barriers to implementation.
- Cost of implementation.
- Availability of markets/end-uses.

Additional criteria included the following:

- Operating experience.
- Regional applicability.
- Public acceptance.
- Social responsibility.

The following alternatives were selected for evaluation:

- White Goods and Bulky Items.
- Tire Recovery.
* Medical Waste Program.

7.6 EVALUATIVE DISCUSSIONS

Effectiveness of the Program

None of the alternatives represent large portions of the waste stream and would therefore have little impact on the diversion goals. For example, white goods and bulky items may make up 2 to 4 percent of the waste; tires are less than 1 percent of the waste stream. However, the other benefits of implementing such programs include the solution for operational problems or potential health and safety problems.

Hazards Associated With the Program

None of the alternatives create hazards; all of the alternatives attempt to deal with potential hazards in a safe, effective manner.

Ability to Accommodate Change

All the alternatives are very flexible for dealing with any changes that may arise during the course of the program.

Consequences to the Waste Stream

These alternatives would not cause changes in the amounts or types of wastes generated. However, the medical waste program might result in less waste being handled as medical waste and more waste being handled as regular refuse or recyclables.

Timing

All alternatives can be implemented in the short term, as quickly as 6 to 12 months.

Need for New or Expanded Facilities

No additional facilities would be required for any of the alternatives. However, there would be some minor changes to the method of collecting the materials.

Consistency With Local Plans, Policies, and Ordinances

All the alternatives are consistent with local waste management goals.

Institutional Barriers to Implementation

No institutional barriers exist to the implementation of these programs.

Cost of Implementation

All the alternatives have costs associated with the coordination and introduction of the programs. White goods, bulky items, and tires would marginally increase the number of truck trips and separate handling at the transfer station could increase labor costs. The increase would not be substantial. The medical waste program may actually result in cost savings if fewer amounts of materials are "red bagged" and handled as hazardous.

Availability of Markets/End-Uses

Markets exist for all metallic products (white goods) and 10 to 20 percent of the tires that are undamaged and can be exported or retreaded. Additionally, some of the material being discarded with the medical wastes could potentially be recycled with any other materials the facility is currently collecting.

Market development would be necessary for wood, plastic, and upholstered items.

Operating Experience

These materials are separated, handled, and recycled in the same manner in many jurisdictions.

Regional Applicability

Creating regional programs is possible and might be easier to implement on a regional basis.

Public Acceptance

Full public support for all the alternatives would be expected as there are no drawbacks to such programs.

Social Responsibility

The public would have more opportunities to participate and to recycle more of their wastes with these alternatives.

7.7 SELECTED ALTERNATIVES

The County will continue its programs to divert white goods, bulky items, and tires, and will increase recordkeeping to quantify the level of diversion. The County will expand the recycling of these materials wherever significant diversion is possible and markets are available. The County will participate when appropriate in regional or state market development activities. The County will also work with cities to develop information for medical waste generators to assist them in reducing the quantity being managed as medical waste. And finally, the County will adopt the requirements of AB 1760 which bans metallic wastes from solid waste facilities by 1994.

7.8 ANTICIPATED DIVERSION

The anticipated diversion will be difficult, if not impossible, to determine because the waste is managed as part of the overall waste stream. Therefore, the diversion from this program will not be used toward the County's mandated diversion goals. However, these programs are important to the task of reducing toxicity and the amounts of waste going to landfills.

7.9 PROGRAM IMPLEMENTATION

Implementation responsibilities will remain with the Solid Waste Management Department of the County. Haulers will be responsible for the continued operation and expansion of the bulky item and tire collection program. Information pamphlets will be developed and distributed , at public events by County staff beginning in 1993. The medical waste program consists of public education and is considered in the Education and Public Information Component. Market development activities for wood, plastic, and tires will also be undertaken, beginning in July 1992.

Task No.	Projected Start	Task Description	Responsibility
Medical Waste Program			
1	1993	Develop and design program.	County Environmental Health Dept./ Local Jurisdictions
2	1993	Negotiate agreement with regional groups.	County Environmental Health Dept./ Regional Group/Local Enforcement Agencies
3	1994	Implement program and monitor.	County Environmental Health Dept./ Regional Group/Local Enforcement Agencies

7.10 SUMMARY OF FUNDING REQUIRED

Costs are included in the Education and Public Information Component. No revenues are associated with the programs.

7.11 MONITORING AND EVALUATION

According to the AB 939 Regulations, each jurisdiction must monitor and evaluate each program area identified for implementation by its Source Reduction and Recycling Element, including management methods for special wastes.

The County Environmental Health Services will continue to monitor management methods for special wastes, and, as needed, report the status of special wastes to appropriate State and Federal agencies. Also, current regulating agencies for specific generators will continue to monitor existing activities.

Regional groups of the West Valley cities, the East Valley cities, and the Desert and Mountain cities are being formed with the County to insure AB 939 objectives are the regional group's objectives. In addition, the regional groups will help insure that implementation and funding occur on any integrated waste management program that has been selected.

7.12 CONTINGENCY MEASURES

Contingency measures are discussed in the Education and Public Information Component. Due to the fact that it will be difficult to obtain information about many of these programs and the limited effect on overall diversion, there are no other contingencies.

SECTION 8
EDUCATION AND PUBLIC INFORMATION COMPONENT

8.1 INTRODUCTION

Education and public information compose the single most important element of any waste diversion element. This component details the educational efforts to complement the source reduction, recycling, composting and special waste activities, estimates costs, discusses implementation responsibility, and proposes monitoring and evaluation systems.

8.2 OBJECTIVES

The following goals and objectives have been established for the Unincorporated regions of San Bernardino County:

- By 1995, ensure that at least 50 percent of the area households will be aware of at least one specific program or activity related to each of the region's AB 939 program components.

- By 1995, at least 50 percent of the area businesses targeted will be aware of at least one specific program or activity related to opportunities for businesses to participate in each of the region's AB 939 program components.

- By 1995, establish with area Chambers of Commerce, a commercial recycling forum and a source reduction and recycling awards recognition program for local businesses.

- By 1995, at least one printed "how-to" material each for source reduction, recycling and composting activities will have been distributed to at least 50 percent of the area.

- By 1995, the County business education program will have provided information to at least 25 percent of the area businesses.

- By 1995, the County will recommend and promote a precycling program and distribute it to 40 percent of the supermarkets and grocery stores in the area.

- By 2000, at least 75 percent of the area households will be aware of at least one specific service related to each of the region's AB 939 program components.

- By 2000, at least 75 percent of the area businesses targeted will be aware of at least one specific service related to opportunities for businesses to participate in each of the region's AB 939 program components.

- By 2000, at least one printed "how-to" material each for source reduction, recycling and composting activities will be distributed to at least 75 percent of the area households, businesses, and government employees.

- By 2000, the County Business Education Program will have offered information on waste audits and education services to at least 50 percent of targeted businesses.

- By 2000, the County will continue to recommend and promote a precycling program and distribute it to 75 percent of the all supermarkets and grocery stores in the area.

8.3 EXISTING CONDITIONS

Currently, the County Solid Waste Management Office develops information, produces brochures, and distributes other materials that promote local recycling programs. There are two full-time Education Specialists, a Staff Analyst to administer Countywide programs, and a Department Media Specialist who assists in developing media strategies for recycling programs. Schools in the County, as well as civic and business groups, are able to request presentations from the Education Specialists who also represent the Department at civic events such as the County Fair, Earth Day, etc., where they distribute source reduction and recycling and composting information to the public. The Department also provides education kits to elementary schools within the County. (See Appendix B).

The County, in a joint effort with the cities in San Bernardino County and the County's landfill operator, publishes a quarterly newsletter called Full Circle. The newsletter provides readers with information concerning recycling programs throughout the County, regional solid waste issues, solid waste recycling events, and details about new legislation affecting solid waste disposal and recycling.

The State-certified recycling redemption centers benefit largely from the promotion and media campaigns administered by the Department of Conservation, Division of Recycling. Local businesses promote the locations as part of the requirement of the AB 2020 law. Additionally, the "igloos" where materials are dropped off and stored are highly visible and serve as a constant reminder to the citizens that recycling is available to them in close proximity to their home.

Local buy-back centers have limited amounts of advertising and promotion. Primarily, the focus of these efforts is direct advertising to specific customers for their particular center. Often, the advertising promotes redemption prices.

In response to AB 939, a countywide Solid Waste Advisory Task Force was formed. One of the working committees on the Task Force is dedicated to education and public information. The Education and Public Information Committee works with the County's Solid Waste Management Department staff and the County's landfill operator, to develop and implement education and public information programs to meet the goals of AB 939. The education and

public information programs will be implemented by the Department in close cooperation with its landfill operator, the Education and Public Information Committee, and other jurisdictions in the region. The Department's purpose is to serve as the primary source of information to complement the independent educational efforts of the cities and help ensure regional accomplishment of the diversion mandates. The Department hopes to foster the emergence of public/private partnerships for ongoing educational programs. To accomplish this, a wide range of programs is being developed, including technical assistance seminars for recycling coordinators, a recycling "hot-line", a Resource Information Center, Grants for Teachers Program, and Business Education Program.

The County expects to continue its role in providing support and information countywide, however, the County is also determined to offer specific education and information to the unincorporated portions of the County that assist in the implementation of the unincorporated programs selected in this document.

A limited number of businesses, offices, and institutions have developed their own "in-house" recycling programs with their own educational and promotional materials.

8.4 TARGETED WASTE GENERATORS

Based on data from the Waste Generation Study, waste generators were targeted for the design and implementation of education and public information programs. The following waste generators were selected based on the type and quantity of waste generated.

- Single-family residents.
- Multifamily residents.
- Commercial/Industrial generators.
- Institutions, agencies, hospitals, and schools.

8.5 SELECTED ALTERNATIVES

8.5.1 Countywide Programs. Many countywide education programs are developed with input from the Education and Public Information Committee of the Solid Waste Advisory Task Force.

Quarterly Newsletters

The County will continue to publish the quarterly newsletter Full Circle and use this forum to present information on the various waste diversion programs including source reduction activities. Government agencies, businesses, the academic community, and civic or environmental groups countywide are the targeted audiences. The Editorial Board of the newsletter consists of the Education and Public Information Committee of the Solid Waste Advisory Task Force.

Solid Waste Self-Education Guide

A solid waste self-education guide containing a list of Task Force members, Task Force committee information, City and County recycling coordinators, landfill information, buy-back centers, and household hazardous waste collection centers has been developed and will be updated and distributed periodically. The target audiences are government agencies, businesses, hospitals, the academic community, and civic or environmental groups.

AB 939 Presentation

The County will prepare a presentation including a speech, pamphlet and slide show which explains AB 939 and the County's waste reduction goals. The presentation will be available to government agencies, city recycling coordinators, and interested members of the public.

Museum Feasibility Study

A feasibility study will be conducted to evaluate the development of a mobile interactive museum focusing on the waste crisis, and the available options and solutions. Schools and the general public will be the target audience of the display.

School Grants For Teachers Program

The County will administer a grant program which will award grants to educators who develop innovative supplemental teaching materials on solid waste issues. The resulting projects will be disseminated to County schools. Pre-school through twelfth-grade educators are the target audience of this program.

Animated Movie Leader

The County will develop characters and story lines for animated movie leaders that address integrated waste management. The characters can serve as a logo to identify the County's educational materials. Children and the general public are the target audiences.

Technical Assistance Seminars

The County, with the Education and Public Information Committee of the Solid Waste Advisory Task Force, will conduct seminars/workshops for City recycling coordinators and other key staff. The purpose of these workshops is to assist cities in meeting the AB 939 mandates.

Resource Information Center

A resource information center dedicated to distributing solid waste information will be developed by the County and the Education and Public Information Committee of the Solid Waste Advisory Task Force. The center will include resources such as an on-line computer network, electronic mail, videos, trade subscriptions, a public hotline, and other reference materials. Government agencies, businesses, and the general public are the target audiences.

Businesses Education Program

The County will develop a comprehensive education kit to be distributed to businesses. The kit will assist area business in their implementation of waste diversion programs. Outstanding efforts will be acknowledged through a business awards program.

8.5.2 Unincorporated County Programs

Volunteer Program

The County will analyze the feasibility of implementing a Volunteer Support program for recycling activities. The volunteers would serve as spokespersons in their neighborhoods or multifamily complexes. They will periodically receive information on the status of recycling programs and are encouraged to share the information with their neighbors. In addition, volunteers could be solicited to stimulate recycling in areas where participation does not meet projected goals. Existing groups, such as homeowners associations, neighborhood block leaders or neighborhood watch will be targeted for participation.

Commercial/Industrial Recycling

The County will work with local haulers to assist in educating businesses in unincorporated areas. In most cases, the hauler will have existing methods for promoting recycling services for such businesses and the County will be able to assist in finding methods to distribute the information.

Media Releases/Advertising

The County will work with regional groups to assist in providing the media with ongoing information about diversion programs and goals. If necessary, the County may purchase advertising as needed to announce new programs, etc.

Community/Special Events

The County will participate in and promote special events, such as Earth Day celebrations, to promote waste diversion and resource conservation. Earth Day events are held annually and feature informational items and displays of products made from recycled materials.

Annual Report

Annual reports will be prepared by the end of the short term planning period in order to assist the County in making decisions for the medium term planning period. The Solid Waste Management Department staff will prepare this "State of the County" annual report.

Precycling Program

A supermarket precycling program will be implemented to educate consumers on the direct relationship between consumer purchases, diminishing landfill space, and increasing waste disposal costs. This precycling program will encourage consumers to change their purchasing decisions.

8.6 PROGRAM IMPLEMENTATION

The selected alternatives, their projected start dates, and the responsible party are listed by task in the following outline. Once again, Countywide programs will be implemented for all areas of the County and unincorporated programs are applicable to unincorporated regions only.

8.6.1 Countywide

Task No.	Projected Start	Task Description	Responsibility
Quarterly Newsletter			
1	1990	Develop newsletter distribution plan.	County Solid Waste Dept./ Solid Waste Advisory Task Force.
2	Ongoing	Publish newsletter.	County Solid Waste Dept./ Solid Waste Advisory Task Force.
3	Ongoing	Distribute newsletter.	County Solid Waste Dept./ Solid Waste Advisory Task Force.
Self-Education Guide			
1	1992	Prepare solid waste self-education guide.	County Solid Waste Dept./Solid Waste Advisory Task Force
2	1992	Distribute solid waste self-education guide.	County Solid Waste Dept./Solid Waste Advisory Task Force
3	Ongoing	Update solid waste self-education guide.	County Solid Waste Dept./Solid Waste Advisory Task Force
AB 939 Presentation			
1	1993	Develop informational materials and list of events to attend.	County Solid Waste Dept./ Solid Waste Advisory Task Force
2	1993	Develop speech, slides, pamphlets and schedule.	County Solid Waste Dept./ Solid Waste Advisory Task Force

Task No.	Projected Start	Task Description	Responsibility
Museum Feasibility Study			
1	1992	Identify study team staff.	County Solid Waste Dept./ Solid Waste Advisory Task Force
2	1992	Develop evaluation criteria.	County Solid Waste Dept./ Solid Waste Advisory Task Force
3	1992	Gather data and make determinations.	County Solid Waste Dept./ Solid Waste Advisory Task Force
School Grants For Teachers Program			
1	1991	Develop grant application.	County Solid Waste Dept./ Solid Waste Advisory Task Force.
2	Ongoing	Evaluate grant applications.	County Solid Waste Dept./ Solid Waste Advisory Task Force.
3	Ongoing	Select/announce grant recipients and assist Schools in incorporating into current curriculum.	County Solid Waste Dept./ Solid Waste Advisory Task Force.
Animated Movie Leader			
1	1993	Contact production companies.	County Solid Waste Dept.
2	1993	Select production company.	County Solid Waste Dept.
3	1993	Develop characters and storylines.	County Solid Waste Dept.
Technical Assistance Seminars			
1	1991	Identify issues.	County Solid Waste Dept./ Solid Waste Advisory Task Force.
2	Ongoing	Develop seminar series, outline, locate presenters.	County Solid Waste Dept./ Solid Waste Advisory Task Force.
3	Ongoing	Conduct seminars.	County Solid Waste Dept./ Solid Waste Advisory Task Force.

Task No.	Projected Start	Task Description	Responsibility
Resource Information Center			
1	1991	Select library location. Identify telephone needs.	County Solid Waste Dept.
2	1991	Select vendor and install phone system.	County Solid Waste Dept.
3	Ongoing	Collect/catalog materials.	County Solid Waste Dept./Solid Waste Advisory Task Force
4	Ongoing	Advertise program and hotline.	County Solid Waste Dept./Solid Waste Advisory Task Force.

Business Education Program			
1	1992	Develop kit prototype.	County Solid Waste Dept./ Solid Waste Advisory Task Force.
2	1993	Field-test kit.	County Solid Waste Dept./ Solid Waste Advisory Task Force.
3	1993	Produce kits and build distribution strategy.	County Solid Waste Dept./Solid Waste Advisory Task Force.
4	1994	Implement business awards program.	County Solid Waste Dept./Solid Waste Advisory Task Force.

8.6.2 Unincorporated

Task No.	Projected Start	Task Description	Responsibility
Volunteer Program			
1	1993	Identify feasibility study team.	County Solid Waste Dept.
2	1993	Conduct feasibility study.	County Solid Waste Dept.
3	1993	Determine whether to pursue program based on study.	County Solid Waste Dept.

Commercial/Industrial Recycling			
1	1993	Collect educational materials currently distributed by haulers.	County Solid Waste Dept.
2	1993	Meet with haulers and assist where necessary.	County Solid Waste Dept.
3	Ongoing	Update information.	County Solid Waste Dept.

Task No.	Projected Start	Task Description	Responsibility
Media Releases/Advertising			
1	1993	Establish from SRRE timelines when release/advertising needed. Tie community/special events into list for free publicity.	County Solid Waste Dept.
2	Ongoing	Prepare releases and advertising as needed using media.	County Solid Waste Dept.
Community/Special Events			
1	1991	Develop information materials on Source Reduction, Recycling and Composting programs.	County Solid Waste Dept.
2	Ongoing	Distribute promotional materials.	County Solid Waste Dept.
3	Ongoing	Establish community presentation roster.	County Solid Waste Dept.
4	Ongoing	Update information regarding programs as needed.	County Solid Waste Dept.
Precycling Program			
1	1993	Solicit participation and cooperation for local supermarket managers.	County Solid Waste Dept.
2	1993	Prepare posters, signs, and brochures explaining the concepts of precycling.	County Solid Waste Dept.
3	1993	Distribute and place brochures, signs and posters in local grocery stores.	County Solid Waste Dept.
4	1993	Begin publicizing participating grocery stores in media campaign. Investigate other new programs.	County Solid Waste Dept.
Annual Report			
1	1994	Develop report.	County Solid Waste Dept.
2	1994	Present report.	County Solid Waste Dept.

8.7 SUMMARY OF FUNDING REQUIRED

The costs for the countywide programs selected appear in Table 8-1. The costs for the unincorporated county programs appear in Table 8-2. Unincorporated county costs are allocated to each region based on population.

TABLE 8-1
ESTIMATED EDUCATION AND PUBLIC INFORMATION COSTS*
SAN BERNARDINO COUNTYWIDE
(in nearest 1991 $1000)

	1991-92	1992-93	1993-94	1994-95	1995-96
Quarterly Newsletter	27,000	28,000	29,000	30,000	31,000
Self-Education Guide	8,000	8,000	9,000	9,000	10,000
AB 939 Presentations	10,000	0	TBD	TBD	TBD
Technical Assistance Seminars	19,000	20,000	20,000	21,000	22,000
Grants For Teachers	66,000	79,000	82,000	TBD	TBD
Resource/Information Center	23,000	27,000	28,000	29,000	30,000
Business Kit	23,000	12,000	12,000	12,000	13,000
Museum Feasibility Study	16,000	14,000	TBD	TBD	TBD
Movie Leader Feasibility Study	24,000	14,000	TBD	TBD	TBD
New Programs	0	17,000	18,000	19,000	20,000
Communication Media Support	0	5,000	5,000	5,000	5,000
TOTAL	**216,000**	**(Not to exceed $250,000 annually)**			

* Programs listed are countywide and administered by the County with input from the Education and Public Information Committee of the Solid Waste Advisory Task Force.

TBD - To Be Determined

TABLE 8-2
ESTIMATED EDUCATION AND PUBLIC INFORMATION COSTS
UNINCORPORATED SAN BERNARDINO COUNTY
(in nearest 1991 $1000)

	1991-92	1992-93	1993-94	1994-95	1995-96
Volunteer Program	TBD	TBD	TBD	TBD	TBD
Commercial/Industrial Recycling	0	10,000	10,000	12,000	12,000
Media Releases/Advertising	0	4,000	5,000	5,000	5,000
Community/Special Events	0	10,000	12,000	14,000	14,000
Video Program*	0	1,000	0	1,000	0
Precycling Program	0	5,000	5,000	5,000	5,000
Annual Report	0	0	0	2,000	2,000
TOTAL	**0**	**$30,000**	**$32,000**	**$39,000**	**$38,000**

* Used as part of the Resource Information Center

8.8 MONITORING AND EVALUATION

The County will be responsible for the monitoring and evaluation of all programs associated with achieving its desired diversion goals. In particular, the attainment of the education and public information objectives will be addressed in two basic methods:

- Surveys to assess the awareness level of the community regarding the various recycling and source reduction programs within the County.

- The gathering of specific data to determine the effectiveness of selected alternatives to meet their objectives.

Surveys will be conducted at the end of the short- and medium-term planning period to determine the awareness level of local citizens about community recycling and source reduction activities. When the selected alternatives are in place, the surveys will attempt to relate citizen awareness to actual participation in the programs. It is important for the County to have a true picture of the relationship between simple awareness and actual participation. The sampling will indicate awareness as follows:

AWARENESS/EFFECTIVENESS

0 percent - 25 percent	Not effective
26 percent - 50 percent	Somewhat effective
51 percent - 75 percent	Effective
76 percent - 100 percent	Very effective

Participation will be evaluated as follows:

PARTICIPATION/EFFECTIVENESS

0 percent - 25 percent	Not effective
26 percent - 50 percent	Somewhat effective
51 percent - 75 percent	Effective
76 percent - 100 percent	Very effective

It is important to assess the relationship between the two areas of awareness and participation. A high awareness and low participation would indicate a weakness in the operational structure of a program. Low awareness and low participation would indicate an ineffective education and/or informational program.

The following monitoring plans will be utilized at the end of the short- and medium-term planning periods to audit selected programs based on the following target audiences: general public; governmental agencies; academic community; and business community. The monitoring plans will determine the effectiveness of the selected programs in achieving the desired goals.

Quarterly Newsletter

- Establish interview format.
- Conduct interviews.
- Evaluate results.

Self-Education Guide

- Identify sample.
- Conduct written survey.
- Evaluate results.

Grants For Teachers

- Name and number of schools or teachers submitting grant applications and later the number utilizing materials developed under grants.
- Number of schools utilizing grant materials.
- Total number of students exposed to program.

Business Education Program

- Number of potential participants.
- Number of participants contacted.
- Number of businesses participating in the awareness program.

Should the monitoring of diversion objectives indicate a shortfall, the following measures will be implemented.

Newsletter

Design a written survey to be used as an insert to the newsletter which will solicit suggestions followed by in-depth interviews.

Self-Education Guide

Conduct meetings with selected governmental representatives to evaluate and re-design the guide.

Grants For Teachers

Through informal surveys and from data provided by the California Division of Recycling, it appears that there is a high level of interest by schools wanting materials for classroom use. Should the County's objectives fall short, meetings will be set with teachers and school administrators to evaluate and redesign the program and/or materials in order to reach desired objectives.

Business Education Program

Solicit improvement suggestions on the survey included in business kit and follow-up with in-depth phone interviews.

8.9 CONTINGENCY MEASURES

If the educational program appears to be performing below expectations, the County will analyze figures on the frequency and type of information that was communicated to target groups. If the messages are not being understood, repeated often enough or designed properly, surveys or focus groups will be able to help the County assess these deficiencies and correct them.

If it appears that the objectives may have been unachievable, the objectives will be revised. If the objectives appear to be achievable, the County could identify other avenues to pursue for additional education. If the objectives appear achievable, the messages appear to be sent frequently, and the targeted groups appear to be receiving the messages, then the monitoring and evaluation program will be reassessed.

SECTION 9
DISPOSAL FACILITY CAPACITY COMPONENT

9.1 INTRODUCTION

Integrated waste management includes the environmentally safe disposal of solid wastes that cannot be feasibly diverted from landfills. This component identifies the unincorporated County's current and future solid waste disposal capacity needs and projects those needs for the next 15 years, beginning in 1991. A discussion of planned closures and expansions is included.

AB 939 regulations state that "the solid waste disposal facility capacity component shall identify and describe all existing permitted solid waste landfills and transformation facilities within the jurisdiction." Within the unincorporated regions of San Bernardino County, there are four land-fill sites within incorporated, owned and operated by the County, and fourteen land-fills located in unincorporated areas. Although not required by AB 939 regulations, this component also addresses the landfills *not* located within unincorporated County regions, but which have disposal capacity available to the unincorporated County.

Historically, the solid waste disposal system in San Bernardino County has been founded on the premise that the County provides landfill space to both incorporated and unincorporated areas alike.

It should be noted that landfill capacity available to unincorporated San Bernardino County may also have been counted towards capacity available to certain incorporated jurisdictions within the County, despite the lack of any waste stream contract or agreement with the County. Without such agreements these cities have no guaranteed capacity as the County has by owning the landfill. Due to the depletion of capacity in the County, it would be beneficial, even necessary, for cities to have agreements with the County for disposal capacity. The County can then adequately plan future siting.

9.2 EXISTING PERMITTED SOLID WASTE DISPOSAL FACILITIES

9.2.1 West Valley

Based on waste hauler surveys, 95 percent of the solid wastes generated in the unincorporated West Valley subregion are disposed in the Milliken Landfill. The remainder is disposed in the Mid-Valley Landfill, located in the City of Rialto, and the Colton Landfill, located in the City of Colton. Although the Milliken Landfill is located in the City of Ontario, it is owned and operated by the County. The Milliken Landfill is the only active, permitted, solid waste landfill in the West Valley portion of the County. There are no active, permitted transformation facilities in the West Valley subregion of San Bernardino County. Traditionally, the County has accepted waste from the various host and non-host communities with no waste stream agreements.

Based on information provided by the Solid Waste Management Department of San Bernardino County and by the California Integrated Waste Management Board, Table 9-1 describes transfer stations and Table 9-2 details the following required information regarding each landfill: facility owner/operator; quantity and types of wastes disposed; permitted site acreage; permitted capacity; current disposal fees; and remaining facility capacity in cubic yards and years.

TABLE 9-1. SAN BERNARDINO COUNTY TRANSFER STATIONS		
Name of Facility	Owner/Operator	Landfill Used
Heaps Peak Transfer Station	San Bernardino County/San Bernardino County	San Timoteo
Lucerne Valley Transfer Station	San Bernardino County/San Bernardino County	Apple Valley

9.2.2 East Valley

Solid wastes generated within the unincorporated portions of the East Valley are disposed in one of three permitted landfills owned and operated by the County: the Colton Landfill, located in the City of Colton; the Mid-Valley Landfill, located in the City of Rialto; and the San Timoteo Landfill, located in the City of Redlands. The Milliken Landfill in Ontario also receives wastes generated within the East Valley subregion. There are no active, permitted transformation facilities in the East Valley subregion.

9.2.3 Desert and Mountain

Thirteen active, permitted landfills within San Bernardino County accept solid wastes from the unincorporated Desert subregion. Of these, nine are located within the unincorporated Desert subregion and four are located within unincorporated areas. Thirteen of the landfills are publicly owned, either by the County, the federal Bureau of Land Management (BLM), or the U.S. Department of Forrestry. All sites owned by BLM are operated by the County Solid Waste Management Department. On three sites owned by BLM the County contracts for operation of these facilities. The County also owns and operates Heaps Peak Transfer Station. There are no active, permitted transformation facilities in the Desert subregion of San Bernardino County.

Only one active, permitted landfill, the Big Bear Landfill, is located in and receives wastes from the Mountain subregion of unincorporated San Bernardino County. The Big Bear Landfill is owned by the U.S. Forest Service (USFS), and is operated by the County Solid Waste Management Department. Required information regarding this site is listed in Table 9-2.

9.3 PLANS FOR FACILITY CLOSURE AND EXPANSION

The information reflected in Table 9-2 is based on the data contained in the existing permits. All County landfills are currently undergoing a permit revision. Based on the revised permit, anticipated closure dates are as follows:

LANDFILL	PERMIT REVISION CLOSURE DATE
Apple Valley	2018
Baker	2171
Barstow	2003*
Big Bear	2009*
Colton	1997
Hesperia	2007*
Landers	2012*
Lenwood-Hinkley	2235
Mid-Valley	1998*
Milliken	1993
Morongo	1998
Newberry	2017 (inactive)
Phelan	2019
Trona-Argus	2021
Twentynine Palms	2080
San Timoteo	2012*
Victorville	2000*
Yermo	1997

The asterisk denotes landfills that are being evaluated for expansion.

9.4 SOLID WASTE DISPOSAL FACILITY NEEDS PROJECTION

The solid waste disposal facility needs projections for the unincorporated San Bernardino County regions and for the entire unincorporated County are summarized in Tables 9-5 through 9-8. Because the West and East Valley regions share the same landfill sites, the disposal facility needs projections for the entire unincorporated Valley have been combined into one table.

Table 9-2. SAN BERNARDINO COUNTY UNINCORPORATED PERMITTED LANDFILL SITES

Site	Owner Operator	Tons/ Day	Cu.Yds./ Day	Tons/ Year	Cu.Yds./ Year	Years Left	Est Closure	Permitted Acreage	Permitted Tons/day	Current Fee	Capacity* 6/30/91	Expansion Potential*	Materials Accepted
DESERT LANDFILLS													
Apple Valley	BLM/SB. Co.	151	302	55,064	110,128	0.57	1992	80	79	35.23	62,305	1,550,000	M, T, A, C
Baker	SB Co./SB Co.	2	4	696	1,392	98.00	2089	40	3	35.23	136,416		M, A, C
Barstow	SB Co./SB Co.	93	185	33,769	67,538	12.46	2003	160	121	35.23	841,577	10,000,000	M, C
Hesperia	BLM/SB. Co.	203	406	74,099	148,198	5.46	1996	80	58	35.23	809,807	Undetermined	M, T, A, C
Landers	BLM/SB. Co.	83	165	30,156	60,311	14.02	2005	638	180	35.23	548,519	10,000,000	M, T, C
Lenwood-Hinkley	SB Co./SB Co.	42	84	15,244	30,488	24.25	2015	160	41	35.23	739,400	Undetermined	M, T, A, C, S
Morongo Valley	SB Co./SB Co.	39	77	13,982	27,963	22.41	2013	75	38	35.23	626,595	Undetermined	M, A, C
Newberry Springs	BLM/SB. Co.	3	6	1,065	2,129	26.58	2018	40	3	35.23	56,586		M, A, C
Phelan	SB Co./SB Co.	105	209	38,171	76,341	10.10	2001	80	43	35.23	770,914		M, T, A, C, S
Trona-Argus	BLM/SB. Co.	5	9	1,667	3,333	28.64	2020	48	37	35.23	95,460		M, T, A, C
Twentynine Palms	BLM/SB. Co.	79	158	28,858	57,716	6.35	1997	70	60	35.23	366,729		M, C, A, S
Victorville	BLM/SB. Co.	289	577	105,269	210,538	1.00	1992	80	75	35.23	210,237	5,000,000	M, C, S
Yermo	BLM/SB. Co.	13	25	4,477	8,954	5.72	1997	40	24	35.23	51,191		M, A, C
Desert Subtotal		**1,107**	**2,207**	**402,517**	**805,029**	**255.56**			**762**		**5,315,738**	**26,550,000**	
VALLEY LANDFILLS													
Colton	SB Co./SB Co.	1,063	1,725	224,191	448,382	6.94	1998	94	525	29.21	3,111,625		M, C
Mid-Valley	SB Co./SB Co.	932	1,530	238,706	447,412	10.99	2002	140	374	29.21	5,245,684	11,325,600	M, T, C, S, D
Milliken	SB Co./SB Co.	2,026	3,339	520,868	1,041,735	2.26	1993	196	1,022	29.21	2,351,819		M, T, A, C, D
San Timeteo	SB Co./SB Co.	510	814	127,056	254,112	36.50	2028	114	1,000	29.21	9,275,115	17,763,720	M, T, A, C
Valley Subtotal		**4,531**	**7,408**	**1,110,821**	**2,191,641**	**56.69**					**19,984,243**	**29,089,320**	
EAST MOUNTAIN LANDFILL													
Big Bear	USFS/SB Co.	75	150	27,311	54,622	-9.00	1990	59	93	67.77	(49,154)	825,000	M, T, A, C
COUNTY TOTALS		**5,713**	**9,765**	**1,540,649**	**3,051,292**	**303.25**			**855**		**25,250,827**	**56,464,320**	

* Capacity and Expansion Potential expressed in Cubic Yards

M = Municipal Solid Waste
T = Tires
A = Agricultural Waste
S = Septage, Sludge
D = Dead Animals

TABLE 9–3. SOLID WASTE DISPOSAL FACILITY NEEDS PROJECTION *
EAST AND WEST VALLEY SUBREGIONS OF UNINCORPORATED SAN BERNARDINO COUNTY

YEAR	MSW GENERATED	+	SLUDGE DISPOSED	+	MSW/SLUDGE IMPORTED	–	MSW DIVERTED	–	VOLUME REDUCTION	–	REMAINING LANDFILL CAPACITY #	–	MSW/SLUDGE EXPORTED	=	ADDITIONAL CAPACITY NEEDED
1991	304,632		0		0		33,252		0		21,822,571		0		0
1992	318,118		0		0		40,697		0		21,545,151		0		0
1993	330,802		0		0		56,160		0		21,270,509		0		0
1994	342,181		0		0		74,416		0		21,002,744		0		0
1995	355,421		0		0		94,030		0		20,741,353		0		0
1996	368,662		0		0		117,038		0		20,489,730		0		0
1997	381,847		0		0		139,895		0		20,247,778		0		0
1998	393,550		0		0		162,754		0		20,016,982		0		0
1999	406,768		0		0		185,610		0		19,795,824		0		0
2000	419,997		0		0		210,609		0		19,586,435		0		0
2001	433,373		0		0		217,301		0		19,370,363		0		0
2002	446,727		0		0		223,981		0		19,147,618		0		0
2003	458,506		0		0		230,020		0		18,919,132		0		0
2004	471,903		0		0		236,589		0		18,683,817		0		0
2005	485,345		0		0		243,367		0		18,441,639		0		0

* All values expressed in cubic yards (in–place density of 1,200 lbs/cu–yd).

\# Based on landfill capacities remaining as of 6/30/90 (listed in Tables 9–1 and 9–2). Figures show capacity estimated to remain at the end of each year. Note that 50% of 1990 disposal was subtracted from 6/30/90 capacity estimates prior to calculation of volume at the end of 1991.

TABLE 9-4. SOLID WASTE DISPOSAL FACILITY NEEDS PROJECTION *
DESERT SUBREGION OF UNINCORPORATED SAN BERARNDINO COUNTY

YEAR	MSW GENERATED	+	SLUDGE DISPOSED	+	MSW/SLUDGE IMPORTED	−	MSW DIVERTED	−	VOLUME REDUCTION	−	REMAINING LANDFILL CAPACITY #	−	MSW/SLUDGE EXPORTED	=	ADDITIONAL CAPACITY NEEDED
1991	254,473		10,008		0		6,492		0		6,200,266		0		0
1992	261,193		10,273		0		18,862		0		5,947,662		0		0
1993	267,913		10,537		0		37,868		0		5,707,080		0		0
1994	274,632		10,802		0		57,136		0		5,478,782		0		0
1995	281,353		11,065		0		80,847		0		5,267,211		0		0
1996	288,071		11,330		0		90,502		0		5,058,312		0		0
1997	294,792		11,594		0		100,369		0		4,852,296		0		0
1998	301,512		11,859		0		110,231		0		4,649,156		0		0
1999	308,231		12,122		0		120,096		0		4,448,899		0		0
2000	314,951		12,387		0		129,851		0		4,251,412		0		0
2001	321,672		12,652		0		132,547		0		4,049,636		0		0
2002	328,390		12,915		0		135,254		0		3,843,584		0		0
2003	335,111		13,180		0		137,962		0		3,633,255		0		0
2004	341,831		13,444		0		140,670		0		3,418,651		0		0
2005	348,550		13,709		0		143,375		0		3,199,767		0		0

* All values expressed in cubic yards (in-place density of 1,000 lbs/cu-yd).
\# Based on landfill capacities remaining as of 6/30/90 (listed in Table 9-3). Figures show capacity estimated to remain at the end of each year.
Note that 50% of 1990 disposal was subtracted from 6/30/90 capacity estimates prior to calculation of volume at the end of 1991.

TABLE 9-5. SOLID WASTE DISPOSAL FACILITY NEEDS PROJECTION *
MOUNTAIN SUBREGION OF UNINCORPORATED SAN BERARDINO COUNTY

YEAR	MSW GENERATED	+	SLUDGE DISPOSED	+	MSW/SLUDGE IMPORTED	-	MSW DIVERTED	-	VOLUME REDUCTION	-	REMAINING LANDFILL CAPACITY #	-	MSW/SLUDGE EXPORTED	=	ADDITIONAL CAPACITY NEEDED **
1991	20,401		868		0		434		0		0		0		20,835
1992	21,186		902		0		2,111		0		0		0		19,977
1993	21,970		936		0		3,698		0		0		0		19,208
1994	22,753		967		0		5,688		0		0		0		18,033
1995	23,538		1,001		0		8,234		0		0		0		16,305
1996	24,323		1,035		0		8,756		0		0		0		16,602
1997	25,106		1,069		0		9,037		0		0		0		17,139
1998	25,892		1,102		0		9,320		0		0		0		17,674
1999	26,675		1,134		0		9,604		0		0		0		18,206
2000	27,460		1,168		0		10,012		0		0		0		18,616
2001	28,245		1,202		0		10,309		0		0		0		19,137
2002	29,030		1,235		0		10,597		0		0		0		19,668
2003	29,812		1,269		0		10,882		0		0		0		20,200
2004	30,597		1,301		0		11,168		0		0		0		20,731
2005	31,382		1,335		0		11,455		0		0		0		21,262

* All values expressed in cubic yards (in-place density of 1,000 lbs/cu-yd).

\# Based on landfill capacities remaining as of 6/30/90 (listed in Table 9-4). Figures show capacity estimated to remain at the end of each year. Note that 50% of 1990 disposal was subtracted from 6/30/90 capacity estimates prior to calculation of volume at the end of 1991.

** Shows annual capacity needs. Total (cumulative) capacity needs over 15-year period = 287,146 cu-yd.

TABLE 9-6. SOLID WASTE DISPOSAL FACILITY NEEDS PROJECTION *
UNINCORPORATED SAN BERARNDINO COUNTY

YEAR	MSW GENERATED	+	SLUDGE DISPOSED	+	MSW/SLUDGE IMPORTED	-	MSW DIVERTED	-	VOLUME REDUCTION	-	REMAINING LANDFILL CAPACITY #	-	MSW/SLUDGE EXPORTED	=	ADDITIONAL CAPACITY NEEDED
1991	579,506		10,876		0		40,178		0		28,022,838		0		0
1992	600,496		11,175		0		61,671		0		27,492,813		0		0
1993	620,686		11,472		0		97,726		0		26,977,589		0		0
1994	639,566		11,769		0		137,239		0		26,481,526		0		0
1995	660,312		12,066		0		183,112		0		26,008,564		0		0
1996	681,056		12,365		0		216,296		0		25,548,042		0		0
1997	701,747		12,662		0		249,301		0		25,100,073		0		0
1998	720,954		12,961		0		282,305		0		24,666,138		0		0
1999	741,674		13,256		0		315,310		0		24,244,723		0		0
2000	762,409		13,555		0		350,472		0		23,837,847		0		0
2001	783,289		13,854		0		360,158		0		23,419,999		0		0
2002	804,147		14,151		0		369,832		0		22,991,202		0		0
2003	823,429		14,450		0		378,864		0		22,552,387		0		0
2004	844,331		14,745		0		388,426		0		22,102,468		0		0
2005	865,277		15,044		0		398,197		0		21,641,606		0		0

* All values expressed in cubic yards (countywide averge in-place density of 1,089 lbs/cu-yd).
\# Based on landfill capacities remaining as of 6/30/90 (listed in Tables 9-1 through 9-4). Figures show capacity estimated to remain at the end of each year. Note that 50% of 1990 disposal was subtracted from 6/30/90 capacity estimates prior to calculation of volume at the end of 1991.

SECTION 10
FUNDING COMPONENT

10.1 INTRODUCTION

This funding component provides cost estimates for programs to be implemented during the short-term planning period; identifies revenue sources, funding and allocation of resources sufficient for program planning, development, and implementation; and identifies sources of contingency funding for component programs.

The funding component presents the costs of the entire SRR Element. These costs, and the determination of the revenues needed to offset the costs, are an integral part of evaluating the program alternatives. This section presents cost estimates for planning, development, implementation, and maintenance of each of the programs proposed in this Element.

10.2 SUMMARY OF UNINCORPORATED COUNTY SRR ELEMENT COSTS

Table 10-1 summarizes annual costs of implementing programs chosen in Sections 4 through 8 of this document, based on cost estimates provided for each region. Estimates are shown for the unincorporated regions. Table 10-1 also shows that costs are projected to be considerably higher in the Desert and Mountain regions in the fourth and fifth years. Costs escalate significantly in the fourth and fifth years for all regions, largely due to the high costs of developing mixed waste processing and composting facilities during that time period.

TABLE 10-1
TOTAL ANNUAL COSTS FOR IMPLEMENTED PROGRAMS*
(all figures in nearest $1000)

	FY'91-92	FY'92-93	FY'93-94	FY'94-95	FY'95-96
West Valley	$ 7,000	$ 174,000	$ 200,000	$ 200,000	$ 834,000
East Valley	$ 3,000	$ 585,000	$1,178,000	$1,181,000	$3,632,000
Desert and Mountain	$ 0	$ 218,000	$ 370,000	$4,127,000	$4,150,000
Unincorporated Countywide	**$ 10,000**	**$ 977,000**	**$1,748,000**	**$5,508,000**	**$8,616,000**

* Does not include countywide education and public information programs administered by the County with input from the Solid Waste Advisory Task Force Education and Public Information Committee.

The significant interregional differences in total program costs indicated in Table 10-1 can be attributed to the differing population sizes served and amounts of waste handled, as well as the types of programs selected. In order to more accurately compare relative costs incurred for programs selected for each region, Table 10-2 provides region-specific annual costs per capita for implementing the unincorporated and countywide programs. Table 10-3 provides program-specific annual costs.

TABLE 10-2
PER CAPITA ANNUAL COSTS FOR ALL IMPLEMENTED PROGRAMS

	Population	1991-92	1992-93	1993-94	1994-95	1995-96
West Valley	23,855	$ 0.29	$ 7.29	$ 8.38	$ 8.38	$ 34.96
East Valley	124,586	$ 0.02	$ 4.70	$ 9.46	$ 9.48	$ 29.15
Desert and Mountain	135,648	$ 0	$ 1.61	$ 2.73	$ 30.42	$ 30.59
Unincorporated Countywide	**284,089**	**$ 0.04**	**$ 3.44**	**$ 6.16**	**$ 19.39**	**$ 30.33**

TABLE 10-3
ESTIMATED UNINCORPORATED COUNTY COSTS BY PROGRAM
(all figures in nearest $1000)

Program	1991-92	1992-93	1993-94	1994-95	1995-96
Source Reduction	$ 5,000	$ 32,000	$ 29,000	$ 21,000	$ 22,000
Recycling	$ 5,000	$ 769,000	$1,107,000	$4,830,000	$7,638,000
Composting	$ 0	$ 146,000	$ 580,000	$ 618,000	$ 918,000
Special Waste	$ 0	$ 0	$ 0	$ 0	$ 0
Ed./Public Info.	$ 0	$ 30,000	$ 32,000	$ 39,000	$ 38,000
Unincorporated Countywide	**$ 10,000**	**$ 977,000**	**$1,748,000**	**$5,508,000**	**$8,616,000**

10.3 COSTS AND FUNDING SOURCES BY REGION

The objective of this section is to identify sufficient funding sources for all programs so that they can operate throughout the short- and medium-term planning periods without the issuance of debt by the County (i.e. no municipal bonds are issued). Waste collection service fees are generally structured so that the revenues generated by the programs are sufficient to cover program costs.

Throughout the short- and medium-term planning periods, some programs will require significant capital expenditure for facility construction or the purchase of equipment. These implementation costs, as well as ongoing maintenance and operations costs, have been recognized and planned for in the Funding Component.

10.3.1 West Valley

Existing Conditions

The County does not strictly oversee the refuse hauling system in the West Valley portion of unincorporated area. There are approximately 10 private haulers currently servicing residential and commercial customers throughout the region. Although there is no franchise system nor an exclusive contract, the haulers must be licensed through the Environmental Health Services Department which sets the maximum rates allowable to be charged by the haulers.

The Solid Waste Management Department is funded by a portion of the tipping fee collected at the Milliken Landfill. The fees charged per ton are allocated to general operations, closure/post-closure funding, State surcharges and other Environmental Health Services Department Charges.

Implementation Costs

Table 10-4 shows the estimated costs that will be incurred by the County for all phases of program implementation during the short-term planning period (1991 to 1995). The cost estimates are based on descriptions of the programs in this Element, and include the time spent by County staff to implement these programs.

Many of the programs presented in this SRR Element require expenditures for public education. For the purposes of Table 10-4, total costs for public education and information have been included; separate costs for each component have been included in the Education and Public Information Component.

Several general assumptions have been used to calculate program costs, as follows:

- Major equipment purchases are not presented as capital expenditures, but rather as amortized costs.
- Equipment is financed at an annual interest rate of 9.5 percent, over a life of 7 years.
- Cost projections are adjusted for an inflation rate of 6.5 percent per year.
- Costs have not been adjusted to reflect avoided disposal costs.
- Costs do not include revenues from the sale of recyclables.

TABLE 10-4 ESTIMATED COSTS FOR THE WEST VALLEY (all figures in nearest $1000)					
Program	**1991-92**	**1992-93**	**1993-94**	**1994-95**	**1995-96**
Source Reduction	$ 3,000	$ 6,000	$ 4,000	$ 4,000	$ 4,000
Recycling	$ 4,000	$ 165,000	$ 125,000	$ 125,000	$ 634,000
Composting	$ 0	$ 0	$ 68,000	$ 68,000	$ 193,000
Public Education	$ 0	$ 3,000	$ 3,000	$ 3,000	$ 3,000
Special Waste	$ 0	$ 0	$ 0	$ 0	$ 0
Total Unincorp. Program Costs	**$ 7,000**	**$ 174,000**	**$ 200,000**	**$ 200,000**	**$ 834,000**

* Does not include the Countywide Solid Waste Advisory Task Force Education and Public Information Program budget of approximately $250,000 per year.

- Labor projections include a 5.5 percent salary increase per year.
- No land acquisition costs have been included, as it is not known whether private or County land will be used for facility development.
- Where costs are presented in the component sections as a range, the higher figure was used.

The County's share of costs for the development and operations of the West Valley regional composting facility was calculated using the amount of yard waste generated in the County area, as determined in the Solid Waste Generation Study.

Funding Sources

A primary objective of the Funding Component is to ensure that program costs are paid by revenues collected from the users of the programs. This basic strategy provides the integrated programs with the flexibility to function independently, and eliminates the need to rely on other County funds.

The County may be eligible for other grants and low-interest loans awarded by the CIWMB and the Department of Conservation. While these funds will help to offset the costs of the programs presented in this Element, they cannot be quantified at this time.

Financial Incentives--

The recycling programs described in this Element may qualify for funds from the State. California Senate Bill 1322 introduced the concept of Recycling Market Development Zones, which encourages cities or groups of cities to establish geographic areas specific to recycling-related business activities. In order to be eligible for State recognition as a Recycling Market Development Zone, these businesses must use recycled material as a feedstock in their manufacturing processes.

State incentives include the following:

- Low-interest loans up to 1 million dollars, or one half the cost of a project, whichever is less.
- Preference when the CIWMB awards research and development funds through the Resource Conservation Division's Research and Development program.
- Tax credits of up to $250,000 to be applied to the purchase of equipment which uses recycled material.

Local incentives may include the following:

- Relaxation of building codes, zoning laws, and general plans.
- Reduction of fees for applications and permits.
- Streamlining the permit process.
- Reduction of business license taxes.
- Provisions for increasing the amounts of recycled feedstock available for industry or providing industry with a steady supply of consistent quality feedstock.

Service Fees--

Service fees for residential and commercial generators will be increased to provide funds to pay for the selected programs. Any funds from State grants or financial incentives will be used to offset the size of the increase. The estimated rate increases are shown in Table 10-5.

TABLE 10-5 REVENUE SOURCES FOR WEST VALLEY COSTS (all figures in nearest $1000)					
	1991-92	1992-93	1993-94	1994-95	1995-96
Cost of Programs	$ 7,000	$ 174,000	$ 200,000	$ 200,000	$ 834,000
Revenues					
Service Fees - Residential	$ 1,000	$ 103,000	$ 130,000	$ 130,000	$ 566,000
Service Fees - Commercial	$ 6,000	$ 71,000	$ 70,000	$ 70,000	$ 268,000
TOTAL REVENUES	$ 7,000	$ 174,000	$ 200,000	$ 200,000	$ 834,000
Incremental Rate Increases					
Residential					
Monthly Cost per Household#	$ 0.01	$ 1.04	$ 1.31	$ 1.31	$ 5.72
Commercial					
Average Monthly Cost per Account*	$ 2.50	$29.58	$29.17	$29.17	$111.67

Cost of residential programs divided by 8,250 households.
* Approximately 200 commercial accounts.

Revenues from the Sale of Recyclables--

Due to the volatility of the markets for recyclable materials, the sale of recyclables cannot be relied upon as a significant source of revenue. Any funds generated through the sale of collected material is subject to negotiation with the collection contractor. Some jurisdictions have allowed the contractor to keep all revenues to reduce the cost of service, while other jurisdictions choose to keep all revenues to apply to administrative costs.

Contingency Sources of Funding

Although it is expected that the programs will receive sufficient funding through the sources discussed above, the following sources of contingency funding have been identified and could be used if necessary:

- Increased surcharge on refuse collection and/or disposal.
- Increased business license/permit fees.

- Issuance of industrial revenue bonds for construction of composting and materials recovery facilities.

- Issuance of general obligation bonds.

10.3.2 East Valley

Existing Conditions

An AB 939 study fee was imposed on the tipping fee at local landfills to fund the AB 939 planning effort. All jurisdictions paid this fee. The fee is no longer being collected.

Implementation Costs

Table 10-6 summarizes the estimated costs for program planning and implementation over the short-term planning period for the selected alternatives of each component. Costs presented in this table include only those costs that will be incurred by the County and do not include those costs that would be incurred by the private sector. Capital costs are included for each of the components along with the total annual costs. Program costs include the cost of time spent by appropriate County staff. Public education costs for each component are addressed in Section 8, Education and Public Information, and are included in Table 10-6 as a single line item. The county is currently budgeting two recycling specialist positions to work in conjunction with already dedicated personnel which consist of a staff analyst, two education specialists, part of a media specialist and assistance from the overall Solid Waste Management Department. The County plans to work with the landfill operator in implementing some of the programs.

Funding Sources

The revenues necessary for these programs will be generated from hauler collection fees or from parcel fees for the unincorporated County. Table 10-7 summarizes these increases in fees.

Contingency Funding Sources

Other funding mechanisms that could be explored as contingency funding for the County include:

- Grants and State funds. The County can apply for grants and other State funds as they become available.

- Waste/recyclables curbside collection fees. The County could require private haulers operating in the unincorporated areas to impose a waste/recyclable collection fee on each of the accounts, a portion of which will be forwarded to the County for various programs.

TABLE 10-6 ESTIMATED COSTS FOR THE EAST VALLEY (all figures in nearest $1000)					
Program	**1991-92**	**1992-93**	**1993-94**	**1994-95**	**1995-96**
Source Reduction	$ 2,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000
Recycling	$ 1,000	$425,000	$ 692,000	$ 692,000	$2,981,000
Composting	$ 0	$146,000	$ 471,000	$ 471,000	$ 633,000
Public Education	$ 0	$ 12,000	$ 14,000	$ 17,000	$ 17,000
Special Waste	$ 0	$ 0	$ 0	$ 0	$ 0
Total Unincorp. Program Costs	**$ 3,000**	**$585,000**	**$1,178,000**	**$1,181,000**	**$3,632,000**

TABLE 10-7 REVENUE SOURCES FOR EAST VALLEY COSTS (all figures in nearest $1000)					
	FY 91-92	**FY 92-93**	**FY 93-94**	**FY 94-95**	**FY 95-96**
Cost of Programs	$ 3,000	$ 585,000	$1,178,000	$1,181,000	$3,632,000
Revenues					
Service Fees - Residential	$ 0	$ 501,000	$ 924,000	$ 926,000	$2,187,000
Service Fees - Commercial	$ 3,000	$ 84,000	$ 254,000	$ 255,000	$1,445,000
TOTAL REVENUES	$ 3,000	$ 585,000	$1,178,000	$1,181,000	$3,632,000
Incremental Rate Increases					
Residential					
Monthly Cost per Household#	$ 0.00	$ 0.68	$ 1.25	$ 1.25	$ 2.95
Commercial					
Average Monthly Cost per Account*	$ 0.20	$ 5.70	$17.21	$17.28	$97.90

Cost of residential programs divided by 61,760 households.

* Approximately 1,230 commercial accounts.

10.3.3 Desert and Mountain

Existing Conditions

Although not specifically required by regulation, the following objectives statements are included in the Desert and Mountain's Funding Component to guide the future development of program implementation funding mechanisms:

- To establish funding mechanisms sufficient for program implementation.
- To establish "fair share" funding mechanisms in which individual categories of generators pay for services received.
- To use funding mechanisms that promote resource recovery activities such as source reduction, recycling, and composting.
- To use funding mechanisms to encourage and promote the development of local activities and industries that contribute to the attainment of the County's diversion targets.

Implementation Costs

This section summarizes program planning and implementation cost estimates developed for the Source Reduction, Recycling, Composting, Special Waste, and Education and Public Information Components. These estimates are planning level estimates developed based on a number of broad assumptions. Actual program implementation costs may differ as a result of individual requirements of refined program design, siting considerations, financing approaches, and engineering design which will need to be performed as a subsequent activity to this plan.

Source Reduction Implementation Costs--

Implementation of the source reduction programs described in Section 4 will require the region to incur expenses for educational and informational material specific to these programs and staff costs for support of these activities. Staff costs are included in the administration line item shown in the summary tables. These Source Reduction programs are to be implemented throughout the Desert and Mountain areas, which includes incorporated jurisdictions as well as unincorporated areas. Cost estimates shown in the summary tables are each region's or jurisdiction's allocated share, generally based on population proportions.

Recycling Implementation Costs--

Implementation of the recycling programs described in Section 5 will require the County to incur expenses for equipment and facilities to perform the needed activities, for educational and informational materials specific to these programs, for staff to operate the facilities, and for staff to develop, initiate and monitor the programs. The staff costs for operation of

facilities are generally included in the estimate for processing facilities, and staff costs for developing, initiating, and monitoring the programs are generally included in the administration line item.

Most of these programs are being implemented throughout the Desert and Mountain region; however, for economic purposes the facilities will be regionally located, with transportation costs dependent on the location of the specific jurisdiction and facilities. The allocation of the facility costs is based on the County's proportion of mixed waste or recyclable material going into the facility. Further, more refined analyses are needed to finalize the selection and sizing of the facilities, as well as their location, and hence the cost estimates are preliminary and subject to change.

The cost of disposing of waste from the recycling facilities and from collection is not included in the costs. The cost of transporting the processed materials to their subsequent market is also excluded.

Composting Implementation Costs--

Implementation of the composting programs described in Section 6 will require the County to incur expenses for facilities and equipment needed to perform tasks associated with the operation of the programs, for promotional and educational materials specific to these programs, for staff to operate the facilities, and for staff to develop, initiate, support, and monitor the composting programs. The staff costs for operation of facilities are generally included in the estimate for composting facilities, and staff costs for developing, initiating, supporting, and monitoring the programs are generally included in the administration line item shown in the summary tables. Market development activities is a staff cost, and if this is to be performed by a public entity, would be included in the administration costs as well.

Once again, the transportation costs to the facilities have been estimated based on jurisdictional- specific geographic conditions. The costs of the facility and operations have been allocated to the County based on their proportion of material going into the facility. The cost estimates are preliminary and subject to change.

Special Waste Implementation Costs--

The Special Waste Component concluded that existing management methods for special wastes were adequate for the unincorporated County needs and in compliance with current regulations. Thus, the Special Waste Component proposed no additional programs for these wastes, and no additional program costs are anticipated. Monitoring of the special waste programs is an existing staff expense with responsibility currently residing with the Department of Environmental Health Services.

Education and Public Information Implementation Costs--

Costs incurred are for informational and educational material, advertisements, exhibits, and staff costs to develop and implement the programs. Staff costs are included in the

administration line item provided in the summary tables. These programs will be implemented Countywide, and the estimated costs are allocated to each jurisdiction generally based on population proportions.

Administration Costs--

Administration costs will be incurred to plan, develop, implement, and monitor the selected programs. The proposed plan for waste diversion programs is a collaborative effort between the Desert and Mountain areas in order to minimize the costs of programs and to maximize the waste diversion. The unincorporated County areas that participate in the use of the regional group's facilities will do so through intergovernmental agreements.

Total Implementation Costs--

The total estimated annual cost of implementing the selected Source Reduction, Recycling, Composting and Education and Public Information Component programs is shown in Table 10-7 for the unincorporated regions in the County. Further presentation and discussion of the programs costs by jurisdiction is provided in the associated Component.

TABLE 10-8
ESTIMATED DESERT AND MOUNTAIN COSTS
(all figures in nearest $1000)

Program	1991-92	1992-93	1993-94	1994-95	1995-96
Source Reduction	$ 0	$ 22,000	$ 21,000	$ 14,000	$ 15,000
Recycling	$ 0	$ 183,000	$ 294,000	$4,018,000	$4,029,000
Composting	$ 0	$ 0	$ 41,000	$ 78,000	$ 90,000
Education and Public Information	$ 0	$ 13,000	$ 14,000	$ 17,000	$ 16,000
Special Waste	$ 0	$ 0	$ 0	$ 0	$ 0
TOTAL	**$ 0**	**$ 218,000**	**$ 370,000**	**$4,127,000**	**$4,150,000**

Funding Sources

This section identifies revenue sources that are planned to be used to fund program planning, development, implementation, and monitoring. To achieve the aggressive diversion requirements of the AB 939 regulations, i,e., 25 percent diversion by 1995 and 50 percent diversion by the year 2000, a significant investment in new programs and diversion facilities will have to be made. Based on the results of the feasibility study, rates for hauler services or parcel fees will be increased. In general, a revenue-neutral, fee-for-service funding

system will be established in which residential, commercial, and industrial waste generators will pay for integrated waste management services in proportion to the amount of waste generated and the potential to recover materials from the waste. The following discussion outlines existing fee structures, funding administration, and funding mechanisms that are planned for use in the unincorporated County to pay for integrated waste management program implementation.

Existing Fee Structures--

Solid waste disposal fees in the Desert and Mountain region area are paid for through a combination of disposal facility tipping fees and fees on parcels of land (as of July 1, 1991). Scales are being installed at landfills in the area so that individual loads may be charged on a tonnage basis. Tipping fees include surcharges required by State law to pay for California Integrated Waste Management Board activities, the costs for landfill closure and post-closure maintenance, and the cost of such Countywide efforts as household hazardous waste program implementation. Parcel fees are used to recover waste management costs from waste generators located in the unincorporated areas of the County. These parcel fees are established so that individual categories of generators pay fees in proportion to the quantity of waste expected to be generated by the activity on the land parcel. The parcel fee system is based on the amount of waste typically generated by a single family residential unit and the proportional amount of waste typically generated by all other categories of land use. The existing fee structure will be modified during the short-term planning period (1991-1995) to offset program planning, development, and implementation costs.

It is anticipated that parcel-based fee systems will continue to be used to recover implementation costs from the remote rural areas of the County. Because of the high cost to provide recovery services to this sparse population, and the geographic extent of these remote rural areas, many recovery services will not be available and generators will continue to rely extensively on landfill disposal. Thus, the parcel fees for these regions will be established to collect the fair share of disposal costs but will not include many of the recovery costs of the urbanized portions.

These new facilities will charge tipping fees to offset the cost of processing and recovery operations. The fee structures will be established to provide an economic incentive for source-separation. Thus, generators will pay tipping fees not only in proportion to the amount of waste, but also according to how much material can be recovered from the waste. For example, generators wishing to dispose of clean yard waste will pay a reduced tipping fee, while generators wishing to dispose of mixed waste containing yard waste, or generators with contaminated loads of yard waste will pay higher tipping fees. Thus, tipping fees will be structured to establish an economic incentive to use the recovery facilities, to alter collection routes in order to increase materials recovery rates, and to offer source-separated collection.

Hauler Collection Fees--

In the unincorporated areas, mandatory refuse collection will be studied to determine the most applicable areas for implementation. Residential, commercial, and industrial generators

in these areas will be required to have regularly scheduled collection service. Collection fees for this service will be based on the amount of waste generated. Hauler collection fees for all generators will increase as necessary to raise additional revenues to pay for the cost of material recovery, processing facility operations costs, and disposal costs for residual waste remaining after recovery. Also, if the Mountain region develops source-separated collection services, it will also be increasing collection fees to pay for the services. Table 10-9 details the expected increases in service fees.

Local Funding--

The unincorporated Desert and Mountain regions will be establishing individual recovery programs. For example, in the Mountain area, a curbside recyclables collection program may be established for residential generators. Both regions will be establishing a network of drop-offs and public area recycling receptacles. These efforts of individual jurisdictions will be paid for by the rate structures and mechanisms, established by the Board of Supervisors. Thus, in the case of the Mountain region, residents with curbside recycling service will be charged a refuse collection rate sufficient to offset the costs of providing the service.

TABLE 10-9
REVENUE SOURCES FOR DESERT/MOUNTAIN COSTS
(all figures in nearest $1000)

	1991-92	1992-93	1993-94	1994-95	1995-96
Cost of Programs	$ 0	$ 218,000	$ 370,000	$ 4,127,000	$4,150,000
Revenues					
Service Fees - Residential	$ 0	$ 145,000	$ 243,000	$ 2,149,000	$ 2,154,000
Service Fees - Commercial	$ 0	$ 73,000	$ 127,000	$ 1,978,000	$ 1,996,000
TOTAL REVENUES	$ 0	$ 218,000	$ 370,000	$ 4,127,000	$4,150,000
Incremental Rate Increases					
Residential					
Monthly Cost per Household#	$ 0.00	$ 0.20	$ 0.34	$ 2.97	$ 2.97
Commercial					
Average Monthly Cost per Account*	$ 0.00	NA	NA	NA	NA

Cost of residential programs divided by 60,390 households.
* Commercial account information not available.

Contingency Funding

The Sources of contingency funding for the selected diversion programs are as follows:

- Federal and State funding.
- Revenue from material recovery.
- Development impact fees.
- State Advanced Disposal Fees or Recycling Incentive Fees.

The County Solid Waste Management Department will monitor the availability of federal and state funding for local waste management projects and will seek grant funds and other financial incentives when they are available. Currently, state funding for waste management programs implemented by local governments is being considered, but is subject to the actions of the state legislature. In addition, programs managed by the Department of Conservation (DOC) and the California Integrated Waste Management Board (CIWMB) may provide funding to local governments. However, grant funds from the state's beverage container "Redemption Fund" are subject to redirection or potential elimination by the legislature and the CIWMB has not completed regulations governing how grant money will be awarded. State funding could vary significantly in the immediate future when most local governments throughout California will be implementing Source Reduction and Recycling Element programs and looking to the state for financial assistance. Therefore, this type of contingency funding cannot be counted upon to offset local integrated waste management program implementation costs.

Material recovery revenues can be a major source of funding and can offset recovery costs. However, market supply and demand changes, caused by a dramatic increase in recovery rates throughout the State, are expected to reduce the value of recovered materials. The County would be used as the administrative vehicle for establishing market arrangements for materials recovered in the region. To the extent possible, the County would work with both private and public sector recovery operators to establish long-term marketing arrangements with private companies to reduce market instability by establishing risk-sharing arrangements with private contractors in which materials revenues or losses from sales of materials are shared by the private and public sector.

Another source of contingency funding is a development impact fee used to offset the costs associated with providing waste management services to new large-scale real estate developments that will generate significant additional solid waste. Such fees have been used to finance other community infrastructure required to support new developments. This option is contingent on continued growth and is a mechanism to assure that the costs associated with growth are born by the developing area.

Yet another source of contingency funding is revenue from Advanced Disposal Fees or, more recently, the State's Recycling Incentives Fees (RIF), which are made available to offset local implementation costs. The California legislature and the Integrated Waste Management Board are currently considering these types of fees which would be levied on selected products to offset waste management costs. These fees are likely to be applied to

nonrecyclable or expensive-to-recycle products, such as disposable diapers, or to more durable products such as tires. It is anticipated that these fees would be assessed on manufacturers and be reflected in prices charged at the point of purchase. If the State adopts such a fee system, a considerable portion of these fees can be transferred to the local level to offset local implementation costs for integrated waste management programs.

SECTION 11
INTEGRATION COMPONENT

11.1 INTRODUCTION

The Integration Component explains how all of the diversion strategies selected in the Source Reduction, Recycling, Composting, and Special Waste Components combine to achieve the 25 percent and 50 percent diversion mandates established by the AB 939 regulations. This component includes a description of the solid waste management practices which promote the integrated waste management hierarchy, an explanation of how components are integrated to maximize the use of all feasible diversion options and to achieve diversion mandates, a discussion of how priorities between components were determined, and a calendar scheduling all program implementation tasks for the short-term planning period.

11.2 SOLID WASTE MANAGEMENT PRACTICES

The solid waste management programs developed as part of the SRR Element planning effort follow the solid waste management hierarchy as described in the AB 939 regulations. Consistent with this hierarchy, the County will promote source reduction activities targeted at decreasing the amount of solid waste being generated. For wastes that continue to be generated in the unincorporated areas, recycling and composting programs will aim to divert wastes from disposal to the maximum extent feasible. For wastes that cannot be diverted, the County will ensure that they are disposed in an environmentally safe manner.

11.3 INTEGRATION OF COMPONENTS TO ACHIEVE MANDATES

The Source Reduction, Recycling, Composting, and Special Wastes Components have been integrated so that one program complements another, and so that the programs selected for implementation achieve their maximum potential. Mutually exclusive objectives and targeted materials for each component were developed to prevent or minimize the implementation of programs that compete for a specific material or waste source. This integrated approach maximizes the use of all feasible source reduction, recycling, and composting options.

11.3.1 Diversion Rates by Program and Region

Tables 11-1 through 11-4 list the programs to be implemented by each of the unincorporated regions and the anticipated contributions of each program towards the mandated diversion goals. The combination of diversion alternatives to be implemented by each region are expected to achieve 25 percent diversion by the end of the short-term planning period in all unincorporated regions. Only the West Valley and East Valley regions, however, are projected to achieve the year 2000 diversion mandate of 50 percent; the Desert and Mountain regions are only expected to reach 41.2 percent and 36.5 percent, respectively, by the end of the medium-term planning period. This anticipated difficulty in achieving 50 percent diversion can be attributed to the demographic character and geographic locations of these regions.

TABLE 11-1 WEST VALLEY WASTE DIVERSION BY PROGRAM				
	1995		2000	
	Tons	%	Tons	%
SOURCE REDUCTION PROGRAMS				
Technical Assistance*	313	0.5	1,015	1.6
Regulatory#	285	0.5	994	1.5
SUBTOTAL	**598**	**1.0**	**2,009**	**3.1**
RECYCLING PROGRAMS				
Residential Curbside**	3,687	6.2	8,355	12.8
Commercial/Industrial**	7,101	11.9	12,598	19.3
Buy-Back Centers	251	0.4	271	0.4
Construction/Demolition	2,381	4.0	3,886	6.0
SUBTOTAL	**13,420**	**22.4**	**25,110**	**38.5**
COMPOSTING PROGRAMS				
Residential Curbside##	2,407	4.0	4,423	6.8
Drop-off##	968	1.6	1,571	2.4
SUBTOTAL	**3,375**	**5.6**	**5,994**	**9.2**
TOTAL FOR ALL PROGRAMS	**17,393**	**29.0**	**33,113**	**50.8**

* Includes education, backyard composting, waste evaluations, awards and public recognition, and nonprocurement source reduction plans.

\# Includes land use development incentives/disincentives.

** Diversion estimates for these programs include processing losses at a MRF. The MRF alternative was not listed in order to avoid double-counting of diversion figures.

Diversion estimates for these programs include processing losses at a composting facility. The composting facility alternative was not listed in order to avoid double-counting of diversion figures.

TABLE 11-2 EAST VALLEY WASTE DIVERSION BY PROGRAM				
	1995		2000	
	Tons	%	Tons	%
SOURCE REDUCTION PROGRAMS				
Technical Assistance*	1,988	1.3	4,239	2.3
Regulatory	614	0.4	916	0.5
Rate Structure Modification	608	0.4	735	0.4
Existing Programs	16	0.0	16	0.0
SUBTOTAL	**3,225**	**2.1**	**5,905**	**3.2**
RECYCLING PROGRAMS				
Residential Curbside #	3,868	2.5	12,716	6.8
Commercial/Industrial #	13,281	8.7	29,038	15.6
Drop-off/Buy-Back/Public Recycling Receptacles	2,456	1.6	2,806	1.5
Demolition/Construction	4,551	3.0	6,090	3.3
Landfill Salvaging	8,341	5.4	15,386	8.3
SUBTOTAL	**32,497**	**21.2**	**66,036**	**35.5**
COMPOSTING PROGRAMS				
Drop-off **	585	0.4	6,256	3.4
Residential Curbside **	2,718	1.8	15,055	8.1
SUBTOTAL	**3,303**	**2.2**	**21,311**	**11.5**
TOTAL FOR ALL PROGRAMS	**39,025**	**25.5**	**93,252**	**50.1**

* Includes technical assistance, education, backyard composting, and waste audits.

\# Diversion estimates for these programs include processing losses at a MRF. The MRF alternative was not listed in order to avoid double-counting of diversion figures.

** Diversion estimates for these programs include processing losses at a composting facility. The composting facility alternative was not listed in order to avoid double-counting of diversion figures.

TABLE 11-3 DESERT WASTE DIVERSION BY PROGRAM				
	1995		2000	
	Tons	%	Tons	%
SOURCE REDUCTION PROGRAMS				
Backyard Composting	453	0.3	846	0.5
Government Procurement	79	0.0	104	0.1
Thrift Shops	1,204	0.9	1,347	0.9
Refillable Bottles	310	0.2	347	0.2
Food Distribution	35	0.0	40	0.0
Recapped Tires	239	0.2	267	0.2
SUBTOTAL	**2,319**	**1.6**	**2,951**	**1.9**
RECYCLING PROGRAMS				
Drop-off Centers	6,836	4.9	7,884	5.0
Buy-Back Centers	1,323	0.9	1,481	0.9
Recycling Receptacles	54	0.0	82	0.1
Commercial/Industrial	6,996	5.0	9,997	6.3
Inerts/Wood Waste	5,806	4.1	6,500	4.1
Mixed Waste Processing	15,293	10.9	17,119	10.9
Tree Mulching	123	0.1	137	0.1
Rendering	492	0.3	551	0.3
SUBTOTAL	**36,924**	**26.2**	**43,751**	**27.8**
COMPOSTING PROGRAMS				
Supervised Drop-off Sites	1,180	0.8	1,606	1.0
Mixed Waste Composting	0	0.0	16,617	10.6
SUBTOTAL	**1,180**	**0.8**	**18,223**	**11.6**
TOTAL FOR ALL PROGRAMS	**40,423**	**28.7**	**64,925**	**41.2**

TABLE 11-4 MOUNTAIN WASTE DIVERSION BY PROGRAM				
	1995		2000	
	Tons	%	Tons	%
SOURCE REDUCTION PROGRAMS				
Backyard Composting	51	0.4	101	0.7
Government Procurement	3	0.0	4	0.0
Thrift Shops	198	1.7	231	1.7
Refillable Bottles	29	0.2	34	0.2
Recapped Tires	22	0.2	26	0.2
SUBTOTAL	**303**	**2.6**	**395**	**2.9**
RECYCLING PROGRAMS				
Drop-off Centers	455	3.9	557	4.1
Buy-Back Centers	69	0.6	81	0.6
Recycling Receptacles	7	0.1	10	0.1
Commercial/Industrial	101	0.9	199	1.4
Inerts/Wood Waste	1,058	9.0	1,235	9.0
Mixed Waste Processing	1,875	15.9	2,189	15.9
Rendering	47	0.4	54	0.4
SUBTOTAL	**3,612**	**30.7**	**4,324**	**31.5**
COMPOSTING PROGRAMS				
Supervised Drop-off Sites	201	1.7	286	2.1
SUBTOTAL	**201**	**1.7**	**286**	**2.1**
TOTAL FOR ALL PROGRAMS	**4,116**	**35.0**	**5,005**	**36.5**

11.3.2 Countywide Diversion Rates

Tables 11-5 and 11-6 summarize the 1995 and 2000 source reduction, recycling, composting, and total diversion rates forecasted for each region. Based on a compilation of diversion rates projected for each region, total diversion for the entire unincorporated County is also projected for the short- and medium-term planning periods. Further information as to how the source reduction, recycling, and composting components are combined in an effort to achieve the diversion mandates is shown in Tables 11-7 and 11-8, which project 1995 and 2000 diversion rates by material type and diversion activity, and Tables 11-9 and 11-10, which project 1995 and 2000 diversion rates by material type and diversion program.

Tables 11-5 through 11-8 show that the County is expected to surpass the short-term mandate by achieving 27.6 percent diversion in 1995, but is projected to fall short of the medium-term mandate by only achieving 46.4 percent diversion in 2000. This shortfall can largely be attributed to the remoteness and low population densities in the Mountain and Desert regions. Diversion estimates exceed the 50 percent level in the East and West Valley regions. Tables 11-9 and 11-10 summarize waste diversion by program and waste type for the years 1995 and 2000 for all of unincorporated San Bernardino County.

The Board of Supervisors sponsored legislation (AB 2494) to allow for the reduction of the diversion goals for the rural, unincorporated portions of the County. Although a large portion of the total unincorporated population lies within these rural areas, the area encompasses 19,000 square miles. Vast distances lie between each sparsely populated area causing most typical recycling and composting programs to be prohibitively expensive. Currently, existing regulations would not permit these rural areas to be considered for a reduction in diversion goals because the total population is so high. By granting this reduction, the CIWMB would allow the more densely populated areas to strive for the mandated goals while allowing a more reasonable and realistic approach in the rural areas.

11.4 COMPONENT PRIORITIES

In developing the unincorporated County's SRR Element, priorities had to be set between components. Priorities were based on the following regulatory, technical, institutional, and economic considerations:

- Results of the solid waste generation study.
- Consistency with existing waste management practices (local conditions).
- Location of the program in the integrated waste management hierarchy.
- Effectiveness in reducing the volume, weight, or hazards of the solid waste.

11.5 INTEGRATED SCHEDULE

The integrated schedule, or master implementation schedule, is shown in Table 11-11. It identifies all implementation tasks for all component programs, and lists the agency responsible for implementing the task, the task starting and milestone dates, and the funding source availability schedule.

TABLE 11-5
1995 WASTE DIVERSION FORECASTS BY DIVERSION ACTIVITY

Subregion	Source Reduction		Recycling		Composting		Total	
	Tons	%	Tons	%	Tons	%	Tons	%
East Valley	3,225	2.1	32,497	21.2	3,303	2.2	39,026	25.5
West Valley	598	1.0	13,420	22.4	3,375	5.6	17,394	29.0
Mountain	303	2.6	3,612	30.7	201	1.7	4,116	35.0
Desert	2,319	1.6	36,924	26.2	1,180	0.8	40,423	28.7
TOTAL	**6,446**	**1.8**	**86,453**	**23.8**	**8,060**	**2.0**	**100,959**	**27.6**

TABLE 11-6
2000 WASTE DIVERSION FORECASTS BY DIVERSION ACTIVITY

Subregion	Source Reduction		Recycling		Composting		Total	
	Tons	%	Tons	%	Tons	%	Tons	%
East Valley	5,905	3.2	66,036	35.5	21,311	11.5	93,252	50.1
West Valley	2,009	3.1	25,110	38.5	5,994	9.2	33,114	50.8
Mountain	395	2.9	4,324	31.5	286	2.1	5,006	36.5
Desert	2,951	1.9	43,751	27.8	18,223	11.6	64,925	41.2
TOTAL	**11,261**	**2.7**	**139,222**	**32.9**	**45,814**	**10.8**	**196,297**	**46.4**

TABLE 11-7. 1995 WASTE DIVERSION FORECASTS BY MATERIAL TYPE AND DIVERSION ACTIVITY

Waste Categories/Types	SOURCE REDUCTION	RECYCLING	COMPOSTING	TOTAL	CONTRIBUTION TO MANDATES
PAPER	809	44,042	0	44,851	12.3%
Newspaper	0	10,519	0	10,519	2.9%
Corrugated Containers	110	20,182	0	20,293	5.5%
High-grade Ledger	297	3,482	0	3,779	1.0%
Mixed Paper	190	5,694	0	5,884	1.6%
Contaminated/Other Paper	212	4,164	0	4,377	1.2%
PLASTICS	571	2,621	0	3,192	0.9%
PET Containers	19	362	0	381	0.1%
HDPE Containers	267	1,838	0	2,105	0.6%
Film	135	210	0	345	0.1%
Polystyrene	60	153	0	213	0.1%
Other Plastics	90	57	0	148	0.0%
GLASS	369	5,560	0	5,929	1.6%
CA Redemption Value	0	2,079	0	2,079	0.6%
Other Glass Containers	369	3,481	0	3,850	1.1%
METALS	563	8,513	0	9,076	2.5%
Aluminum Cans	0	1,450	0	1,450	0.4%
Tin Cans	0	1,858	0	1,858	0.5%
Ferrous	152	3,959	0	4,111	1.1%
Non-ferrous	133	526	0	660	0.2%
White Goods	267	534	0	801	0.2%
Mixed/Other Metals	10	186	0	197	0.1%
YARD WASTE	723	0	7,649	8,372	2.3%
Grass/Leaves/Prunings	723	0	7,649	8,372	2.3%
OTHER ORGANICS	1,827	12,707	411	14,946	4.1%
Food	368	588	0	957	0.3%
Wood	95	11,335	243	11,673	3.2%
Tires and Rubber	313	660	0	973	0.3%
Manure	38	0	168	207	0.1%
Disposable Diapers	63	0	0	63	0.0%
Textiles	950	124	0	1,074	0.3%
OTHER WASTES	1,276	13,010	0	14,286	3.9%
Asphalt	0	51	0	51	0.0%
Concrete	0	1,976	0	1,976	0.5%
Other Inert Solids	1,276	10,983	0	12,259	3.4%
SPECIAL WASTES	307	0	0	307	0.1%
Bulky Waste	307	0	0	307	0.1%
TOTAL	**6,446**	**86,453**	**8,060**	**100,959**	**27.6%**

TABLE 11–8. 2000 WASTE DIVERSION FORECASTS BY MATERIAL TYPE AND DIVERSION ACTIVITY

Waste Categories/Types	SOURCE REDUCTION	RECYCLING	COMPOSTING	TOTAL	DIVERSION CONTRIBUTION
PAPER	2,808	67,360	7,939	78,106	18.5%
Newspaper	0	15,605	2,139	17,744	4.2%
Corrugated Containers	522	28,376	2,613	31,511	7.4%
High–grade Ledger	525	5,982	826	7,333	1.7%
Mixed Paper	698	12,626	2,361	15,685	3.7%
Contaminated/Other Paper	1,063	4,770	0	5,833	1.4%
PLASTICS	1,287	8,315	0	9,602	2.3%
PET Containers	29	642	0	671	0.2%
HDPE Containers	206	3,489	0	3,695	0.9%
Film	569	2,424	0	2,993	0.7%
Polystyrene	128	826	0	953	0.2%
Other Plastics	355	935	0	1,290	0.3%
GLASS	453	8,288	0	8,741	2.1%
CA Redemption Value	0	3,070	0	3,070	0.7%
Other Glass Containers	453	5,218	0	5,671	1.3%
METALS	464	14,635	0	15,099	3.6%
Aluminum Cans	0	2,018	0	2,018	0.5%
Tin Cans	0	2,347	0	2,347	0.6%
Ferrous	98	7,796	0	7,894	1.9%
Non–ferrous	0	1,025	0	1,025	0.2%
White Goods	314	1,234	0	1,548	0.4%
Mixed/Other Metals	52	214	0	266	0.1%
YARD WASTE	2,665	0	28,666	31,330	7.4%
Grass/Leaves/Prunings	2,665	0	28,666	31,330	7.4%
OTHER ORGANICS	2,934	20,012	9,210	32,156	7.6%
Food	715	674	7,645	9,033	2.1%
Wood	300	17,759	592	18,651	4.4%
Tires and Rubber	354	1,267	0	1,622	0.4%
Manure	49	0	973	1,022	0.2%
Disposable Diapers	199	0	0	199	0.0%
Textiles and Leather	1,316	312	0	1,628	0.4%
OTHER WASTES	294	20,612	0	20,906	4.9%
Asphalt	0	155	0	155	0.0%
Concrete	0	3,255	0	3,255	0.8%
Other Inert Solids	294	17,202	0	17,496	4.1%
SPECIAL WASTES	356	0	0	356	0.1%
Bulky Waste	356	0	0	356	0.1%
TOTAL	**11,261**	**139,222**	**45,814**	**196,297**	**46.4%**

TABLE 11-9. 1995 WASTE DIVERSION BY PROGRAM AND WASTE TYPE (In Tons/Yr)

	Recycling Programs								Composting	
	Residential Curbside	Drop-off/ Buyback Receptacles	Commercial/ Industrial	Demolition Construction (Wood/Inerts)	Landfill Salvaging	Mixed Waste Processing	Tree Mulching	Rendering	Residential Yard Waste Collection	Yard Waste Drop-off
PAPER										
Newsprint	3,968	4,269	0	0	0	2,295	0	0	0	0
Corrugated Containers	0	1,829	14,460	0	0	3,920	0	0	0	0
High-grade	132	366	2,629	0	0	0	0	0	0	0
Mixed	0	0	0	0	0	4,924	0	0	0	0
Contaminated/Other	0	0	0	0	0	3,365	0	0	0	0
PLASTICS										
Containers	0	0	0	0	0	0	0	0	0	0
PET	66	305	0	0	0	10	0	0	0	0
HDPE	132	146	0	0	0	1,721	0	0	0	0
Film	0	0	0	0	0	191	0	0	0	0
Polystyrene	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0
GLASS										
Ca. Redemption Value	496	1,561	0	0	0	0	0	0	0	0
Containers	728	1,549	0	0	0	1,338	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0
METALS										
Aluminum Cans	430	975	0	0	0	0	0	0	0	0
Tin Cans	662	1,195	0	0	0	0	0	0	0	0
Ferrous	0	0	1,315	0	2,272	526	0	0	0	0
Nonferrous	0	0	263	0	317	0	0	0	0	0
White Goods	0	0	0	0	722	0	0	0	0	0
Mixed/Other Metals	0	0	0	0	157	0	0	0	0	0
YARD WASTE										
Grass/Leaves/Prunings	0	0	0	0	0	0	40	0	4,963	2,887
OTHER ORGANICS										
Food	0	0	0	0	0	0	0	589	0	0
Wood	0	0	4,342	4,804	2,004	430	96	0	0	0
Tires	0	0	0	0	828	0	0	0	0	0
Manure	0	0	0	0	0	0	0	0	0	211
Disposable Diapers	0	0	0	0	0	0	0	0	0	0
Textiles and Leather	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0
OTHER WASTES										
Asphalt	0	0	51	0	0	0	0	0	0	0
Concrete	0	0	603	1,373	0	0	0	0	0	0
Other Inert Solids	0	0	2,629	7,549	1,668	0	0	0	0	0
Household Haz. Wst.	0	0	0	0	0	0	0	0	0	0
Fines	0	0	0	0	0	0	0	0	0	0
Miscellaneous	0	0	0	0	0	0	0	0	0	0
SPECIAL WASTES										
Asbestos	0	0	0	0	0	0	0	0	0	0
Bulky Items	0	0	0	0	215	0	0	0	0	0
Ash	0	0	0	0	0	0	0	0	0	0
Autoshredder	0	0	0	0	0	0	0	0	0	0
Misc. Special Wastes	0	0	0	0	0	0	0	0	0	0
TOTAL	6,613	12,195	26,292	13,726	8,183	18,719	136	589	4,963	3,097

TABLE 11-10. 2000 WASTE DIVERSION BY PROGRAM AND WASTE TYPE (In Tons/Yr)

	Recycling Programs								Composting		
	Residential Curbside	Drop-off/ Buyback Receptacles	Commercial/ Industrial	Demolition Construction (Wood/Inerts)	Landfill Salvaging	Mixed Waste Processing	Tree Mulching	Rendering	Residential Yard Waste Collection	Yard Waste Drop-off	Mixed Waste Composting
PAPER											
Newsprint	11,252	5,251	0	0	0	1,267	0	0	0	0	0
Corrugated Containers	0	1,431	27,686	0	0	2,437	0	0	0	0	0
High-grade	481	572	5,034	0	0	0	0	0	0	0	0
Mixed	0	0	0	0	0	11,848	0	0	0	0	453
Contaminated/Other	0	0	0	0	0	0	0	0	0	0	5,968
PLASTICS											
Containers	97	71	0	0	0	0	0	0	0	0	0
PET	192	472	0	0	0	6	0	0	0	0	0
HDPE	961	643	0	0	0	2,086	0	0	0	0	0
Film	0	0	0	0	0	1,755	0	0	0	0	0
Polystyrene	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0
GLASS											
Ca. Redemption Value	1,443	1,574	0	0	0	49	0	0	0	0	0
Containers	2,693	2,147	0	0	0	829	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0
METALS											
Aluminum Cans	961	1,001	0	0	0	55	0	0	0	0	0
Tin Cans	1,154	1,145	0	0	0	0	0	0	0	0	0
Ferrous	0	0	2,517	0	5,377	0	0	0	0	0	0
Nonferrous	0	0	1,007	0	19	0	0	0	0	0	0
White Goods	0	0	0	0	1,237	0	0	0	0	0	0
Mixed/Other Metals	0	0	0	0	266	0	0	0	0	0	0
YARD WASTE											
Grass/Leaves/Prunings	0	0	0	0	0	0	57	0	18,958	6,667	4,040
OTHER ORGANICS											
Food	0	0	0	0	0	0	0	674	0	0	0
Wood	0	0	10,068	6,183	1,929	385	97	0	0	0	0
Tires and Rubber	0	0	0	0	1,377	0	0	0	0	0	0
Manure	0	0	0	0	0	0	0	0	0	999	8,730
Disposable Diapers	0	0	0	0	0	0	0	0	0	0	0
Textiles and Leather	0	0	0	0	0	292	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0
OTHER WASTES											
Asphalt	0	0	151	0	0	0	0	0	0	0	0
Concrete	0	0	1,359	1,767	130	0	0	0	0	0	0
Other Inert Solids	0	0	2,517	9,715	4,816	446	0	0	0	0	0
Household Haz. Wst.	0	0	0	0	0	0	0	0	0	0	0
Fines	0	0	0	0	0	0	0	0	0	0	0
Miscellaneous	0	0	0	0	0	0	0	0	0	0	0
SPECIAL WASTES											
Asbestos	0	0	0	0	0	0	0	0	0	0	0
Bulky Items	0	0	0	0	244	0	0	0	0	0	0
Ash	0	0	0	0	0	0	0	0	0	0	0
Autoshredder	0	0	0	0	0	0	0	0	0	0	0
Misc. Special Wastes	0	0	0	0	0	0	0	0	0	0	0
TOTAL	19,233	14,307	50,340	17,665	15,394	21,455	154	674	18,958	7,665	19,191

TABLE 11-11
MASTER IMPLEMENTATION SCHEDULE - SOURCE REDUCTION COMPONENT

Description of Task	Responsible Entity	Projected Start Date	Milestone Date	Funding Source
Residential backyard composting	County Solid Waste Management Dept.	Mid 1993	Late 1993	Service Fees
Government procurement policies	County Solid Waste Management Dept.	Mid 1993	Late 1993	Service Fees
Nonprocurement	County Solid Waste Management Dept.	Mid 1993	Late 1993	Service Fees
Commercial/industrial waste evaluations/waste minimization	County Solid Waste Management Dept.	Mid 1993	Late 1993	Service Fees
Awards program	County Solid Waste Management Dept./DEHS	Mid 1993	Late 1993	Service Fees
Quantify existing alternatives	County Solid Waste Management Dept.	Mid 1993	Late 1993	Service Fees
Land use and development	County Solid Waste Management Dept./County Planning Dept.	Mid 1993	1994	Service Fees
Quantity-based fees	County Solid Waste Management Dept.	Mid 1993	1994	Service Fees
Reporting requirements	County Solid Waste Management Dept.	Mid 1993	1994	Service Fees
Tipping fee differentials	County Solid Waste Management Dept.	Mid 1993	1994	Service Fees
Advance disposal fees	County Solid Waste Management Dept.	Mid 1993	Late 1993	Service Fees

TABLE 11-11
MASTER IMPLEMENTATION SCHEDULE - RECYCLING COMPONENT

Description of Task	Responsible Entity	Projected Start Date	Milestone Date	Funding Source
Residential curbside recycling	County Solid Waste Management Dept.	Mid 1993	Late 1994	Service Fees
Commercial, industrial, and school recycling	County Solid Waste Management Dept.	Mid 1993	Late 1994	Service Fees
Construction/demolition debris recycling	County Solid Waste Management Dept.	Mid 1993	1994	Service Fees
Drop-off and buy-back centers	County Solid Waste Management Dept.	Mid 1993	1994	Service Fees
Residential telephone survey	County Solid Waste Management Dept.	Mid 1993	1994	Service Fees
Market development	County Solid Waste Management Dept.	Mid 1993	1994	Service Fees
Mechanized materials recovery facility	County Solid Waste Management Dept.	1993	1995	Service Fees
Inerts and wood waste processing	Regional Groups	1993	1994	Service Fees
Public recycling receptacles	County Solid Waste Management Dept./ Regional Groups	1993	1994	Service Fees
Intermediate processing centers/materials recovery facilities	County Solid Waste Management Dept.	1993	1995	Service Fees

TABLE 11-11
MASTER IMPLEMENTATION SCHEDULE - COMPOSTING COMPONENT

Description of Task	Responsible Entity	Projected Start Date	Milestone Date	Funding Source
Regional composting facility with drop-off	County Solid Waste Management Dept./Local Jurisdictions	1993	1998	nnService Fees
Residential yard waste collection	County Solid Waste Management Dept.	Early 1995	Late 1996	Service Fees
Yard waste composting facilities	Regional Group/County Solid Waste Management Dept.	Mid 1993	Late 1994	Service Fees
Supervised yard waste drop-off sites	Regional Group/Individual Jurisdictions	Mid 1993	Mid 1994	Service Fees
Market development tasks	Regional Group/County Solid Waste Management Dept.	Mid 1993	Mid 1994	Service Fees
MMSW composting facilities	Regional Group/County Solid Waste Management Dept.	Mid 1993	1997	Service Fees

TABLE 11-11
MASTER IMPLEMENTATION SCHEDULE - SPECIAL WASTE COMPONENT

Description of Task	Responsible Entity	Projected Start Date	Milestone Date	Funding Source
Medical waste program	County Environmental Health Dept./Local Jurisdictions	Mid 1993	Mid 1994	Service Fees

TABLE 11-11
MASTER IMPLEMENTATION SCHEDULE - EDUCATION AND PUBLIC INFORMATION COMPONENT

Description of Task	Responsible Entity	Projected Start Date	Milestone Date	Funding Source
Quarterly newsletter	County Solid Waste Management Dept./Solid Waste Advisory Task Force	1990	Ongoing	Service Fees
Solid waste self education guide	County Solid Waste Management Dept./Solid Waste Advisory Task Force	1992	Ongoing	Service Fees
AB 939 presentation	County Solid Waste Management Dept./Solid Waste Advisory Task Force	Mid 1993	Late 1993	Service Fees
Museum feasibility study	County Solid Waste Management Dept./Solid Waste Advisory Task Force	1992	Completed	Service Fees
School grants for teachers program	County Solid Waste Management Dept./Solid Waste Advisory Task Force	1991	Ongoing	Service Fees
Animated movie leader	County Solid Waste Management Dept./Solid Waste Advisory Task Force	Mid 1993	Late 1993	Service Fees
Technical assistance seminars	County Solid Waste Management Dept./Solid Waste Advisory Task Force	1991	Ongoing	Service Fees
Resource information center	County Solid Waste Management Dept./Solid Waste Advisory Task Force	1991	Ongoing	Service Fees
Business education program	County Solid Waste Management Dept./Solid Waste Advisory Task Force	1992	1994	Service Fees
Volunteer program	County Solid Waste Management Dept.	Mid 1993	Late 1993	Service Fees
Commercial/industrial recycling	County Solid Waste Management Dept.	1993	Ongoing	Service Fees
Medical Releases/Advertising	County Solid Waste Management Dept.	1993	Ongoing	Service Fees
Community/special events	County Solid Waste Management Dept.	1991	Ongoing	Service Fees
Precycling program	County Solid Waste Management Dept.	Mid 1993	Late 1993	Service Fees
Annual report	County Solid Waste Management Dept.	Early 1994	Mid 1994	Service Fees

APPENDIX A

GLOSSARY OF TERMS

GLOSSARY

Aerobic. Refers to environmental conditions in which oxygen is present and available for biochemical processes (such as waste decomposition or composting).

Anaerobic. Refers to environmental conditions in which oxygen is not present and is not available for biochemical processes (such as waste decomposition or composting).

Bulky items/bulky waste. Discarded furniture and mattresses.

Buy-back recycling center. A facility which pays a fee for the delivery and transfer of ownership of source-separated materials to the facility, for the purpose of recycling or composting.

Commercial solid wastes. Solid waste originating from stores, business offices, commercial warehouses, hospitals, educational, health care, military, and correctional institutions, non-profit research organizations, and government offices.

Composting. A solid waste management practice that involves accelerated biological decomposition of organic materials under controlled conditions.

Composting facility. A permitted solid waste facility which processes and composts organic materials in order to generate a useful soil amendment product. Although some separation of materials almost always occurs at composting facilities, most do not process mixed municipal solid waste, but only accept specific (source-separated) materials such as green waste, animal manure, or food waste. (See mixed waste composting facility.)

Construction and demolition waste. A category of industrial solid wastes, which include building materials, packaging, and rubble resulting from construction, remodeling, repair, and demolition operations.

Contaminated paper. Various grades of waste paper which have been contaminated with food waste or have a high moisture content.

Disposal. The management of solid waste through landfilling or transformation at permitted solid waste facilities.

Disposal capacity. The capacity, expressed as tons or cubic yards, which is either currently available at a permitted solid waste landfill, or will be needed for the disposal of solid waste generated within the jurisdiction over a specified period of time.

Diversion. Source reduction, recycling, or composting activities which prevent solid waste materials from being disposed in landfills or transformation facilities.

Diversion Alternative. Any activity implemented by a jurisdiction which could result in or promote the diversion of solid waste through source reduction, recycling, or composting, from solid waste landfills and transformation facilities.

Drop-off recycling center. A facility which accepts delivery of source-separated materials for the purpose of recycling or composting without paying a fee.

End market or end use. The use or uses of a diverted material or product which has been returned to the economic mainstream.

Green waste. Same as yard waste.

Household hazardous waste. Wastes resulting from products purchased by the general public for household use which, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may pose a substantial known or potential hazard to human health or the environment when improperly treated, disposed, or otherwise managed.

Industrial solid waste. Solid waste originating from mechanized manufacturing facilities, factories, refineries, construction and demolition projects, and publicly operated treatment works and/or solid wastes placed in debris boxes.

Inert solids or inert waste. A non-liquid solid waste including, but not limited to, soil and concrete that does not contain significant concentrations of hazardous waste or soluble pollutants and does not contain significant quantities of decomposable solid waste.

Market development. A method of increasing the demand for recovered materials so that end markets for the materials are established, improved, or stabilized and thereby become more reliable.

Materials recovery facility (MRF). A permitted solid waste facility where solid wastes or recyclable materials are sorted or separated, by hand or by use of machinery, for the purposes of recycling or composting.

Medium-term planning period. The period beginning in the year 1996 and ending in the year 2000.

Mixed municipal solid waste (MMSW). Municipal solid waste that has not been separated into waste types for the purposes of recycling or composting.

Mixed paper. A waste type which is a mixture, unsegregated by color or quality, of at least two of the following paper wastes: newspaper, corrugated cardboard, office paper, computer paper, white paper, coated paper stock, or other paper wastes.

Mixed waste (mixed MSW) composting facility. A special type of composting facility which receives mixed municipal solid waste and composts the organic fraction; processing

and separation of the inorganic fraction can be conducted either before or after the composting stage.

Mixed waste (mixed MSW) processing facility. A permitted solid waste facility that receives mixed municipal solid waste and processes it, using manual or mechanical separation, into materials that can be recycled. MMSW processing facilities are distinguished from MRFs in that they are specially designed for handling the mixed waste stream, whereas MRF designs range from those which can handle mixed recyclables only to those which can also process mixed waste streams.

Municipal solid waste or MSW. All solid wastes generated by residential, commercial, and industrial sources, and all solid waste generated at construction and demolition sites, at food-processing facilities, and at treatment works for water and wastewater, which are collected and transported under the authorization of a jurisdiction or are self-hauled.

Non-ferrous metals. Any metal scraps that have value and that are derived from metals other than iron and its alloys in steel, such as aluminum, copper, brass, bronze, lead, or zinc.

Operational costs. Direct costs incurred in maintaining the ongoing operation of a program or facility. Operational costs do not include capital costs.

Organic waste. Solid wastes originating from living organisms and their metabolic waste products which are biologically decomposable by microbial and fungal action into the constituent compounds of water, carbon dioxide, and other simpler organic compounds.

Rate structure. A set of prices established by a jurisdiction in order to compensate for the costs of diverting or disposing of solid wastes.

Recovered material. Material which has been retrieved or diverted from disposal or transformation for the purpose of recycling, re-use, or composting. "Recovered material" does not include those materials generated from and reused on site for manufacturing purposes.

Recycling. The process of diverting solid waste from disposal through materials separation and processing and using the materials to manufacture a new product. Although a material is not actually "recycled" until it is made into a new product, materials sold for reprocessing are generally considered to have been recycled.

Residential solid waste. Solid waste originating from single family or multi-family dwellings.

Reusability. The ability of a product or package to be used more than once in its same form.

Re-use. The use, in the same form as it was produced, of a material which might otherwise be discarded.

Salvage. The controlled removal of solid waste materials at a permitted solid waste facility for recycling, re-use, composting, or transformation.

Sewage sludge. Residual solids and semi-solids resulting from the treatment of wastewater, but does not include wastewater effluent discharged from such treatment processes.

Short-term planning period. The period beginning in the year 1991 and ending in the year 1995.

SIC Code. The standards published in the U.S. Standard Industrial Classification Manual (1987).

Sludge. Residual solids and semi-solids resulting from the treatment of water, wastewater, and/or other liquids. Sludge includes sewage sludge and sludge derived from industrial processes.

Source reduction. Any action which causes a net reduction in the generation of solid waste, including reducing the use of nonrecyclable materials, replacing disposable products with reusable ones, reducing packaging, reducing the amount of yard waste generated, establishing garbage rate structures with incentives to reduce the amount of waste produced, and increasing the efficiency of the use of disposable materials and products.

Source separated. The segregation, by the generator, of materials designated for separate collection for some form of materials recovery or special handling.

Transformation facility. A facility whose principal function is to convert, combust, or otherwise process solid waste by incineration, pyrolysis, destructive distillation, or gasification, or to chemically or biologically process solid wastes, for the purpose of volume reduction, synthetic fuel production, or energy recovery. Transformation facility does not include a composting facility.

Waste categories. The grouping of solid wastes with similar properties into major solid waste classes, such as grouping together office, corrugated, and newspaper as a paper waste category.

Waste generator. Any person whose act or process produces solid waste or whose act first causes solid waste to become subject to regulation.

Waste type. Identified wastes having the features of a group or class of wastes which are distinguishable from any other waste type.

White goods. Discarded, enamel-coated major appliances, such as washing machines, clothes dryers, hot water heaters, stoves, and refrigerators.

Yard waste. Wastes generated from the maintenance or alteration of public, commercial, or residential landscapes, including yard clippings, leaves, tree trimmings, prunings, brush, and weeds.

APPENDIX B

EDUCATION AND PUBLIC INFORMATION MATERIALS

APPENDIX B

EDUCATION AND PUBLIC INFORMATION MATERIALS

The following are materials used in conducting AB 939 public education programs. Please refer to Sections 8-3 through 8-6 for program descriptions. See Tables 8-1 and 8-2 page 8-10 and 8-11 for budget information.

- **Grants For Teachers Curriculum Guide**

  Target Audience: K-12 Teachers and Students
  Distribution: Every School Countywide
  Date: 1992-1993

- **Self-Education Guide**

  Target Audience: City/Governmental Agencies
  Distribution: City and Governmental Officials/Interested Public
  Date: June 1991 and July 1993

- **AB 939 Slide/Audio Presentation Brochure**

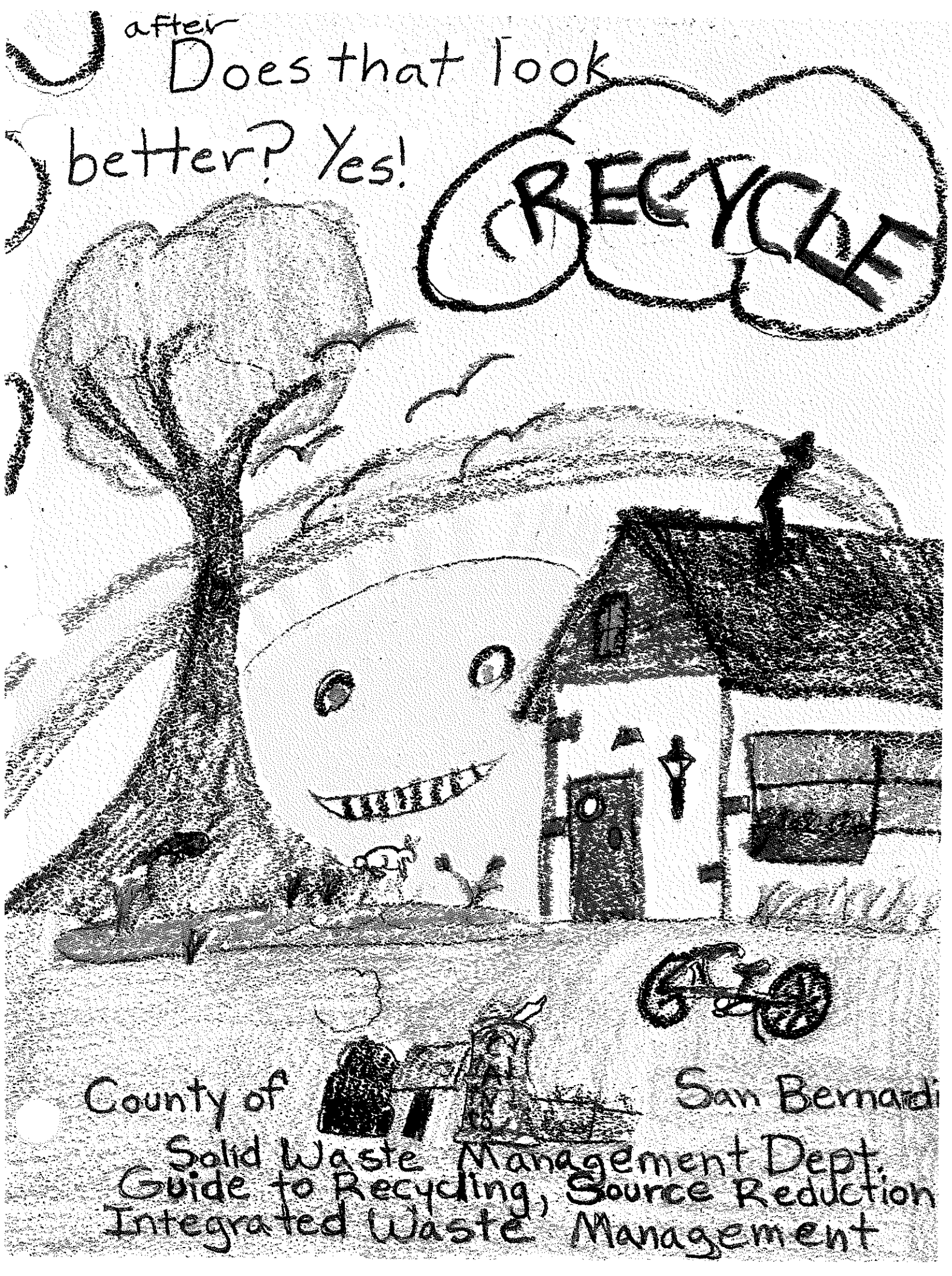
  Target Audience: Civic and Environmental Groups/General Public
  Distribution: Public Speaking Forums
  Date: June 1993

- **Technical Assistance Seminars**

  Target Audience: City/County/State Recycling Coordinators
  Distribution: Various Locations Countywide
  Date: On-going since February 1992

- **Community Special Events Programs and Materials**

  Target Audience: Schools/General Public
  Distribution: Countywide
  Date: On-going since 1990


after
Does that look
better? Yes!
RECYCLE
County of San Bernardi
Solid Waste Management Dept.
Guide to Recycling, Source Reduction
Integrated Waste Management

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Karen Christensen, J.T. Napier, Emerald Preston,
Arlaine Tyler and Pam Wilson
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Barstow Unified School District 49

K-5....RECYCLING THROUGH GARDENING
Laura Stanley, Kathy Roman
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K-6....KIDS, CROPS, AND COMPOST
Donn Beers, Theresa Johnson, Tom Kirkpatrick,
Linda Lankford, Sandy Messina, and Christina Pratt
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1-3....E.A.R.T.H. (ENVIRONMENTAL AWARENESS, RECYCLING, TEACHING AND HELPING)
Lori Eaton, Herb Gomez, Julie Kratz,
Patty Roma, and Lori Smith
West Randall Elementary School
Fontana Unified School District 81

2-4....POLLUTION, RECYCLING, TRASH AND LITTER
Kay Milender, Cheryl Kesterson, Gary Herfurth,
Tom Merchant, Leora Clark, and Lenora Moody
Skyline North Elementary School
Barstow Unified School District 93

4-6....EXPERIENCING CORRECT ENVIRONMENTAL LIVING
Troy M. Knudsvig, Theresa Partida
Alice Birney Elementary School
Colton Joint Unified School District 105

4-6...."IS THERE LIFE AFTER TRASH FOR A LANDFILL?"
Cecelia (Cid) Breyer
Kimberly Elementary School
Redlands Unified School District 109

4-6...."FROM RECYCLABLE MATERIALS TO NEW PRODUCT"
Cecelia (Cid) Breyer
Kimberly Elementary School
Redlands Unified School District 113

Preschool....TEACHING RECYCLING THROUGH DRAMATIC PLAY
Marcie Tomerlin and Beverly Allen
Harmon Preschool
San Bernardino City Unified School District 117

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Elizabeth Castaneda, Christina May,
Margaret Smith, Debbie Waltzer
West Randall Elementary
Fontana Unified School District 121

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Judy Stutz, Pam Shea
Charles Hoffman Elementary
Rim of the World School District 149

First Grade....LESSONS FROM A THEMATIC HABITAT DESERT
Donna Sheppler, Susan Tipton
Eagle Ranch Elementary School
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Marjorie J. Grimsley, Russell Carmichael
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5-6 & R.S.P.....RECYCLING -- EAGLE RANCH SCHOOL
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Jim Jordan, Jim Barnett
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Larry D. Smith
Victor Valley Junior High
Victor Valley Union High School District 175

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Marcia Zableckis and Aubrey Harness
Barstow Middle School
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Keith Chatterton, Carolyn Dimond,
Kathy Moon, Steven Merryman
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Fontana Unified School District 205

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9-12....RECYCLING WHITE PAPER AT PACIFIC HIGH SCHOOL
Drew Vanderpool, Kevin Fisher
Pacific High School
San Bernardino City Unified School District 209

10-12....IS THERE A TRASH PROBLEM AT ETIWANDA HIGH SCHOOL
Candace L. Cline
Etiwanda High School
Chaffey Union High School District 211

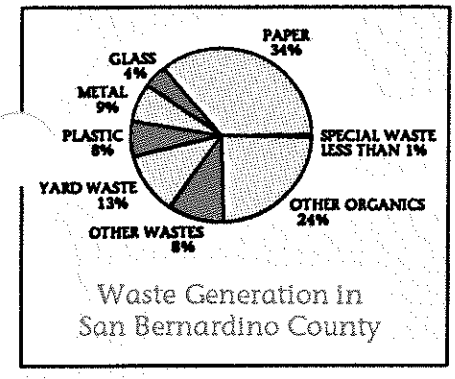
APPENDIX

POINT OF VIEW ON ENVIRONMENTAL EDUCATION
FROM THE CALIFORNIA DEPARTMENT OF EDUCATION A-1

THE GOALS OF ENVIRONMENTAL EDUCATION
AND RECOMMENDATIONS FOR ACTION A-3

CITY RECYCLING CONTACTS
IN THE SAN BERNARDINO COUNTY A-5

ENVIRONMENTAL ORGANIZATIONS A-6



Waste Generation in
San Bernardino County

PLEASE POST! APPLICATION DEADLINE: March 15, 1993

GRANTS FOR TEACHERS, 1993

County of San Bernardino
Solid Waste Management Department

APPLICATIONS NOW AVAILABLE FOR GRANTS UP TO $1,000

These grants are sponsored by the County of San Bernardino Solid Waste Management Department in conjunction with the Countywide AB 939 Solid Waste Advisory Task Force Committee on Education and Public Information which mobilizes the cities and unincorporated areas of San Bernardino County to achieve the mandates of California Assembly Bill 939—to reduce their waste stream by 25% by 1995 and 50% by 2000. This program targets the leadership and effectiveness of teachers as change agents in reaching the goals of this mandate.

WHAT IS THE GRANTS FOR TEACHERS PROGRAM?

The GRANTS FOR TEACHERS program sparks innovation by making grants available to teachers with creative ideas for projects that teach the concept of recycling, source reduction, and integrated waste management. The purpose of GRANTS FOR TEACHERS is to stimulate creativity, develop innovative materials in all curriculum areas, support teacher networking, add vitality to partnerships between schools and communities, and raise the general awareness level of solid waste issues in San Bernardino County. The program seeks to promote opportunities for teachers to acquire funding for innovation, receive recognition from their colleagues, and to know they are highly valued by their community.

WHO IS ELIGIBLE?

Any teacher, Pre-School through 12th Grade, in San Bernardino County public or private schools may apply.

HOW DOES THE PROGRAM WORK?

Applications are available in January at all schools or may be obtained by calling County of San Bernardino Solid Waste Management Department at (909) 381-2404. Grant amounts for project development are up to $500 for individual applications and up to $1,000 for team applications. Applications must be postmarked by March 15, 1993. Selection of grant recipients will be decided by a Grant Review Panel of educators.

FOR MORE INFORMATION, PLEASE CALL
COUNTY OF SAN BERNARDINO
SOLID WASTE MANAGEMENT DEPARTMENT
(909) 381-2404

PRINTED ON RECYCLED PAPER

Certificate of Participation

_____ was a participant in the

GRANTS FOR TEACHERS program sponsored by the

County of San Bernardino Solid Waste Management Department

in conjunction with the

Countywide AB 939 Solid Waste Advisory Task Force

Committee on Education and Public Information

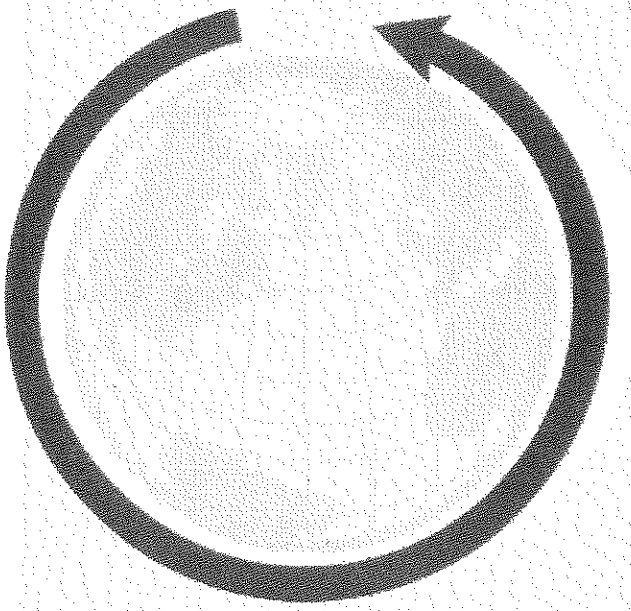
Spring 1993

John A. Burke, Director
Solid Waste Management Department

Chairperson
Education and Public Information Committee

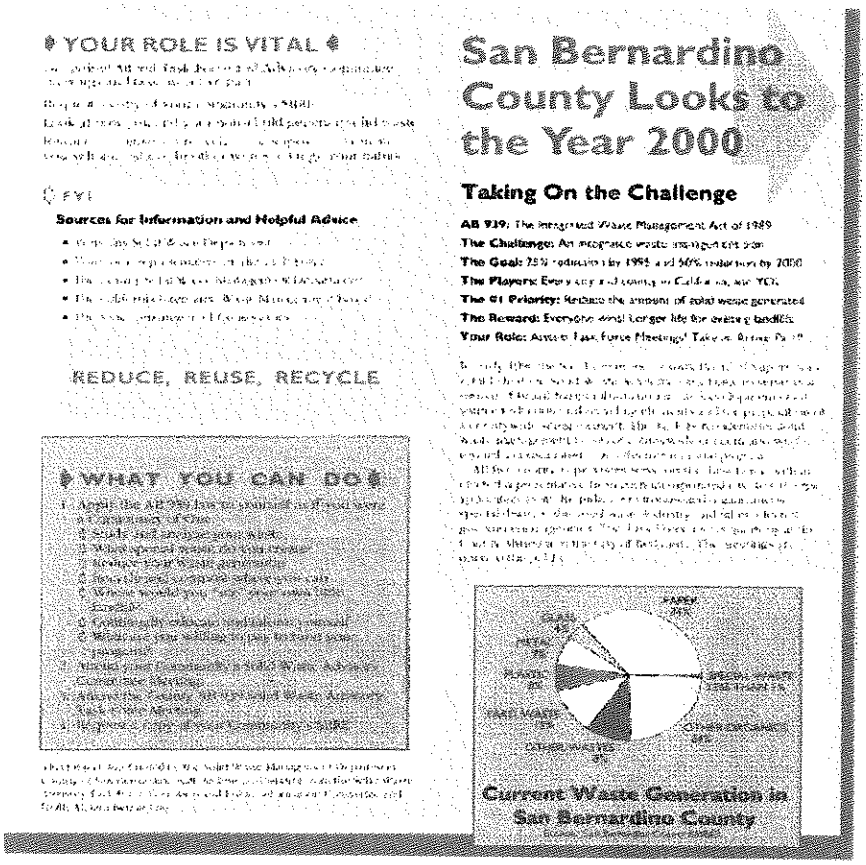
It's A Small Planet... Reduce, Reuse, Recycle:

Good Planets are Hard to Find



A Guide to Self-Education on Solid Waste Issues through the cooperative efforts of the Incorporated Cities and the County of San Bernardino

Participant Brochure, included as part of the AB 939 Slide/audio Presentation Kit



YOUR ROLE IS VITAL

FYI

Sources for Information and Helpful Advice

REDUCE, REUSE, RECYCLE

WHAT YOU CAN DO

San Bernardino County Looks to the Year 2000

Taking On the Challenge

AB 939: The Integrated Waste Management Act of 1989

The Challenge: An integrated waste management plan

The Goal: 25% reduction by 1995 and 50% reduction by 2000

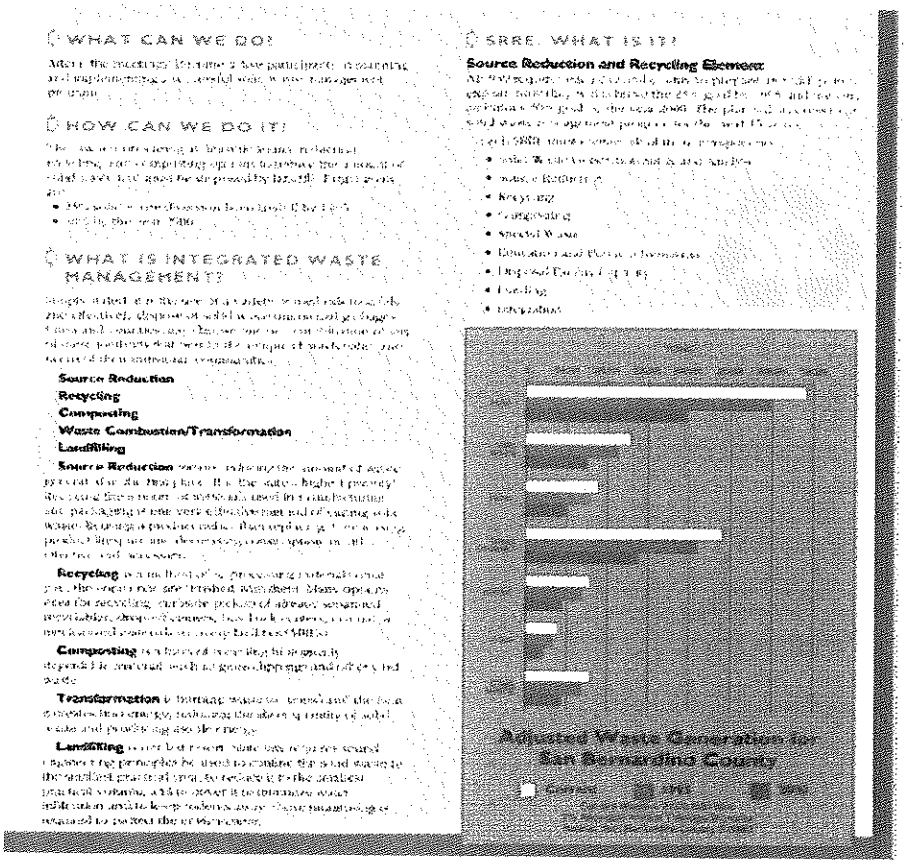
The Players: Every city and county in California, and YOU.

The #1 Priority: Reduce the amount of solid waste generated

The Reward: Everyone avoid longer life for existing landfills

Your Role: Attend Task Force Meetings! Take an Active Part!

Current Waste Generation in San Bernardino County



WHAT CAN WE DO?

HOW CAN WE DO IT?

WHAT IS INTEGRATED WASTE MANAGEMENT?

Source Reduction

Recycling

Composting

Waste Combustion/Transformation

Landfilling

Source Reduction means reducing the amount of waste generated at the beginning.

Recycling is a multi-step process involving collection, processing, marketing and manufacturing.

Composting is a process of decomposing organic materials.

Transformation is a process that reduces the amount of waste.

Landfilling is the disposal of waste.

SRRE: WHAT IS IT?

Source Reduction and Recycling Element

Adjusted Waste Generation for San Bernardino County

TECHNICAL ASSISTANCE PROGRAMS

Project Summary

prepared by

NORCAL/SAN BERNARDINO, INC.

for the

SOLID WASTE MANAGEMENT DEPARTMENT
COUNTY OF SAN BERNARDINO

PROGRAM SPONSORED BY COUNTY OF SAN BERNARDINO
SOLID WASTE MANAGEMENT DEPARTMENT IN CONJUNCTION
WITH THE AB 939 SOLID WASTE ADVISORY TASK FORCE
EDUCATION AND PUBLIC INFORMATION COMMITTEE

December 31, 1992

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8.0 PHOTO ALBUM

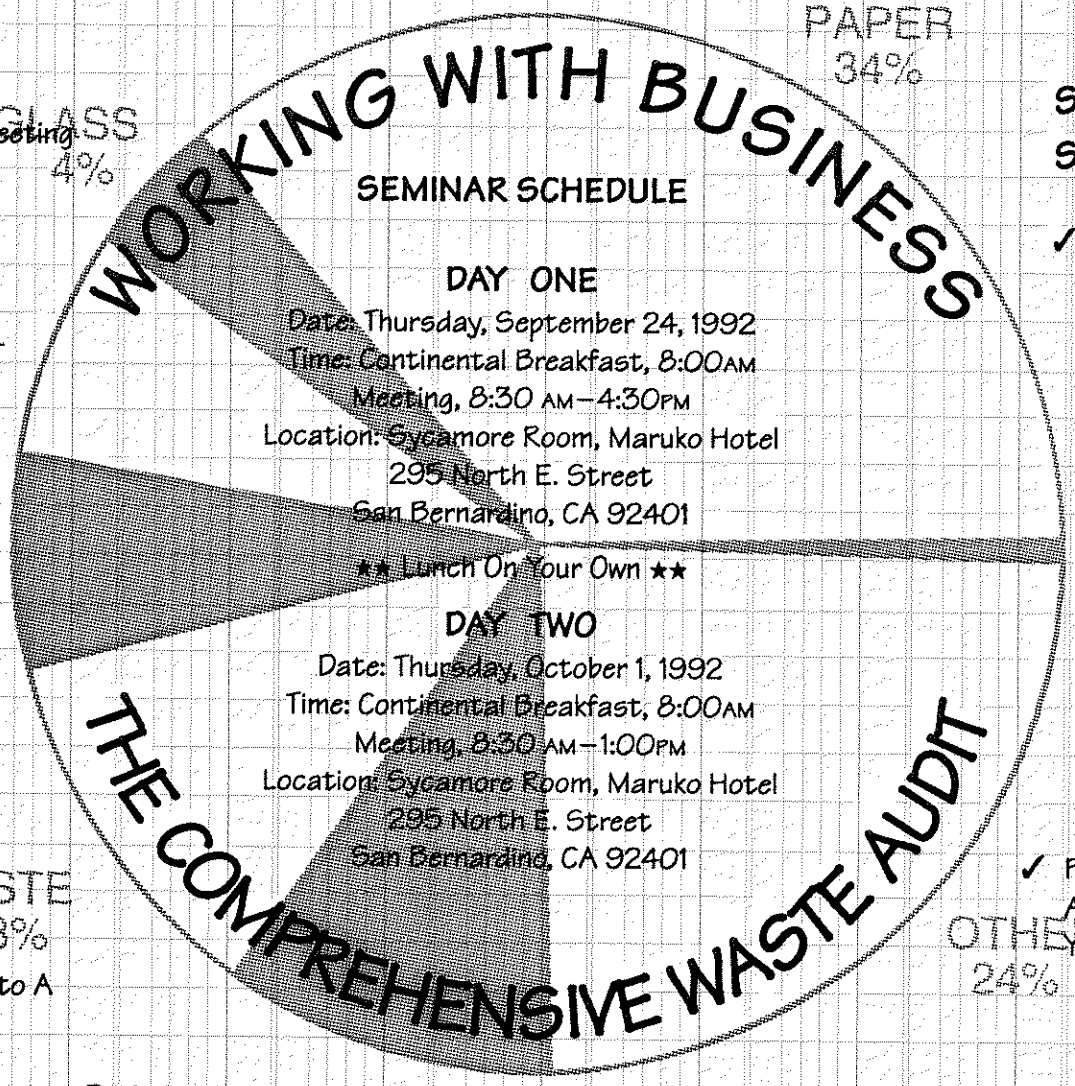
The Bottom Line . . .

SEMINAR FOCUS
DAY ONE

- ✓ The Role of Waste Audits in Meeting AB 939 Goals
- ✓ Municipal Waste Audit Programs–Short Case Studies
- ✓ Approaching the Business Sector
- ✓ The Waste Audit–What to Look For
- ✓ Organizing Your Waste Audit
- ✓ Waste Audit Walkthrough–Carousel Mall

SEMINAR FOCUS
DAY TWO

- ✓ Marketing Materials–The Key to A Successful Program
- ✓ The Waste Audit Follow-up–Program Design and Implementation
- ✓ Monitoring and Evaluation



SEMINAR SCHEDULE

DAY ONE

Date: Thursday, September 24, 1992
Time: Continental Breakfast, 8:00AM
Meeting, 8:30 AM–4:30PM
Location: Sycamore Room, Maruko Hotel
295 North E. Street
San Bernardino, CA 92401
★★ Lunch On Your Own ★★

DAY TWO

Date: Thursday, October 1, 1992
Time: Continental Breakfast, 8:00AM
Meeting, 8:30 AM–1:00PM
Location: Sycamore Room, Maruko Hotel
295 North E. Street
San Bernardino, CA 92401

RSVP: Elizabeth Hale SBCoSWMD
(714) 387-0149
FAX (714) 387-0130

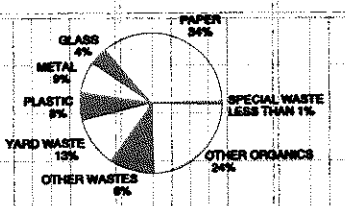
SEMINAR STRATEGIES

- ✓ Conduct a Waste Audit (Bring a clip board)
- ✓ Analyze/Write Procurement Policies
- ✓ Review Ordinances & Permitting Issues
- ✓ Develop Tracking & Evaluation Strategies
- ✓ Address Employee Participation Programs
- ✓ Prepare and Present a Waste Audit Report to the Business You Audited

Sponsored by San Bernardino County Solid W `lanagement Department in conjunction with the AB 939 Solid Waste Advisory Task For `cation and Public Information Committee.

The Bottom Line . . . Working with Business

A Series of Technical Assistance Seminars
For City Recycling Coordinators in San Bernardino County



Current Waste Generation in San Bernardino County

Seminars	Date/Time	Place	Presenter(s)
The Comprehensive Waste Audit			
Day One	8:00AM–4:30PM September 24, 1992	Maruko Hotel and the Carousel Mall (You will conduct an On-Site Waste Audit)	David Polis & Diane Inman Emcon Southwest
Day Two	8:00AM–1:00PM October 1, 1992	Maruko Hotel	
Building a StrategicCommunication Plan			
Day One	8:00AM–4:30PM November 5, 1992	Holiday Inn-Victorville	Jessica Laufer & Jacques Clafin Laufer Associates
Day Two	8:00AM–1:00PM November 12, 1992	Holiday Inn-Victorville	
Business Interaction	Successes and Near Successes/A round table and dialog opportunity with panelists . . . Have lunch together . . . Date and Place to be announced shortly		Recycling Coordinators Business Representatives Government Agencies

Strategies

+ Seminars
+ Workshops
+ Lectures
+ Field Trips
+ Round Table
+ Individual/Group Tasks
+ Job/Home Work
+ Networking
+ More . . .

The Bottom Line . . . To Assist City Recycling Coordinators =

- ✓ Focus on Waste Disposal Data in SRRE'S
- ✓ Address Business Sector Programs Identified in City SRRE'S
- ✓ Reach AB 939 Mandates
- ✓ Acquire/Enhance Skills
- ✓ Engage in actual job respons

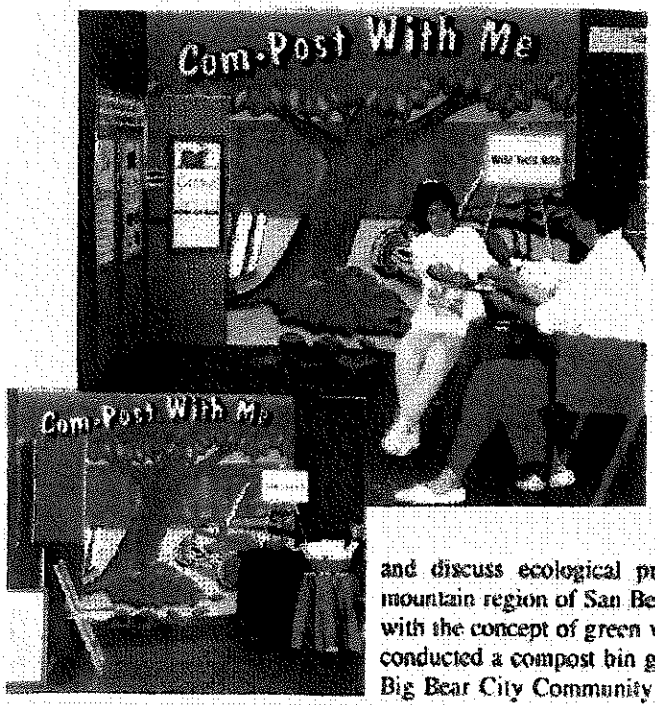
Sponsored by San Bernardino County Solid Waste Management Department in conjunction with the AB 939 Solid Waste Advisory Task Force Education and Public Information Committee.

Good News

from
Solid Waste Management

PUBLIC OUTREACH ACTIVITIES - APRIL & MAY 1993

The San Bernardino County Solid Waste Management Department Community & Government Relations Division reached more than 4,000 county residents over April and May. Many of the 18 public outreach events throughout San Bernardino County centered around April's Earth Day/Earth Month activities, giving Solid Waste Management an opportunity to familiarize the public with recycling and source reduction principles.



Leading off the events was the annual Home Improvement Show at the National Orange Show Grounds. This event ran April 2 through 4 and gave Community & Government Relations an opportunity to debut its informational "Com-Post With Me" composting display. Designed by CGR staff, the display included a public drawing for a Flowtron compost bin donated by Target Stores. Master composter Elaine Newman, Resource Recovery Specialist from the City of Rialto, conducted live composting demonstrations throughout the weekend.

The Big Bear Contractor's Expo, April 17 & 18, allowed Solid Waste Management staff to meet with mountain area residents and discuss ecological problems and opportunities unique to the mountain region of San Bernardino County. To familiarize residents with the concept of green waste recycling, the department once again conducted a compost bin giveaway, this time in conjunction with the Big Bear City Community Services District.

1993 marked the third year in which Solid Waste Management participated in countywide Government Day activities. Through these informational displays, county residents can obtain

an understanding of the various San Bernardino County departments and their functions. SWMD ran County Government Day displays at Chino Town Center (April 17), Victorville Mall (April 18), and Inland Center Mall (April 24).

Cal State San Bernardino held two Earth Month events this year. On Thursday, April 22, Solid Waste participated in the annual CSUSB Earth Day Eco-Games & Expo. Conducted by Cal State Associated Students, this event offers environmental organizations the chance to communicate with a broad majority of the university's students and faculty. At the end of the event, Greek Council delegates asked the SWMD representative to judge their chalk art contest.

One of the most significant one-day public outreach events of the year is the Cal State San Bernardino Environmental Expo. Held Saturday, April 24, the event drew more than 300 people, mostly educators, to the Solid Waste Management booth. Chaffey College had their own Environmental Resources Expo, also on the 24th. Although this event took place on a weekend, CGR representatives report having talked to almost 150 people!

During April and May, Community & Government Relations attended functions at five county schools. The department was even asked to provide a judge for the Live Oak Elementary School Trash Art Contest in Fontana. For the contest, approximately 100 elementary-age children constructed works of art made entirely of trash. Judge Terry Wold, SWMD Media Specialist, admitted to having had a tough time picking a winner from all the imaginative entries.



Crazy Bob and his vacuum cleaner friend were just two of the entries in Live Oak Elementary's Trash Art Contest April 24.

The month of May gave CGR representatives several opportunities to present informational lectures on many aspects of Solid Waste Management. On May 6, the San Bernardino Host Lion's Club invited Solid Waste Management to conduct their program. "The Lion's Purr" newsletter later reported:

> *"Our speaker was Jennifer Bendzsak, Educational Specialist, Community & Government Relations, Public Works Group, Solid Waste Management Department, County of San Bernardino. Her talk was much better than her title!"*

The following day, Education Specialist Rex Richardson met with a group of outpatients at Redlands Community Hospital. Most of those attending the presentation live in multi-unit dwellings so this engagement provided a valuable opportunity to generate recycling awareness.

Our final event in May was the 10-day National Orange Show. CGR staff spoke with almost 1,800 Orange Show attendees, most of whom generously helped themselves to our recycling and composting handouts. The composting display used at the Home Improvement Show was modified to accommodate the windy outdoor venue and SWMD again conducted a compost bin drawing. Yucaipa resident Shirley McBride was the delighted winner of our top-of-the-line BioStack compost bin purchased by Solid Waste Management from the City of Rialto.

Full Circle Newsletter

FULL CIRCLE

Volume II Issue 2 *A Newsletter Focusing on Solid Waste Issues for the Cities and County of San Bernardino* *Winter 1992*

California's Bottle Bill: A Success Story

FULL CIRCLE

Volume II Issue 1 *A Newsletter Focusing on Solid Waste Issues for the Cities and County of San Bernardino* *Fall 1992*

AB 2494: Enhancing California's Integrated Waste Management Act

FULL CIRCLE

Volume I Issue 2 *A Newsletter Focusing on Solid Waste Issues for the Cities and County of San Bernardino* *Winter 1991*

Source Reduction - Better than Recycling

By Tom Ramsay, Associate Director, Packaging Developments, Procter & Gamble Company

More and more of us begin to re-
cycle as we become more concerned and
them that's a 70% savings on all cans
those recycled and those discarded - a
reduction in laundry bottle material - and
laundry bottles are beginning to be re-

FULL CIRCLE

Volume II Issue 1 *A Newsletter Focusing on Solid Waste Issues for the Cities and County of San Bernardino* *Fall 1991*

County Makes 2 Million Tons of Trash Yearly

Current Waste Generation
San Bernardino County
2,023,000 TONS

organics 14%, other wastes 11%, and special wastes 8%

Of the 2 million tons of trash generated in San Bernardino County, 1.7 million tons are disposed (landfilled) and 284,000 tons (14%) are diverted. Collectively, the cities and county have some distance to go before arriving at the State's

You're Invited to Join the

COUNTYWIDE AB 939 SOLID WASTE ADVISORY TASK FORCE
EDUCATION & PUBLIC INFORMATION COMMITTEE

for a

"JOURNEY TO THE CENTER OF THE LANDFILL" LUNCHEON

Guest Speaker

WILLIAM RATHJE, PhD

Director, The Garbage Project
Professor of Anthropology
University of Arizona

HURSDAY, JANUARY 21, 1993
11:30 a.m. - 1:30 p.m.
(Before the 2:00 p.m. SWAT meeting)

FISK AUDITORIUM
San Bernardino County Museum
2024 Orange Tree Lane
Redlands, California

NO-HOST LUNCHEON
$10.00 per person
Make check payable to:
Joan Mayhew Catering, Inc.

RESERVATIONS by January 19, 1993
Checks or cash for reservations will be accepted at the door prior to the luncheon

RESERVATION REQUEST

Please Return To: **San Bernardino County Solid Waste Management Department**
FAX: (909) 386-8707 MAIL: 222 W. Hospitality Lane • San Bernardino, CA • 92415-0017

Your Name:_____

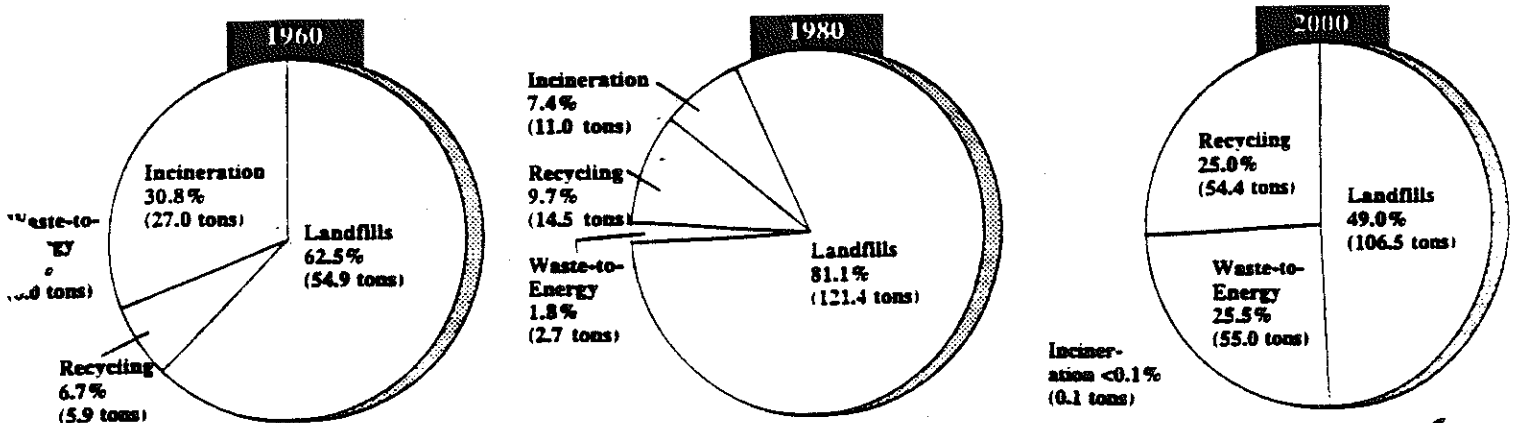
Organization:_____ FAX:_____ Phone:_____

Entree Choice: ☐ *Chicken Dijon* ☐ *Vegetarian Crepe*

For telephone inquiries, please contact Leanne Johnson at (909) 386-8738

Checks/Cash for reservations will be accepted at the door on the day of the luncheon
*Sorry, **No Orders At the Door***

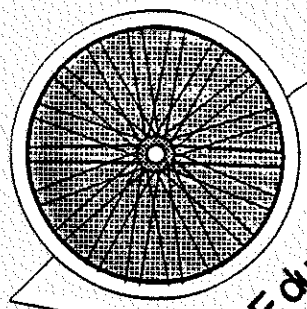
The Changing Shape of Integrated Waste Management*



Sources: U.S. EPA. National Solid Waste Management Association.

* Tons in millions of tons per year. Incineration = without energy recovery. Percentages may not add to 100% due to rounding.

You're Invited...



We're Putting the Wheels in Motion
For the County-Wide
Education and Public Information Programs

You Are Invited

To Our Picnic

Join the Education and Public Information Committee
for a "No Host Lunch"

Thursday, October 17, 1991 ***(Rain or Shine)***
12:00 NOON (Before the Solid Waste Task Force 2:00 Meeting)
"Teachers' Hall of Fame" Schoolhouse
San Bernardino County Museum
2024 Orange Tree Lane, Redlands
(Map on Reverse Side)

Lunch will be held on the lawn, picnic style. Bring a blanket and dress is casual.
(Several school lunch tables are available)

DISPLAYS • STORYTELLING • MUSIC • FOOD • PROGRAM

RSVP by October 11. Make check for $7.25 payable to "The Godmothers". *(Sorry. No orders at the door.)*

Detach and Return

Name _____ Phone _____

Organization _____

Address _____

_____

Sandwich Choice *(please check one):*
(Lunch includes Sandwich, Salad, Veggie Tray, Dessert and Drink)

☐ Turkey ☐ Ham ☐ Italian (Meat Combo) ☐ Assorted Cheese

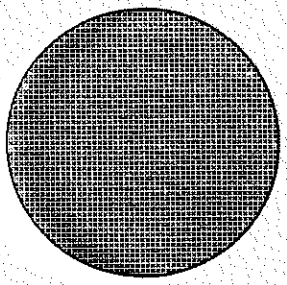
Please include check for $7.25 payable to "The Godmothers"

Return Form To:

County of San Bernardino
Department of Solid Waste Management
621 E. Carnegie Drive, Suite 270
San Bernardino, CA 92415-0017
Attention: **Earl Maciel**

For questions, phone the Department of Solid Waste Management at (714) 387-0149

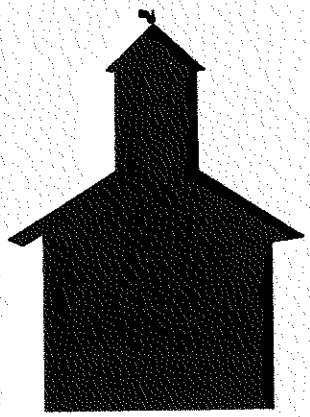
Picnic
in the
Courtyard



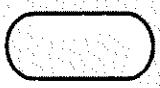
Museum



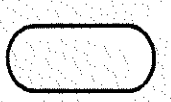
Locomotive



Teachers'
Hall of Fame



Missile



Jet

Parking Lot

San Bernardino County Museum

RECYCLING/BUY-BACK CENTERS

SAN BERNARDINO COUNTY AREA

***NOTE:** Materials collected for recycling, except CA Redemption containers, are subject to market fluctuations and, based on market demand, may not be accepted at the Recycling Center or accepted as a donation only. Please contact the desired Recycling Center to confirm the material will be accepted.

Consult your local telephone directory for a complete list of centers in your area. *This listing is intended for public information only and does not suggest endorsement by the County of San Bernardino.*

May 1993

***Key to Commodities** ● **Denotes Center Accepts Material**

CAA=CA Redemption Aluminum, OA=Other Aluminum, M=Metal, MP=Mixed Paper, NP=Newsprint, CP=Corrugated Paper, OP=Office Paper, CAG=CA Redemption Glass, OG=Other Glass, CAP=CA Redemption Plastic, OPL=Other Plastic, 1-PET, 2-HDPE, c-Colored, TC=Tin Cans, OTR=Other

BUY-BACK CENTER	COMMODITY												
	CAA	OA	M	MP	NP	CP	OP	CAG	OG	CAP	OPL	TC	OTR
Clean Earth Recycling Center 20947 Bear Valley Road Apple Valley CA 92308 (619)240-3858	●	●	●	-	●	●	-	●	●	●	-	-	A
Barstow Recycling 130 Eastgate Barstow CA 92311 (619)255-2267	●	●	●	-	●	●	●	●	●	●	2	-	A
Bob's Recycling Center 1605 State St. Barstow CA 92311 (619)256-1204	●	●	●	-	●	-	-	●	●	●	-	-	-
Hilco Salvage 2421 W. Main St. Barstow CA 92311 (619)256-6215	-	●	●	-	-	-	-	-	-	-	-	-	-
All Metals Recycling 10065 Alder Bloomington CA 92316 (909)877-8785	●	●	●	-	-	-	-	●	●	●	-	●	-
Palm Springs Recycling 36530 Sunair Plaza Cathedral City CA 92234 (619)321-4087	●	●	●	-	●	●	●	●	●	●	1c,2c	●	A,B
Canco 1224 N. Mt. Vernon Ave. Colton CA 92324 (909)825-8223	●	●	●	-	-	-	-	●	●	●	-	-	-
Colton Recycling Centers Stater Bros Parking Lots @ Rancho & Mill, La Cadena & Valley, Colton (909)370-6100	●	-	-	-	B,C	-	●	●	●	●	1c,2c	●	-

A-Accepts Car Batteries B-Accepts Phone Books C-Accepts Appliances

Buying Recycled Builds Markets

Printed On Recycled Paper

RECYCLING/BUY-BACK CENTERS

SAN BERNARDINO COUNTY AREA

***Key to Commodities** ● **Denotes Center Accepts Material**

CAA=CA Redemption Aluminum, OA=Other Aluminum, M=Metal, MP=Mixed Paper, NP=Newsprint, CP=Corrugated Paper, OP=Office Paper, CAG=CA Redemption Glass, OG=Other Glass, CAP=CA Redemption Plastic, OPL=Other Plastic, 1-PET, 2-HDPE, c-Colored, TC=Tin Cans, OTR=Other

Buy Back Center	Commodity												
	CAA	OA	M	MP	NP	CP	OP	CAG	OG	CAP	OPL	TC	
Courtyard Recycling 1250 E. Washington Street *(behind Albertson's)* Colton CA (909)423-0111	●	●	●	-	●	●	●	●	●	●	1c-6c	●	-
I.E.S. Recycling 11180 Live Oak Fontana CA (909)428-0325/0826	●	●	●	●	●	●	●	●	●	●	1-6	●	A
A&C Recycling 9150 Cherry Avenue Fontana CA 92335 (909)356-2830	●	●	●	-	-	-	-	●	-	●	-	-	-
Fontana Paper Mills Inc. 13733 Valley Blvd. Fontana CA 92335 (909)823-4100	-	-	-	-	●	●	●	-	-	-	-	-	-
Frankel Iron & Metal 15615 Arrow Blvd. Fontana CA 92335 (909)823-3431	●	●	●	-	-	-	-	-	-	-	-	-	-
A 2 Z Recycling 6183 Sierra Avenue Fontana CA (909)356-1381	●	●	●	-	-	-	-	●	●	●	-	●	-
Advance Disposal Co./Desert Recycling 11500 Manposa Road Hesperia CA 92345 (619)244-9773 / (619)948-3122	●	●	●	-	-	●	-	●	●	●	2	-	-
Carson Recycling 11099 "G" Ave. Hesperia CA 92345 (619)947-3099	●	●	●	-	●	●	●	●	●	●	1,2	●	A
Victor Valley Recycling 17491 Lilac St. Hesperia CA 92345 (619)244-7224	●	●	●	-	●	●	-	●	●	●	2	-	A
A-1 Recycling 10651 E Avenue Hesperia CA (619)947-5522	●	●	●	-	-	●	-	●	-	●	-	●	A
Avalon Salvage 24399 Hwy. 58 Hinkley CA 92347 (619)253-7408	-	●	●	-	-	-	-	-	-	-	-	●	A
Claypool & Co. Recycling 534 Front Street Needles CA 92363 (619)326-3859	●	●	●	-	●	-	-	●	-	●	-	-	A

A-Accepts Car Batteries B-Accepts Phone Books C-Accepts Appliances

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	CAA	OA	M	MP	NP	CP	OP	CAG	OG	CAP	OPL	TC	OTR
D&M Metals 840 E. State Ontario CA 91761 (909)986-1596	●	●	●	-	-	-	-	●	●	●	-	-	A
Main Street Fibers 608 Main Ontario CA 91761 (909)986-6310	●	●	-	-	●	●	●	●	●	●	1c,2c	●	-
Ontario Metal Recycling 717 S. Taylor Ave. Ontario CA 91761 (909)983-0655	●	●	●	-	-	-	-	●	●	●	1c,2c	●	C
Continental Recycling 5082 Mission Blvd Ontario CA 91762 (909)628-0033	●	●	●	-	-	-	-	●	●	●	1c,2c	-	-
American Metal Recycling 2202 S. Milliken Avenue Ontario CA (909)989-9000	-	●	●	-	-	-	-	-	-	-	-	●	-
Palm Springs Recycling 280 Oasis Road Palm Springs CA 92262 (619)325-3377	●	●	●	-	●	●	●	●	●	●	1c,2c	●	A
Country Can Recycling 4371 Phelan Road Phelan CA 92371 (619)868-4100	●	●	●	-	●	●	-	●	●	●	1,2	-	A
Mission Recycling Center 1341 E. Mission Blvd. Pomona CA 91766 (909)623-1278	●	●	●	-	●	●	-	●	●	●	1c,2c,3c	●	-
Pomona Paper Stock/Recycling Resources 1406 W. 2nd Street Pomona CA 91766 (909)629-9911	●	●	-	-	●	●	●	●	●	●	-	-	-
Pomona Valley Recycling 1326 E. 9th Street Pomona CA 91766 (909)629-5265	●	-	-	-	●	●	●	●	-	●	-	-	-
Paper Scrap Specialists 1391 E. Mission Boulevard Pomona CA 91767 (909)620-4421	●	-	-	●	-	●	●	-	-	-	-	-	-
Pomona Scrap Metal Co. 1432 E. 1st Pomona CA (909)623-1373	-	-	-	-	-	-	-	-	-	-	-	-	C

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	CAA	OA	M	MP	NP	CP	OP	CAG	OG	CAP	OPL	TC	
Daniels Components Ex. (DCE) 9529 8th Street Rancho Cucamonga CA 91730 (909)944-0025	●	●	●	-	●	●	●	●	●	●	-	-	-
Reynolds Aluminum 9910 E. 6th St. Rancho Cucamonga CA 91730 (909)980-1203	●	●	●	-	-	-	-	●	-	●	-	-	-
All State Paper & Metal 13195 Whittram Ave. Rancho Cucamonga CA 91739 (909)899-3613	●	●	●	●	●	●	●	●	●	●	-		A
Redlands Recycling 612 Lawton St. Redlands CA 92373 (909)793-9969	●	●	●	-	-	-	-	●	●	●	-	-	-
EDCO Disposal 210 E. Cameron Rialto CA 92376 (909)877-1596	●	-	-	-	●	-	-	●	-	●	-	-	-
Augustine Metals 3759 Plancentia Lane Riverside CA 92501 (909)682-8102	●	●	A	-	-	-	-	-	-	-	-	-	-
D&L Metals 6565 Mission Blvd. Riverside CA 92509 (909)681-2525	●	●	●	-	-	-	-	●	-	●	-	-	-
Recycling Services 8566 Limonite Ave. Riverside CA 92509 (909)685-4430	●	●	●	-	-	-	-	●	●	●	-	-	A
Riverside Scrap 2993 6th St. Riverside CA 92517 (909)686-2120	●	●	●	-	●	●	●	●	●c	●	-	●	C
Recycled Fibers of California 165 E. Mill San Bernardino CA 92408 (909)884-8404	-	-	-	●	●	●	●	-	-	-	-	-	-
Inland Paper Stock 777 W. Rialto Ave. San Bernardino CA 92410 (909)884-8672	●	●	-	●	●	●	●	●	●	●	-	-	-
San Bernardino Metal Corp. 144 S. "G" St. San Bernardino CA 92410 (909)889-0626	●	●	●	-	●	●	-	●	●	●	-	-	A

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BUY BACK CENTER

	Commodity												
	CAA	OA	M	MP	NP	CP	OP	CAG	OG	CAP	OPL	TC	OTR
VFW Recycling Center 6595 Adobe Rd. Twentynine Palms CA 92277 (619)367-0290	●	●	●	-	-	-	-	●	●	●	-	-	-
A-1 Upland Recycling 1248 W. 9th Street Upland CA 91786 (909)982-1044	●	●	●	-	●	●	-	●	●	●	1c,2c	-	-
American Best Recycling 17229 Gasline Road Victorville CA (619)241-8414	●	●	●	-	-	-	-	●	●	●	1c,2c	●	A,C
Hi-Desert Recycling 55525 Yucca Trail Yucca Valley CA 92284 (619)365-1935	●	●	●	-	-	-	-	●	●	●	1c	-	A

Community Programs

County Museum Recycling Project *(accepts material on 4th full weekend of each month only)*
2024 Orange Tree Lane, Redlands CA 92374
Call (909)798-8570 *or* call BFI Loma Linda Disposal at (909)825-3402 for details

Other Materials

CAR BATTERIES: Trak Auto Stores, K-Mart and Sears Auto Centers - contact local store
MATTRESSES: MBC Mattress Company (909)371-8044
SURPLUS FOOD: San Bernardino County Food Bank (909)386-5011
Inland Harvest (909)335-7327
Survive Food Bank (909)787-8641

Prepared By:

San Bernardino County
Solid Waste Management Department

The Landfill People

(800) 722-8004 *or* (909) 381-2404

A-Accepts Car Batteries B-Accepts Phone Books C-Accepts Appliances

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RECYCLING ACTION GUIDE

There are many elements to an effective recycling program. The most important element is YOU. You make it happen. If you don't--recycling won't get done. Your efforts will make a difference-an important difference-in the quality of life in our county.

Just what can you do? Plenty! Here's how...

MAKE RECYCLING PERSONAL: Recycling is most successful when a lot of individuals commit to its success. While efforts to recycle made by companies are indeed important, it's you and people like you that, on a day-by-day basis, make recycling work. Be organized!

REDUCE THE AMOUNT OF WASTE YOU GENERATE by purchasing reuseable and long-lasting items. Compost yard wastes.

BUY WITH RECYCLING IN MIND. Purchase products in easy to recycle containers and packaging. Avoid single-use and items with a combination of packaging materials, which are difficult to recycle.

PARTICIPATE IN YOUR LOCAL RECYCLING PROGRAMS. Most areas of the county have drop-off/buy-back centers ready to take your CA. REDEMPTION glass, plastic and aluminum. Many of these centers also take newspaper, cardboard, office paper, other glass and plastics, and metals. Several communities have city-operated curbside recycling programs, check to see if your city does. In any event, recycle at home!

BUY PRODUCTS MADE FROM RECYCLED MATERIALS. Your purchase strengthens the market for recycled products and signals the manufacturer the use of recycled materials are important to you the consumer.

ENCOURAGE AND EDUCATE OTHERS TO RECYCLE. Share recycling suggestions with your neighbors, co-workers and friends. Educate your children on how important and easy it is to recycle. Communicate your wishes to your elected officials. Make a difference!

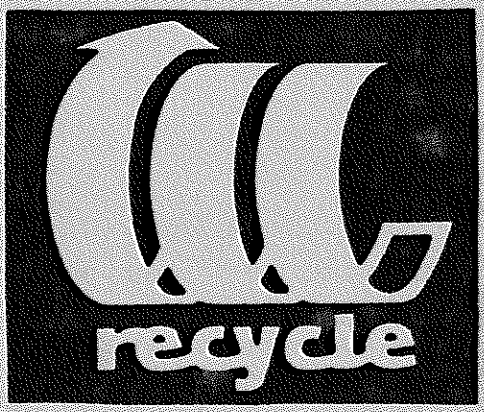
DONATE USED FURNITURE, APPLIANCES, CLOTHING AND TOYS to organizations instead of throwing them in the trash. Recycling allows others a chance to find new uses for these items.

Turn over flyer for important recycling symbols and explanations.

YOU make the difference!

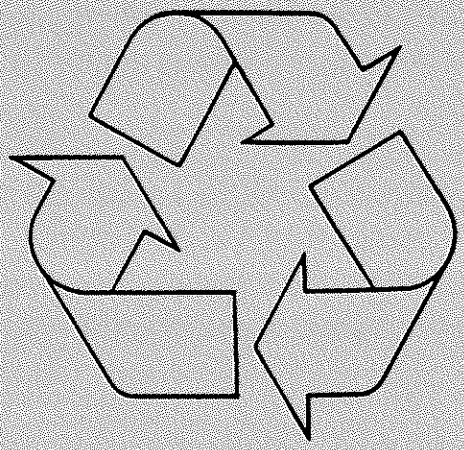
For more information on recycling, contact:
San Bernardino County
Solid Waste Management Department
(909)386-8700

LOOK FOR THESE SYMBOLS WHEN YOU SHOP
It Makes Good Recycling Sense



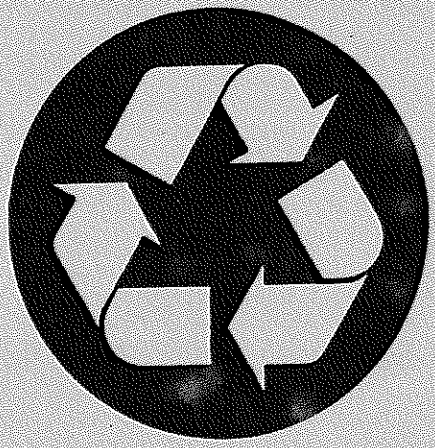
CA. REDEMPTION VALUE:

This symbol can be found on "California Redemption Value" beverage containers. California Redemption fees are collected when the beverage is purchased as part of the California recycling program. Empty containers marked with this symbol can be redeemed for cash.



RECYCLABLE:

This symbol identifies the material as being recyclable. Meaning, the material can be recycled and reused. More and more materials are being labeled with thi symbol to help the public better identify which materials can be recycled. This triangular shaped arrow design is the international recycling symbol.



CONTAINS RECYCLED MATERIAL:

This symbol helps to identify a product or package made from recycled materials. Consult the package or manufacturer for more details on the exact amount of recycled materials used.

Turn over flyer for important recycling information.

Sponsored in-part by:

FOOD 4 LESS.
"Our Name Says It All"
P.O. Box 1663
San Bernardino Ca. 92402
(714) 889-2131

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BACKYARD COMPOSTING RECIPES

G = greens B = browns





Recipe 1

3 parts	Fresh Grass Clippings	G
3 parts	Fruit & Veggie Scraps	G
6 parts	Dry Leaves	B

Recipe 2

3 parts	Dry Grass Clippings	B
3 parts	Garden Prunings	G

Recipe 3

3 parts	Wood Shavings	B
3 parts	Fresh Grass Clippings	G



Add water and air to all recipes.



Condiments

1/2 - 2 shovelfuls	Fireplace Ashes
1/2 shovelful	Bone Meal
1/2 shovelful	Finished Compost

Preparation

Your compost pile should be a mix of half Browns (avoid pine needles) and half Greens. Remember to mix in some water and to keep the pile moist (like a damp sponge). Stir your pile about once a week. In a couple of months, your compost will be ready!

Presented by:
San Bernardino County
Solid Waste Management Department
(909) 381-2404 1-800-722-8004

How To COMPOST At Home

GREENS + BROWNS + AIR and WATER = COMPOST

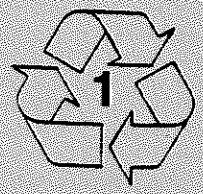
How it works: Put equal amounts of Greens and Browns into a pile or composting bin. Add enough water to make the mixture moist and mix. Keep moist and mix weekly. In as little as 4-6 weeks your compost will be ready.

Troubleshooting

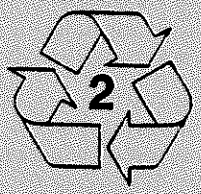
Symptom	Problem	Solution
Question:	What can I do with compost?	Compost is used to enrich the soil and as a mulch to retain moisture and protect plants.
Bad odor.	Not enough air, or too much green material.	Mix the pile, or add in more brown material.
Composts too slowly.	Not enough water.	Moisten and mix the pile.
Pile is damp and warm only in the center.	Pile is too small.	Collect more material and mix it into the pile.
Pile is damp and sweet-smelling but no heat.	Lack of green material.	Mix in more green material like fresh lawn clippings, yard trimmings, and weeds.

PLASTICS CODING SYSTEM

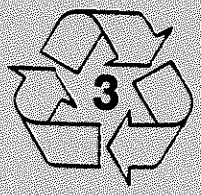
To help consumers more easily identify the different types of plastic, a numbered coding system has been developed. You can find these code numbers stamped on the bottom of the item. Number 1 and 2 types of plastics are the most commonly recycled.



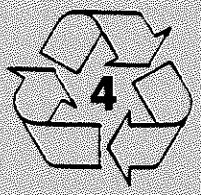
PET (polyethylene terephthalate): Soft, generally clear material, commonly used for food and beverage containers. Example: Soda bottles



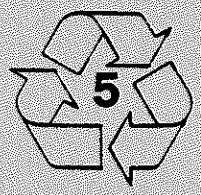
HDPE (high-density polyethylene): White, translucent colored material. Example: Milk jugs



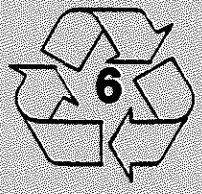
VINYL: Color varies. Example: Shampoo bottles



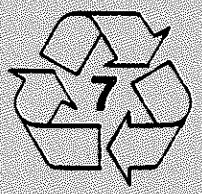
LDPE (low-density polyethylene): Various colors. Example: Squeeze bottles



Polypropylene: Example: Catsup bottles



Polystyrene: Sometimes called polyfoam. Example: Fast-food packaging



Other: Material contains more than one type of plastic, or item isn't coded.

Printed on recycled paper

Litter Life Span

An unsightly legacy that endures.

*The time required for some commonly littered objects to decompose**

Litter	*Decomposition Time*
Aluminum Cans	80-100 years
Glass Bottles	1,000,000 years
Plastic Bags	10-20 years
Plastic Coated Paper	5 years
Plastic Film Containers	20-30 years
Nylon Fabric	30-40 years
Rubber Boot Sole	50-80 years
Leather	up to 50 years
Wool Clothing	1-5 years
Orange and Banana Peels	2-5 weeks
Cigarette Butts	1-5 years

Highway Litter

In 1976, Caltrans removed 56,000 cubic yards of trash from California highways. This volume jumped to 176,000 cubic yards in 1985. [illegible] traffic rose 50%, litter tripled.

A six-month survey in 1984 uncovered a host of littered materials along the state's roads and highways, including:

- a roll of carpet padding
- cement pillars
- an 8'x8' cargo box
- diapers
- a roll of wire
- aluminum sheets
- livestock feed
- calcium nitrate
- bags of cement
- sheetrock
- a tied bundle of shingles
- boxes of lettuce
- a pitchfork
- 3 bales of insulation
- an open box of nails

Everything from lumber and air conditioning ducts, to furniture and paint cans are found, and most of the time, drivers are unaware that they have lost a valuable piece of cargo – and caused a serious road hazard in the process.

Cover the Load

Debris blowing from uncovered [illegible]s is the most common form of accidental littering in California. Since 1974, littering of construction material and debris has climbed 239%.

Truck-blown litter is not only unsightly, but it can also be extremely dangerous to motorists and highway workers.

The California Waste Management Board strongly urges all truck drivers to carefully secure their loads and cover them with a tarp or net.

* Remember - for decomposition to occur, you need air, sunlight and water. None of these are present in the landfill. That's why *"A Landfill is Forever"*.

Thank You!

The County of San Bernardino thanks you for recycling your holiday tree. By recycling, you have helped save precious landfill space. More recycling ideas are listed on the back of this flyer.

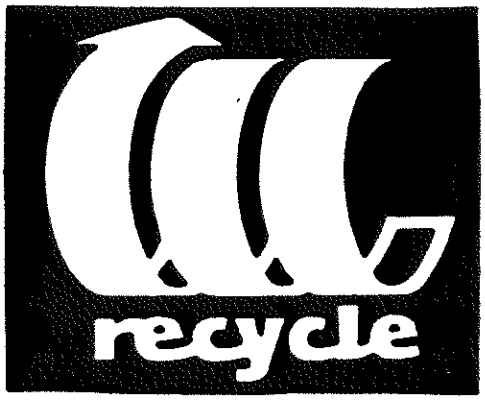
Did you know recycling saves energy and water? Recycling reduces pollution too:

Recycled Material	Energy Saved	Water Saved	Air Pollution Reduced	Water Pollution Reduced
Paper	23 - 74%	61%	60 -73%	35%
Glass	5%	--	22%	--
Steel	47 - 74%	40%	86%	76%
Aluminum	95%	95%	95%	97%
Plastics	88%	--	--	--

Recycling a ton of newspaper saves about 17 trees and 3.3 cubic yards of precious landfill space.

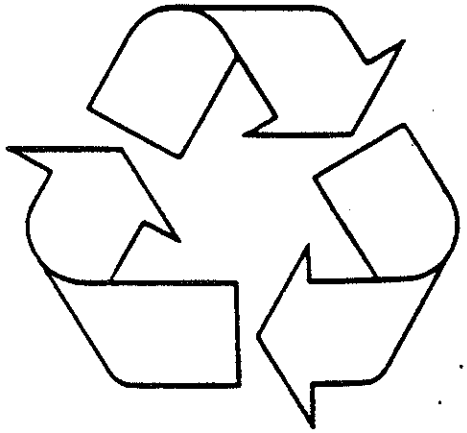
Printe ı Recycled Paper

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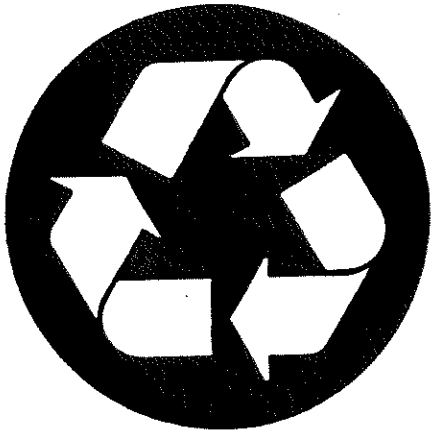
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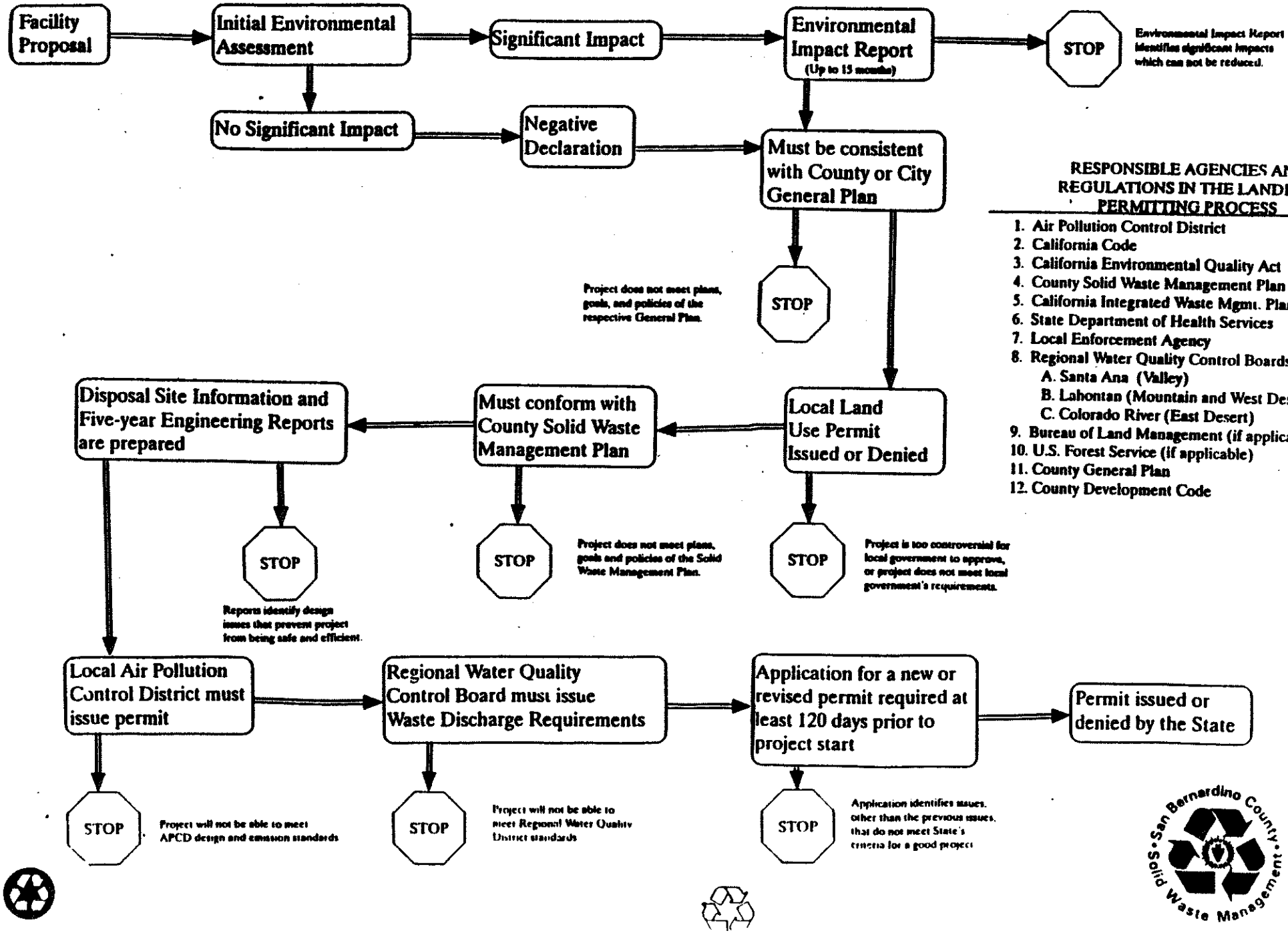
Sponsored in-part by:

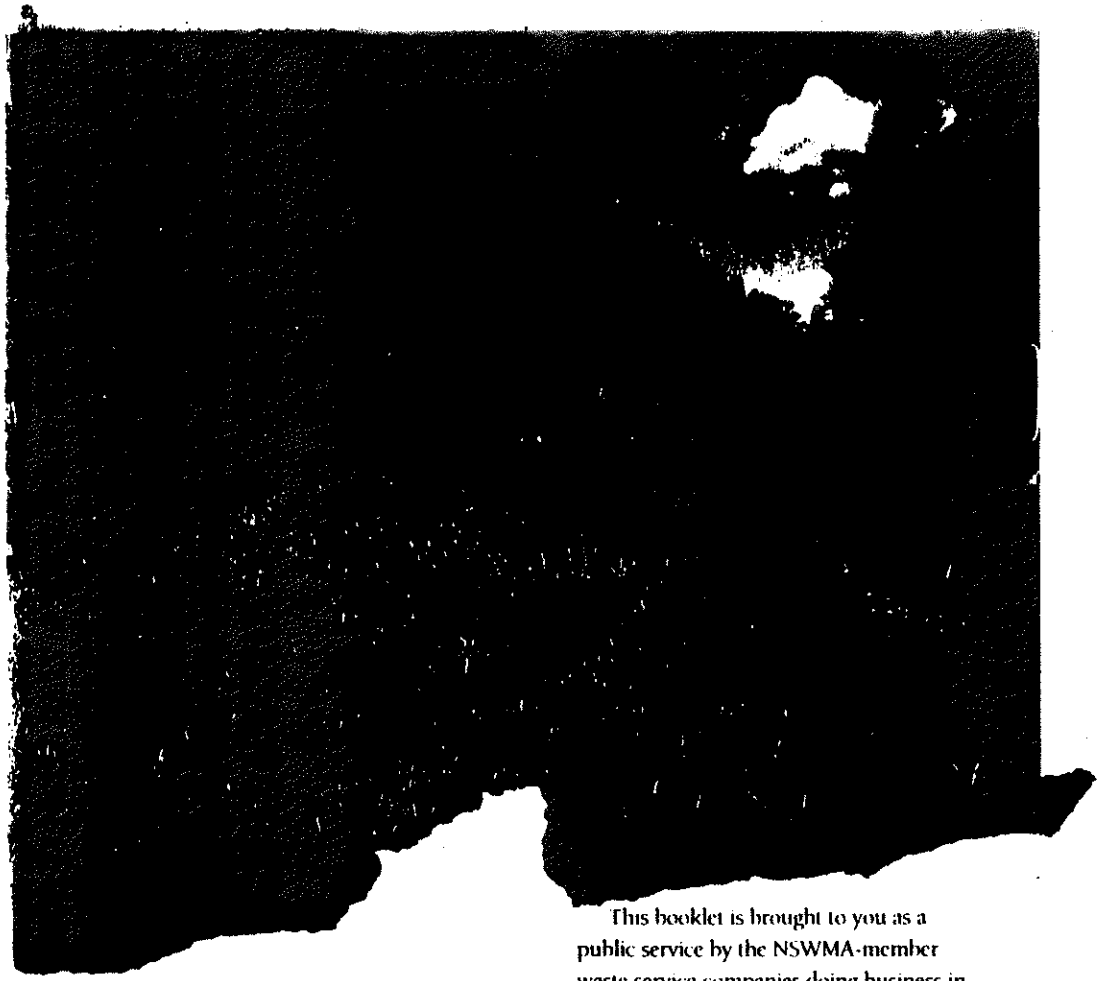
FOOD 4 LESS.

"Our Name Says It All"
P.O. Box 1663
San Bernardino Ca. 92402
(714) 889-2131

printed on recycled paper

SOLID WASTE FACILITY PERMITTING PROCESS





This booklet is brought to you as a public service by the NSWMA-member waste service companies doing business in your state.

San Bernardino County
SOLID WASTE MANAGEMENT DEPT.
[illegible]
[illegible]
San Bernardino, CA 92415-0017

National Solid Wastes Management Association
Suite 1000
1730 Rhode Island Avenue, NW
Washington, DC 20036
(202) 659-4613

NSWMA

LET'S PUT A LID ON ILLEGAL DUMPING



APPENDIX C

COMMENTS AND RESPONSES TO COMMENTS ON PRELIMINARY DRAFT SRR ELEMENT AND HHW ELEMENT

LETTER # 1 response GM 4/30

STATE OF CALIFORNIA — Pete Wilson, Governor

CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD
8800 Cal Center Drive
Sacramento, California 95826

April 24, 1992

Mr. Gerald M. Newcombe, II
Interim Deputy Director
San Bernardino County Solid Waste Department
621 East Carnegie Drive, Suite 270
San Bernardino, CA 92415-0017

SUBJECT: Preliminary Draft Source Reduction and Recycling Element for the San Bernardino County Unincorporated areas

Dear Mr. Newcombe:

The California Integrated Waste Management Board (Board) staff have reviewed the Preliminary Draft Source Reduction and Recycling Element (SRRE) and Waste Generation Study (WGS) for the San Bernardino County unincorporated areas for compliance with Chapter 9, Title 14 of the California Code of Regulations (CCR), Planning Guidelines and Procedures for Preparing and Revising Countywide Integrated Waste Management Plans (Guidelines). This letter has general comments and observations. Attached to this letter are specific comments staff had on the SRRE and WGS.

Board staff would like to commend the County for developing a well-organized planning document. The multijurisdictional planning program, broken down into the three subareas within the county, (west valley, east valley and desert/mountain area), contained some very positive and promising implementation programs and tasks.

It appears the County will surpass the short-term mandate by achieving 27.6 percent diversion in 1995. The projection for the year 2000 is estimated to be 46.1 percent. This projection is short of the 50 percent diversion mandate required by Public Resources Code (PRC) section 41780. It is stated that the shortfall is primarily attributed to the remoteness and low population densities in the mountain and desert regions of the unincorporated county. Statutory law requires cities and counties to divert 25% and 50% of its solid waste from landfills and transformation facilities. In order to achieve those goals, local jurisdictions must maximize the use of all feasible source reduction, recycling, and composting options in order to reduce the amount of solid waste that must be disposed of by transformation and land disposal.

If the County of San Bernardino is effectively implementing all feasible source reduction, recycling and composting measures and these measures are the greatest feasible amounts the County may achieve, then on or after January 1, 1995, as allowed by PRC section 41785, the County may request a reduction to the 50% requirement by petitioning the Board to conduct a public hearing on the request.

General Comments

1-1 In the Source Reduction, Recycling and Composting Components, the selected programs were identified. However, the estimated quantities to be diverted by **diversion program and waste type** were not discussed, as required by CCR section 18733.4(b). Instead, the estimated quantities for diversion were shown by region (West Valley, East Valley, etc.). This does not meet the regulatory requirement and must be corrected in the final SRRE.

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RESPONSES TO COMMENTS
ON THE SAN BERNARDINO COUNTY SRRE
FROM THE CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD

1-1 Although this breakdown was not available from all the consultants working on the various County regions, SCS has developed this information for inclusion in the final draft of the SRRE. Please note that no breakdown of diversion by waste type for source reduction programs was provided because there is yet no known method of quantifying source reduction diversion, and a breakdown of estimates by waste type would therefore not be possible.

1-2 Existing programs, including thrift shops, appliance repair stores, pallet repair businesses and diaper services are expected to continue operating throughout the planning periods. The County, as stated on page 4-20, does not have direct control over these types of facilities and will devise methods to quantify the wastes diverted. If these businesses cease to operate, which may result in a lower than anticipated waste diversion goal, please discuss the contingency measures the County will enact.

1-3 The monitoring and evaluation section of all of the Components was missing the identification of known monitoring and evaluation funding requirements, revenues and revenue sources, a requirement of CCR section 18733.6(c)(3).

1-4 The Recycling Component did not discuss the availability of end uses of diverted materials. It is not clear how the County is actually developing public and private-sector markets for all of the targeted recyclable materials. No discussion nor identification was found on the end uses or end markets to be secured during the short-term for the diverted materials. No discussion was found that described the measures that would be taken if unfavorable market conditions occur which prevent the County from the reaching the 25 percent and 50 percent goals. CCR sections 18733.3(b)(4), 18733.4(c) and 18735.4(a) and (b) require this information in the final SRRE.

1-5 It was not clear in the preliminary draft SRRE which monitoring method the County has selected to monitor the source reduction, recycling, composting and special waste programs and to evaluate compliance with the mandated diversion requirements. CCR section 18733.6 requires a jurisdiction to either use a waste generation study, a targeted solid waste characterization study, an assessment of changes in design, production, distribution, sale and/or use of products/packages which affect waste generation, or a method approved by the Board. In the final SRRE, please identify the method for each Component the County has selected.

1-6 The County has targeted a number of disposed wastes that could be diverted by selected programs. Those wastes, as indicated on Page 3-18, include:

- o paper (newsprint, corrugated containers, high-grade, mixed and contaminated/other),
- o plastics (Pet, HDPE, film and other),
- o glass (CRV and containers),
- o metals (aluminum, tin, ferrous, nonferrous, white goods, mixed/other),
- o yard (grass, leaves, prunings),
- o other organics (food, wood, tires, rubber, manure, disposal diapers, textiles and leather),
- o other waste (asphalt, concrete, other inerts, household hazardous waste), and
- o special waste (bulky items)

It was not clear how these targeted wastes that are currently disposed in the jurisdiction could potentially be diverted from disposal by the use of the diversion programs identified in the Components. For example, the Recycling Component diversion programs did not address the materials that would be collected in each of the alternatives selected although specific materials were targeted on page 5-3. In addition, staff found no programs discussing the diversion of food waste, manure, disposable diapers, aluminum, tin, mixed metals, asphalt and concrete. This oversight must be addressed in the final SRRE.

RESPONSES TO COMMENTS ON THE SAN BERNARDINO COUNTY SRRE FROM THE CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD

1-2 The contingency measures described in the Source Reduction Component on pages 4-34 and 4-35 would serve to support the achievement of source reduction goals in the event that the existing source reduction programs discontinue or fall short of expected levels.

1-3 Please note that this information was provided in the Funding Component (pages 10-11 through 10-14).

1-4 The County may explore local regional markets for recovered materials. Contracts may be secured with those brokers that can provide long-term purchase guarantees, favorable commodity prices, and/or proven materials end users.

1-5 The County will use targeted solid waste characterization studies to monitor source reduction, recycling, composting, and special waste programs.

1-6 A table, which identifies programs which target each material, will be included in the final draft of this document.

All city and county source reduction and recycling elements should provide for flexibility and include contingency plans and alternatives in the event that unforeseen changes occur in areas such as legislative, the local, state and national economy, demographic changes, technology, and market availability. 1-6a

If you have any questions about these comments, please do not hesitate to contact me at (916) 255-2555, or Toni Galloway of the Division's Local Assistance Branch, South Section, at (916) 255-2309.

Sincerely,

Judith J. Friedman

Judith J. Friedman, Manager
Local Assistance Branch, South Section
Planning and Assistance Division

cc: San Bernardino County Local Task Force
SCS Engineers

RESPONSES TO COMMENTS
ON THE SAN BERNARDINO COUNTY SRRE
FROM THE CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD

1-6a Please note that contingency measures have been included in the Preliminary Draft SRRE (see Sections 4.12, 5.12, 6.12, 7.12, and 8.9).

In the following comments on the preliminary draft SRRE, please note that all comments which include a reference to the CCRs or to the PRC concern regulatory or statutory requirements and should be fully addressed in the revised SRRE. Other comments are Board staff suggestions based on technical review and are provided for your consideration. The exception to this, which should be fully addressed, is a request for missing information, a definition, or to clarify a discussion.

Comments on the Solid Waste Generation Study

1-7 It is stated on page S-4 that a quantitative field analysis was performed at local landfills to determine the composition of solid wastes currently being disposed by waste generators within the unincorporated areas. However, there appears to be no discussion in the WGS on how the number of samples were taken and what sampling method was used. Please provide a detailed discussion on these issues, including calculations, as required by CCR section 18722(h).

1-8 The total waste generated (325,352 tons) for the entire unincorporated area, as shown on Table S-5 does not appear to be correct. By adding total waste disposed and waste diverted (297,492 tons + 22,854 tons), the total waste generated should be 320,346 tons. Please clarify this discrepancy in the final WGS.

1-9 It is stated on page 3-3 that the unincorporated areas of San Bernardino County disposed approximately 297,500 tons of solid waste in 1990, or about 540,900 cubic yards (assuming an in-place density of 1,100 pounds per cubic yard). Please cite the reference used (e.g., author, title, page number, date, publisher and place of publication) for using the conversion factor of 1,100 pounds per cubic yard, as required by CCR section 18722(f)(1).

1-10 Please identify all solid waste diversion facilities used by the unincorporated areas of San Bernardino County, as required by CCR section 18722(i).

1-11 Staff found no discussion in the WGS regarding seasonal variation on waste disposed and waste diverted. If there are any variations, please substantiate the necessary data in the final WGS.

1-12 Please include, in the final WGS, a separate outline of the reporting procedures established by the jurisdiction for compiling solid waste quantity and composition data, as required by CCR section 18722(o). The outline should state when (monthly, quarterly, etc.) and from whom (hauler, landfill operator, etc.) reports are expected.

1-13 Staff was informed that two newly incorporated cities were formed -- Yucca Valley and Chino Hills. Please clarify if the aggregate data for these two cities has been disaggregated from this WGS.

Comments on the Recycling Component

1-14 On page 5-9, inerts and wood waste processing capabilities were alternatives selected for implementation. These materials (concrete, asphalt, dirt and wood waste) would "be stockpiled and periodically processed" to meet market specifications. Please discuss how long these materials would be stockpiled and where the stockpiling would occur. In addition, please discuss the definition or interpretation of "periodically processed" (i.e., monthly, quarterly, yearly, etc.). If the materials are not recycled and returned to the economic mainstream, then waste diversion credit will not be allowed for

RESPONSES TO COMMENTS ON THE SAN BERNARDINO COUNTY SRRE FROM THE CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD

1-7 Please note that three different consultants conducted the waste characterization analysis for the four regions of the Unincorporated San Bernardino County. The Solid Waste Generation Studies prepared by each of the consultants provided the discussions requested by the CIWMB but were not included in the County SRRE. In the final draft of the SRRE, the Solid Waste Generation Studies for all three regions will be included in Appendix D through F in Volume 2 of the SRRE.

1-8 The correct amount is 320,352 not 325,352. Table S-5 will be corrected accordingly.

1-9 This conversion factor was provided by the San Bernardino County Solid Waste Management Department. A published reference, such as the "Waste Compaction Study for the Recyclery at Newby Island," conducted in 1989 by Browning-Ferris Industries (San Jose, California), was not used. If the figure used in the published study, 1,264 pounds per cubic yard, was used, the volume of approximately 297,500 tons of solid waste would be 470,727 cubic yards.

1-10 Existing solid waste diversion facilities used by the Unincorporated County include the following:

Heaps Peak Transfer Station (salvage)
Milliken Landfill (landfill salvage)
A-1 Upland Recycling (buyback center)
A&C Recycling (buyback center)
Advance Disposal (buyback center)
Aesop Brothers Recycling (buyback center)
All Metals Recycling (buyback center)

1-11 Discussions were provided in the Solid Waste Generation Studies prepared for each region. In the final draft of the SRRE, the Solid Waste Generation Studies for all three regions will be included in Appendix D through F in Volume 2 of the SRRE.

1-12 Reporting procedures were included in the Solid Waste Generation Studies prepared for each region.

1-13 Data for Chino Hills were not included in this study; data for Yucca Valley were included.

1-14 Inerts and wood waste will be stockpiled for short periods of time (less than 2 months) and subsequently processed for recycling at one of the several processing facilities identified in the report.

the stockpiled materials and the County may not meet the 25 or 50 percent diversion requirement.

1-15 Processing of inerts and wood waste was not identified and selected on page 5-17 under "selected alternatives". Construction and demolition debris was selected but this program was not discussed nor identified in this section. Processing facilities were discussed but it was not clear if this will focus on inerts and wood waste. Please clarify these issues in the final SRRE.

1-16 On page 5-32, it is stated that three additional steps will be taken if the County fails to make reasonable progress toward its recycling objectives. Please note that only two steps are identified. If there are three steps, please clarify this in the final SRRE.

1-17 The evaluation of alternatives and selected diversion programs in the Recycling Component (residential curbside collection, commercial/industrial recycling, drop-off centers, and public recycling receptacles) did not address what types of materials will be collected and diverted, as required by CCR section 18733.4(b). In addition to the regulatory requirement, without this information market development activities would be extremely difficult to plan for and pursue.

Comments on the Composting Component

1-18 On page 6-8 it was stated that the "CIWMB does not allow composting of wastewater treatment sludge to contribute towards the State's 25% and 50% diversion mandates". Sludge does not count toward diversion credit as a result of PRC section 41781(b)(5). However, PRC section 41781.1, which takes effect July 1, 1992, may allow the diversion of sludge to count toward the diversion requirements, if a jurisdiction submits a request to the Board for permission to use sludge. The Board would have to make a finding, based on substantial evidence in the record, that the proposed reuse of the sludge will not pose a public health or environmental threat and that a monitoring system is in place. San Bernardino County may want to pursue this option for possible diversion credit.

Comments on the Special Waste Component

-9 No discussion of grease trap pumpings waste was found in this Component. According to Enforcement Branch staff, there are many restaurants that cater to a large tourism population. Please discuss how San Bernardino County disposes of this special waste.

Comments on the Education and Public Information Component

1-20 As required by CCR sections 18740(e)(4) and (6), please identify monitoring and evaluation funding requirements, revenues and revenue sources and establish a program monitoring and reporting schedule for the programs selected in the this Component.

Comments on the Disposal Capacity Facility Component

1-21 The solid waste disposal facility needs projection tables in the Component differ from the example and equation established in CCR section 18744(b)(2). Tables 9-3, 9-4, 9-5 and 9-6 have included sludge as a disposed waste in a separate column rather than adding the disposed amount to the MSW generated column.

RESPONSES TO COMMENTS ON THE SAN BERNARDINO COUNTY SRRE FROM THE CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD

1-15 Construction and demolition refers to inerts and wood waste processing. The reference to construction and demolition debris will be changed to inerts and wood waste processing and a subsection discussing the selection of this alternative will be added in the final draft of the SRRE.

1-16 There are only two steps which will be considered by the County; the statement that there are three steps is in error and will be corrected in the final draft SRRE.

1-17 This information is included in tables included in Section 11 which list the amounts and types of materials to be diverted by recycling and composting programs selected for implementation during the short and medium-term periods.

1-18 Comment noted.

1-19 Grease trap pumpings from restaurants will be collected by a licensed liquid waste hauler which handles these materials and disposed of at the Fountain Valley Sewage Treatment Plant in Orange County (the closest facility which accepts this type of waste).

1-20 Please note that this information was provided in the Funding Component (pages 10-11 through 10-14).

1-21 Comment noted.

Comments on the Funding Component

1-22 The Funding Component is the section of the Element that should include a recapitulation of all program costs and revenue sources that were discussed in the individual Component program sections. Please identify the kind of financing structure that currently exists and what will be used in the future – project or system financing. Describe which funds, if any, are dedicated to a specific debt or project. In addition, in order to show sufficient flexibility to allow for unexpected developments, more detail is needed on what projected amounts may be obtained from various contingent funding sources, such as the issuance of debt instruments and municipal bonds.

Comments on the Integration Component

1-23 As required by CCR section 18746(b), a schedule for funding source availability and a schedule showing the anticipated date of achievement of the 25 and 50 percent diversion mandates are required to be included in the integrated schedule. This information was missing from Table 11-9.

RESPONSES TO COMMENTS ON THE SAN BERNARDINO COUNTY SRRE FROM THE CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD

1-22 Please note that this information was provided in the Funding Component (10-11 through 10-14).

1-22 There is no County financing structure currently in effect; all solid waste programs are being implemented by private waste haulers, and service fees are the sole source of revenue for the existing and proposed waste collection, disposal, and diversion activities. The proposed processing facilities described in this document are expected to be developed by private companies, so that capital costs will be recovered by tipping fees paid by the facility users. Municipal bonds have been included as a contingency source of funding in the event that the facilities are publicly owned. The amount of funding available by the issuance of such bonds will vary depending on the reserve fund requirements of the bond underwriters.

1-23 Since service fees are the main source of revenue, it is anticipated that changes in service fees will be implemented just prior to the development of the program in order to cover program costs. The 25 percent goal is expected to be attained in the East and West Valley regions during 2000; the Mountain and Desert regions and the Unincorporated County as a whole are not expected to reach the 50 percent goal by 2000, however.

LETTER # 2

STATE OF CALIFORNIA

Pete Wilson, Governor

CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD

8800 Cal Center Drive
Sacramento, California 95826

SOLID WASTE
MANAGEMENT DEPARTME...

92 APR -8 AM 10:03

April 1, 1992

Mr. Gerald M. Newcombe, II
Interim Deputy Director
San Bernardino County Solid Waste Department
621 East Carnegie Drive, Suite 270
San Bernardino, CA 92415-0017

SUBJECT: Preliminary Draft Household Hazardous Waste Element for Unincorporated San Bernardino County

Dear Mr. Newcombe:

The California Integrated Waste Management Board (Board) staff have reviewed the Unincorporated San Bernardino County draft Household Hazardous Waste Element (HHWE) for compliance with Article 6.3 of Chapter 9, Title 14 of the California Code of Regulations (CCR), Planning Guidelines and Procedures for Preparing and Revising Countywide Integrated Waste Management Plans (Guidelines). All references to CCR sections relate to the Board-approved Article 6.3 unless otherwise noted.

Overall, the Preliminary HHWE appears to be a very good planning document. [illegible] only a few [illegible], which are:

2-1 • In the final HHWE, please describe what, if any, enforcement actions will be taken against violators of the load check program.

2-2 • As required by CCR section 18751.3, each alternative requires an estimation of the costs for implementation of the alternatives and the availability of local, regional, national, and international end-uses for materials diverted. Please ensure in the final HHWE that these two requirements are fulfilled for each alternative discussed. The current description on page 5-6 states that "markets vary for different types of materials and stable markets exist to recycle motor oil, etc.". This does not fulfill the regulatory requirement for availability of end uses of the materials.

This concludes the comments on the draft Household Hazardous Waste Element for the Unincorporated County of San Bernardino. These comments, and all other comments received by the County should be addressed in the final HHWE. If we may be of any assistance during the revised HHWE phase, please contact me at (916) 255-2555 or Toni Galloway of the Division's Local Assistance (South) Section at (916) 255-2309.

Sincerely,

Judith J. Friedman

Judith J. Friedman, Manager
Local Assistance Branch, South Section
Planning and Assistance Division

cc: San Bernardino County Local Task Force
SCS Engineers

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RESPONSES TO COMMENTS ON THE SAN BERNARDINO COUNTY HHWE FROM THE CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD

2-1 The County does not allow the load to be dumped until the HHW material has been removed. The violator is notified that they will lose the privilege of using the facility if they are found in violation again. All HHW materials collected are returned to the customer.

2.2 The following costs are estimated:

Periodic Curbside Collection	$500,000 - $700,000 annually
One-Day Collection Events	$ 100 - $200 per vehicle on average
Permanent Collection Sites	$ 70,000 - $400,000 annually
Drop-off at Retail Sites	$ 0 - $10,000 annually
Public Education/Information	$ 50,000 annually
Load Check Program	$420,000 annually

There are well-established markets for used motor oil, latex paint, automotive batteries, and antifreeze due to the fact that these materials can be recycled. Motor oil can be refined into lubricating oil, reused as motor oil, or used as fuel for industrial burners. Latex paint can be used by non-profit groups, for graffiti removal, or by paint companies. Automotive batteries can be separated and recycled, and still has high monetary value. Antifreeze can be recycled into airplane de-icing solutions, cement grinding chemicals, and brake fluid. And finally, waste exchanges can also be another viable market in the instance where HHW materials are still usable and available to community groups, organizations, etc. For example, a local theatrical company may be able to use paints that a household may wish to discard.

LETTER # 3

Source Reduction and Recycling Committee

COMMENTS

by the City of Barstow
on the SRRE Preliminary Draft of the
County of San Bernardino

General:

This element does an excellent job of melding the elements of the three regional groups of jurisdictions.

S-17 Rural reduced diversion.

What is the criteria or justification that the County will use to define which communities would be included or excluded in a petition to the CIWMB for reduced diversion requirements. It is noted that the per household implementation costs in the Desert are almost half those in the urban West Valley. (tables 10-5, 10-6 in the Integration Component.

3-1

An evaluation of the possible impacts on neighboring jurisdictions, positive and negative, should be included. Is it possible that incorporated cities such as Big Bear Lake, Twentynine Palms and Barstow may become islands of greater compliance, rendering the unincorporated portions of the common waste sheds incompatible in terms of programs and facilities needs?

Solid Waste Generation Analysis

3-1 Ownership of Needles landfill. The landfill is not owned by the City of Needles as indicated. The City operates the landfill under a lease agreement with the County.

3-2

3-2 Table 3-1, Waste Management Structure, is incomplete. Several haulers who serve the County unincorporated region are not listed. County DEHS may maintain a list of waste hauler permits.

3-3

RESPONSES TO COMMENTS
ON THE SAN BERNARDINO COUNTY SRRE
FROM THE CITY OF BARSTOW

3-1 The County would petition for a reduction in diversion requirements for the Desert and Mountain regions; the petition would cover all unincorporated areas in these regions and would not select certain areas for inclusion.

The unincorporated areas in the Desert and Mountain regions are projected to be unable to reach the 50 percent diversion goal by the year 2000 due to the excessive costs of providing certain types of recycling and composting programs to remote, sparsely populated areas. In particular, curbside collection programs and residential yard waste collection were found to be impractical and overly costly, and were not selected for implementation. The County plans to maximize diversion through other, more cost-effective programs. The impacts of reduced diversion requirements on neighboring jurisdictions are therefore not expected to be significant, and would not lessen the County's efforts to develop regional programs and facilities in conjunction with the incorporated cities.

3-2 Comment noted; text to be revised accordingly.

3-3 Comment noted; text to be revised accordingly.

Source Reduction Component

3-4 | 4-7 | Misspelling in the last sentence of the last paragraph of Section 4.4

3-5 | 4-8 | 4.4.3 Waste Evaluation. The effectiveness of the methods discussed may be questionable.

Recycling Component

3-6 | 6-23 | 6.7.1 It is inadequately explained why "it is recommended that the County take the lead in managing the implementation of education and public information programs to promote the use of composting." Throughout the entire element, tasks and the role of the county are intermingled between what the County shall do to serve its unincorporated jurisdiction; what the County shall do as a member of the local Task Force; what the County shall do for all jurisdictions within the County; and what the County will do as one member of a regional group of jurisdictions.

Special Waste Component

3-7 | 7-3 | Landfill Septage Ponds.

Possible impacts on the permits, and environmental compliance at those landfills with active, unlined septic ponds should be identified, evaluated, alternatives discussed in more detail.

Licensing and the existing and planned level regulation, inspection and enforcement of septic haulers should be discussed.

The wastewater treatment plant at the Marine Corps Logistics Base (Nebo), near Barstow has not been identified as a potential site for treatment of septic waste.

3-8 | 7-3 | Industrial Sludge. The County may be ignoring possibly significant impacts of industrial sludge that enter permitted landfill facilities by way of septic haulers.

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RESPONSES TO COMMENTS ON THE SAN BERNARDINO COUNTY SRRE FROM THE CITY OF BARSTOW

3-4 Comment noted. Text will be revised accordingly.

3-5 Comment noted.

3-6 Comment noted. The County envisions cooperative efforts in providing public education materials to both incorporated and unincorporated areas, especially in areas where the incorporated and unincorporated boundaries may be ill-defined. In addition, the County already has staff in place to conduct such efforts.

3-7 The comments are noted, but the discussions requested are not directly related to the purpose of the Special Waste Component. This component did not address the potential to use military facilities to treat septic waste generated elsewhere in the County.

3-8 Comment noted.

LETTER #4

Office of the
CITY MANAGER
RICHARD D. ROWE
City Manager

...CO. SOLID WASTE
...MENT DEPARTMENT

FRED AGUIAR
Mayor
DIANE J. ERWIN
Mayor Pro Tem
DICK SAWHILL
EUNICE ULLOA
AL YANKEY

CITY OF CHINO

RECEIVED
APR - 9 1992
S.W.M.D. DEPUTY DIRECTOR
ADMIN. SVCS./PLANNING

April 6, 1992

Mr. Gerald M. Newcombe, II
Interim Deputy Director
San Bernardino County Solid Waste Management Department
621 East Carnegie Drive, Suite 270
San Bernardino, CA 92415-0017

Dear Mr. Newcombe:

Thank you for the opportunity to submit comments on the preliminary drafts of the Source Reduction and Recycling Element (SRRE) and Household Hazardous Waste Element (HHWE) for the County unincorporated areas. As the County has used the same consultant that prepared the City of Chino's SRRE and HHWE, many of the programs selected by San Bernardino County are similar to programs selected by the City of Chino. Therefore, we have comments only on a few issues of regional concern:

Program Capability with Cities

4-1 Although not defined in detail in the SRRE, the City of Chino is supportive of the County's plan to pattern both recycling and composting programs in unincorporated areas after programs developed in neighboring cities. (Discussed in Executive Summary, Section 2.3, p. S-10; Recycling Component, Section 5.2, p. 5-1; and Composting Component, Section 6.2.1, p. 6-3). We look forward to meeting with County staff on this proposal.

Flow Control, Composting Component, Section 6.6.8, p. 6-19

4-2 The discussion on flow control seems to confuse two issues: the need of composting facility operators to ensure a supply of compostable materials to cover basic capital and operating costs, and the desire of San Bernardino County to cover closure and other costs related to landfill disposal through charging tipping fees at facilities performing waste diversion activities. The City of Chino recommends that San Bernardino County include cities in any decision-making process related to charging tipping fees on diverted waste.

13220 Central Avenue, Chino, California 91710
Mailing Address: P.O. Box 667, Chino, California 91708-0667
(714) 627-7577

RESPONSES TO COMMENTS
ON THE SAN BERNARDINO COUNTY SRRE
FROM THE CITY OF CHINO

4-1 Comment noted.

4-2 Comment noted.

Vehicle Abatement Programs, Special Waste Component, Section 7.3, Auto Bodies, p. 7-5.

The Department of Environmental Health Services Program is listed as "fully implemented" and the SRRE recommends no changes to the existing Program, except for additional publicity efforts. It is recommended that a discussion of funding options for vehicle abatement activities be included, with serious consideration given towards implementing the AB 4114 Program and phasing out the use of a landfill tipping fee surcharge.

Funding for Permanent Facilities, Household Hazardous Waste Element, Funding Component, Section 8.2, p. 8-2.

The component states that "financial responsibility to implement these programs will remain constant between the County and participating cities." The City of Chino recommends that the County consider incorporating direct City expenditures into the County fee structure and then reimbursing host cities, such as Chino, directly. Such a fee structure will allow for the submittal of one reimbursement grant application Countywide to the California Integrated Waste Management Board. Non-host cities would also contribute an appropriate share of expenditures towards permanent facilities used by their residents.

Your consideration of these comments is appreciated. If there are any questions, please contact me at (714) 627-7577, extension 402.

Sincerely,

Marcia Godwin

MARCIA GODWIN
Management Assistant II
Environmental Administration

MG:jmc
MG040292.J

cc: Assistant City Manager

RESPONSES TO COMMENTS ON THE SAN BERNARDINO COUNTY SRRE FROM THE CITY OF CHINO

4-3 Currently, the only new funding source being pursued is through the Office of Economic and Community Development in the form of Community Development Block Grants (CDBG) for blight abatement. Attempts at implementing AB 4114 were unsuccessful due to a number of problems with procedure, implementation, distribution of funds, and unfavorable climate for added taxation through the DMV fees. A discussion of this program may be revisited at a later date if these problems can be worked out.

4-4 Comment noted.

Comments, Public Education Component
Unincorporated Area of San Bernardino County

Submitted by Marcia Godwin, City of Chino

1. Objectives, Section 8.2, pp. 8-1 to 8-2.

It is unclear whether which of the goals apply to countywide programs and which goals are for the unincorporated area only. for example, if the County will be implementing a waste audit countywide, the program could overlap with waste audits planned by individual cities and regional coalitions.

2. Unincorporated County Programs. Section 8.5.2, Annual Report, p. 8-6.

Even though this is listed under unincorporated area programs, it is unclear whether the report will also summarize countywide activities.

3. Monitoring and Evaluation, Section 8.8, pp. 8-13 to 8-14.

It is unclear whether the telephone surveys will be conducted for the unincorporated area only, or whether the surveys will evaluate countywide activities.

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RESPONSES TO COMMENTS
ON THE SAN BERNARDINO COUNTY SRRE
FROM THE CITY OF CHINO

4-5 The goals are for the unincorporated portions of the County as stated in the first sentence of Section 8.2.

4-6 The County anticipates highlighting the activities for the unincorporated portions of the County. However, it is also likely that Countywide activities will also be available for inclusion.

4-7 At this time the County anticipates only using the telephone survey in the unincorporated areas.

LETTER # 5

SENT BY: City of Colton ; 3-10-93 ; 13:41 ; [illegible] 31758- Solid Waste Mgmt. IB &

colton

Department Public Works

Phone No.: 370-6150

March 8, 1993

John Brosz
City of Ridgecrest

RE: EXECUTIVE SUMMARY FOR COUNTY S.R.R.E.

My comments on the Executive Summary of the County S.R.R.E. and M.R.W.M.P., are as follows:

1. On page 3-11, section 3.3.1 Source Reduction Programs, under Waste Evaluation/Waste Minimization, the County will work with coalition jurisdictions, (East Valley, West Valley, Desert, Mountain) to establish a annual waste audit program to assist businesses with an evaluation of waste reduction measures under what arrangement will this occur? i.e. a J.P.A. or M.O.U.? — Maybe through Coalition - have to all approve.

2. On page 3-21, under section 3.6 anticipated implementation schedules

3.6.1 - Source Reduction Schedules are very aggressive, especially those starting dates of 7/93 in all regions seems a little premature and possibly unrealistic target dates.

3.6.2 - Under Recycling - the schedules of 7/93 also seems very aggressive and a little premature/unrealistic.

3.6.3 - Composting those target dates starting 7/93 for M.R.W.M. facility in the Desert/Mountain region seems a little aggressive and premature/unrealistic for composting facilities. - Coordinate with Regional Group.

Please review my comments and let me know if you have any questions regarding my comments or concerns.

Sincerely,

David L. Melilli

David L. Melilli
Public Works Operations Manager

CITY OF COLTON CIVIC CENTER • 650 N. LA CADENA DRIVE • COLTON, CALIFORNIA 92324

43

RESPONSES TO COMMENTS ON THE SAN BERNARDINO COUNTY SRRE FROM THE CITY OF COLTON

5-1 Comment noted. San Bernardino is prepared to work with local jurisdictions.

5-2 Comment noted. However, the tables reflect the County's best estimate of when programs will be implemented.

LETTER #6

CITY OF FONTANA

COMMENTS ON SAN BERNARDINO COUNTY'S
SOURCE REDUCTION AND RECYCLING COMPONENTS

6-1 S-11 1st paragraph. The County Plan indicates adoption of a mandatory collection system in the unincorporated West Valley region and encourage development of this program. Will this apply to the unincorporated areas surrounding Fontana?

6-2 S-12 Mechanized MRF. The County proposes working cooperatively with incorporated cities to design and implement comprehensive materials recovery and processing facilities. Please identify funding and proposed use of landfill tipping fees which have been previously collected for new facility development.

6-3 S-13 Mixed Waste/Interim Facilities. What are the locations of the facilities under consideration?

6-4 S-14 Regional Yard Composting. Will a composting facility be fully operational in the beginning of the "medium-term" or will the composting facility begin design, review and construction in the beginning of the "medium-term"? This may result in a regional impact.

6-5 S-14 Quarterly Newsletter. What is the distribution policy of "Full Circle" and will this be used as an educational tool? Will residents, business and industry receive copies of the newsletter?

4-9 Section 4.4.9. This section indicates that composting bins will be provided at low cost. How will this be funded? On page 4-32 states that the County will provide "How-to" composting brochures and page 4-26 the chart indicates design and educate with no mention of bins.

6-6 This section indicates that VERY high fees will be imposted on yard waste collection as an incentive to backyard compost.

This can cause a major impact on those persons on fixed incomes, elderly, handicapped people, medically impaired and women.

This action can result in stockpiling in yards, unmaintained lawns, major increase in illegal dumping that will affect both the Cities and the County, increase fire hazards and safety as well as vector/oder problems.

In the event yard waste fees were higher than refuse fees, this action could cause yard waste to be deposited into refuse. These issues should be addressed.

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RESPONSES TO COMMENTS ON THE SAN BERNARDINO COUNTY SRRE FROM THE CITY OF FONTANA

6-1 The County expects to conduct a feasibility study in order to establish which areas would be best suited for mandatory collection. At this time no decision has been made to mandate collection in any unincorporated areas.

6-2 Sources of funding are discussed in Chapter 10 on pages 10-5 through 10-7. At this time a decision has not been made as to whether the facility would be a private venture, a public venture, or a public-private partnership.

6-3 Specific sites have not been chosen, but general locations for processing facilities are Victor Valley, Twentynine Palms, Unincorporated East Desert, Big Bear Lake, and Needles. More information is provided on page 5-20.

6-4 Implementation schedules for composting programs are provided on pages 6-31 through 6-34.

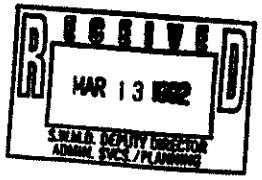
6-5 The targeted audiences are governmental agencies, businesses, academic communities, and civic or environmental groups countywide. This newsletter is used as an educational tool.

6-6 Please note that Section 4.4.9 is merely a description of the alternative, and that the bulleted items on page 4-9 of the SRRE are only examples of types of strategies used in other backyard composting programs. Of the four bulleted items, only the second (education and technical assistance programs) was chosen for selection by the County (see p. 4-21); the others were rejected for some of the same reasons cited by the City of Fontana.

CITY OF

San Bernardino

PUBLIC SERVICES DEPARTMENT
MANUEL P. MORENO, JR.
DIRECTOR PUBLIC SERVICES



March 10, 1992

Mr. Gerald M. Newcombe II, Interim Deputy Director
Sn Bdno Cnty Solid Waste Management Department
621 E. Carnegie Drive, Suite 270
San Bernardino, CA 92415-0017

Re: San Bernardino County Source Reduction and Recycling Element/
Household Hazardous Waste Element

Dear Mr. Newcombe:

We have reviewed the preliminary draft of the SRRE/HHWE provided by your office on February 25, 1992 and offer the enclosed comments for your review. If there are any questions, please contact Kevin Barnes of my staff at (714) 384-5053.

Sincerely,

Manuel P. Moreno, Jr.,
Director of Public Services

MPM:dmf

enclosures

300 NORTH D STREET SAN BERNARDINO
CALIFORNIA 92418 0001 714/384-5003

PRIDE IN PROGRESS

LETTER #7

COMMENTS FROM THE CITY OF SAN BERNARDINO
ON THE PRELIMINARY DRAFT OF THE
COUNTY OF SAN BERNARDINO'S SRRE
3/9/92

7-1 1. The definitions of areas appear to be inconsistent with the text of the document. For example, Lake Arrowhead is listed as part of the Desert/Mountain Region but is included in the East Valley programs. The mixed terminology for areas and regions is slightly confusing throughout the document.

7-2 2. The West Mountain area, with self-haul by residents to Heaps Peak Transfer Station as the only facility, has conditions very different from the urban area of the East Valley in which the West Mountain area is included. The element should be revised to reflect and address the needs of the West Mountain communities.

7-3 3. Table S-2 (disposal) and Table S-6 (generation projections) show a vast difference in the East Valley tonnages between 1990 and 1995. What is the reason for this?

7-4 4. Section 3.1.2 makes no reference to the self-haul method of waste transport which is common to desert and mountain areas. If mandatory refuse collection is to be studied in these rural areas, evaluation of quantity-based user fees should be included in the SRRE.

Also, the existing solid waste disposal system does not employ scales in all the facilities, although the tipping fees are being increased to cover the cost of weighing incoming waste. The weighing process should be fully implemented with a method of determining the jurisdictional source of waste generation in order to avoid gaps or overlaps in reporting throughout the region.

7-5 5. Table 3-2 shows only 2,293 tons for self-haul in the East Valley and none for the Desert. The Heaps Peak Transfer Station in the West Mountains (which is counted as East Valley) handles far more than this amount as self-haul. The methodology used in creating this document should be reviewed.

7-6 6. Section 4.4.3 has a misspelling in the last sentence.

7-7 7. It is unclear whether the County seeks to enlist the cooperation of the cities within the county in urging the State to implement Advance Disposal Fees as mentioned on page 4-24.

7-8 8. Table 4-4 has a misspelling in the headings.

7-9 9. Section 6.6.2 indicates that exportation of yard waste from the county in response to landfill bans may be a hazard in that transfer or disposal facility revenues may decline. This should not be a consideration because the purpose of AB 939 is to reduce landfill dependency. Also, exportation would probably be minimal due to the great distances involved.

RESPONSES TO COMMENTS
ON THE SAN BERNARDINO COUNTY SRRE
FROM THE CITY OF SAN BERNARDINO

7-1 Comment noted; text will be revised to match the SRRE.

7-2 The waste collected from the West Mountain area is taken to a East Valley landfill and was therefore included with the East Valley region.

7-2 Comment noted. However, programs have been developed both on a county-wide basis and for subregions within the County.

7-3 The 1990 data in Table S-2 are estimates of existing waste generation gathered primarily from a survey of local haulers and recyclers. The 1995 data in Table S-6 are estimates of future waste generation based on the growth forecasts of the Southern California Association of Governments. It is likely that actual growth will be less than forecast due to relatively slow housing and economic growth over the past few years.

7-4 A reference to the self-haul method of disposal is included in Section 3.1.2 in the final draft; reference is made to the West Mountain region's use of the Heaps Peak Transfer Station by self-haulers. An evaluation of quantity-based user fees is provided in Section 4.4. The County is implementing a computerized system of weighing incoming refuse at disposal facilities which identifies the jurisdiction of origin for each load.

7-5 The amounts of self-haul wastes reported for the East Valley and Desert regions were obtained from the Solid Waste Generation Studies (SWGS) for those regions. It should be noted that the Heaps Peak Transfer Station recycles a significant percentage of the incoming wastes; the amounts disposed shown in Table 3-2 would therefore be less than the amount diverted at the facility. Also, the amounts of self-haul wastes generated in the Desert and Mountain regions were listed as zero because they were allocated to residential and commercial sources based on the origin of the waste.

7-6 Comment noted, text revised accordingly.

7-7 The County does intend to enlist the cooperation of the cities in urging the State to implement Advance Disposal Fees.

7-8 Comment noted; text will be revised accordingly.

7-9 Comment noted; text will be revised accordingly.

COMMENTS FROM THE CITY OF SAN BERNARDINO ON THE PRELIMINARY DRAFT OF THE COUNTY OF SAN BERNARDINO'S SRRE - cont'd.

7-10 10. Various parts of the document refer to the County's landfill contractor in the singular, but there are more than one. Also, some tables list the County as the operator of most facilities and do not mention the existing use of contractors for operations.

7-11 11. Section 9.1 states that historically the solid waste disposal system in San Bernardino County has been founded on the premise that the County provides landfill space to both incorporated and unincorporated areas alike. It then mentions that due to depletion of capacity in the County it would be necessary for cities to have agreements with the County for disposal capacity. There has been no mention of exclusive reservation of landfill capacity in the Solid Waste Advisory Task Force meetings or committees, nor has there been any such indication in the County's comments on various cities' SRRE documents which list county landfills in their disposal components. If there is an intended policy change, the County should make it clear at the earliest possible date in order that regional solutions can be reached.

7-12 12. Table 9-2 needs revision and correction. For example, "years left" cannot logically be totalled. The tons/day figures do not multiply by any particular number of operating days to yield tons/year figures. The capacity column should be given a unit of measure so that "years left" figures can be derived. Also, it is unclear whether future waste generation rates are used in "years left" estimations.

7-13 13. Various tables concerning landfill volumes assume differing landfill densities. These should be corrected or explained if variances are due to regional differences.

7-14 14. Tables 9-3, 9-4, 9-5, and 9-6 do not realistically portray the county-wide landfill situation because waste generation from incorporated jurisdictions is not considered.

7-15 15. The Funding Component expresses a "fair share" policy for subregions to support their respective program costs. This is a good feature because of the diversity of programs and demographics throughout the county.

7-16 16. The Funding Component should consider program economies of scale which may result from extending local jurisdiction programs or local hauler programs into neighboring county areas as mentioned in the executive summary.

7-17 17. Table 11-2 has math errors.

7-18 18. The tonnage estimated for the East Mountain area seems too low for the population. Also, the existing biomass fuel diversion from the East and West Mountains is not considered.

RESPONSES TO COMMENTS ON THE SAN BERNARDINO COUNTY SRRE FROM THE CITY OF SAN BERNARDINO

7-10 AB 939 requirements for this component require that the operator is listed. It is acknowledged that the County uses more than one contractor.

7-11 Comment noted.

7-12 Comment noted.

7-13 The varying densities used in Tables 9-3 through 9-6 (1,200 lbs/cubic yard for the East and West Valley landfills; 1,000 lbs/cubic yard for the Desert and Mountain landfills) are due to regional differences in densities reported at the landfill sites.

7-14 Waste generated by the incorporated cities is not included in the tables because this document is written for the Unincorporated County only. The issue of available disposal capacity will be addressed in the Siting Element of the Countywide Integrated Waste Management Plan.

7-15 Comment noted.

7-16 Comment noted. Although the SRRE provides only rough cost estimates to implement selected programs, economies of scale have been considered in estimating these rough costs.

7-17 Comment noted. Text will be revised accordingly.

7-18 The diversion tonnages were calculated by the Mountain region's consultant based the best data available on existing waste disposal and diversion, projected growth rates, and estimated diversion from selected programs.

COMMENTS FROM THE CITY OF SAN BERNARDINO
ON THE PRELIMINARY DRAFT OF THE
COUNTY OF SAN BERNARDINO'S SRRE
WITH RESPECT TO FUNDING AND FACILITY SITING
3/10/92

7-19 1. The County Solid Waste Management Department has indicated that repermitting of various facilities is in process. The SRRE should indicate daily tonnage limits sought for each facility permit in comparison to actual tonnages to ensure regional balance. Because of the ongoing conversion from volume-based to weight-based measurement at some county facilities, it will be important to leave a margin for error in obtaining new permitted tonnage levels.

7-20 2. The County Solid Waste Department has in practice included expansion costs in the landfill system budget and rate schedule based on tonnage projections which include waste from incorporated jurisdictions, but those tonnages are not considered in the SRRE disposal facility needs projections. There may be a significant impact on the rate structure, reducing the ability of unincorporated areas to support program costs, as landfill economies of scale are altered by leaving out incorporated area tonnage. The SRRE should include contingencies if the County is considering reservation of existing capacity for unincorporated areas only.

7-21 3. Table 9-2 information actually indicates 6.6 years of capacity for the Desert, 9 years for the Valley, and 6.2 years for the county total when dividing capacity by existing cubic yards per year. The SRRE should show contingencies for securing landfill capacity in light of the question of capacity reservation raised by section 9.1.

7-22 4. Two major private landfill and transfer systems are reportedly seeking permits, (one within the county and one to export from the county) but neither the projects nor the potential capacity are mentioned in the document. It would seem appropriate to include this information if the County has not definitely reserved sufficient disposal capacity within its own system as discussed in section 9.1.

RESPONSES TO COMMENTS
ON THE SAN BERNARDINO COUNTY SRRE
FROM THE CITY OF SAN BERNARDINO

7-19 The information provided in this component addresses AB 939 requirements. The information requested by the City of San Bernardino will be provided in the Siting Element of the Countywide Integrated Waste Management Plan.

7-20 The County does not intend to reserve landfill space for unincorporated areas only, and will continue to base the landfill system budget and rate schedules on tonnage projections that include the waste delivered from all areas of the County.

7-21 Contingencies for providing future landfill capacity will be the focus of the Countywide Integrated Waste Management Plan, due to be prepared in the next few years.

7-22 Comment noted. Proposed facilities will be evaluated in the Siting Element of the Countywide Integrated Waste Management Plan.

RITY CALDWELL
Mayor
LAN DEBLASIS
Mayor Pro Tem
JIM BUSBY
Council Member
ROBERT DOLCH
Council Member
PEGGY SARTOR
Council Member

LETTER #8

City of Victorville
CALIFORNIA

JAMES L. COX
City Manager

March 9, 1992

S.A. CO. SOLID WASTE MANAGEMENT DEPARTMENT
RECEIVED MAR 13 9:47

Ms. JoAnn Wilson, Staff Analyst
Solid Waste Advisory Task Force
Garden Office No. 1, Building B
621 East Carnegie Drive, Suite 270
San Bernardino, CA 92415-0017

Dear Ms. Wilson:

Thank you for the opportunity to review San Bernardino County's Preliminary Draft Source Reduction and Recycling Element. The major unresolved regional issue appears to be utilization of a regional materials recovery facility.

8-1 1. The description of "Buy-Back Centers (page 5-8), includes the following sentence: "Residents of the unincorporated area may use buy-back centers in the surrounding cities." There has been some preliminary discussion amongst Desert and Mountain cities regarding subsidized buy-back, funded by avoided landfill tipping fees. While non-subsidized buy-back would be available to all citizens, only participating agencies' residents would participate in the subsidized buy-back. The County is urged to consider participating in this proposed regional program, which is likely to generate higher recovery rates.

8-2 2. The last sentence in the section on Desert and Mountain "Processing Facilities" indicates that "[t]he following discussion provides the rationale for selection of each alternative." However, there is no discussion, nor identification of alternatives.

8-3 3. Many of the recycling implementation tasks shown on pages 5-22 and 5-23 are planned to be carried on a Desert and Mountain regional basis, consistent with pages 5-24 and 5-25. However, only the County's responsibility is indicated.

8-4 4. The discussion of selected composting alternatives (page 6-23) indicates that "[i]t is further recommended, as facilities are developed, that the County take the lead in managing the implementation of education and public information programs to encourage the use of composting

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KEY CITY OF THE HIGH DESERT

RESPONSES TO COMMENTS ON THE SAN BERNARDINO COUNTY SRRE FROM THE CITY OF VICTORVILLE

8-1 Comment noted.

8-2 Comment noted; text will be revised accordingly.

8-3 This document was prepared for the unincorporated portions of the County. Implementation schedules for recycling programs focuses on County responsibilities, unless the corresponding task necessarily requires a regional effort (such as the tasks listed on pages 5-24 and 5-25.

8-4 The County agrees that it would be inappropriate for the County to "take the lead" in managing programs which impact directly on the cities' compliance with AB 939 and wishes to reassure the cities of Victorville and Barstow that it does intend to share regional program management responsibilities with the cities. The statement on page 6-23 was intended to reference the County's own diversion levels which the County's efforts would be sustaining. The County will revise the language in Section 6.7.1 in the final draft to clarify its intentions and policies.

facilities and market development programs to insure that diversion levels can be sustained." This statement is not consistent with the regional focus of programs and facilities planned for the Desert and Mountain areas. Nor does the statement agree with the "Regional Groups" responsibilities shown in section 6.9. It is inappropriate to suggest that the County manage programs impacting directly on the cities' ability to comply with AB 939. Program management needs to be shared amongst all parties.

5. The focus of Education and Public Information programs ignores the development of regional groups charged with implementing AB 939 programs on behalf of the cities, particularly in the Desert and Mountain area. Program management responsibilities need to be shared amongst all parties, and there needs to be assurance that countywide programs adequately address each regions' needs. Implementation costs shown in Table 10-8 reinforce the regional approach.

8-5

6. The Introduction to the Disposal Facility Capacity Component indicates that "due to the depletion of [landfill] capacity in the County, it would be beneficial, even necessary, for cities to have agreements with the County for disposal capacity. The County can then adequately plan future siting." An alternative to "disposal capacity" agreements is to develop an integrated waste management system, secured by funding and use agreements. The integrated system could include recycling and composting facilities, as well as landfills, based on complementary design and operations. For example, the landfills could serve to receive the residue from materials recovery facilities--with all waste initially directed to MRFs. Landfills could be operated on reduced schedules linked only to planned deliveries from MRFs. Finances could be integrated, so that landfills do not compete for waste from recycling and composting facilities. Moreover, landfill rates could be stabilized over the total waste stream instead of depending on diminishing disposal amounts. If an integrated system cannot be achieved, the County's "disposal agreements" need to assure stable, long-term rates commensurate with other available disposal options.

8-6

7. The outline of Integration Component tasks beginning on page 11-10 does not include a timetable for determining

8-7

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RESPONSES TO COMMENTS ON THE SAN BERNARDINO COUNTY SRRE FROM THE CITY OF VICTORVILLE

8-5 The County chose to outline the educational efforts that would be undertaken in two ways; first, the educational programs that would be available county-wide, both for unincorporated and incorporated areas, and second, the educational programs that would be available only in the unincorporated areas. The County is offering these programs as a supplement or an initial start to the educational efforts that the incorporated cities or regions may choose to implement.

8-6 Comment noted. The County is open to further discussions on this idea and other suggestions which would allow for greater integration of County-wide waste management activities.

8-7 Comment noted. The County intends to implement programs in the unincorporated areas and work in a cooperative manner with local jurisdictions.

County participation in "Regional Groups." There should be a date beyond which activities are carried out by the County alone, instead of on a regionally cooperative basis.

With the clarifications mentioned, we will be better able to support San Bernardino County's programs.

Sincerely,

Terry E. Caldwell

Terry E. Caldwell
Chairman, Regulatory Compliance
and Fiscal Review Committee

TEC:yb

cc: Supervisor Turoci
Supervisor Walker
Committee Members

RESPONSES TO COMMENTS
ON THE SAN BERNARDINO COUNTY SRRE
FROM THE CITY OF VICTORVILLE

8-5 The County chose to outline the educational efforts that would be undertaken in two ways; first, the educational programs that would be available county-wide, both for unincorporated and incorporated areas, and second, the educational programs that would be available only in the unincorporated areas. The County is offering these programs as a supplement or an initial start to the educational efforts that the incorporated cities or regions may choose to implement.

8-6 Comment noted. The County is open to further discussions on this idea and other suggestions which would allow for greater integration of County-wide waste management activities.

8-7 Comment noted. The County intends to implement programs in the unincorporated areas and work in a cooperative manner with local jurisdictions.

LETTER # 9.

THE COUNTY OF RIVERSIDE

WASTE MANAGEMENT

ROBERT A. NELSON
Director

April 17, 1992

Gerald M. Newcombe, II
Interim Deputy Director
San Bernardino County Solid Waste Management Department
621 East Carnegie Drive, Suite 270
San Bernardino, CA 92415-0017

Re: San Bernardino County Unincorporated Area Preliminary Draft Source Reduction and Recycling Element (SRRE) and Household Hazardous Waste Element (HHWE)

Dear Mr. Newcombe:

The Riverside County Waste Management Department appreciates the opportunity to review your Preliminary Draft SRRE and HHWE. The organization and format make it a very readable document.

The Department is particularly impressed with the regional approach taken in the document. The division of the County into three areas and development of programs for each region seems to address the difficulties associated with the geographically diverse areas of your County. The comprenensive and innovative regional approach taken in the Education and Public Information Component was also impressive. The work of your Education Subcommittee in developing Countywide programs will undoubtedly be valuable in developing the Integrated Waste Management Plans. The Facility Capacity Component received a closer review and the attached comments on that Component are offered as only "advisory".

Thank you for the opportunity to review your Elements. Please do not hesitate to contact me at (714) 275-8780 should you have any questions regarding these comments.

Sincerely,

Keeley P. Kikuno, Senior Planner, for

Michael Schier
Solid Waste Planning Manager

Attachment

1995 Market Street • Riverside, CA 92501-1719 • (714) 275-1370 • FAX (714) 275-1374

Please review & incorporate into the final SRRE. Comm 4/20

ATTACHMENT

COMMENTS ON DISPOSAL FACILITY CAPACITY COMPONENT
(County of San Bernardino)

9-1 **1. Section 9.2.3. Desert and Mountain:**

It is indicated that there are fourteen active landfills in the Desert subregion. Should this be thirteen?

9-2 **2. Table 9-2:**

Further explanation of the negative values for the "Years Left" and "Capacity" for the Big Bear Landfill would be beneficial.

9-3 **3. Tables 9-3, 9-4, 9-5, & 9-6:**

The projection formula for facility capacity needs utilized year-end "remaining" facility capacity instead of utilizing the "available" facility capacity at the beginning of year "n". To illustrate this , refer to Table 9-3 for the years 1991 & 1992, the formula should be:

YEAR	MSW		DIVERTED		AVL.BL. CAP		ADDITIONAL CAPACITY
1991	201,370	—	10,017	—	22,000,001	=	[illegible]
1992	204,170	—	40,100	—	21,836,130	=	[illegible]

Every year after and each of the tables needs to be corrected.

RESPONSES TO COMMENTS
ON THE SAN BERNARDINO COUNTY SRRE
FROM THE COUNTY OF RIVERSIDE

9-1 Comment noted; text will be revised accordingly.

9-2 Comment noted; text will be revised accordingly.

9-3 Comment noted.

Joe Action 4/6
Joann - war Packet

LETTER #10

818 West Seventh Street, 12th Floor · Los Angeles, California 90017-3435 (213) 236-1800 FAX (213) 236-1825

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Chino

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Palm Desert

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RECEIVED
APR - 1992

Mr. Gerald M. Newcombe, II March 19, 1992
Interim Deputy Director
San Bernardino County Solid Waste Management Department
621 East Carnegie Drive, Suite 270
San Bernardino, CA 92415-0017

RE: San Bernardino County Source Reduction and Recycling Element and Household Hazardous Waste Element
SCAG SB-55538-SP

Dear Mr. Newcombe, II:

Thank you for submitting the San Bernardino County Source Reduction and Recycling Element and Household Hazardous Waste Element to SCAG for review and comment. As Areawide Clearinghouse for regionally significant projects, SCAG assists cities, counties, and other agencies to review projects and plans for consistency with the Regional Housing Needs Assessment (RHNA), Regional Mobility Plan (RMP), Growth Management (GMP), and Air Quality Management (AQMP) Plans, all of which are included in the State Implementation Plan (SIP).

The attached comments are meant to provide guidance for completing the proposed project within the context of our regional goals and policies which are based in part upon state and federal mandates. While neither the project sponsor nor the lead agency is required to undertake the specific actions recommended by SCAG or other overnmental Review Process, there are requirements in state tency with regional goals and plans.

s about the attached comments, please contact Charles or Bill Boyd at (213) 236-1960. They will be happy to work comments presented herein and, if necessary, develop a s regional, state and federal requirements.

Sincerely,

[illegible]
Ph.D.

Monitoring

- Local jurisdiction participation and cooperation in helping its res county meet the obligation for managing household hazardous waste either [illegible]sting facilities to treat and dispose of household hazardous waste or by entering into intergovernmental agreements with other jurisdictions to site facilities.

- Structure of the Household Hazardous Waste Element such that it gives first priority to household hazardous waste source reduction; second priority to recycling; and, third priority to waste treatment.

- Local jurisdiction measures to insure effective communication among all levels of government involved with hazardous waste management.

- Local jurisdiction measures to supply data to and participate with the its respective county in submission of annual reports on household hazardous waste reduction progress to the Southern California Hazardous Waste Management Authority.

Project Description:

The San Bernardino County Source Reduction and Recycling Element (SRRE) and Household Hazardous Waste Element (HHWE) for unincorporated areas were prepared to meet the requirements of the Integrated Waste Management Act of 1989 (AB 939). In case of the SRRE program, central to this integrated approach is the expected goals of the 25% and 50% diversion of materials from landfills by 1995 and 2000 respectively. The County is comprised of four regions; the East Valley, West, the Desert, and the Mountain. The Desert and Mountain subregions is illustrated as one area (see the attached area map).

1995 WASTE DIVERSION FORECASTS BY DIVERSION ACTIVITY

Subregion	Source Reduction		Recycling		Composting		Total	
	Tons	%	Tons	%	Tons	%	Tons	%
East Valley	3,310	2.1	33,350	21.2	3,390	2.2	40,050	25.5
West Valley	478	1.0	10,727	22.4	2.698	5.6	13,903	29.0
Mountain	386	2.6	3,645	30.7	203	1.7	4,155	35.0
Desert	2.862	1.6	42,702	26.2	1.365	0.8	46.749	28.7
TOTAL	6,776	1.8	90.424	23.8	7.657	2.0	104.857	27.6

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Recommendations:

10-1 **SCAG recommends the San Bernardino County continue to advocate and support the policies and programs of the SCHWMP.**

10-2 **SCAG refers the San Bernardino County to the SCHWMP Principles of Fair Share which hold local jurisdictions responsible for management of hazardous wastes in an amount proportionate to the hazardous waste generated in the local jurisdiction.**

10-3 **SCAG further encourages effective communication among all levels of government involved with hazardous waste management, and the submission of annual reports on household hazardous waste reduction progress to the Southern California Hazardous Waste Management Authority.**

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RESPONSES TO COMMENTS
ON THE SAN BERNARDINO COUNTY SRRE
FROM THE SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

10-1 through 10-3
Comments noted.

LETTER # 11

UNINCORPORATED AREAS OF SAN BERNARDINO COUNTY

COMMENTS FROM COMPOSTING, SLUDGE, SEPTIC, & HHW COMMITTEE SAN BERNARDINO COUNTY SOLID WASTE ADVISORY TASK-FORCE

MARCH 1992

SOURCE REDUCTION AND RECYCLING ELEMENT

COMMENTS, OTHER SECTIONS

11-1 1. Solid Waste Generation Analysis, County Demographics, Section 3.1.1, (p. 3-1). From the population estimates given on this page, it can be inferred that waste generation information for the newly incorporated cities of Chino Hills and Yucca Valley have not been included. There should be clarification about these cities and whether they are preparing independent SRRE's.

11-2 2. Solid Waste Generation Analysis, Table 3-1 (p. 3-2). It appears that Monte Vista Disposal should be added to the list of West Valley Haulers.

COMPOSTING COMPONENT COMMENTS

11-3 3. Countywide Objectives, Section 6.2.1, (p. 6-3). Although this program has not been defined in detail, the Committee is supportive of the County's plan to pattern programs in unincorporated areas after programs developed in neighboring cities.

11-4 4. Existing Conditions, Section 6.3, (p. 6-4). The Committee is aware of several existing private composting-type operations within San Bernardino County in addition to the two identified facility. It is the Committee's understanding that the Local Enforcement Agency (San Bernardino County Department of Environmental Health Services) is compiling a list of these facilities and permit status. (Facilities also mentioned in Section 6.6.6.)

11-5 5. Description of Alternatives, Section 6.4, (p. 6-5). Mixed municipal waste composting and landfill disposal bans on yard waste are not marked as selected, although they are listed as a selected alternative and a contingency measure, respectively, later in the component.

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RESPONSES TO COMMENTS ON THE SAN BERNARDINO COUNTY SRRE FROM THE COMPOSTING, SLUDGE, SEPTIC, AND HHW COMMITTEE OF THE SAN BERNARDINO COUNTY SOLID WASTE ADVISORY TASK-FORCE

11-1 These cities were incorporated while the SRRE was being prepared. Data from Chino Hills have been deleted from the SRRE. Both cities are preparing separate SRREs.

11-2 Comment noted; text to be revised accordingly.

11-3 Comment noted.

11-4 Final regulations were recently issued by the CIWMB for green waste composting. Regulations for co-composting and mixed waste composting will be issued in the future. Facility operators will be required to obtain permits through the County DEHS, the state-designated local enforcement agency, who will administer the CIWMB regulations.

11-5 Only programs which were selected for all subregions were marked with an asterisk. Contingency programs were not marked as selected to distinguish them from those which the County plans to implement.

11-6

6. Effectiveness of the Program, Section 6.6.1, (p. 6-10). This section repeats a statement from the Desert/Mountain Coalition SRRE that no credit can be taken for either yard waste or MHSW composting with sewer sludge. This Committee has requested clarification from the CIWMB on this matter.

11-7

7. Timing of Implementation, Section 6.6.5.

A. (p. 6-17). This section summarizes composting regulations expected to be issued in 1991. Since these regulations will impact not just the County, but also other jurisdictions, there should be clarification about the status of these regulations.

B. (bottom of p. 6-17 to 6-18). How will the drop off sites, especially the unsupervised ones, screen and reject yard waste that requires processing? At what point does yard waste require processing prior to composting? The discussion indicates that most yard wastes (leaves and grass clippings) don't require processing, while tree stumps do. A significant portion of the yard waste stream may fall somewhere between those two extremes, especially in the desert and mountain regions, where small trees and bushes are more often used in landscaping than grassy lawns.

11-8

8. Consistency with Local Policies, Plans and Ordinances, Section 6.6.7, (p. 6-18). South Coast Air Quality Management District regulations should be addressed because of potential air pollution reduction measures and equipment certifications that may be required related to composting facilities.

11-9

9. Institutional Barriers, Section 6.6.8, (p. 6-19). The discussion on flow control seems to confuse two issues: the need of composting facility operators to ensure a supply of compostable materials to cover basic capital and operating costs, and the desire of San Bernardino County to cover closure and other costs related to landfill disposal through charging tipping fees at facilities performing waste diversion activities. This issues should be clearly differentiated in the SRRE. While it may be appropriate to charge tipping fees at transfer stations, the Committee recommends that cities be included in any decision-making process related to charging tipping fees on diverted waste.

11-10

10. East and West Valley, Section 6.7.2, (p. 6-24). While it is recognized that the County prefers windrow composting as the most cost-effective process, at least one jurisdiction (Ontario) is actively considering an in-vessel facility.

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RESPONSES TO COMMENTS ON THE SAN BERNARDINO COUNTY SRRE FROM THE COMPOSTING, SLUDGE, SEPTIC, AND HHW COMMITTEE OF THE SAN BERNARDINO COUNTY SOLID WASTE ADVISORY TASK-FORCE

11-6 Based on the CIWMB comments on the SRRE, starting on July 1, 1992, the diversion of sludge may count toward the AB 939 diversion requirements if the County submits a request to the CIWMB for permission to use sludge in a manner which will not pose a public health or environmental threat.

11-7a Final regulations for green waste composting were recently issued by the CIWMB. Facility operators will be required to obtain permits through the County DEHS, the state-designated local enforcement agency, who will administer the CIWMB regulations.

11-7b The main point of this section is that the time needed to establish a facility for processing or composting yard waste will likely be greater than the time needed to establish a yard waste collection system, unless existing permitted facilities can be used. Although the Task Force's point that most of the yard waste will require processing is convincing, it is anticipated that the drop-off sites will not require a CIWMB permit unless the yard waste is processed at the same site.

11-8 Comment noted. The South Coast Air Quality Management District regulations require a permit to operate any stationary equipment that is not powered by electricity.

11-9 It is not apparent that there is any mention or reference to the funding of landfill disposal costs by charging tip fees at facilities performing waste diversion activities, nor was there any intention of referring to this issue. The County would include affected cities in the decision-making process in the event that tipping fees were to be charged on diverted waste.

11-10 Although windrow composting is preferred, the County is willing to consider in-vessel composting if it is shown to be cost-effective.

Would the County participating in a facility using in-vessel composting if it were the only viable composting facility in the region?

11. East and West Valley. Section 6.7.2. (pp. 6-24 to 6-25) and Desert and Mountain. Section 6.7.1 (pp. 6-27 to 6-28). There are different descriptions for market development for each area. It appears that these two sections should be consistent, i.e. Recycling Market Development Zone Program and educational materials should be selected countywide. If market development activities will be different in each area, differences should be highlighted and explained since the success of market development activities in one area will impact marketing in other regions.

11-11

12. Desert and Mountain. Section 6.7.1. (p. 6-26). Yard waste landfill disposal ban is listed as a medium-term contingency measure for the desert area only. As noted in the Evaluation section, a disposal ban is likely to result in the exportation of waste to other areas, in this case to the East and West Valley areas. Any landfill bans, if implemented at all, should be countywide or even for the Southern California region. The Committee recommends that cities be included in any decision-making process related to landfill disposal bans.

11-12

13. Monitoring and Evaluation. Section 6.11. (pp. 6-36 to 6-37). It would seem that the Local Enforcement Agency would be the more appropriate agency to be responsible for monitoring efforts for permitted composting facilities on a countywide basis since the LEA will be conducting monthly inspections. The Solid Waste Management Department will be the owner and/or operator of few, if any, of the composting facilities to be established.

11-13

14. Contingency Measures. Section 6.12. (p. 6-38). Using composted material as alternative cover material at County landfills is given as a contingency measure only. It is possible that there may be a demand for additional cover material and that it may be preferred to use composted material rather than purchasing other types of cover material. The Committee recommends that additional information about the demand for cover material at landfills be included, in order to address this issue.

11-14

SPECIAL WASTE COMPONENT COMMENTS

15. Existing Conditions. Section 7.3. Sewage Sludge. (p. 7-2). A complete list of treatment plants should be given, along with a description of which facilities generate sewage sludge.

11-15

RESPONSES TO COMMENTS
ON THE SAN BERNARDINO COUNTY SRRE
FROM THE COMPOSTING, SLUDGE, SEPTIC, AND HHW COMMITTEE
OF THE SAN BERNARDINO COUNTY SOLID WASTE ADVISORY TASK-FORCE

11-11 Comment noted; text will be revised accordingly.

11-12 Comment noted.

11-13 Comment noted.

11-14 Comment noted.

11-15 This information is not required to meet AB 939 requirements and was not included in this component of the SRRE.

15. Existing Conditions, Section 7-3, Landfill Septage Ponds, (p. 7-3). A complete list of sewage plants that accept septage and are considering accepting septage should be given.

7. Existing Conditions, Section 7-3, Auto Bodies, (p. 7-5). The Department of Environmental Health Services program is listed as "fully implemented" and the SRRE recommends no changes to the existing program, except for additional publicity efforts. In fact, DEHS is still finalizing agreements with cities that have their own programs to reimburse the portion of the landfill tipping fee designated for vehicle abatement. The description of the program also erroneously implies that service is not provided to the Unincorporated West and East Valley areas.

It is suggested that a discussion of existing and future funding options for vehicle abatement activities be included as there is a concern by Committee members that the tipping fee may not be the most appropriate funding mechanism for vehicle abatement activities. Funding options should include the AB 4114 program.

HOUSEHOLD HAZARDOUS WASTE ELEMENT COMMENTS

1. Household Hazardous Waste Generation. There should be more specific information about quantities of HHW detected in the Solid Waste Generation Analysis for the unincorporated area, in accordance with CIWMB regulations for the HHWE.

2. Background Information, Section 1.1, (p. 1-1). The City of Chino Hills should be added to the list of incorporated cities since it is assumed that the Chino Hills area is not included in the HHWE for the unincorporated area.

3. Figure 1-1, Map, (p. 1-3). Please accurately define the regions. The map does not agree with the definitions as described on pages 1-1 to 1-2. If the West Mountain area is included with the East Valley, as in the SRRE, what is the reason? The rural mountain areas have different conditions which should be addressed in the HHWE. For example, the West Mountain area currently has no HHW collection center, although one is planned for the Big Bear area. Perhaps the Heaps Peak Transfer Station could be used as a HHW center since most of the West Mountain solid waste is self-hauled to it already.

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RESPONSES TO COMMENTS
ON THE SAN BERNARDINO COUNTY SRRE
FROM THE COMPOSTING, SLUDGE, SEPTIC, AND HHW COMMITTEE
OF THE SAN BERNARDINO COUNTY SOLID WASTE ADVISORY TASK-FORCE

11-15a This information is not required to meet AB 939 requirements and was not included in this component of the SRRE.

11-16 This information is not required to meet AB 939 requirements and was not included in this component of the SRRE.

11-17 The information that was used to estimate the amount of HHW generated was derived from existing HHW collection programs and appeared to be the best available data.

11-18 This omission will be corrected in the final draft HHWE.

11-19 Comment noted.

4. Short-Term Planning Objectives, Section 2.2, (pp. 2-1 to 2-21).

   A. It appears that some of the objectives listed under individual planning areas should be countywide objectives (developing markets, investigate feasibility of expansion opportunities, increase load checking, etc.)

   B. There should be an objective relating to the proposal for a new central processing facility.

5. Permanent Collection Sites, Section 4.2.4, (p. 4-2). It is misleading to state that this alternative would "essentially maintain the status quo" for the Valley areas when several new collection centers are scheduled to open within the next two years.

6. One-Day Collection Events, Section 5.4.2, Operating Experience, (p. 5-8). Is it correct that the programs divert 3 to 4 percent of HHW disposed of in landfill? Shouldn't this read 3 to 4 percent of HHW generated?

7. Public Education and Information, Section 5.5.7, Consequences to the Waste Stream, (p. 5-26). This section states that there will be no change in waste generation for the East Valley as a result of public education activities. The discussion for the West Valley and Desert/Mountain areas states that there may be a reduction in waste generated.

8. Evaluation of Alternatives, Section 5, (pp. 5-1 to 5-36). The Committee found the organization of this section confusing and redundant. Different titles of the same alternatives were used and it was unclear why some alternatives were considered for one or two areas and not all three. For example, load checking should have been included for the West Valley for Milliken while it is still in operation and for any future transfer stations.

   It would have been easier to compare program alternatives if this section followed the same format of the SRRE by discussing alternatives and criteria jointly, with subheadings by region. For alternatives considered only by one region, that could have been noted in the discussion.

9. Selection of Alternatives, Section 6, (pp. 6-1 to 6-15). The Committee also found the organization of this section confusing and redundant. As an example, load checking at material recovery facilities and transfer stations has been selected for the Desert/Mountain Area, but not apparently in the Valley areas.

RESPONSES TO COMMENTS
ON THE SAN BERNARDINO COUNTY SRRE
FROM THE COMPOSTING, SLUDGE, SEPTIC, AND HHW COMMITTEE
OF THE SAN BERNARDINO COUNTY SOLID WASTE ADVISORY TASK-FORCE

11-20 Comments noted.

11-21 The statement in question will be revised in the final draft HHWE.

11-22 Comment noted; text will be revised accordingly.

11-23 Comment noted; text will be revised accordingly.

11-24 Comment noted and will be considered in future revisions to the HHWE.

11-25 Comment noted and will be considered in future revisions to the HHWE.

SECTION 8 EDUCATION AND PUBLIC INFORMATION COMPONENT--

12-7 Section 8.2, Objectives--"Area Households" and "Area Businesses" are too vague of terms. This is NOT the SRRE for the entire county, but rather for the unincorporated areas within the county. Thus, the objectives should focus on targeted areas. Do the unincorporated areas even have Chambers of Commerce? Objectives should be more specific.

12-8 Section 8.5, Selected Alternatives. Under countywide programs, there is no mention how unincorporated areas will be served by them. For example, it should be shown that representatives from the unincorporated areas are on the mailing lists for the county quarterly newsletter; it should be shown that the school grant program will reach students and teachers in unincorporated areas; it should be shown that the AB939 workshops will cover these areas, etc.

12-9 Section 8.5.2 Unincorporated County Programs. These need to be more specific as to locations served. What "local haulers", "what neighborhoods", what "businesses", what "regional groups"? Again, the point of this SRRE is to show that unincorporated areas will be adequately served and addressed.

12-10 Section 8.6 Program Implementation. This section basically describes all of the countywide programs to be implemented. As such, it is very good. However, we still cannot see how unincorporated areas are covered under all of these programs.

12-11 Section 8.8 Monitoring and Evaluation. This section must identify specific communities or areas to be surveyed. How do we know that unincorporated areas have been "reached" by the educational programs or will be adequately "surveyed" if they are not identified?

12-12 Overall, it is a monumental task to specify all of the unincorporated target communities, businesses, institutions, and population. However, the SRREs and HHWEs in their current state are much too generic to prove to me that indeed the unincorporated areas are addressed. Specific areas, as per Table S-1 and Table 1-1, at a minimum, should be identified throughout these elements.

RESPONSES TO COMMENTS
ON THE SAN BERNARDINO COUNTY SRRE
FROM MARY ELLEN HARRIS
OF THE SAN BERNARDINO COUNTY SOLID WASTE ADVISORY TASK-FORCE

12-7 The SRRE does focus on three, diverse regions in the County, and at this time, the level of detail necessary for this document has exceeded that which is necessary to meet AB 939 requirements. The SRRE is not expected to be a detailed road map; implementation of the programs selected in the SRRE will include specific targeting.

12-8 The County chose to provide a two-tiered approach to selecting alternatives. The first tier was for programs that would serve the entire County, regardless of whether the area was an incorporated city or an unincorporated pocket of the population. The second tier was for programs that would target unincorporated areas, and not be offered to all County residents. The same tiered approach was carried through to the implementation section and the monitoring and evaluation section. Once again, the level of detail necessary to meet AB 939 requirements.

12-9 to 12-12

The purpose of the SRRE is to provide basic planning information to the staff and committees tasked with implementing diversion programs. Specific details are left to those who are tasked with implementation. For example, County staff with the knowledge of local conditions, budgets available for implementation, and the politics that exist in specific areas, will draft the specific methods of implementation that fit into the frame work of the SRRE.

LETTER #12

TO: JoAnn Wilson

FROM: Mary Ellen Harris MEH

DATE: March 9, 1992

RE: Comments on County of San Bernardino Preliminary Draft SRRE & HHWE

EXECUTIVE SUMMARY--

12-1 Section 2.2.2 Existing Waste Diversion Rates. Table S-4 indicates that total waste diversion for the unincorporated areas is 7.1%. I calculated 7.7% (22,854 tons/297,492 tons = x/100).

12-2 Section 2.3 Solid Waste Diversion Programs Proposed for Implementation. There is no discussion of the EXISTING diversion programs that have accounted for the 7.7% diversion. What are these programs? Are they working? Could they be expanded? Are they included in in the programs described in this section?

The programs described are very generic. We have no idea where the targeted areas are for implementation. It cannot be assumed that countywide measures will automatically affect all unincorporated areas, let alone help these areas reach their goals.

12-3 Section 2.5 Anticipated Diversion. The idea of having diversion goals reduced for rural, unincorporated portions of the County is not a good one in my opinion. Are other counties trying this for unincorporated areas, too? IF this SRRE clearly identified target areas and described strategies and monitoring adequately, there would be no need to introduce this option now. It would make sense to see what actually happens by 1995 before predicting shortfalls by 2000. This SRRE, at this point in time, must show that goals can be reached or it will be considered unacceptable.

HOUSEHOLD HAZARDOUS WASTE ELEMENT--

12-4 Section 3.2.1--Can any specifics be included on the proposed new HHW collection centers in Yucca Valley and Big Bear?

12-5 Section 3.3.1--A draft Memorandum of Understanding should be included in this document before it is finalized. How will this agreement among jurisdictions serve unincorporated (non-jurisdictional) areas?

SECTION 1 of SRRE--

12-6 Section 1.3 Public Review Process. Mention specifically how members of the unincorporated areas are able to review this document.

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RESPONSES TO COMMENTS ON THE SAN BERNARDINO COUNTY SRRE FROM MARY ELLEN HARRIS OF THE SAN BERNARDINO COUNTY SOLID WASTE ADVISORY TASK-FORCE

12-1 AB 939 regulations require the diversion rate to be calculated using the following formula:

Disposed + Diverted = Generated
Diverted / Generated = Diversion Rate

12-2 Existing diversion programs are detailed in the Solid Waste Generation Study and summarized in Chapter 3, pages 3-9 through 3-14 of the SRRE. The information included in the Executive Summary is included as just a brief overview of the entire SRRE.

12-3 For reasons described in the SRRE, it does not appear economically feasible to approve programs necessary to achieve 50 percent diversion by the year 2000.

12-4 Comment noted; text revised accordingly.

12-5 Appendix A of the HHWE contains the Household Hazardous Waste Agreement that is signed by incorporated cities and the County for use of HHW collection centers. All unincorporated residents can use all collection centers in the County, regardless of whether they are operated by cities on behalf of the County, or by the County itself.

12-6 Comment noted; copies of the SRRE were made available to libraries throughout the County for unincorporated residents. Also, public hearing notices were made and several public hearings were held in larger, unincorporated communities.

an area exceeding 20,000 square miles, some residents will have to drive further than others for services. It should be noted the mountain area has been served for the past five years by three separate one-day events each year. There are many criteria which must be considered when siting a permanent HHW collection center. These include safety and security of the site, availability and willingness of a co-sponsoring agency to operate the facility, anticipated usage and adjacent land uses. DEHS recognizes the need to site additional permanent facilities and is trying to address those needs in an orderly way. It is not clear why this single area has been singled out for comment when there are other needs which are greater.

4. Short-Term Planning Objectives, Section 2.2, (pp. 2-1 to 2-11.

   A. It appears that some of the objectives listed under individual planning areas should be countywide objectives (developing markets, investigate feasibility of expansion opportunities, increasing load checking, etc.)

   B. There should be an objective relating to the proposal for a new central processing facility.

   A. The County has limited staff to accomplish these objectives. It would be more realistic to delete the sections identifying short and medium term objectives by individual planning area, leaving only the County-wide objectives.

   B. The addition of a county wide objective to "Provide an expanded Central Facility" is an excellent suggestion.

5. Permanent Collection Sites, Section 4.2.4, (p. 4-2). It is misleading to state that this alternative would "essentially maintain the status quo" for the Valley areas when several new collection centers are scheduled to open with in the next two years.

   This section should indicate that new facilities are planned for Upland (now open), Ontario and Rialto.

6. One-Day Collection Events, Section 5.4.2, Operating Experience, (p. 5-8). Is it correct that the programs divert 3 to 4 percent of HHW disposed of in landfill? Shouldn't this read 3 to 4 percent of the HHW generated?

   It is more accurate to say that these programs divert 3 to 4 percent of the HHW currently being generated. What is uncertain is how much of the waste generated is being

RESPONSES TO COMMENTS
ON THE SAN BERNARDINO COUNTY SRRE
FROM THE DEPARTMENT OF ENVIRONMENTAL HEALTH SERVICES
OF SAN BERNARDINO COUNTY

DEHS comment 4A

The County has limited staff to accomplish these objectives. If changes were required to Section 2.2 of the HHWE, it would be more realistic to delete the sections identifying short and medium term objectives by individual planning area, leaving only County-wide objectives.

DEHS comment 4B

Comment noted for inclusion in the final draft HHWE.

DEHS comment 5

Comment noted. The final draft HHWE will be modified to indicate that new facilities are planned for Upland, Ontario, and Rialto.

DEHS comment 6

It is more accurate to say that these programs divert 3 to 4 percent of the HHW currently being generated. What is uncertain is how much of the waste is being stored rather than disposed.

ACKGROUND INFORMATION FOR SCS ENGINEERS

ON COMMENTS RECEIVED FROM

SAN BERNARDINO COUNTY SOLID WASTE ADVISORY TASK-FORCE

ON

HOUSEHOLD HAZARDOUS WASTE ELEMENT

1. Household Hazardous Waste Generation There should be more specific information about quantities of HHW detected in the Solid Waste Generation ANalysis for the unincorporated area, in accordance with CIWMB regulations for the HHWE.

DEHS has not received a copy of comments from the CIWMB. If this is an issue they have raised then information from the Waste Characterization Analysis for the three study areas should be added to Section 3.2 Waste Generation Data. [DEHS does not have this data.] However, if the CIWMB has not raised this issue no change is needed.

2. Background Information, Section 1.1, (R. 1-1). The city of Chino Hills should be added to the list of incorporated cities since it is assumed that the Chino Hills area is not included in the HHWE for the unincorporated area.

Section 1-1 should be updated to reflect the incorporation of Chino Hills.

3. Figure 1-1, Map (R. 1-1). Please accurately define the regions. The map does not agree with the definitions as described on pages 1-1 to 1-2. If the West Mountain area is included with the East Valley, as in the SRRE, what is the reason? The rural mountain areas have different conditions which should be addressed on the HHWE. For example, the West Mountain area currently has no HHW collection center, although one is planned for the Big Bear area. Perhaps the Heaps Peak Transfer station could be used as a HHW center since most of the West Mountain solid waste is self-hauled to it already.

There appears to be an error on the map. The Mountain area appears to have been added to the East Valley instead of combining it with the Desert as indicated. With regard to the second part of this comment: The County's HHW program is designed to provide a network of permanent collection centers open to all County residents. In the seven years this program has been operating that network has grown from two permanent sites to ten permanent sites. Obviously, in

RESPONSES TO COMMENTS
ON THE SAN BERNARDINO COUNTY SRRE
FROM THE DEPARTMENT OF ENVIRONMENTAL HEALTH SERVICES
OF SAN BERNARDINO COUNTY

DEHS comment 1

Comment noted. Because the CIWMB did not raise this issue, no change to the HHWE is needed.

DEHS comment 2

Comment noted; the text will be revised in the final draft HHWE to match the SRRE.

DEHS comment 3

The comment on the map is noted and appropriate changes will be made to the final draft HHWE. The County's HHW program is designed to provide a network of permanent collection centers open to all County residents. In the seven years this program has been operating, that network has grown from two permanent sites to ten permanent sites. Obviously, in an area exceeding 20,000 square miles, some residents will have to drive further than others for services. It should be noted that the mountain area has been served for the past five years by three separate one-day events each year. There are many criteria which must be considered when siting a permanent HHW collection center. These include safety and security of the site, availability and willingness of a co-sponsoring agency to operate the facility, anticipated usage, and adjacent land uses. DEHS recognizes the need to site additional permanent facilities and is trying to address those needs in an orderly way. It is not clear why this single area has been singled out for comment when there are other needs which are greater.

stored, rather than disposed.

7. **Public Education and Information, Section 5.5.7, Consequences to the Waste Stream (p. 5-26).** This section states that there will be no change in waste generation for the East Valley as a result of public education activities. The discussion for the West Valley and Desert/Mountain areas states that there may be a reduction in waste generated.

   Indeed, a good education program should cause a significant reduction in HHW generated. This should be acknowledged in the Plan.

8. **Evaluation of Alternatives, Section 5, (pp. 5-1 to 5-36).** The Committee found the organization of this section confusing and redundant. Different titles of the same alternatives were used and it was unclear why some alternatives were considered for one or two areas and not all three. For example, load checking should be included for the West Valley for Milliken while it is still in operation and for any future transfer stations.

   It would be easier to compare program alternatives if this section followed the same format of the SRRE by discussing alternatives and criteria jointly, with subheadings by region. For alternatives considered only by one region, that could have been noted in the discussion.

   Comment noted.

9. **Selection of Alternatives, Section 6, (pp.6-1 to 6-15).** The Committee also found the organization of the section confusing and redundant. As an example, load checking at material recovery facilities and transfer stations has been selected for the Desert/Mountain Area, but not apparently in the Valley areas.

   Comments noted.

10. **Background Information, Section 8.1 (p.8-2).** Discussion and evaluation of alternative funding sources is not addressed in the component even though the potential of budget shortfalls is described as "the most perilous to the continuance of the program." The brief list of contingency alternatives merely identifies some measure that may be taken. A county-wide parcel fee and direct contractual agreements with cities are not included as alternatives yet may have institutional barriers or practicality problems no greater than those that are mentioned, such as advanced disposal fees or private donations.

RESPONSES TO COMMENTS
ON THE SAN BERNARDINO COUNTY SRRE
FROM THE DEPARTMENT OF ENVIRONMENTAL HEALTH SERVICES
OF SAN BERNARDINO COUNTY

DEHS comment 7

The final draft of the HHWE will be modified to note that a good education program should cause a significant reduction in the HHW generated.

DEHS comments 8 and 9

Comments noted.

DEHS comment 10

It is not clear how direct contractual agreements with cities would solve the problem if there are budget shortfalls at the city level. The likelihood of County-wide parcel fees to cover city costs seems remote.

It is not clear how direct contractual agreements with cities would solve the problem is there are budget shortfalls at the city level. The likelihood of county-wide parcel fees to cover city costs seems remote.

11. Incremental Cost Increases/Decreases, Section 8.2. (p 9-1). This section states that periodic collection events will be phased out in 1993 when other sections of the HHWE state that the program will continue. It is unclear whether the one day events are proposed to be phased out on the Desert/Mountain area only or also in the Valley areas, as implied in Table 8-1 and the Executive Summary.

County DEHS has indicated that the timing for phasing out one-day events will coincide with the implementation of a mobile program. This issued should be clarified in the HHWE.

Every effort is being made to move away from one-day collection events, however, the exact timing of this is difficult to define. The plan should probably indicate that one-day events will be phased our sometime during the short or medium term.

RESPONSES TO COMMENTS
ON THE SAN BERNARDINO COUNTY SRRE
FROM THE DEPARTMENT OF ENVIRONMENTAL HEALTH SERVICES
OF SAN BERNARDINO COUNTY

DEHS comment 11

The County is making every effort to move away from the one-day collection events. However, the exact timing of this is difficult to define. The final draft of the HHWE can be modified to indicate that the one-day events will be phased out sometime during the short or medium term planning periods.

DEHS Response to LETTER #11

INTEROFFICE MEMO

DATE May 18, 1992

PHONE [illegible] SOLID WASTE MANAGEMENT DEPARTMENT

FROM PETER BELIENTY, DIVISION CHIEF
Hazardous Materials Management - DEHS

92 MAY 22 AM 10:05

TO JOE BELIANDI, INTERIM PLANNING MANAGER
Solid Waste Management Department

HHWE ONLY

SUBJECT UNINCORPORATED AREA HOUSEHOLD HAZARDOUS WASTE ELEMENT (HHWE)

Attached are DEHS' responses to comments received on the HHWE. These responses have been written to provide background information to the County consultants and not intended to be provided to the public. We suggest the consultant prepare a response for the Task Force by marking a copy of the Task Force comments with the actual page number of the change or "Comment noted" as appropriate for each comment.

If you have any questions on this matter I may be reached at 387-3200, or you may reach Judy Orttung at 387-4629.

PB:gd

cc: Pam Bennett
Joan Mulcare

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To Mark Alpert	From Harold Duffy
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10. Background Information, Section 8.1, (p. 8-2).

Discussion and evaluation of alternative funding sources is not addressed in this component, even though the potential of budget shortfalls is described as "the most perilous to the continuance of the program." The brief list of contingency alternatives merely identifies some measure that may be taken. A county-wide parcel fee and direct contractual agreements with cities are not included as alternatives, yet may have institutional barriers or practicality problems no greater than those that are mentioned, such as advanced disposal fees or private donations.

/11-26

11. Incremental Cost Increases/Decreases, Section 8.2, (p. 8-11). This section states that periodic collection events will be phased out in 1993 when other sections of the HHWE state that the program will continue. It is unclear whether the one day events are proposed to be phased out in the Desert/Mountain area only or also in the Valley areas, as implied in Table 8-1 and the Executive Summary.

/ 11-27

County DEHS has indicated that the timing for phasing out one-day events will coincide with the implementation of a mobile program. This issue should be clarified in the HHWE.

/MG

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RESPONSES TO COMMENTS ON THE SAN BERNARDINO COUNTY SRRE FROM THE COMPOSTING, SLUDGE, SEPTIC, AND HHW COMMITTEE OF THE SAN BERNARDINO COUNTY SOLID WASTE ADVISORY TASK-FORCE

11-26 Comment noted.

11-27 The DEHS plans to phase out HHW collection events sometime in the near future, as reflected in the document on page 8-1. However, the implementation of a mobile program is dependent upon the availability of funds and the degree of participation.